IN THE COURT OF APPEALS OF THE STATE OF OREGON

NICOLAS BLUMM and CLAIRE GATES, individually and on behalf of all others similarly situated,
Plaintiffs-Respondents,

v.

NORTHWEST NATURAL GAS COMPANY,
Defendant-Appellant,

and

NORTHWEST NATURAL HOLDING CO.,
Defendant.

Multnomah County Circuit Court
24CV48490

A189258

Appeal from Limited Judgment
of the Circuit Court for Multnomah County
Honorable Benjamin Souede, Judge

RESPONDENTS' ANSWERING BRIEF AND SUPPLEMENTAL EXCERPT OF RECORD

October 2026

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INTRODUCTION

This appeal concerns an anti-SLAPP motion filed by Defendant Northwest Natural Gas, Oregon's largest natural gas utility, against two of its customers who sued Defendant for misleading customers about the "carbon offsets" and "renewable natural gas" it sells through its "Smart Energy" program. Plaintiffs Nicolas Blumm and Claire Gates claim that Defendant failed to deliver the climate neutrality it promised to its Smart Energy customers. Plaintiffs sued on behalf of a class of similarly situated Smart Energy customers, alleging claims for breach of contract and violations of Oregon's Unlawful Trade Practices Act (UTPA).

Northwest Natural Gas filed a special motion to strike Plaintiff's claims pursuant to ORS 31.150, Oregon's anti-SLAPP law. A recently adopted amendment to ORS 31.150 bars its use against claims, like Plaintiffs', arising from companies' product and service marketing. The trial court correctly agreed with Plaintiffs that ORS 31.150 applied, and further concluded that, in any event, Plaintiffs had met their burden to offer substantial admissible evidence to support a prima facie case as to each of their claims for relief. Defendant identifies no legal error in the trial court's rulings. This Court should affirm.

STATEMENT OF THE CASE

I. Statement of the Nature of the Action and Relief Sought

Plaintiffs do not accept Defendant's statement of the nature of the action and relief sought because it includes argument. Plaintiffs alternatively state as follows:

This is a putative class action case in which Plaintiffs Blumm and Gates allege claims against Defendant for breach of contract and violations of Oregon's UTPA. Plaintiffs' claims arise out of Defendant's so-called "Smart Energy" program. In the trial court, Defendant filed a special motion to strike Plaintiffs' claims pursuant to Oregon's anti-SLAPP law.[1] The trial court denied that motion. It thereafter entered a limited judgment pursuant to ORS 31.150(1), from which Defendant appeals.

II. Nature of the Judgment, Basis for Appellate Jurisdiction, and Timeliness of Appeal

Plaintiffs accept Defendant's statement of the nature of the judgment, basis for appellate jurisdiction, and timeliness of appeal. Plaintiffs agree that the appeal was timely filed.

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[1] Defendant also filed motions to dismiss Plaintiffs' claims pursuant to ORCP 21. The trial court granted in part and denied in part those motions. That ruling is not at issue on appeal.

SUMMARY OF ARGUMENT

The trial court correctly denied Defendant's special motion to strike by interpreting the exemption in ORS 31.150(3) to apply to Plaintiffs' claims over Defendant's Smart Energy solicitations. That conclusion follows from the exemption's plain text, which clear that the anti-SLAPP law does not apply to claims against businesses when the claims "arise out of a communication related to the" business's sale of goods or services. The legislative history of and caselaw interpreting ORS 31.150(3) underscores its application. And that application does not offend the Oregon Constitution; even if ORS 31.150(3) triggered scrutiny under Article I, section 8, it would pass muster, a conclusion Oregon's commercial speech precedent does not disturb.

The trial court also correctly ruled that, even if ORS 31.150(3) did not apply, Plaintiffs met their burden under step two of the anti-SLAPP inquiry, ORS 31.150(4), to present substantial evidence to support a prima facie case on their claims. Defendant's argument to the contrary rests on the erroneous premise that, with Plaintiff Blumm's testimony excluded, nothing remained but Defendant's own evidence, which it perceives to defeat Plaintiffs' claims. That disregards the standard of review, the scope of what the trial court actually decided, and most of the evidence in the record. Applying the correct standard to the full record, the trial court correctly determined that Plaintiffs met the "low bar" of establishing a prima facie case. *Young v. Davis*, 259 Or App 497,

508, 314 P3d 350 (2013). When considered, as it must be, in the light most favorable to Plaintiffs, Plaintiffs presented substantial evidence as to each of the elements of their UTPA and breach of contract claims.

The trial court committed no legal error. This Court should affirm.

QUESTIONS PRESENTED

This appeal presents the following questions:

1. Did the trial court correctly deny Defendant's special motion to strike by interpreting the exemption set forth under ORS 31.150(3) to apply to Defendant's Smart Energy solicitations?

2. Did the trial court correctly rule that Plaintiffs met their burden under ORS 31.150(4) to present substantial evidence to support a prima facie case on their claims for relief?

In Plaintiffs' view, the answer to both question is "Yes."

FACTUAL BACKGROUND

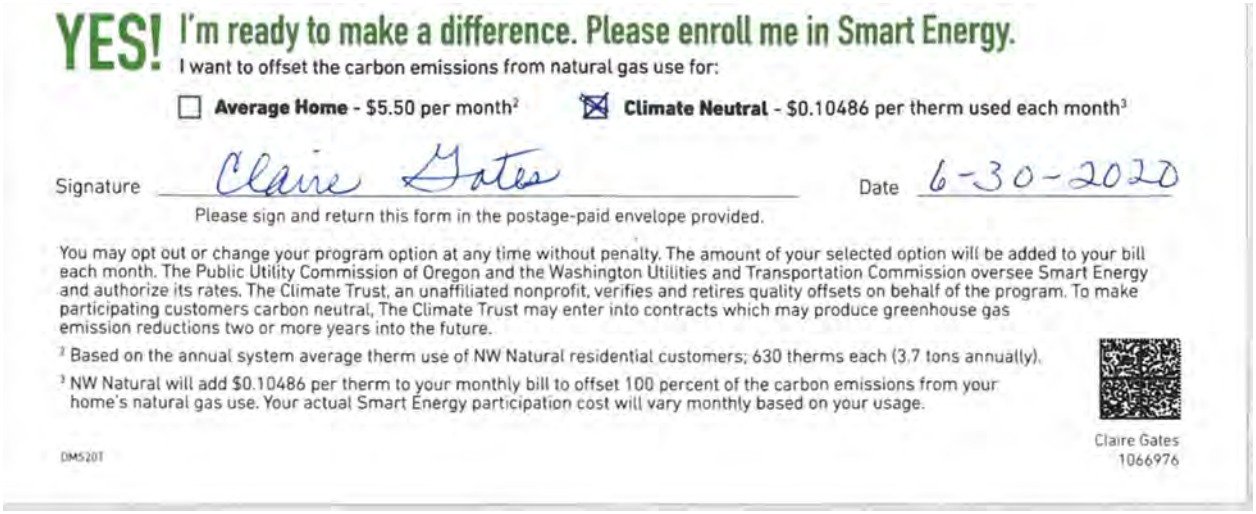
Plaintiffs do not accept Defendant's statement of facts, which describes Smart Energy as a nonprofit cause to which customers "voluntarily contribute," omitting entirely the terms on which Defendant actually sold it. Plaintiffs therefore offer the following factual statement. Because Defendant's second assignment of error challenges the trial court's ruling that Plaintiffs presented substantial evidence to support a prima facie case on their claims for relief, the facts below are stated in the light most favorable to Plaintiffs. *Young*, 259 Or

App at 507–10 Defendant's evidence is described where it bears on whether Plaintiffs' claims fail as a matter of law. *Id.* at 509–10.

I. Defendant sells Smart Energy to its gas customers, priced by the therm and billed on the customers' gas bills.

Defendant is Oregon's largest natural gas utility, serving approximately two million people in Oregon and southwest Washington. ER-2, ER-14. Its primary business is distributing natural gas to residential, commercial, and industrial customers. ER-181 (quoting Defendant's 2023 Form 10-K); *see also* ER-429 ("The parties agree that Defendant is 'primarily engaged' in the business of selling natural gas.").

Defendant created its "Smart Energy" program in 2007. ER-22. Through the program, it markets carbon offsets and "renewable natural gas" as a way for gas customers to "offset carbon emissions" from their natural gas use. ER-105, 111. Customers who join agree to pay a monthly fee—an "Average Home" option for a set $8 per month, or a "Climate Neutral" option for a variable fee based on the customer's monthly natural gas use. ER-27; ER-97. More than 92,000 customers were enrolled in the Smart Energy program as of January 2025. ER-97. Defendant has advertised its Smart Energy program through every channel it uses to reach its gas customers, including direct mail solicitations (ER-407):



YES! I'm ready to make a difference. Please enroll me in Smart Energy.

I want to offset the carbon emissions from natural gas use for:

☐ **Average Home** - $5.50 per month[2] ☒ **Climate Neutral** - $0.10486 per therm used each month[3]

Signature Claire Gates Date 6-30-2020

Please sign and return this form in the postage-paid envelope provided.

You may opt out or change your program option at any time without penalty. The amount of your selected option will be added to your bill each month. The Public Utility Commission of Oregon and the Washington Utilities and Transportation Commission oversee Smart Energy and authorize its rates. The Climate Trust, an unaffiliated nonprofit, verifies and retires quality offsets on behalf of the program. To make participating customers carbon neutral, The Climate Trust may enter into contracts which may produce greenhouse gas emission reductions two or more years into the future.

[2] Based on the annual system average therm use of NW Natural residential customers; 630 therms each (3.7 tons annually).

[3] NW Natural will add $0.10486 per therm to your monthly bill to offset 100 percent of the carbon emissions from your home's natural gas use. Your actual Smart Energy participation cost will vary monthly based on your usage.

DM5201

Claire Gates
1066976

phone calls (ER-396–97):

KEVIN: Awesome. I really appreciate your time.

Well, we're calling customers who are eligible to participate in Smart Energy. It's a carbon offset program from your natural gas company.

Have you heard about a carbon neutral option available with Northwest Natural?

NICOLAS BLUMM: I haven't, no.

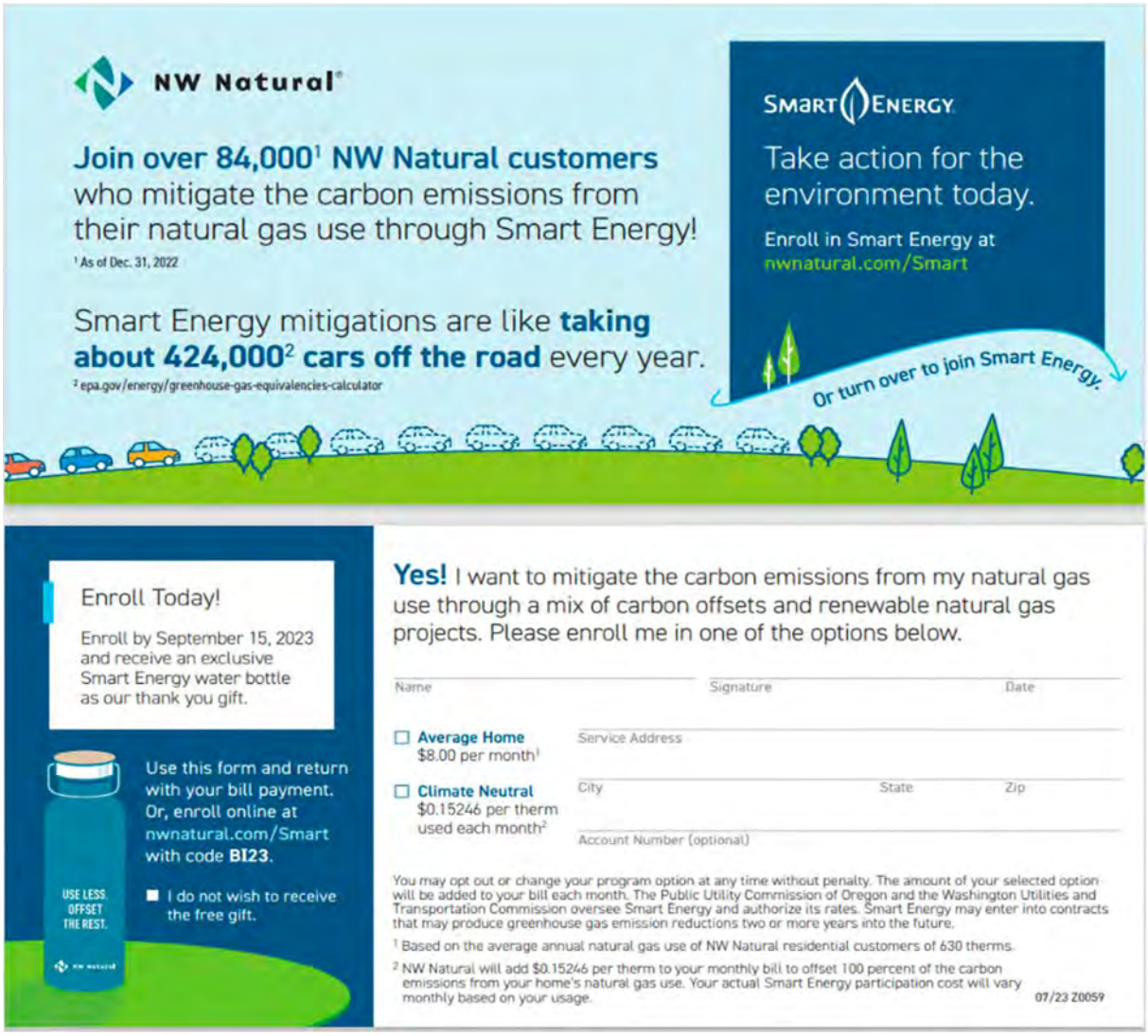
KEVIN: And that's totally okay. That's why we're calling people.

As you may know, the energy used in your home creates carbon emissions, kind of like driving a car. And that's why Northwest Natural offers this program. It's for customers who want to reduce the environmental impact of their energy use.

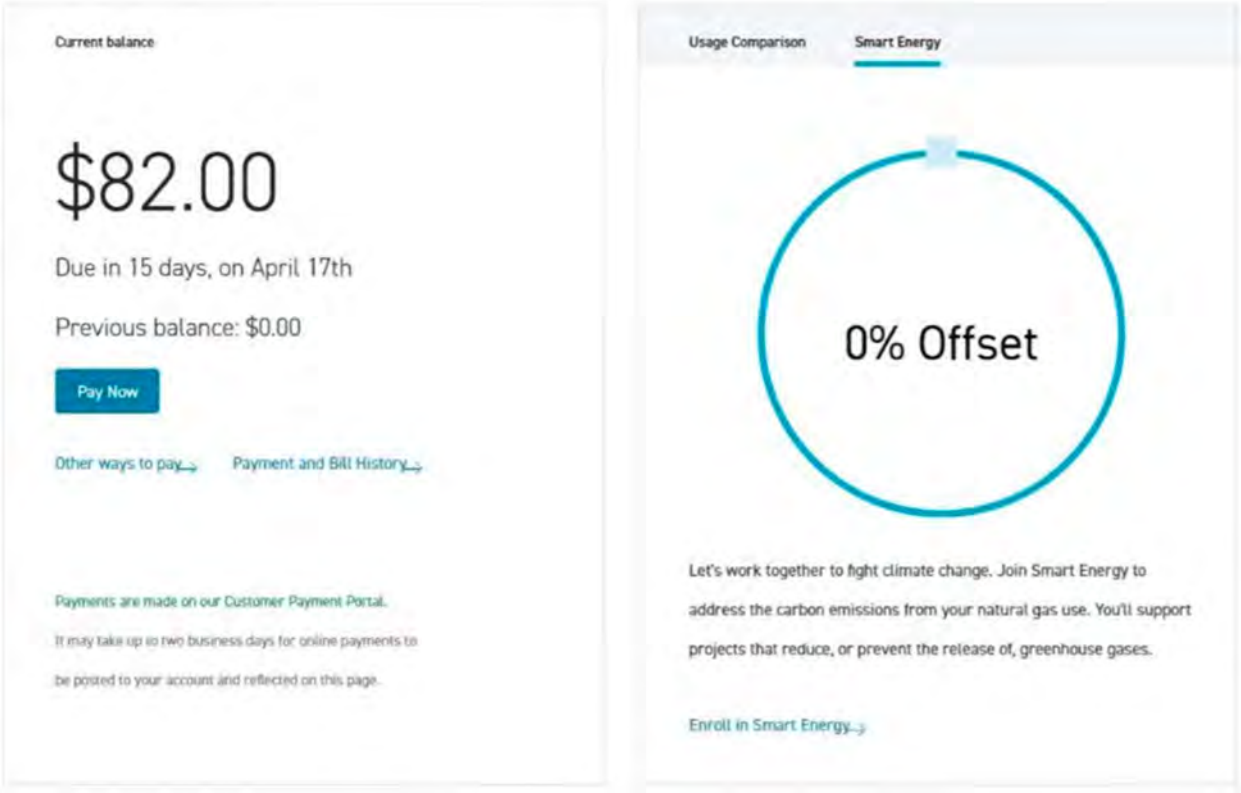
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And it may take about a full billing cycle, but you'll see a line item that says Smart Energy on your bill.

inserts in customers' bills (ER-23):



and on customers' online service portal (ER-26):



It also advertises the program on its website, in its customer newsletter, and through its social media accounts. ER-23; ER-89.

The materials that Defendant used to enroll Plaintiffs into the Smart Energy program promise a specific result of customers' Smart Energy purchase. Specifically, Defendant promises that, by enrolling, the program would "add $0.10486 per therm to [a customer's] monthly bill to *offset 100 percent* of the carbon emissions from [their] home's natural gas use." ER-407 (emphasis added). Defendant assures Smart Energy customers that offsets they purchase would "make participating customers carbon neutral." ER-407.

II. Carbon Offsets, Dairy Digesters, and Renewable Natural Gas (RNG)

A carbon offset is a market-based tool intended to counteract the greenhouse gas emissions from one activity by purchasing credits generated by an equivalent emissions reduction somewhere else. ER-4. Offsets must bear certain attributes to be considered legitimate. ER-5; SER-7, 105. Specifically, an offset must be "additional" (the reduction would not have happened anyway and is not required by law), "unique" (not double-counted), real and quantifiable, verified, permanent, and measured against a robust baseline. ER-5; SER-105–10.

Plaintiffs' expert, Dr. Emily Grubert, explained distinctions among carbon offsets that are also relevant. Grubert is a licensed professional engineer and an associate professor of sustainable energy policy and civil and environmental engineering at the University of Notre Dame. SER-2–3. She served as Deputy Assistant Secretary for the Office of Carbon Management at the U.S. Department of Energy, and her expertise is greenhouse gas accounting. SER-2–3.

According to Dr. Grubert, offsets come in two types. A removal-based offset captures carbon dioxide already in the atmosphere and stores it permanently. SER-4. If the purchaser emits one unit and pays to remove one unit, the net effect is zero, so removal offsets can deliver climate neutrality. SER-4. An avoidance-based offset is one that pays someone else not to emit.

SER-4. The purchaser's emissions still reach the atmosphere; the claimed benefit is only that someone else's emissions were lower than they otherwise would have been. SER-4. Avoidance-based offsets "are fundamentally incapable of delivering carbon neutrality." SER-4. Removal offsets cost roughly $1,500 per tonne of carbon dioxide. SER-11.

Defendant's Smart Energy service claims to mitigate natural gas customers' emissions by procuring offsets that purport to avoid the release of methane from liquid cow manure. ER-14–22. Methane emissions from animal waste management systems vary depending on the type of system. ER-7. Large dairies typically flush manure into open lagoons, where it decomposes without oxygen and emits methane. ER-8. A "digester" covers the lagoon and captures the methane, which can be burned for electricity or refined into fuel. ER-9. The dairy and energy industries have referred to this manure-derived methane, created through a manure "digester," as "biogas" and the upgraded product, "biomethane." SER-7–8. Now, they call biomethane "renewable natural gas," or RNG. SER-7–8. Because captured methane can be sold, facilities have financial incentives to produce more of it, and some have abandoned practices that reduce manure methane in order to increase it. ER-13–14; SER-8, 10.

III. Plaintiffs enrolled in Smart Energy after Defendant promised them carbon neutrality.

In May 2020, Defendant mailed Plaintiff Gates a letter urging her to "be part of Smart Energy." ER-408. The letter told her that "[t]he carbon emissions from your natural gas use will be offset through projects that reduce, or prevent the release of, greenhouse gases" and promised "High Quality – verified offsets." ER-408. It explained that the offsets came from "projects like biodigesters on dairy farms that capture methane from cow manure, keeping the greenhouse gas from entering the atmosphere," and displayed a map of those projects. ER-409.

On June 30, 2020, Gates signed and returned the enrollment form, selecting the "Climate Neutral" option. ER-387, ER-407. The form stated that NW Natural Gas "will add $0.10486 per therm to your monthly bill to *offset 100 percent* of the carbon emissions from your home's natural gas use." ER-407 (emphasis added). Gates enrolled because she "was interested in doing [her] part to lower [her] carbon footprint," and she expected Defendant provide what it offered: "a 100% offset or mitigation of my monthly natural gas emissions." ER-230–31. She paid the Smart Energy charge for roughly four years, cancelling in June 2024 after learning the program funded dairy digesters that might be environmentally harmful. ER-231; ER-387. Gates would not have enrolled had she known that Defendant would not use her payments to cancel out her emissions carbon emissions. ER-231.

Plaintiff Blumm, for his part, enrolled in Smart Energy on October 1, 2021, during a call from Defendant's outreach vendor. ER-385. On that call, the representative told Blumm that "when you enroll in Smart Energy, the carbon emissions from your natural gas use will be offset," that the Climate Neutral option would "offset 100 percent of the emissions from your home's natural gas use," and that the program would reduce his "carbon footprint by about 613 pounds per month." ER-396. The representative then enrolled Blumm in the "Climate Neutral" option and told him that the Climate Trust "verifies and retires quality offsets on behalf of the program to make participating customers carbon neutral." ER-397.

Blumm paid the Smart Energy charge on autopay for nearly three years. ER-226. In May 2024, his online account page told him he was "addressing approximately 100% of the carbon emissions from" his natural gas use. ER-227. He cancelled after learning more about the program, and he would not have enrolled in the first place had he known he would not receive what Defendant had advertised. ER-228; ER-425–26.

IV. The offsets that Defendant purchased could not deliver carbon neutrality, as Defendant promised its customers it would.

Defendant's representations are false and misleading because the carbon offsets and RNG that Defendant purchases do not "offset" or "mitigate" the "carbon emissions" from Plaintiffs' and other customers' natural gas use.

In fact, Defendant's promises *cannot* deliver carbon neutrality or "offset 100 percent" of customers' emissions. As Dr. Grubert explained, Smart Energy offsets are "avoidance-based"—meaning that they pay a project not to emit, while the customer's own emissions still occur. SER-4. As a result, the offsets "are fundamentally incapable of delivering carbon neutrality; they can only reduce emissions relative to a counterfactual." SER-4. Their net effect is still to make climate change worse. SER-4. Thus, even if they possessed the hallmarks of trustworthiness—which they do not, Dr. Grubert further explained—Defendant's "avoidance-based" offsets could only *reduce* emissions relative to a counterfactual; they could never result in climate neutrality, as Defendant promised. SER-4.

Dr. Grubert further explained that the Smart Energy offsets raise "major additionality concerns." SER-9. "Additionality" is the concept that a carbon offset project, and any emissions reductions flowing from the project, would not have occurred absent the crediting mechanism's incentive, and would not have been otherwise required by law or regulation. SER-5, SER 105. A project or offset lacks additionality if the emissions would have been avoided anyway, without the purchase of the offset, or if the emissions purportedly "reduced" by the project didn't need to be created or wouldn't have existed in the first place. SER-9–10.

Defendant's Smart Energy offsets do not satisfy this test. Most digesters receiving Smart Energy funding have long generated credits for other offsetting programs, belying any notion that Defendant's investment in these digesters created any "additional" emissions reductions that would not have occurred without Smart Energy. SER-9–10; SER-151–77. And at roughly $28 per tonne, the offsets cost a small fraction of the roughly $1,500 per tonne required for removal-based offsets actually capable of delivering neutrality. SER-11.

V. Trial Court Proceedings

Plaintiffs filed this putative class action in October 2024. ER-1, 453. Blumm alleges UTPA claims under ORS 646.608(1)(b), (e), (f), and (g), alleging that Defendant misrepresented the qualities, standard, and certification of the offsets it sold through Smart Energy. ER-45–46. Both Plaintiffs allege a claim for breach of contract, on the basis that Defendant offered to offset 100 percent of the emissions from natural gas use for a per-therm fee, Plaintiffs accepted and paid, and Defendant did not deliver. ER-47–48.

In January 2025, Defendant moved to dismiss and filed a special motion to strike under ORS 31.150. ER-50–73. In its motion, Defendant asked the trial court to strike some 40 paragraphs of Plaintiffs' complaint describing Defendant's Smart-Energy-related statements. ER-52–53, 56. At step two of the motion to strike, Defendant argued only that Plaintiffs' claims were legally

insufficient for the reasons in the motion to dismiss, and that Blumm's UTPA claim was time-barred. ER-51–52.

Plaintiffs argued in response that their claims arise from Defendant's commercial advertising, not from protected speech; that ORS 31.150(3) bars the special motion; and that in any event they had presented substantial evidence to support a prima facie case. ER-163–208. Plaintiffs submitted declarations from Blumm, Gates, and Dr. Grubert, as well as copies of Defendant's marketing and regulatory materials. ER-170 n 1; ER-225–337; SER-1–311.

In reply, Defendant submitted new evidence, including a declaration attaching the Blumm call recording and transcript, the Gates mailer and enrollment form, customer account records, and a supplemental declaration about its website. ER-339–43, 381–419. After a hearing, Plaintiffs filed supplemental declaration from Plaintiff Blumm and a notice explaining why they had not withdrawn his initial declaration. ER-420–26.

In a written ruling, the trial court denied Defendant's special motion to strike, concluding that ORS 31.150(3) bars the motion. ER-429–30. The trial court explained that each claim "centers on a program through which Defendant offered an option to its customers to purchase 'carbon offsets' to mitigate the impact of that customer's use of natural gas." ER-447. The complaint's "core theory," the court reasoned, "is that in the course of selling its natural gas, Defendant committed deceptive practices by offering for sale ride-along less-

than-advertised carbon offsets." ER-447. The claims therefore relate to "the selling of natural gas," the business in which Defendant is primarily engaged. ER-447. In the alternative, the court found that Plaintiffs "satisfied their burden and have presented substantial evidence to support a prima facie case." ER-448. In reaching that conclusion, the court disregarded the portions of Blumm's declarations about how he enrolled and what he was told at enrollment. ER-431 n 3. It found that Plaintiffs "have met their evidentiary burden even when the self-contradicting evidence is disregarded." ER-447.

The court entered a limited judgment on November 3, 2025. ER-443–49, 452. Defendant timely appealed.

ANSWER TO FIRST ASSIGNMENT OF ERROR

I. Preservation of Error

Plaintiff agrees that the assignment of error is preserved.

II. Standard of Review

This Court reviews a trial court's ruling on a special motion to strike for legal error. *Waggoner v. Husk*, 337 Or App 519, 522, 564 P3d 167 (2025).

ARGUMENT

I. The trial court correctly ruled that the commercial speech exemption of ORS 31.150(3) bars Defendant's use of the anti-SLAPP law.

As the trial court rightly found, the plain text of ORS 31.150(3) "squarely" applies to Plaintiffs' claims arising from a commercial actor's marketing for its own paid service. ER-430. The available legislative history, drawn from comments to the section of the Uniform Public Expression Protection Act from which ORS 31.150(3) derives, confirms that conclusion. And caselaw in Oregon and other jurisdictions further support it, finding narrower commercial speech exemptions applicable in much closer cases than here. Defendant's contrary arguments should be rejected; ORS 31.150(3) applies to Plaintiffs' claims arising from Defendant's advertisements for its natural gas emissions offsetting service.

A. By its text, ORS 31.150(3) applies to Plaintiffs' claims arising from Defendant's solicitations to its natural gas customers to pay extra to offset the emissions from the gas Defendant sells them.

The text of ORS 31.150(3) precisely describes Defendant's solicitations. When interpreting statutory text, this Court's primary goal "is to determine the intent of the legislature at the time it enacted the relevant statute." *Matter of Comp. of Ward*, 369 Or 384, 394, 506 P3d 386 (2022) (citing *State v. Gaines*, 346 Or 160, 171, 206 P3d 1042 (2009)). The Court "look[s] to the text, context, and any helpful legislative history of the statute in question, keeping in

mind that 'there is no more persuasive evidence of the intent of the legislature than the words by which the legislature under-took to give expression to its wishes.' " *Id.* (quoting *Gaines*, 346 Or at 171).

The commercial speech exemption of ORS 31.150(3) states, in its entirety,

> "A special motion to strike may not be made against a claim under this section against a person primarily engaged in the business of selling or leasing goods or services if the claim arises out of a communication related to the person's sale or lease of the goods or services."

ORS 31.150(3). Thus, whether the exemption applies depends on two questions. The first is whether the claim is "against a person primarily engaged in the business of selling or leasing goods or services." *Id.* If it is, the second is whether that "claim arises out of a communication related to" the commercial actor's "sale or lease of the goods or services." *Id.*

Plaintiffs' UTPA and contract claims easily fit that bill. The parties agree that Defendant is "a person primarily engaged in the business of selling or leasing goods or services," ORS 31.150(3), as a utility that sells natural gas. ER-429. Plaintiffs' claims also arise "out of a communication related to [Defendant]'s sale" of that natural gas, because they arise out of Defendant's Smart Energy solicitation to its natural gas customers. Under its Smart Energy Program, Defendant, in exchange for monthly surcharge on its customers' natural gas bill, offers to "mitigate," "address," and/or "offset" the "carbon

emissions from [customers'] natural gas use." ER-23, 26, 396–97, 407. Defendant's offer is exclusively available to its natural gas customers, solicited through the same channels its gas is sold, and tied to the customers' gas bill. Because its "communications" offering carbon offsets are "related to" Defendant's "sale * * * of goods or services" (natural gas), the exemption applies, and a "special motion to strike may not be made." ORS 31.150(3). The inquiry should end there.

B. Defendant's construction of the exemption is not supported by its text or purpose.

To avoid that result, Defendant effectively seeks to rewrite the exemption, first by asserting that it applies only to claims arising from " 'commercial speech' as the term is understood in the context of the U.S. Constitution's First Amendment." Opening Br at 17–18. That means, in Defendant's view, that the exemption applies only to speech that "does *no more* than propose a commercial transaction." *Id.* (citing *United States v. United Foods, Inc.*, 533 US 405, 409, 121 S Ct 2334, 150 L Ed 2d 438 (2001)) (emphasis added). And even then, Defendant claims that the exemption applies only when the commercial speech proposes a transaction for whatever product or service the company is "primarily engaged the business of" selling. *Id.* Stated another way, under Defendant's interpretation, the exemption would apply *only* if Defendant were sued for saying, "Buy our natural gas!", but not

for any other speech related to the natural gas it sells, or for offers for products or services related to that gas.

This reading has no basis in the statute's text, its purpose, or the caselaw construing it. By its text, ORS 31.150(3) applies to claims arising from communications "*related to* the person's sale or lease of the goods or services," *even if* they do more than promote a commercial transaction. And that makes sense: like Defendant's Smart Energy marketing, many advertisements do more than simply propose a sale; they tell a story about why a product is the most environmentally friendly or efficient, or describe a societal problem the company's service helps address. This does not transform the marketing into pure political speech.

Defendant's own authority confirms as much. *See Boshears v. PeopleConnect, Inc.*, 2022 WL 888300, at *10 (WD Wash Mar 25, 2022), *vacated on other grounds*, 2023 WL 4946630 (9th Cir 2023) ("advertising which 'links a product to a current public debate' " is nevertheless "properly characterized as commercial speech" (quoting *Bolger v. Youngs Drug Prods. Corp.*, 463 US 60, 67–68, 103 S Ct 2875, 77 L Ed 2d 469 (1983))).[2] Regardless

[2] None of the other authorities Defendant cites supports the argument that its Smart Energy solicitations are noncommercial speech. Indeed, none of the cases concerns advertising at all. *See Connick v. Myers*, 461 US 138, 144–45, 103 S Ct 1684, 75 L Ed 2d 708 (1983) (First Amendment protection for public employee speech); *Lowell v. Wright*, 369 Or 806, 825, 512 P3d 403 (2022) (customer's online review of a piano store); *New York Times Co v. Sullivan*, 376 US 254, 279–80, 84 S Ct 710, 11 L Ed 2d 686 (1964) ("actual malice"

of the values-conveying or messaging function Defendant believes its Smart Energy advertisements have or intend to convey, Opening Br at 24, Plaintiffs' claims arising from its Smart Energy solicitations fall squarely within ORS 31.150(3).

Courts in other jurisdictions considering arguments similar to Defendant's have rejected them, applying instead the plain text of the statute's commercial-speech exemption. The Texas Court of Appeals, for instead, held that it was "bound by the plain language of the Texas statut[e]" to apply its exemption to law firm communications when the text "evince[d] legislative intent for the exemption to apply to communications that are broader than advertisements or proposed transactions." *Kostura v. Judge*, 627 SW3d 380, 389 (Tex Ct App 2021). "The question before th[e] Court [wa]s not whether public policy should limit the commercial-speech exemption to advertising or proposed commercial transactions, but whether the statute's text imposes such a limitation." *Id.* Defendant's authority does not compel a contrary result. *See Holtec Int'l v. Javerbaum Wurgaft Hicks Kahn Wikstrom & Sinins, P.C.*, 2026 WL 2014782, at *7 (NJ Super Ct App Div July 13, 2026) (construing New

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standard in news publisher defamation suit); *Janus v. Am. Fed'n of State, Cnty., & Mun. Emps., Council 31*, 585 US 878, 913–14, 138 S Ct 2448, 201 L Ed 2d 924 (2018) (addressing speech of unions with which nonmembers may disagree in challenge to nonmembers' compelled union dues); *N.M. Top Organics-Ultra Health, Inc. v. Kennedy*, 2019 WL 211530, at *9 (DNM Jan 16, 2019) (First Amendment claim by cannabis education booth at state fair).

Jersey's exemption "strictly but reasonably" to effectuate legislative intent); *Farina v. Omari*, 2026 WL 1552256, at *6–7 (DNJ June 2, 2026) (applying plain text of exemption); *Boshears*, 2022 WL 888300, at *7 (same).

Defendant next reads the word "primarily" in ORS 31.150(3) to take on a new meaning: that the exemption only applies when the claims arise from proposed transactions for the goods and services the defendant is "primarily engaged in" selling—"not *any* goods or services, but '*the* goods or services' " Opening Br at 22, 28 (emphasis in Defendant's brief). Under that reading, ORS 31.150(3) doesn't apply because even if Defendant is selling carbon offsets, it is *gas*—not carbon offsets—that it is "primarily" engaged in selling. *Id.*

But that interpretation fares no better. By the statute's text, "primarily" modifies "person," not "goods or services." ORS 31.150(3) ("a *person* primarily engaged in the business of selling or leasing goods or services" (emphasis added)). The question is whether the claims are against a commercial actor, not what type of commerce reaps the most profits for them.[3]

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[3] Defendant's reliance on the definite article in ORS 31.150(3) ("*the* goods or services") also doesn't help its case. "The" confines the exemption to a business's speech about its own products; it does not narrow the exemption in any way that helps Defendant, which is being sued over communications related to the natural gas it sells. *Compare Holtec*, 2026 WL 2014782 at *4 (in identical exemption, substituting "person's sale or lease of *the* goods and services" with "*their* goods and services"), *with Castleman v. Internet Money Ltd.*, 546 SW3d 684, 688–89 (Tex 2018) (declining to apply Texas exemption when claims arose out of defendant's allegedly defamatory statements about *plaintiff's* goods and services, not about defendant's own services), *and*

Even if Defendant were correct, however, it would not change the result. The Smart Energy add-on service to offset customers' natural gas emissions is directly "related to" Defendant's primary business activity of selling natural gas, as the trial court correctly ruled. ER-430; *see also Neurelis, Inc. v. Aquestive Therapeutics, Inc.*, 71 Cal App 5th 769, 788–89 (2021) (applying California commercial speech exemption to pharmaceutical company's statements to investors about securities even though company was not "primarily engaged" in selling securities); *BioCorRx, Inc. v. VDM Biochem., Inc.*, 99 Cal App 5th 727, 735–37 (2024) (applying same exemption in dispute between competitors, rejecting defendant's "narrow interpretation of the word 'primarily' ").

Defendant's attempt to rewrite ORS 31.150(3) fails. Plaintiffs' claims fall squarely within its proscription. *See also* ER-430.

C. The legislative history of the commercial speech exemption supports Plaintiffs' interpretation.

To the extent that any ambiguity remains from the statute's text and purpose, that ambiguity is resolved by its legislative history. The Oregon legislature amended the anti-SLAPP law in 2023 to adopt various provisions of the Uniform Public Expressions Protection Act ("UPEPA"), including the

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Simpson Strong-Tie Co., Inc. v. Gore, 49 Cal 4th 12, 33 (2010) (exemption did not apply to attorney speech's allegedly defaming defendant's product).

commercial speech exemption modeled after UPEPA § 2(c)(3).[4] Although the legislative record contains no discussion of the exemption,[5] as the bill's sponsor noted,[6] the Uniform Law Commission's commentary on the sections the legislature adopted is instructive on their scope and purpose. *Livingston v. Metro. Pediatrics, LLC*, 234 Or App 137, 143–44, 227 P3d 796 (2010) ("A commentary to a uniform act that is enacted by the Oregon legislature is a part of the act's legislative history."); *Kelly v. Olinger Travel Homes, Inc.*, 200 Or App 635, 644 n 5, 117 P3d 282 (2005) (comments to uniform laws "are instructive, because the legislature took note of them at the time of adoption").

As the Uniform Law Commission's comments explain, the commercial-speech exemption is meant to "carv[e] out" commercial speech "from the scope of the Act." *See* App-9–10, Comment 13 to UPEPA § 2 ("UPEPA

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[4] Section 2(c)(3) of the UPEPA exemption provides: "This [act] does not apply to a [cause of action] asserted: * * * against a person primarily engaged in the business of selling or leasing goods or services if the [cause of action] arises out of a communication related to the person's sale or lease of the goods or services."

[5] None of the 17 state legislatures that have adopted UPEPA in whole or part debated the commercial exemption, making the UPEPA commentary to section 2(c)(3) the clearest available indication of the Oregon legislature's intent in enacting ORS 31.150(3).

[6] *See* Testimony House Committee on Judiciary, SB 305, Mar 14, 2023 (statement of Lane Shetterly), *available at* https://olis.oregonlegislature.gov/liz/mediaplayer/?clientID=4879615486&eventID=2023031216) (recording at 22:00). Mr. Shetterly chaired the Uniform Law Commission committee that drafted the UPEPA.

Comments"). To illustrate how the exemption applies, the Commission provided an example:

> "By way of illustration, if a mattress store is sued for false statements made in its advertising of mattresses—whether by an aggrieved consumer or a competitor—the mattress store would not be able to avail itself of the Act. But if the same mattress store were sued for tortious interference for organizing a petition campaign to oppose the building of a new school, its activity would not be related to the sale or lease of goods or services, and it could use the Act for protection of its First Amendment conduct."

Id. The Commission's example provides further support for why ORS 31.150(3) applies in this case. As with the mattress store, Defendant is a natural gas company "sued for false statements made in its advertising" related to that natural gas "by an aggrieved consumer"; it was not sued for political activity unrelated to its natural gas business.

Finally, California's experience shows what commercial-speech exemptions like ORS 31.150(3) are meant to prevent. The California legislature adopted its exemption after finding a "disturbing abuse of" its anti-SLAPP statute that undermined the right to "petition for the redress of grievances." Cal Civ Proc Code § 425.17(a). As the California Court of Appeals explained, the exemption was "aimed squarely at false advertising claims," responding to concerns that corporations were using the anti-SLAPP statute "to burden plaintiffs who were pursuing unfair competition or false advertising claims." *Demetriades v. Yelp, Inc.*, 228 Cal App 4th 294, 309 (2014). Defendant attempts exactly that here: despite ORS 31.150(3)'s plain

text, it recasts its Smart Energy solicitations as free speech about climate change, to "burden" Plaintiffs who are pursuing a false advertising claim against it. That is not the intent of the law.

D. Caselaw interpreting Oregon's and other commercial speech exemptions further demonstrates ORS 31.150(3) applies.

The only other decision to address ORS 31.150(3), *Pereschica v. Hershner Hunter, LLP*, is a federal case in which the trial court declined to apply the exemption to claims arising from legal filings and notice letters in a debt collection suit, given that they were not directly related to the defendant's business. 2026 WL 866300, at *4–5 (D Or Mar 30, 2026). That is easily distinguishable from this case, in which the claims arise from solicitations for a paid service.

Defendant's other anti-SLAPP authority is no different. *See Holtec*, 2026 WL 2014782, at *7 (New Jersey commercial speech exemption did not apply to "informational" blog post "not about the sale of [firm']s legal services"); *Farina*, 2026 WL 1552256, at *1, 6 (social media posts fell outside exemption by "not refer[ring] to any services offered by Defendant."). And its remaining out-of-state authorities finding speech not commercial do not involve anti-SLAPP statutes at all, and fail to demonstrate that Smart Energy solicitations are not commercial speech.[7] Whether or not Smart Energy is "socially

[7] *See Mood For A Day, Inc. v. Salt Lake Cnty.*, 953 F Supp 1252, 1258 n 9 (D Utah 1995) (cannabis state fair display); *Complete Angler, LLC v. City of*

conscious," and whether or not Defendant profits from it, ORS 31.150(3) applies.

II. Applying the commercial speech exemption to Plaintiffs' claims would not offend the Oregon Constitution.

Contrary to Defendant's suggestion, there is no constitutional "proble[m]," let alone a "serious" one, Opening Br at 29, that would be avoided by adopting Defendant's construction. Even if the commercial exemption triggered scrutiny under Article I, section 8, of the Oregon Constitution, it would survive it.

Oregon courts analyze claims under Article I, section 8, under the familiar three-category *Robertson* framework. *State v. Babson*, 355 Or 383, 393–94, 326 P3d 559 (2014) (discussing *State v. Robertson*, 293 Or 402, 649 P2d 569 (1982)). "[U]nder the first category * * *, a law that is 'written in terms directed to the substance of any opinion or any subject of communication is unconstitutional unless the restriction is wholly confined within an historical exception.' " *Id.* (quoting *Robertson*, 293 Or at 412). Under the second, laws " 'directed in terms against the pursuit of a forbidden effect,' " where " 'the proscribed means of causing that effect include speech or writing,' * * * [are] examined for overbreadth." *Id.* Under the third, laws " 'directed only against

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Clearwater, Fla., 607 F Supp 2d 1326, 1328 (MD Fla 2009) (fish mural); *Linc-Drop, Inc. v. City of Lincoln*, 996 F Supp 2d 845, 852 (D. Neb. 2014) (charity clothing drop box); *Vill. of Schaumburg v. Citizens for a Better Env't*, 444 US 620, 632, 100 S Ct 826, 63 L Ed 2d 73 (1980) (same).

causing the forbidden effects' * * * can be challenged by arguing that the law could not constitutionally be applied to a person's particular words or other expression." *Id.*

Defendant does not mention *Robertson,* much less identify what *Robertson* category it believes ORS 31.150(3) falls into or explain why it would fail the corresponding test. Nor could it. Denying businesses sued over their advertising the benefit of the anti-SLAPP statute does not restrain expression. At most, ORS 31.150(3) would fall into the third *Robertson* category, and would easily pass muster.

The authority on which Defendant relies does not suggest otherwise. Defendant invokes a footnote in this Court's decision in *City of Hillsboro v. Purcell*, stating that Article I, section 8 permits a city to "regulate commercial speech no more rigorously than it does noncommercial speech." 87 Or App 649, 653, n 4, 743 P2d 1119 (1987). The Supreme Court affirmed, holding that a city ordinance criminalizing door-to-door sales was overbroad under Article I, section 8, but it did not adopt that footnote. 306 Or 547, 550, 761 P2d 510 (1988). And *Northwest Advancement*, which Defendant cites for that same proposition, *upheld* a regulation of door-to-door commercial solicitation by minors because it was tailored to state interests. *Nw. Advancement, Inc. v. State, Bureau of Lab., Wage & Hour Div.*, 96 Or App 133, 141, 772 P2d 934

(1989). That is hardly support for a rule that commercial and noncommercial speech must be treated identically.

Likewise, *Moser v. Frohnmayer* invalidated a prohibition on commercial advertising with automatic telemarketing devices not because it put commercial and noncommercial speech on unequal footing, but because the legislature targeted speech instead of "identif[ying]" and "proscrib[ing]" the "harmful *effects* of automated telephone solicitations." 315 Or 372, 379, 845 P2d 1284 (1993) (emphasis in original); *see also Zackheim v. Forbes*, 134 Or App 548, 555, 895 P2d 793 (1995) (holding prohibitions on commercial use of accident reports "justified neither by an historical exception nor by the purpose of preventing an identified actual effect or harm").

Defendant also cites *State ex rel. Rosenblum v. Living Essentials, LLC*, 371 Or 23, 50, 529 P3d 939 (2023), for the principle that Article I, section 8 "expressly prohibits state regulation of speech * * * that moves beyond purely commercial proposals and into 'supposedly detrimental messages or ideas themselves.' " Opening Br at 30–31. True enough. But Plaintiffs pursue UTPA claims against allegedly misleading advertising, and *Living Essentials* held that UTPA provisions proscribing such conduct are not facially unconstitutional. 371 Or at 59. And even if Defendant's Smart Energy solicitations were more than "purely commercial proposals" (they are not), a court's determination that the anti-SLAPP law does not apply regulates nothing

based on its "supposedly detrimental messages." *Id.* at 50. The question is not whether the state may regulate Defendant's speech, but whether Article I, Section 8, entitles Defendant to the anti-SLAPP statute's protection in this case.[8] It does not.

ANSWER TO SECOND ASSIGNMENT OF ERROR

I. Preservation of Error

Plaintiffs agree that Defendant generally preserved its challenge to the trial court's step-two ruling, with one exception. On appeal, Defendant raises one issue was never presented to the trial court: that Plaintiff Gates failed to establish the "relevant terms" of her contract, including under the rule of completeness, ORS 40.040. Opening Br at 41–42. That issue is unpreserved.

II. Standard of Review

This Court reviews a trial court's ruling on a special motion to strike for legal error. *Waggoner*, 337 Or App at 522.

At the second step, the question is whether the plaintiff has presented "substantial evidence to support a prima facie case." ORS 31.150(4). In answering that question, the Court does not weigh the parties' evidence; it views the evidence in the light most favorable to Plaintiff and draws all

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[8] For that reason, it is immaterial that " 'the merits of' " whether Defendant's " 'conduct is wrongful'—*e.g.*, deceptive—'are taken into account' only at step two 'of the analysis,' " as Defendant stresses. Opening Br at 30 (citing *Davoodian v. Rivera*, 327 Or App 197, 210, 535 P3d 309 (2023)).

reasonable inferences in Plaintiff's favor. *Handy v. Lane Cnty.*, 360 Or 605, 608 n 1, 385 P3d 1016 (2016). Defendant's evidence may be considered "only to determine if it defeats plaintiff's showing as a matter of law." *Plotkin v. SAIF*, 280 Or App 812, 815, 385 P3d 1167 (2016) (alterations removed). Moreover, Plaintiff need "not * * * definitively prove" each element of their claim; rather, the "substantial evidence" can be based on "reasonable inference[s]" and "circumstantial evidence rather than direct evidence." *Waggoner*, 337 Or App at 533.

ARGUMENT

Defendant's challenge to the trial court's step-two ruling rests on a single premise: that once the trial court set aside part of Plaintiff Blumm's testimony, nothing remained but Defendant's own evidence, and that evidence defeats Plaintiffs' claims. Opening Br at 34–42. Neither half of that premise survives scrutiny. Defendant ignores the standard of review, the scope of what the trial court actually decided, and most of the evidence. Applying the correct standard to the entire record, the Court should affirm.

I. Defendant disregards the rules that govern appellate review.

Defendant's second assignment of error asks this Court to do something it cannot do: decide the case anew. Rather than demonstrate a legal error in the trial court's ruling, Defendant repeats the arguments the trial court already

rejected and asks for a different result. Under this Court's well-established standards of review, Defendant's arguments fail.

A. Defendant does not apply the correct standard of review.

Defendant acknowledges, as it must, that this Court reviews a ruling on a special motion to strike for legal error. Opening Br at 34. The legal question at step two is narrow: whether Plaintiffs' evidence, viewed with all reasonable inferences drawn in their favor, would permit a reasonable factfinder to find each element of their claims. *Young*, 259 Or App at 507–10. That "low bar befits the pretrial nature" of the anti-SLAPP procedure, the "goal" of which "is to weed out meritless claims meant to harass or intimidate—not to require that a plaintiff prove its case before being allowed to proceed further." *Id.* at 508.

Yet Defendant identifies no misstatement of law by the trial court. It does not contend that the trial court applied the wrong standard, misread an element of any claim, or relied on inadmissible evidence. The only error it identifies—in passing and without citation to authority—is that the court did not list, in its order, the evidence on which it relied. Opening Br at 42 (arguing that the court erred by "failing to identify" the evidence in its ruling). The rest of Defendant's argument asks this Court to reweigh the evidence entirely and reach a different conclusion about what it shows. That is improper.

The trial court's failure to catalogue the evidence is not legal error. *See Oregon Educ. Ass'n v. Parks*, 253 Or App 558, 567, 291 P3d 789 (2012) (court

"was not required to identify in its ruling 'admissible evidence'" that it considered). It read everything the parties submitted, SER-315, and heard more than an hour of argument on issues parties raised, SER-317–446. In its order, the court referred to Plaintiffs' arguments and "the evidence [Plaintiffs] ha[d] adduced." ER-429. It then held that Plaintiffs met their evidentiary burden "even when the self-contradicting evidence is disregarded." ER-431 n 3. The question for this Court is whether the record supports that ruling, not whether the order recited the evidence. *See Oregon Educ. Ass'n*, 253 Or App at 567. As explained below, it does.

B. Defendant disregards the trial court's rulings.

Defendant also treats the trial court's evidentiary ruling as though it had adopted Defendant's version of Blumm's enrollment. Opening Br at 35–37, 39. It did not. As the trial court explained, it set aside "those portions" of Blumm's declarations relating to two subjects: "how he enrolled in the Smart Energy program" and "what if anything he was told by Defendant about the program at the time that he enrolled." ER-431 n 3. Beyond that narrow ruling, the trial court neither credited Defendant's evidence on those subjects nor disregarded the other evidence in the record relating to Blumm's enrollment. Disregarding a witness's testimony on a subject does not amount to a finding that the opposite is true. *See* ER-431 n 3 (finding instead that contradictions between

Blumm's declarations on certain points resulted in "an evidentiary nullity" on those points).

Defendant also passes over the trial court's related rulings. In ruling on Defendant's motion to dismiss, which Defendant incorporated into its step two argument, ER-64, the court rejected the willfulness and contract arguments that Defendant now repackages as evidentiary failures. ER-440. And the trial court's comments at the hearing show that it understood the correct standard and applied it. The court recognized that step two does not permit it to weigh the parties' evidence, SER-381, and it identified the real dispute between the parties as one about question: "what does 100 percent mean?" SER-443. That is a question for a factfinder, not a basis to strike Plaintiffs' claims.

C. Defendant's "relevant terms" argument as to Plaintiff Gates is unpreserved.

On appeal, Defendant argues for the first time that Gates failed to establish the "relevant terms" of her contract and that the rule of completeness, ORS 40.040, required her to supply the full context of her enrollment. Opening Br at 41–42. Defendant never made that argument to the trial court.

Preservation requires that a party give the trial court a chance to consider and rule on the argument it later makes on appeal. *Peeples v. Lampert*, 345 Or 209, 219–20, 191 P3d 637 (2008). Because Defendant failed to do so here, the Court should decline to review it. In any event, for the reasons explained below, the argument fails on its merits.

D. Defendant presents only the evidence favorable to it, as though the record were viewed in its favor.

Defendant's most fundamental error in framing the issues on appeal is its wholesale disregard of *any* of Plaintiffs' evidence, presenting only the evidence that favored Defendant. It effectively inverts the step two standard: rather than viewing the evidence in Plaintiffs' favor, as well-settled precedent commands, Defendant presents its own evidence as established fact, describing Plaintiffs' evidence as "refuted." Opening Br at 12–15. Remarkably, it characterizes the recording of Blumm's enrollment call as "the only cognizable evidence in the record" of what Blumm was told, Opening Br at 36, 39, and from there concludes that Blumm has no evidence of any misrepresentation at all.

Moreover, Defendant's description of its own evidence is cherry-picked, leaving out the parts of that evidence that matter. On the very recording Defendant relies on, its representative told Blumm that the Climate Neutral option would "offset 100 percent of the emissions from your home's natural gas use," and that the program's offsets would "make participating customers carbon neutral." ER-396; ER-397. Indeed, Defendant's counsel conceded at the hearing that Blumm "was told on a phone call that Defendant would make participating customers carbon-neutral." SER-366; *see also* SER-408. Gates's enrollment form, also Defendant's exhibit, makes the same promise. ER-407.

Defendant's brief also omits entirely the rest of Plaintiffs' evidence: the portions of Blumm's declarations the trial court did not set aside, ER-226–28;

Gates's entire declaration, ER-230–31; Dr. Grubert's entire expert declaration, SER-1–13; the marketing and account materials Defendant used to solicit Smart Energy enrollments, SER-20–89; and the Department of Environmental Quality's penalty orders against Smart Energy projects, SER-115–38. At step two, that evidence must be credited, not ignored. As this Court has made clear, Defendant's evidence matters only if it "defeats plaintiff's claim as a matter of law." *Young*, 259 Or App at 509–10. Here, Defendant's evidence does the opposite: it confirms the very promise Plaintiffs allege Defendant broke.

II. Applying the correct standard, the trial court correctly ruled that there was substantial evidence to support a prima facie case for each of Plaintiffs' claims.

Applying the correct standard, the trial court's ruling should be affirmed. Defendant's argument is not really about the absence of "substantial evidence to support a prima facie case," *Young*, 259 Or App at 508, but about what Defendant's promise meant.

Defendant's position is that when it told customers it would offset 100 percent of their emissions and make them carbon neutral, it promised only to buy offsets that a third party had verified and retired. SER-408; 441–43; ER-370–72. Plaintiffs' position, supported by expert testimony, is that Defendant promised something its avoidance-based offsets could never deliver. That is a genuine dispute about the meaning of a representation and the truth of a promise, and it is a dispute that a fact finder, not a court, must resolve.

For the reasons that follow, Plaintiffs offered substantial evidence supporting each element of their claims for relief.

A. Plaintiff Blumm's enrollment

Defendant's argument about Blumm's enrollment begins and ends with the trial court's evidentiary ruling. Because the court set aside Blumm's testimony about his enrollment, Defendant reasons, Blumm "offers no evidence at all about what NW Natural told him when he enrolled." Opening Br at 36. That argument misreads both the ruling and the record.

As noted, the trial court disregarded only "those portions" of Blumm's declarations relating to "how he enrolled" and "what if anything he was told by Defendant about the program at the time that he enrolled." ER-431 n 3. The rest of Blumm's testimony remained, including that he paid the Smart Energy charge on autopay for nearly three years, ER-226; that in May 2024 his account page told him he was "addressing approximately 100% of the carbon emissions" from his gas use, ER-227; that he did not know that more than 20 percent of his payments funded Defendant's marketing and program administration, ER-228; and that he would not have enrolled had he known he would not receive what Defendant advertised, ER-228; *see also* ER-425–26.

Indeed, the recording Defendant *itself* submitted remains and supports Plaintiffs' *prima face* case. As the recording establishes, at the time Blumm enrolled, Defendant's representative told Blumm that "carbon emissions from

your natural gas use will be offset through projects that reduce or prevent the release of carbon emissions elsewhere." ER-396. The representative described the Climate Neutral option as one in which "you can offset 100 percent of the emissions from your home's natural gas use," and promised that the program would reduce Blumm's "carbon footprint by about 613 pounds per month." ER-396. After Blumm enrolled, the representative told him that the Climate Trust "verifies and retires quality offsets on behalf of the program to make participating customers carbon neutral." ER-397.

B. Plaintiff Blumm's UTPA claim

Under ORS 646.608(1)(b), (e), and (g)—the four UTPA provisions on which Plaintiff Blumm's case is based—a person engages in an unlawful trade practice if, in the course of the person's business, vocation, or occupation, the person

> (b) "[c]auses likelihood of confusion or of misunderstanding as to the source, sponsorship, approval, or certification of * * * goods or services";
>
> (e) "[r]epresents that * * * goods or services have * * * characteristics, ingredients, uses, benefits, quantities or qualities that the * * * goods or services do not have * * *";
>
> (g) "[r]epresents that * * * goods or services are of a particular standard, quality, or grade * * * if the[y] * * * are of another."

ORS 646.608(1)(b), (e), (g).[9] A person who suffers an "ascertainable loss of money or property, real or personal, as a result of another person's willful" use of a trade practice declared unlawful may file an action to recover actual or statutory damages, whichever is greater. ORS 646.638(1). Under the UTPA, "willful" is a negligence standard: "A willful violation occurs when the person committing the violation knew or should have known that the conduct of the person was a violation." ORS 646.605(10). Plaintiffs' evidence, when considered in the light most favorable to Plaintiffs, amounts to substantial evidence as to each of the elements of their UTPA claims.

Misrepresentation: The representations at issue in this case are undisputed. Defendant concedes that it told customers that participation in the Smart Energy Program would offset "100 percent" of the emissions from the customer's home, and that it would make the customer "carbon neutral."

The record also supports that those representations were false. Smart Energy's offsets fund dairy digesters that purport to "capture methane from cow manure, keeping the greenhouse gas from entering the atmosphere." ER-409. As Dr. Grubert explained, however, offsets of that kind are "avoidance-based" and "fundamentally incapable of delivering carbon neutrality," because the

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[9] Plaintiffs also pleaded a claim under ORS 646.608(1)(f), which the trial court dismissed on the ground that carbon offsets are not "goods." Plaintiffs cannot appeal the trial court's ruling until entry of judgment; thus, while they do not concede the ruling was correct, it is not at issue in this appeal.

purchaser's emissions still reach the atmosphere. SER-4. She further explained that the Smart Energy offsets raise "major additionality concerns" because the digesters Smart Energy funds cannot be said to avoid the release of methane that would otherwise have existed. SER-9–10. Indeed, facilities are incentivized by offsetting schemes to increase, not decrease, methane production. SER-10. Their price, roughly $28 per tonne compared with $1,500 for offsets capable of neutrality, reflects their limits. SER-11. And two digesters on Defendant's own enrollment mailer were penalized by the Department of Environmental Quality for venting uncombusted methane about 13 percent of the time between 2019 and 2021. ER-409; SER-115–38.[10]

Willfulness: A violation is willful if the defendant "knew or should have known" its conduct violated the UTPA. ORS 646.605(10); *State ex rel. Redden v. Discount Fabrics, Inc.*, 289 Or 375, 385, 615 P2d 1034 (1980). Defendant knew its customers cared about climate change. Defendant also chose the projects it funds through its Smart Energy program, ER-383–85; aware that "[e]ssentially all offsets today are avoidance-based," SER-5. A company that

[10] Defendant notes that third parties verified its offsets. Opening Br at 37. But the protocols it relies on measure reductions against a modeled baseline, ER-265–72, the very avoidance accounting Dr. Grubert says cannot deliver neutrality. Defendant's claimed "verification" simply shows that an offset credit exists, not that the credit offset 100 percent of a customer's emissions. At best, Defendant's point creates a factual dispute.

promises 100 percent neutrality from offsets that cannot deliver neutrality should have known that promise was untrue.[11]

Ascertainable loss caused by violation: Blumm suffered an ascertainable loss because he enrolled in the Smart Energy program after Defendant's misrepresentations, and paid a monthly fee for the emissions-offsetting benefits that Defendants told him he would receive. ER-197 (collecting citations). Defendant contends that Blumm cannot show reliance. Opening Br at 37–38 (citing *Bohr v. Tillamook Cnty. Creamery Ass'n*, 373 Or 343, 366 n 5, 567 P3d 413 (2025)). But Blumm accepted Defendant's offer and paid for the program each month, ER-397; ER-226, and he testified that he would not have enrolled had he known he would not receive what Defendant advertised, ER-228; ER-425–26.[12] A factfinder could conclude from that record that he enrolled (and paid) because of Defendant's promise.

That Blumm was told about dairy biodigesters during his enrollment call did not put him on notice that the digesters might not actually cancel out carbon emissions as promised. Again, Blumm was offered a "100 percent" offset "of the emissions from [his] home's natural gas use," and a "carbon neutral" home.

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[11] Defendant cannot claim that the studies questioning digester offsets were available such that Blumm should have found them, ER-72, while also claiming that it, the company that selected the projects, had no reason to know. ER-198. The trial court heard that same argument below and ruled in Plaintiffs' favor. *See* ER-198, 440.

[12] That testimony—which concerns why he enrolled, not what he was told—was not excluded by the trial court.

ER-396; ER-397. Plaintiffs' evidence shows that Blumm did not receive carbon neutrality or a "100 percent" offset, even if he had been told that dairy biodigesters were the type of project that the offset program supported. That evidence suffices to support Plaintiffs' prima facie case.

Statute of limitations: Whether and when a plaintiff should have discovered a misrepresentation "is normally a question for the jury." *Mathies v. Hoeck*, 284 Or 539, 543, 588 P2d 1 (1978). And as an affirmative defense, a statute of limitations defense can succeed at step two only if Defendant's evidence defeats the claim as a matter of law. *Young*, 259 Or App at 509–10.

Here, Defendant's evidence does not. Defendant argues that the enrollment call's mention of dairy biodigesters put Blumm on notice that the program could not deliver carbon neutrality. Opening Br at 39. But the same call assured Blumm that the offsets were "quality offsets" that would "make participating customers carbon neutral." ER-397. Defendant's website emphasized verification, ER-413–18, and Blumm's account page told him for years that he was "addressing approximately 100%" of his emissions, ER-227. A factfinder could conclude those reassurances gave Blumm no reason to suspect a problem. *See Forest Grove Brick Works, Inc. v. Strickland*, 277 Or 81, 86–87, 559 P2d 502 (1977) ("A fraud which is flagrant and widely publicized may require the defrauded party to make immediate inquiry. On the

other hand, one artfully concealed or convincingly practiced upon its victim may justify much greater inactivity.").

C. Plaintiff Blumm's breach of contract claim

The trial court also did not err in ruling that Plaintiffs offered substantial evidence to support a prima facie case on their contract claims. Under Oregon law, breach of contract consists of four elements: (1) a contract, formed through an offer, acceptance of that offer, and a mutual exchange of consideration; (2) the plaintiff's full performance; (3) the defendant's breach; and (4) damages. *See Homestyle Direct, LLC v. Dep't of Hum. Servs.*, 354 Or 253, 263, 311 P3d 487 (2013) (holding that enrollment in a program created a binding contract where contractor executed an enrollment form to participate in government agency's paid meal delivery program).

Defendant argues that Blumm cannot show the offer or its terms. Opening Br at 40. Its own recording shows both. Its representative offered the Climate Neutral option, which would "offset 100 percent of the emissions from your home's natural gas use" for about 10.5 cents per therm, and Blumm accepted. ER-396; ER-397. He then paid each month. ER-226. The same evidence demonstrating that Defendant's promise of climate neutrality was false shows Defendant breached that promise. Blumm incurred damages when he paid for a 100% offset that Defendant failed to deliver.

D. Plaintiff Gates' breach of contract claim.

Defendant's argument as to Gates is unpreserved, *see* supra at 34, and wrong. The term Gates relied on appears on the form she signed, which Defendant itself submitted: Defendant "will add $0.10486 per therm to your monthly bill to offset 100 percent of the carbon emissions from your home's natural gas use." ER-407. The trial court observed that this footnote "is probably in the contract," and Defendant's motion to dismiss quoted the same term as the Climate Neutral promise.

The rule of completeness does not change the analysis. ORS 40.040 is a rule of admissibility. When one party offers part of a writing or conversation, the rule allows the other party to offer the remainder so that the factfinder can understand it in context. At most, then, the rule would have given Defendant a basis to offer evidence completing or contextualizing Ms. Gate's account of her enrollment. It does not, however, provide a basis to argue that her evidence fails to establish a prima facie case. And Defendant has already placed the complete form and mailer into the record. ER-407–09. Viewed in the light most favorable to Plaintiffs, those materials confirm, rather than undercut, the term Gates alleges Defendant breached. The form Gates signed promised to "offset 100 percent of the carbon emissions from your home's natural gas use" in exchange for a per-therm charge, ER-407, and the mailer repeated that "[t]he

carbon emissions from your natural gas use will be offset," ER-408. That is substantial evidence of the relevant terms of the contract.

The record contains substantial evidence of every other element of Gates's contract claim as well. Defendant made an offer: for $0.10486 per therm, it would offset 100 percent of her home's emissions. ER-407. Gates accepted by signing and returning the form and selecting the Climate Neutral option. ER-387; ER-407; ER-230–31. She paid the Smart Energy charge for roughly four years. ER-231; ER-387. And the record, particularly when construed in Plaintiffs' favor, shows that Defendant did not deliver what it promised. The offsets Smart Energy purchased are avoidance-based and, as Dr. Grubert explained, "fundamentally incapable of delivering carbon neutrality." SER-4. Two of the projects pictured on Gates's own enrollment mailer were penalized by the Department of Environmental Quality for venting uncombusted methane during periods that overlapped her enrollment. ER-409; SER-115–38. Finally, Gates testified that she would not have enrolled had she known Defendant would not use her payments to offset her emissions. ER-231. To the extent Defendant believes that "100 percent" should be interpreted differently based on the "context of the entire contract," that disagreement goes to the meaning of the contract, which is a question for the factfinder, not a reason to strike the claim at step two.

CONCLUSION

For the foregoing reasons, Plaintiffs respectfully urge the Court to affirm the trial court's judgment.

DATED this 20th day of October, 2026.

Respectfully submitted,

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CERTIFICATE OF COMPLIANCE

I certify that this brief complies with the word-count limitation in ORAP 5.05, which word count is 9,918.

I certify that the size of the type in this brief is not smaller than 14-point for both the text of the brief and footnotes.

DATED this 20th day of October, 2026.

SUGERMAN DAHAB

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IN THE CIRCUIT COURT OF THE STATE OF OREGON

FOR THE COUNTY OF MULTNOMAH

NICOLAS BLUMM and CLAIRE GATES, individually and on behalf of all others similarly situated, Plaintiffs, v. NORTHWEST NATURAL GAS COMPANY and NORTHWEST NATURAL HOLDING CO. Defendants.	Case No. 24CV48490 Hon. Benjamin Souede **DECLARATION OF EMILY GRUBERT IN OPPOSITION TO DEFENDANT NORTHWEST NATURAL GAS'S SPECIAL MOTION TO STRIKE THE FIRST AMENDED COMPLAINT**

I, Emily Grubert, declare as follows:

1. I am over the age of eighteen (18) years of age and am fully competent to make this declaration. I have personal knowledge of the facts set forth below, and would testify truthfully as follows, if called upon to do so.

A. Introduction

2. I am an Associate Professor of Sustainable Energy Policy and, concurrently, of Civil and Environmental Engineering and Earth Sciences at the University of Notre Dame.

3. I am testifying on behalf of Plaintiffs in this proceeding, regarding the extent to which greenhouse gas ("GHG") offsets and renewable natural gas ("RNG") projects in

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Defendants' Smart Energy program can, and do, mitigate the greenhouse gas emissions attributable to Plaintiffs' and class members' natural gas use.

4. My declaration is based on my review of Plaintiffs' First Amended Class Action Complaint dated December 6, 2024, the Climate Action Reserve's Livestock Project Protocol, Northwest Natural Gas's 2022 and 2023 supply reconciliation reports, and Northwest Natural Gas's public-facing website on its Smart Energy program.[1] In addition, my declaration is based on my prior academic research on GHG accounting as it relates to GHG offsets and RNG.

5. Defendants are representing the Smart Energy program as effectively neutralizing customers' contributions to climate change from their natural gas use. This is almost certainly false. Defendants' Smart Energy program is not actually delivering what it claims customers are paying for.

B. Background and Qualifications

6. I am a licensed Professional Engineer and hold a PhD from Stanford University, an MA and MS from the University of Texas at Austin, and a BS from Stanford University.

7. Prior to joining the University of Notre Dame ("Notre Dame"), I was an Assistant Professor of Civil and Environmental Engineering (and, by courtesy, of Public Policy) at the Georgia Institute of Technology ("Georgia Tech").

[1] NW Natural, *Smart Energy Program: About Smart Energy*, https://www.nwnatural.com/about-us/smart-energy-program/about-smart-energy (accessed Mar. 3, 2025).

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8. While at Notre Dame and Georgia Tech, I served as Deputy Assistant Secretary for the Office of Carbon Management (2021–2022) and as Senior Advisor for Energy Asset Transformation (2022–2023) at the U.S. Department of Energy.

9. My specific expertise is in energy systems modeling, particularly focused on GHG accounting and environmental assessment, including life cycle assessment.

10. My full Curriculum Vitae is included as Attachment A.

11. My business address is 302 Hesburgh Center, Notre Dame, IN 46556.

12. I have previously submitted testimony or comments to the California Air Resources Board, the New York State Public Service Commission, the Vermont Public Utility Commission, the Washington D.C. Public Service Commission, the Colorado Air Quality Control Commission, and the Minnesota Public Utilities Commission, largely on issues related to GHG accounting.

C. Greenhouse Gas Offsets

13. GHG offsetting programs are intended to neutralize the climate impacts of a purchaser's GHG emissions. Essentially, when someone claims to have "offset" emissions, they are claiming that they are no longer responsible for climate impacts associated with emissions they have caused because they have purchased the right to claim another party's actions to reduce climate impacts.

14. Whether a "carbon offset" provides any benefit to the climate depends on several factors, including: (1) whether the offset is based on the avoidance of emissions or on the removal of emissions; (2) whether emissions reductions are "additional" to the baseline scenario; and (3) whether emissions reductions are permanent.

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i. Offsets based on emissions avoidance versus removal

15. With an avoidance-based offset, some entity is paid *not* to emit (that is, to avoid) some level of GHGs, but the purchaser still emits GHGs. The net effect is still to make climate change worse, but not as bad as it would have otherwise been, based on (often complex) claims about what the future would have looked like.

16. That is, an offset purchaser emits 1 unit of CO_2 or emits GHGs equivalent to 1 unit of CO_2 ("CO_2-equivalent") and pays someone not to emit an additional 1 unit of CO_2 or CO_2-equivalent. The end result is that 1 unit of CO_2-equivalent is added to the atmosphere rather than 2, and the emitter claims carbon neutrality on this basis (1+0=1 instead of 1+1=2).[2] For this reason, avoidance-based offsets are fundamentally incapable of delivering carbon neutrality; they can only *reduce* emissions relative to a counterfactual where emissions would have otherwise been higher.

17. By contrast, removal-based offsets actually can enable climate neutrality. For removal-based offsets, CO_2 that is already in the atmosphere is captured and stored in such a way that it will not re-enter the atmosphere. That is, the purchaser emits 1 unit of CO_2 and pays for -1 unit of CO_2 in the atmosphere, resulting in climate neutrality ($1 - 1 = 0$).[3] True offsetting that allows for climate neutrality would require a seller to demonstrate that the offset is based on a removal of some amount of GHG from the atmosphere.

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[2] Emily Grubert & Shuchi Talati, *The distortionary effects of unconstrained for-profit carbon dioxide removal and the need for early governance intervention* 15 CARBON MGMT. 1 (2023), https://doi.org/10.1080/17583004.2023.2292111 (accessed Mar. 3, 2025).

[3] Emily Grubert & Shuchi Talati, *The distortionary effects of unconstrained for-profit carbon dioxide removal and the need for early governance intervention* 15 CARBON MGMT. 1 (2023), https://doi.org/10.1080/17583004.2023.2292111 (accessed Mar. 3, 2025).

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18. Essentially all offsets today are avoidance-based, presenting major threats to effective climate action.[4]

ii. "Additionality" of emissions reductions

19. "Additionality" is a term of art to indicate that a claimed quantity of GHGs avoided or removed would not have been avoided or removed *but for* the purchase of the offset.

20. Whether an avoidance-based offset satisfies additionality, *i.e.*, reduces emissions relative to the counterfactual, or what would have happened otherwise, requires a robust consideration and defense of that counterfactual—recognizing that "what would have happened otherwise" might include policy changes and other trends that mean it is not necessarily the direct continuation of current practice. For example, offset sellers should prove that the existence of an offset program does not discourage GHG regulation or otherwise generate perverse incentives.[5]

iii. Permanence of emissions reductions

21. Carbon offset sellers should also prove that any emissions avoidance will not be reversed (*i.e.*, that the emissions will not simply be deferred or shifted). For example, if a claim is made that a new fossil fuel-fired power plant is not built, but then a different new fossil fuel-

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[4] Danny Cullenward, Grayson Badgley & Freya Chay, *Carbon offsets are incompatible with the Paris Agreement*, 6 ONE EARTH 1085 (2023), https://doi.org/10.1016/j.oneear.2023.08.014 (accessed Mar. 3, 2025); Barbara Haya *et al.*, *Managing uncertainty in carbon offsets: insights from California's standardized approach*, 20 CLIMATE POL'Y 1112 (2020) https://doi.org/10.1080/14693062.2020.1781035 (accessed Mar. 3, 2025).

[5] Barbara Haya *et al.*, *Managing uncertainty in carbon offsets: insights from California's standardized approach*, 20 CLIMATE POL'Y 1112 (2020) https://doi.org/10.1080/14693062.2020.1781035 (accessed Mar. 3, 2025).

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fired power plant is built later to compensate for not building the first one, that would merely defer or shift the avoided emissions.

iv. Other considerations

22. Many offsets are sold in CO_2-equivalent terms, allowing an entity to claim that avoiding or reducing emissions from *one* GHG, such as methane (CH_4), can offset emissions from *another* GHG, like carbon dioxide (CO_2). These are called "cross-gas offsets."

23. Such claims use a factor known as the "global warming potential" to compare the relative warming impacts[6] of one GHG, like methane, against the warming impact of carbon dioxide. The larger the global warming potential, the more that a given gas warms the Earth compared to carbon dioxide over that same time period.

24. Global warming potential is uncertain and depends on considerations like the length of time a given gas persists in the atmosphere impacting the climate.[7]

25. The current estimate for the global warming potential of methane relative to CO_2 based on the most recent (2018) consensus report by the Intergovernmental Panel on Climate Change ("IPCC") is about 30 kg CO_2-equivalent per kg methane on a 100 year time scale.[8] This means that methane emissions are valued at 30 to 1 relative to CO_2 in settings where policy makers

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[6] Though potentially not other impacts of climate change, like ocean acidification.

[7] Emily Grubert & Adam R. Brandt, *Three considerations for modeling natural gas system methane emissions in life cycle assessment*, 222 J. CLEANER PRODUCTION 760 (2019) https://doi.org/10.1016/j.jclepro.2019.03.096 (accessed Mar. 3, 2025).

[8] Smith, C. et al., *The Earth's Energy Budget, Climate Feedbacks and Climate Sensitivity Supplementary Material* in *Climate Change 2021: The Physical Science Basis (contribution of Working Group I to the Sixth Assessment Report of the IPCC)* 16 (2021), https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_LongerReport.pdf (accessed Mar. 3, 2025).

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have chosen to consider impacts on a 100-year time frame, which is the most common choice. Methane is short lived in the atmosphere relative to CO_2 (~11 years relative to effectively indefinite persistence), so it causes large near-term warming that stops once the gas oxidizes: the 100-year time frame is a policy choice that seeks to estimate average impacts over a standardized period. It is very common for actors to use outdated estimates of global warming potential: for example, the federal government uses inconsistent and outdated factors for internal versus international reporting.[9] Challenges with establishing equivalence between CO_2 and other GHGs, like methane, are one motivation for disallowing cross-gas offsets in settings where it is important to guarantee specific climate outcomes (e.g., climate neutrality).

26. Sellers should be transparent about assumptions like global warming potential for cross-gas offsets.

27. Finally, another indicator of offset quality in market contexts is price: low-cost offsets tend to have dubious additionality characteristics in particular, meaning that the emissions reduction likely would have happened anyway or the emission would not have occurred, even without the offset funding.

D. Renewable Natural Gas

28. RNG is essentially pure methane derived from biological sources like cow manure or food waste.

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[9] *Understanding Global Warming Potentials*, ENV'T PROT. AGENCY (last updated Jan. 16, 2025), https://www.epa.gov/ghgemissions/understanding-global-warming-potentials#GWP_GHGI_GHGRP (accessed Mar. 3, 2025).

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29. Biogas, which is typically a blend of methane (CH_4) and carbon dioxide (CO_2), can be upgraded in purity to RNG such that the RNG is compatible with fossil natural gas infrastructure.

30. Notably, the biogas that is processed into RNG can have varying ratios of methane and carbon dioxide depending on whether the organic matter is exposed to oxygen during decomposition or not, and most facilities have some degree of control over (1) the amount of methane produced and (2) the ratio of methane to carbon dioxide produced. This matters because methane is a much more potent GHG than carbon dioxide, but because methane has some commercial value as a fuel—unlike its less GHG-intensive counterpart, carbon dioxide—policies can, and often do, inadvertently encourage additional methane production and additional methane escape to the atmosphere.

E. The Emissions Mitigation Potential of Greenhouse Gas Offsets and Renewable Natural Gas in the Smart Energy Program

31. Defendants are telling customers that they are "addressing the carbon emissions from their natural gas use." However, "carbon emissions" is a fundamentally ambiguous term, as not all greenhouse gases are carbon-based (e.g., nitrous oxide is a powerful greenhouse gas) and GHG impacts are usually designated on a carbon dioxide (CO_2) emissions basis rather than a carbon (C) basis. That said, the term "carbon emissions" is colloquially equivalent to "greenhouse gas emissions" and would usually be understood to include all contributions to climate change from the activity for which a person is buying offsets.

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32. Thus, "addressing the carbon emissions from their natural gas use" would be colloquially understood to mean that using natural gas would no longer contribute to climate change due to the offset purchases*:* that is, it would be understood to mean that *all* GHG emissions over the life cycle of the natural gas system are being neutralized. This includes carbon dioxide emissions from burning natural gas, methane emissions associated with leaks and other situations where methane (natural gas) is emitted to the atmosphere, and any other emissions associated with the system. Here, if Defendants' offsets address only the GHG emissions from the *combustion* of natural gas in customers' homes, the customers' natural gas use would still contribute to climate change due to upstream emissions, methane leaks at the point of use, and other factors.[10]

i. Smart Energy GHG offset projects

33. The quality of Smart Energy offsets is dubious, for several reasons.

34. They appear to be avoidance-based offsets, which, as described above, are incapable of delivering climate neutrality even when they are high quality, in the sense that they only reduce emissions relative to a counterfactual.[11]

35. There are also major additionality concerns with Smart Energy GHG offsets.

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[10] *Carbon Dioxide Emissions Coefficients*, U.S. ENERGY INFO. ADMIN. (Sept. 18, 2024), https://www.eia.gov/environment/emissions/co2_vol_mass.php (accessed Mar. 3, 2025); NW Natural, *2023 Smart Energy Reconciliation Report* 3 (2024), https://apps.puc.state.or.us/edockets/docket.asp?DocketID=17092 (accessed Mar. 3, 2025) (using the U.S. Energy Information Administration's CO_2 factor for natural gas combustion in homes when describing emissions addressed through Smart Energy).

[11] Emily Grubert, *At scale, renewable natural gas systems could be climate intensive: The influence of methane feedstock and leakage rates*, Env't Res. Letters, Aug. 2020, https://doi.org/10.1088/1748-9326/ab9335 (accessed Mar. 3, 2025).

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Smart Energy claims that without the offset projects it funds, methane – a potent GHG – would have been emitted to the atmosphere. But this assumes that (1) the methane would have otherwise existed in the first place; and (2) there is no requirement (and there would never be a requirement) to collect and flare (burn) capturable methane.

36. Both those assumptions are doubtful. First, it is often not the case that the methane would otherwise have existed given that financial incentives (e.g., from offset sales) exist to increase methane production from e.g., wastewater treatment plants, landfills, and dairies, and given that facilities can design processes to produce more or less methane. When producing methane is profitable, facilities tend to produce more, which means destroying it has no climate benefit relative to not having produced it in the first place.[12]

37. Second, it is often not the case that methane would have otherwise reached the atmosphere given legal requirements to burn capturable methane for safety reasons. Methane can spontaneously combust, which is why many jurisdictions require that it is collected and flared (burned). Even in cases where flaring is not currently required, a counterfactual future for jurisdictions pursuing strong climate policy could be reasonably expected to involve requirements to destroy capturable methane, given the potency of this gas and relative ease of destruction.

38. Thus, if the methane "captured" by Smart Energy-funded projects might not otherwise have existed—i.e., its creation was avoidable—and if the methane would have had to

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[12] Emily Grubert, *At scale, renewable natural gas systems could be climate intensive: The influence of methane feedstock and leakage rates*, Env't Res. Letters, Aug. 2020, https://doi.org/10.1088/1748-9326/ab9335 (accessed Mar. 3, 2025).

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be destroyed anyway for safety or other policy reasons, then the projects are not avoiding any emissions and Smart Energy funding is not providing any climate benefits relative to what would have happened anyway.

39. Moreover, to the extent these offsets do create "additional" emissions avoidance, Defendants have not shown that emissions avoidance will not be reversed (*i.e.*, that the emissions will not simply be deferred or shifted). For example, if a flare is installed to prevent methane from reaching the atmosphere but later is turned off or falls into disrepair, it will cease to avoid emissions. Offsets are sometimes bought in advance of the offsetting activity occurring, so offsets that depend on continual operations of equipment bear particular scrutiny.

40. Finally, the price of Smart Energy offsets is far below that of a high-quality, removal-based offset that would provide climate neutrality. Defendants' claim "Climate Neutral" offsetting is "about 15 cents more per therm each month." At roughly 5.3 kg of CO_2-equivalent emitted per therm of natural gas,[13] this cost is equivalent to about $28 per tonne of CO_2-equivalent. So, customers are paying a relatively low price—up to about $28 per tonne of CO_2 equivalent—compared to around *$1,500* per tonne—the market price for removal-based offsets capable of delivering carbon neutrality.[14]

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[13] *Greenhouse Gas Equivalencies Calculator*, ENV'T PROT. AGENCY (last updated Nov. 2024), https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator#results (accessed Mar. 3, 2025).

[14] Carbon dioxide removal ("CDR") through Direct Air Capture with permanent CO_2 storage is available for purchase for roughly $1,500 per tonne through Climeworks, which is among the only current vendors of CDR for consumer purchases. *See Remove carbon dioxide with Climeworks*, CLIMEWORKS, https://climeworks.com/ (accessed Mar. 3, 2025).

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ii. Smart Energy RNG projects

41. It is unclear what the distinction between "carbon offsets" and "renewable natural gas projects" is in this setting. For example, Northwest Natural Gas identifies the Wasatch Resource Recovery (food waste) RNG project as a part of Smart Energy, but does not appear to be physically delivering RNG. As such, customers are likely paying for an offset in the form of environmental attributes associated with RNG (i.e., the right to claim avoided emissions), not RNG itself.

42. At best, this is an avoidance-based offset—incapable of providing carbon neutrality—with two significant problems. First, a potentially large share of the capturable methane used to create RNG does not provide "additional" GHG reductions because that methane would not have existed absent incentives to sell RNG or environmental attributes associated with RNG. As noted previously, facilities can, and do, intentionally manipulate processes to create methane to then "capture" and sell to buyers like Northwest Natural Gas, and even where methane is not intentionally produced to create RNG, it is often diverted from a flare for the same purpose.[15]

43. In both scenarios, there is no climate benefit relative to not having produced the methane in the first place. Second, upgrading biogas (the raw mixture of CO_2 and methane) into RNG (pipeline-quality near-pure methane) often results in fairly significant methane emissions during processing, which might exceed losses associated with alternative management pathways like flaring. That is, producing RNG might actually increase methane emissions to the

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[15] Burning methane in a flare (to destroy it) has the same effect as the end-use combustion of methane as RNG.

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atmosphere relative to what would have happened with a flare.[16]

44. At worst, the environmental attributes of RNG purchased by Defendants are not even retained on behalf of Northwest Natural Gas customers, meaning that Defendants are merely buying a paper certificate claiming the use of RNG as a commodity whose climate attributes have been stripped and sold off in other offsetting markets, such as California's Low Carbon Fuel Standard program. This would constitute double counting, and Smart Energy customers' payments would not result in additional climate benefits. A common double counting problem with selling environmental attributes arises because environmental attributes are not exchanged: an RNG producer sells the right to claim the environmental characteristics of RNG to a fossil gas user, but does not take on the liability for the fossil gas environmental characteristics when the physical RNG commodity, now stripped of its environmental characteristics, is sold. Purchasers of that RNG might reasonably assume they are using a climate-friendly resource when they use the RNG, thus resulting in double-counting.

I declare under penalty of perjury under the laws of the United States that the foregoing is true and correct.

Dated: March 6, 2025

s/ Emily Grubert
Emily Grubert

[16] Emily Grubert, *At scale, renewable natural gas systems could be climate intensive: The influence of methane feedstock and leakage rates*, Env't Res. Letters, Aug. 2020, https://doi.org/10.1088/1748-9326/ab9335 (accessed Mar. 3, 2025).

SUGERMAN DAHAB
101 SW Main Street, Suite. 910 - Portland, Oregon 97204
Phone 503.228.6474 | Fax 503.228.2556

CERTIFICATE OF SERVICE

I hereby certify that I caused to be served the foregoing **DECLARATION OF EMILY GRUBERT IN SUPPORT OF PLAINTIFFS' RESPONSE IN OPPOSITION TO DEFENDANTS' SPECIAL MOTION TO STRIKE FIRST AMENDED COMPLAINT** on the following named person(s) on the date indicated below:

Clifford Scott Davidson, OSB No. 125378
Drew L. Eyman, OSB No. 163762
SNELL & WILMER LLP
601 SW 2nd Ave. Ste. 2000
Portland, OR 97204
Tel: (503) 624-6800

Megan H. Berge
Brent Cooper (admitted *pro hac vice*)
Kent Mayo (admitted *pro hac vice*)
BAKER BOTTS LLP
700 K Street N.W.
Washington, D.C, 20001-5692
Tel: (202) 639-7700

Attorneys for Defendants Northwest Natural Gas Company and Northwest Natural Holding Co.

☐ by Overnight Delivery
☐ by Facsimile
☐ by U.S. Mail with postage prepaid
☒ By OJD File & Serve
☒ by Email
csdavidson@swlaw.com
deyman@swlaw.com
megan.berge@bakerbotts.com
brent.cooper@bakerbotts.com
kent.mayo@bakerbotts.com

DATED this 10th day of March, 2025.

By: /s/ Nadia H. Dahab
David F. Sugerman, OSB No. 862984
Nadia H. Dahab, OSB No. 125630
SUGERMAN DAHAB
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Attorneys for Plaintiffs

IN THE CIRCUIT COURT OF THE STATE OF OREGON

FOR THE COUNTY OF MULTNOMAH

NICOLAS BLUMM and CLAIRE GATES, individually and on behalf of all others similarly situated, Plaintiffs, v. NORTHWEST NATURAL GAS COMPANY and NORTHWEST NATURAL HOLDING CO. Defendants.	Case No. 24CV48490 Hon. Benjamin Souede **DECLARATION OF KELSEY R. EBERLY IN SUPPORT OF PLAINTIFFS' RESPONSE IN OPPOSITION TO DEFENDANTS' SPECIAL MOTION TO STRIKE FIRST AMENDED COMPLAINT**

I, Kelsey Eberly, declare as follows:

1. I am an attorney with FarmSTAND, counsel for Plaintiffs in the above-captioned matter. I am over the age of 18, have personal knowledge of the facts set forth below, and would testify truthfully as follows, if called upon to do so.

2. Attached as **Exhibit 1** is a true and correct copy of screenshots of a page titled "Address your environmental impact with Smart Energy" on the Northwest Natural Gas website.

3. Attached as **Exhibit 2** is a true and correct copy of a Smart Energy promotional bill insert downloaded from Northwest Natural Gas's website, https://www.nwnatural.com/-/media/nwnatural/pdfs/2023-bill-inserts/smartenergy-bi-wa-

2023.pdf?rev=47a43ae2f31a485b9b4c8479b7d4c461&hash=AAA7AF487A614506888A985DE338257F.

4. Attached as **Exhibit 3** is a true and correct copy of a screenshot of a video posted on Northwest Natural Gas's Facebook page, https://www.facebook.com/NWNaturalGas/, on January 7, 2021, available at https://www.facebook.com/watch/?v=399128947828240.

5. Attached as **Exhibit 4** is a true and correct copy of a screenshot of a May 20, 2024, post on Northwest Natural Gas's Facebook page.

6. Attached as **Exhibit 5** is a true and correct copy of a screenshot of an August 21, 2024, post on Northwest Natural Gas's Facebook page.

7. Attached as **Exhibit 6** is a true and correct copy of the June/July 2023 edition of Northwest Natural Gas's Customer Newsletter, Comfort Zone, available at https://www.nwnatural.com/-/media/nwnatural/pdfs/2023-bill-inserts/cz_june_july_2023.pdf?rev=309081d601364a979a4df6fe3927fee2&hash=B4C137AA762AD17C44A6BD10FC1C5CBE.

8. Attached as **Exhibit 7** is a true and correct copy of a screenshot of a Northwest Natural Gas customer's online account overview page as seen when the customer signed into their account in April 2024.

9. Attached as **Exhibit 8** is a true and correct copy of a screenshot of the enrollment page for Smart Energy showing the customer can select "Average Home" (based on the "average therm use of NW Natural residential customers") for a fixed $8 per month, or the "Climate Neutral" option, "to address 100% of the carbon emissions from your home's natural gas use," for a cost that "will vary monthly based on your usage."

10. Attached as **Exhibit 9** is a true and correct copy of a screenshot of the customer's account overview page after enrolling in Smart Energy.

11. Attached as **Exhibit 10** is a true and correct copy of a screenshot of a graphic displayed on the customer's Northwest Natural Gas account page.

12. Attached as **Exhibit 11** is a true and correct copy of the Dec. 17, 2021 Direct Testimony of Cory A. Beck before the Oregon Public Utilities Commission. I obtained the testimony from the PUC's website, https://edocs.puc.state.or.us/efdocs/UAA/ug435uaa161326.pdf. Exhibit 11 is an excerpt of a larger filing related to Northwest Natural Gas's application for a general rate revision.

13. Attached as **Exhibit 12** is a true and correct copy of a screenshot of a video posted on Northwest Natural Gas's YouTube channel on Oct 18, 2017, available at https://www.youtube.com/watch?v=CnwOJjIRqnQ.

14. Attached as **Exhibit 13** is a true and correct copy of screenshots of the Northwest Natural Gas website "Less We Can," available at https://www.lesswecan.com/renewable-natural-gas.

15. Attached as **Exhibit 14** is a true and correct copy of a September 13, 2024 article by McKenzie Funk in ProPublica with the headline, "Oregon's Largest Natural Gas Company Said It Was Going Green. It Sells as Much Fossil Fuel as Before."

16. Attached as **Exhibit 15** is a true and correct copy of the White House Voluntary Carbon Markets Joint Policy Statement and Principles published May 2024, available at https://home.treasury.gov/system/files/136/VCM-Joint-Policy-Statement-and-Principles.pdf.

17. Attached as **Exhibit 16** is a true and correct copy of a post on EPA's website titled "Agriculture and Aquaculture: Food for Thought," dated October 2020 (and stating it was last updated January 15, 2025), available at https://www.epa.gov/snep/agriculture-and-aquaculture-food-thought#:%7E:text=A%20single%20cow%20produces%20between,(Our%20World%20in%20Data).

18. Attached as **Exhibit 17** is a true and correct copy of a Notice of Civil Penalty Assessment and Order from the Oregon Department of Environmental Quality (DEQ) to Farm

Power Misty Meadow LLC, dated November 10, 2021, available at https://www.oregon.gov/deq/nr/111021farmPower.pdf.

19. Attached as **Exhibit 18** is a true and correct copy of a letter re: Notice of Civil Penalty Assessment and Order from the Oregon Department of Environmental Quality to Farm Power Misty Meadow LLC, dated April 12, 2022, available at https://www.oregon.gov/deq/nr/042022FarmPowerMistyMeadow.pdf.

20. Attached as **Exhibit 19** is a true and correct copy of the California Air Resources Board (CARB) Staff Summary for the Sacramento Municipal Utility District's (SMUD) Low Carbon Fuel Standard (LCFS) Tier 2 Pathway application. The summary was obtained from CARB's website, at https://ww2.arb.ca.gov/sites/default/files/classic/fuels/lcfs/fuelpathways/comments/tier2/b0037_summary.pdf.

21. Attached as **Exhibit 20** is a true and correct copy of a letter from SMUD to CARB regarding SMUD's LCFS Pathway application, dated December 26, 2019, and available at https://ww2.arb.ca.gov/sites/default/files/classic/fuels/lcfs/fuelpathways/comments/tier2/b0037_smud.pdf.

22. Attached as **Exhibit 21** is a true and correct copy of an article by Diane Greer in BioCycle, titled "Digester Developers In The Agricultural Sector," dated July 18, 2011, available at https://www.biocycle.net/digester-developers-in-the-agricultural-sector/.

23. Attached as **Exhibit 22** is a true and correct copy of an October 9, 2019 article by the NASA Science Editorial Team on NASA's website, titled, "The Atmosphere: Getting a Handle on Carbon Dioxide," and available at https://science.nasa.gov/earth/climate-change/greenhouse-gases/the-atmosphere-getting-a-handle-on-carbon-dioxide/.

24. Attached as **Exhibit 23** is a true and correct copy of Climate Action Reserve's U.S. Livestock Project Protocol Version 4.0, dated January 23, 2023. I downloaded the protocol

from Climate Action Reserve's website, at https://www.climateactionreserve.org/wp-content/uploads/2023/10/US_Livestock_Protocol_Combined-1.pdf, and provided a true and correct copy of this document to Emily Grubert for her review and preparation of her declaration.

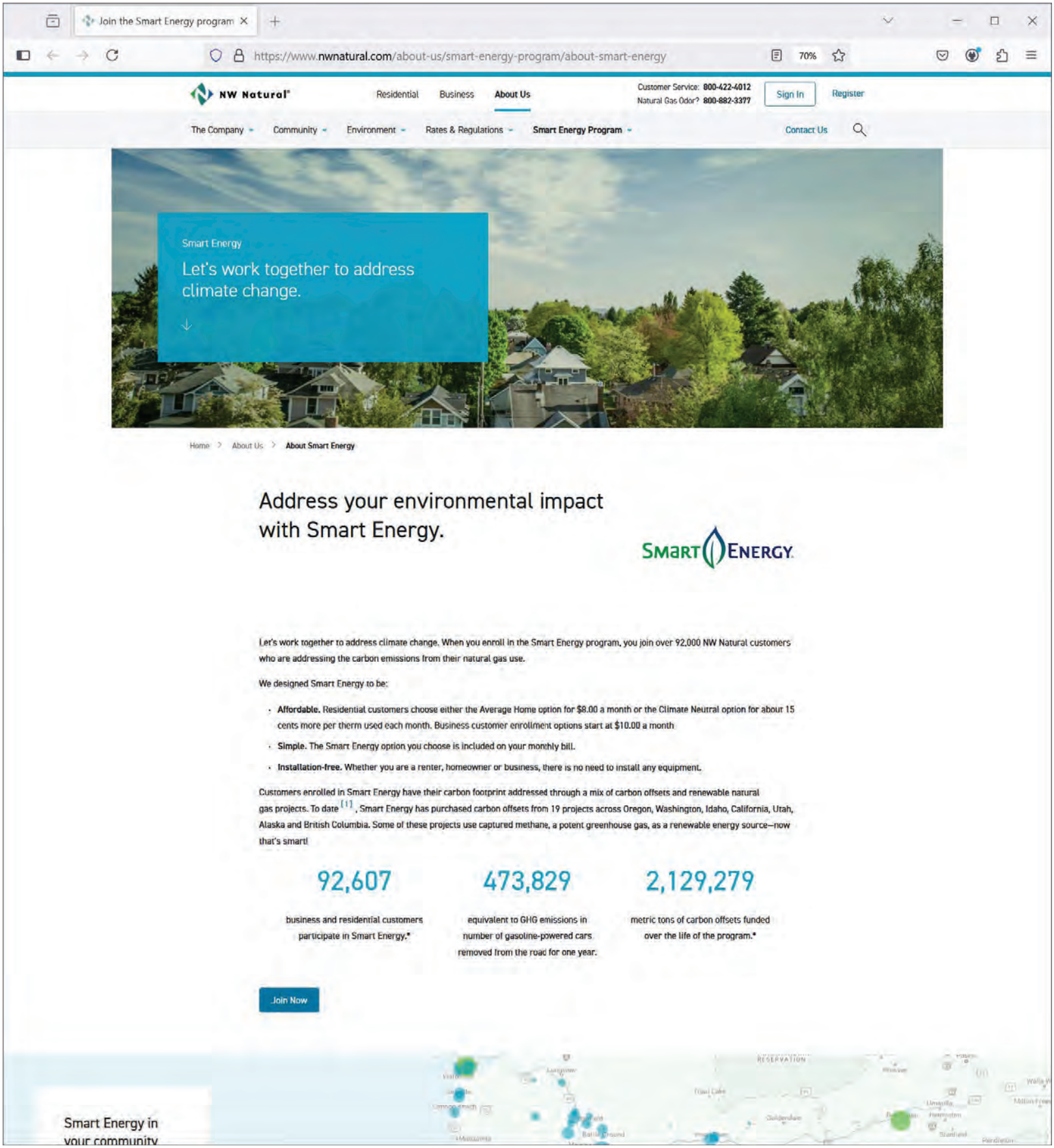
25. Attached as **Exhibit 24** is a true and correct copy of Northwest Natural Gas's 2022 Smart Energy Reconciliation Report, dated March 29, 2023. I downloaded the report from the Oregon Public Utilities Commission website, at https://edocs.puc.state.or.us/efdocs/HAQ/rg2haq144246.pdf, and provided a true and correct copy of this document to Emily Grubert for her review and preparation of her declaration.

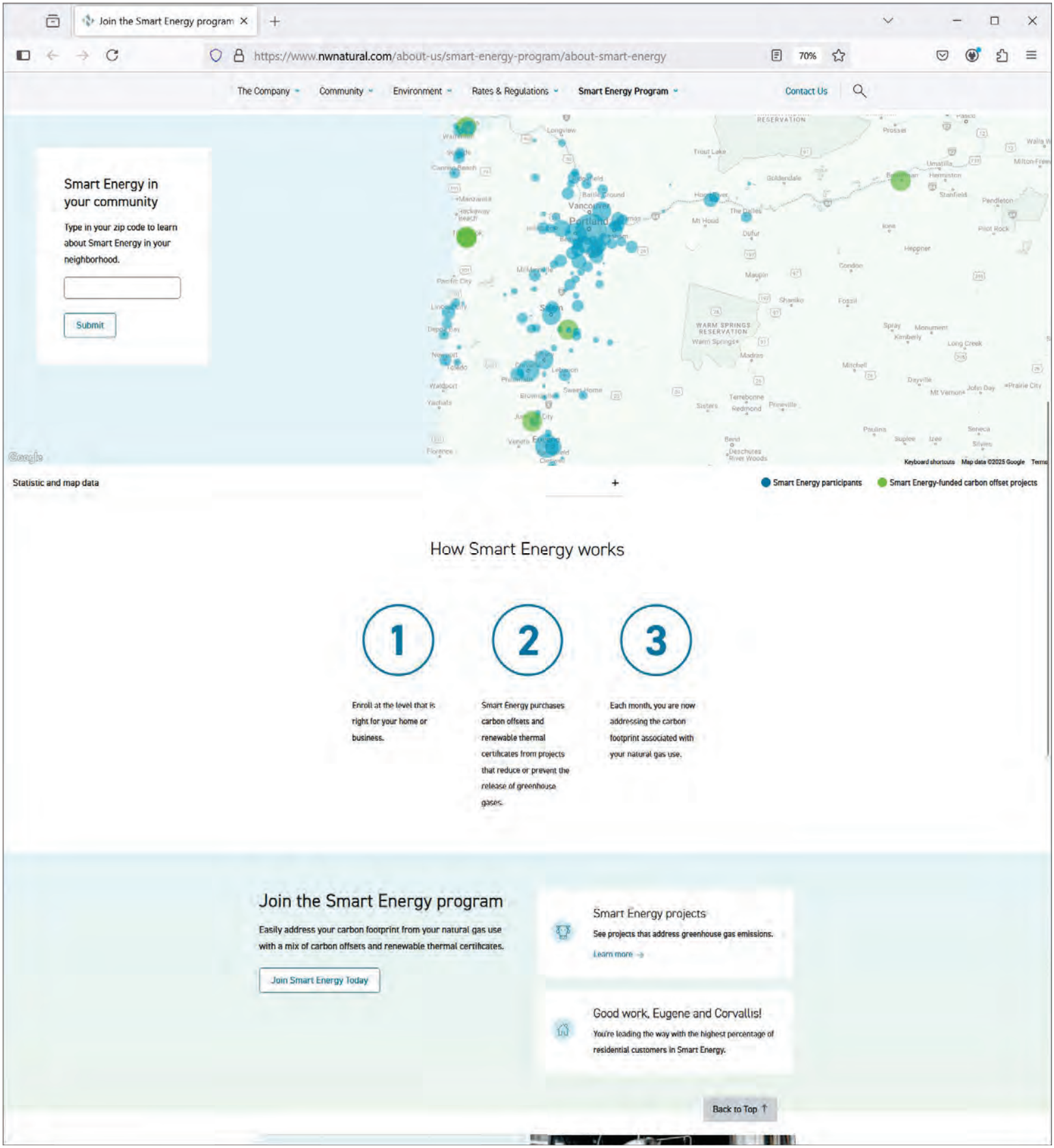
26. Attached as **Exhibit 25** is a true and correct copy of Northwest Natural Gas's 2023 Smart Energy Reconciliation Report, dated March 19, 2024. I downloaded the report from the Oregon Public Utilities Commission website, at https://edocs.puc.state.or.us/efdocs/HAQ/rg2haq327422023.pdf, and provided a true and correct copy of this document to Emily Grubert for her review and preparation of her declaration.

I declare under penalty of perjury under the laws of the United States that the foregoing is true and correct.

DATED this 10th day of March, 2025.

s/ Kelsey R. Eberly
Kelsey R. Eberly


Join the Smart Energy program
https://www.nwnatural.com/about-us/smart-energy-program/about-smart-energy
70%
NW Natural
Residential
Business
About Us
Customer Service: 800-422-4012
Natural Gas Odor? 800-882-3377
Sign In
Register
The Company
Community
Environment
Rates & Regulations
Smart Energy Program
Contact Us
Smart Energy
Let's work together to address climate change.
Home > About Us > About Smart Energy
Address your environmental impact with Smart Energy.
SMART ENERGY
Let's work together to address climate change. When you enroll in the Smart Energy program, you join over 92,000 NW Natural customers who are addressing the carbon emissions from their natural gas use.
We designed Smart Energy to be:
Affordable. Residential customers choose either the Average Home option for $8.00 a month or the Climate Neutral option for about 15 cents more per therm used each month. Business customer enrollment options start at $10.00 a month
Simple. The Smart Energy option you choose is included on your monthly bill.
Installation-free. Whether you are a renter, homeowner or business, there is no need to install any equipment.
Customers enrolled in Smart Energy have their carbon footprint addressed through a mix of carbon offsets and renewable natural gas projects. To date [1], Smart Energy has purchased carbon offsets from 19 projects across Oregon, Washington, Idaho, California, Utah, Alaska and British Columbia. Some of these projects use captured methane, a potent greenhouse gas, as a renewable energy source—now that's smart!
92,607
business and residential customers participate in Smart Energy.*
473,829
equivalent to GHG emissions in number of gasoline-powered cars removed from the road for one year.
2,129,279
metric tons of carbon offsets funded over the life of the program.*
Join Now
Smart Energy in your community


Join the Smart Energy program
https://www.nwnatural.com/about-us/smart-energy-program/about-smart-energy
70%
The Company
Community
Environment
Rates & Regulations
Smart Energy Program
Contact Us
Smart Energy in your community
Type in your zip code to learn about Smart Energy in your neighborhood.
Submit
Statistic and map data
Smart Energy participants
Smart Energy-funded carbon offset projects
How Smart Energy works
1
Enroll at the level that is right for your home or business.
2
Smart Energy purchases carbon offsets and renewable thermal certificates from projects that reduce or prevent the release of greenhouse gases.
3
Each month, you are now addressing the carbon footprint associated with your natural gas use.
Join the Smart Energy program
Easily address your carbon footprint from your natural gas use with a mix of carbon offsets and renewable thermal certificates.
Join Smart Energy Today
Smart Energy projects
See projects that address greenhouse gas emissions.
Learn more
Good work, Eugene and Corvallis!
You're leading the way with the highest percentage of residential customers in Smart Energy.
Back to Top

Join the Smart Energy program

https://www.nwnatural.com/about-us/smart-energy-program/about-smart-energy

70%

The Company | Community | Environment | Rates & Regulations | Smart Energy Program | Contact Us

"We signed up for Smart Energy as a way to address our carbon footprint. We want to make sure that we keep the planet in balance with the energy we use."

Adam Milne
Old Town Pizza, Old Town Brewing





"Smart Energy is one way I can grow my business and address my impact. It's a perfect fit for business, my customers, and the community."

Morgan Gary
Spin Laundry Lounge

Discover More

Learn about Less We Can.

Let's work together to make a low-carbon, renewable energy future a reality.

Start now →

No-cost, low-cost efficiency tips.

Read tips that can help you improve energy efficiency and lower your monthly bill.

See tips →

Free weatherization: see if you qualify.

Free weatherization services, including insulation, can lower your monthly energy bill.

View services and agencies →

Register your account online.

View and pay bills, see gas use, and compare use over time.

Register

Back to Top ↑

Builders / HVAC | Investors | Suppliers | Careers | Safety | Contact Us

NW Natural®

Join over 84,000[1] NW Natural customers who mitigate the carbon emissions from their natural gas use through Smart Energy!

[1] As of Dec. 31, 2022

Smart Energy mitigations are like **taking about 424,000[2] cars off the road** every year.

[2] epa.gov/energy/greenhouse-gas-equivalencies-calculator

SMART ENERGY®

Take action for the environment today.

Enroll in Smart Energy at nwnatural.com/Smart

Or turn over to join Smart Energy.



Enroll Today!

Enroll by September 15, 2023 and receive an exclusive Smart Energy water bottle as our thank you gift.



Use this form and return with your bill payment. Or, enroll online at nwnatural.com/Smart with code **BI23.**

☐ I do not wish to receive the free gift.

Yes! I want to mitigate the carbon emissions from my natural gas use through a mix of carbon offsets and renewable natural gas projects. Please enroll me in one of the options below.

Name _____ Signature _____ Date _____

☐ **Average Home**
$8.00 per month[1]

☐ **Climate Neutral**
$0.15246 per therm used each month[2]

Service Address _____

City _____ State _____ Zip _____

Account Number (optional) _____

You may opt out or change your program option at any time without penalty. The amount of your selected option will be added to your bill each month. The Public Utility Commission of Oregon and the Washington Utilities and Transportation Commission oversee Smart Energy and authorize its rates. Smart Energy may enter into contracts that may produce greenhouse gas emission reductions two or more years into the future.

[1] Based on the average annual natural gas use of NW Natural residential customers of 630 therms.

[2] NW Natural will add $0.15246 per therm to your monthly bill to offset 100 percent of the carbon emissions from your home's natural gas use. Your actual Smart Energy participation cost will vary monthly based on your usage.

07/23 Z0059

facebook.com/NWNaturalGas/videos/our-smart-energy-program-is-now-over-60k-customers-strong-to-thank-our-newest-cu/399128947828240/

facebook

Email or phone

Video Home Live Reels Shows Explore



NW Natural
January 7, 2021
Follow

Our Smart Energy program is now over 60K customers strong! To thank our newest customers, NW Natural donated $25K to Oregon Parks Forever. Join our carbon offset program today and help fight climate change. #LessWeCan http://ow.ly/VS8Q50D0VJU
See less

Our Smart Energy program is now over 60K customers strong! To thank our newest customers, NW Natural donated $25K to Oregon Parks Forever. Join our carbon...

Like Comment Share 130 views

EXHIBIT 3
Page 1 of 1

SER-025

facebook.com/NWNaturalGas

facebook

NW Natural

Intro

Serving 2.5 million customers with reliable, efficient and safe natural gas.

Page · Energy Company

(800) 422-4012

nwnatural.com

Photos See all photos



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NW Natural
May 20 at 11:10 AM

Thank you to our 92,000+ Smart Energy customers! Together, you've addressed over two million tons of carbon emissions from your natural gas use.

Want to join in? Learn how at nwnatural.com/Smart



5 1

Like Comment

Jeff Tanasse
Can we keep our gas appliances in view of new law?

1w

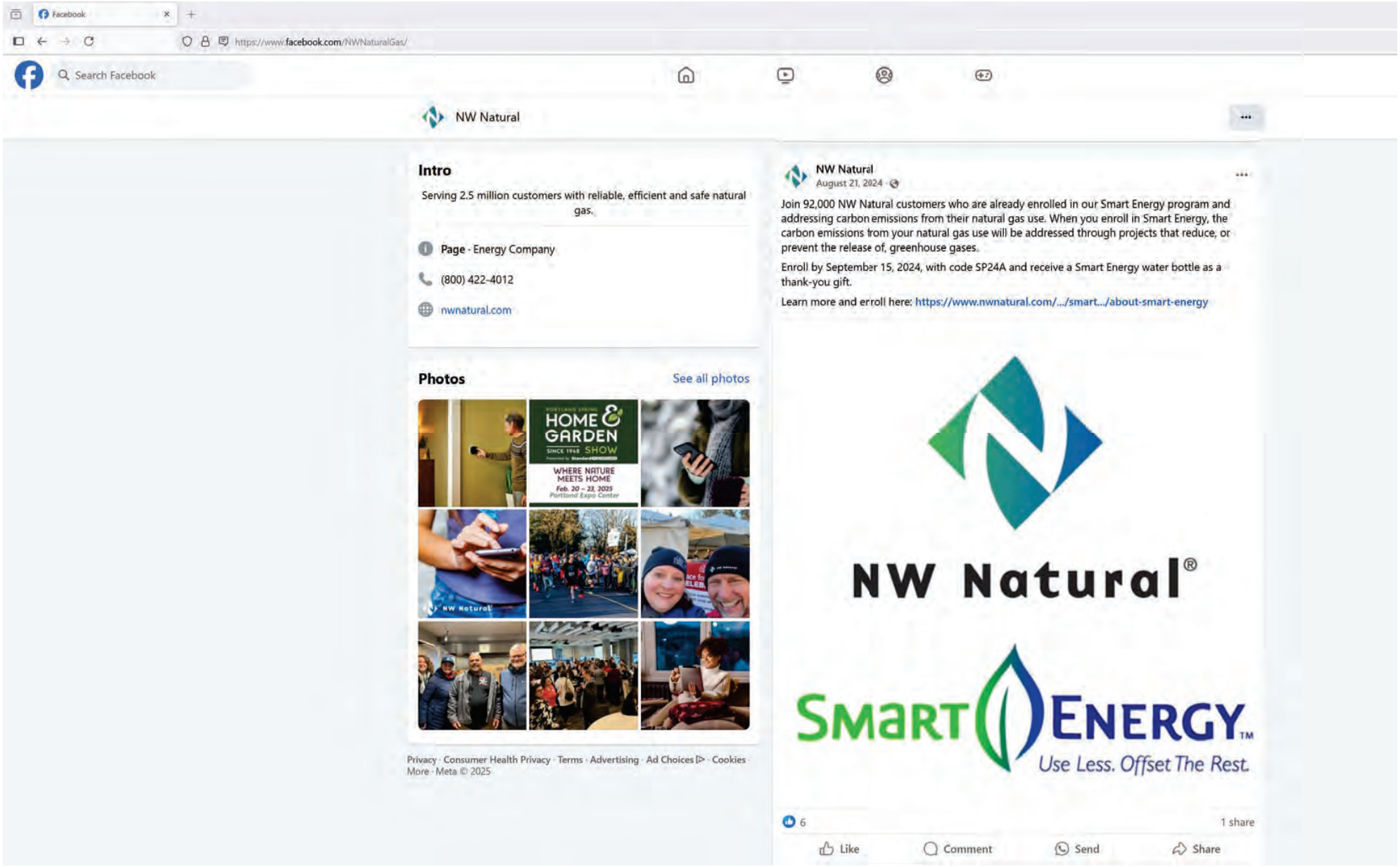


EXHIBIT 5
Page 1 of 1

SER-027

Comfort Zone

NW Natural Customer Newsletter

NW Natural®

June, July 2023 · nwnatural.com

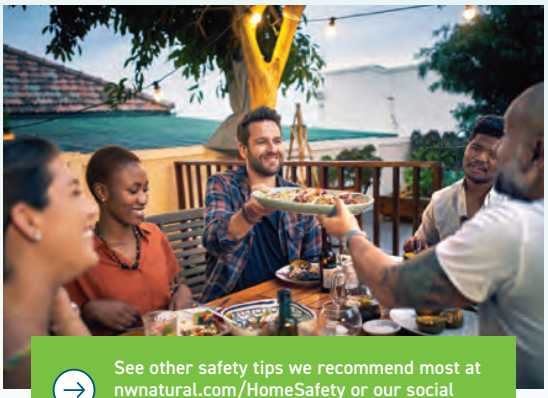
YOUR SAFETY COMES FIRST

Two summer safety tips from NW Natural

Safety is our priority and commitment to you. That's why we work 24/7 to maintain our modern and tight pipeline system.

You can also help. If gardening or grilling is in your future, please remember these two easy safety best practices:

1. Always notify 811 before you dig. You can **schedule this free service online or by phone**. Then dig knowing where underground utility lines lie on your property.
2. Keep your outdoor **grill at least 10 feet away** from other structures and objects.



See other safety tips we recommend most at nwnatural.com/HomeSafety or our social media channels.

2022 SMART ENERGY PROGRESS REPORT

More than 1.9 million tons of emissions mitigated



We launched Smart Energy 15 years ago for customers who wanted to offset the carbon emissions from their natural gas use.

Recently, Smart Energy celebrated the milestone of funding 1.9 million metric tons total emission mitigations.[1] **That's equivalent to removing nearly 425,000 gasoline-powered cars from the road for a year.**[2] Thank you, Smart Energy customers!

Reducing environmental impacts with carbon mitigation

When you enroll in Smart Energy, the carbon emissions from your natural gas use will be 1) offset through projects that reduce, or prevent the release of, greenhouse gases, or 2) mitigated through a mix of carbon offsets and renewable natural gas projects. The options available may vary depending on the location of your gas service.

Smart Energy projects keep methane, a potent greenhouse gas, from entering the atmosphere by harnessing it as a renewable energy source. Today, Smart Energy has verified and retired carbon offsets from 19 projects in the Pacific Northwest, California, Utah, Alaska and British Columbia.

Learn about Smart Energy projects and enroll at nwnatural.com/Smart.

[1] As of December 31, 2022. See https://apps.puc.state.or.us/edockets/docket.asp?DocketID=17092 for details.

[2] This figure was calculated using emissions data of 1,908,923 metric tons of carbon dioxide and the EPA's Greenhouse Gas Equivalences Calculator here https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator

Quick self-service at nwnatural.com

Check on **your monthly bill and gas use**.

Start, stop or transfer natural gas service.

Change settings in the **Account Preference Center**.

WAYS TO SAVE

Home energy improvements can lower energy bills and gas use

When you improve your home energy efficiency, you can lower energy bills and use less energy.

We, along with NW Natural Preferred Contractors and Energy Trust of Oregon, offer rebates so you spend less to make these improvements. If you are on a limited income, you may be eligible for more discounts.

- **Get up to $1,200 for upgrades** to both heating and cooling.
- **Get a $300 discount when you upgrade** to a Rinnai Sensei high-efficiency natural gas tankless water heater.

  Bonus: A high-efficiency tankless water heater with a battery backup can work even when the power goes out.



See more ways to save money and energy at nwnatural.com/Offers.

INVESTING IN THE COMMUNITY

Three incoming Linn-Benton Community College students receive scholarships to pursue careers in skilled trades



We have supported the economic development of local communities for a long time—164 years! This year, we are especially excited to help young people enter professions that are experiencing a shortage of skilled workers.

We recently awarded three incoming **Linn-Benton Community College** students $5,000 scholarships to attend LBCC's Career Technical Education program. These students will receive essential training and skills to enter in-demand trades.

"Linn-Benton Community College is at the forefront of connecting students with high-demand trades in the mid-Willamette Valley," said David Van Der Haeghen, NW Natural's Community Affairs Manager for the area. "We are thrilled to award these scholarships to such deserving students, who have demonstrated a commitment to their education and communities."

Read more about this workforce partnership at nwnatural.com/Newsroom.

KNOW YOUR RIGHTS AND RESPONSIBILITIES AS A NW NATURAL CUSTOMER

We are committed to providing safe and reliable natural gas service to all customers. You can help us meet this commitment by paying your bill on time, keeping your gas meter and other NW Natural facilities protected from damage or tampering, and alerting us in advance at **nwnatural.com** or **800-422-4012** if you plan to move, wish to change your service, or have a service problem.

Know your customer rights and responsibilities: View the Rights and Responsibilities brochure at nwnatural.com/BillInserts.

Z0029 6/23

Current balance

$82.00

Due in 15 days, on April 17th

Previous balance: $0.00

Pay Now

Other ways to pay → Payment and Bill History →

Payments are made on our Customer Payment Portal.

It may take up to two business days for online payments to be posted to your account and reflected on this page.

Usage Comparison | Smart Energy



Let's work together to fight climate change. Join Smart Energy to address the carbon emissions from your natural gas use. You'll support projects that reduce, or prevent the release of, greenhouse gases.

Enroll in Smart Energy →

Payment Plans

WARM Billing Method

Join Smart Energy to address the carbon emissions from your natural gas use through (1) carbon offsets from projects that reduce, or prevent the release of, greenhouse gases, or (2) a mix of carbon offsets and renewable natural gas projects. The options available may vary depending on the location of your gas service.

Select one option:

Select this option

Average Home

Based on the annual system average therm use of NW Natural residential customers; 630 therms each (3.7 tons annually).

$8.00

Monthly contribution

This amount will be added to your monthly bill.

Select this option

Climate Neutral

NW Natural will add $0.15246 per therm to your monthly bill to address 100% of the carbon emissions from your home's natural gas use. Your actual Smart Energy participation cost will vary monthly based on your usage.

$6.40

Average monthly participation cost based on your historical use.



Cancel

I Agree, Enroll

Payment Plans

WARM Billing Method

Your enrollment in Smart Energy is complete.

Thank you for addressing the carbon emissions from your natural gas use with Smart Energy. Your monthly contribution supports projects that reduce, or prevent the release of, greenhouse gases.

Status: **Enrolled**

Amount: Average Home - $8.00

Manage

Smart Energy Participation History

Below is the percentage of your carbon emissions from natural gas use addressed by Smart Energy.

Bill Date	Therms	Smart Energy Option	Percent Offset
03/27/2024	63.5	Not Enrolled	0.0
02/27/2024	72.5	Not Enrolled	0.0
01/29/2024	111.2	Not Enrolled	0.0
12/27/2023	85.9	Not Enrolled	0.0
11/27/2023	80.5	Not Enrolled	0.0
10/24/2023	19.0	Not Enrolled	0.0
09/25/2023	2.1	Not Enrolled	0.0
08/24/2023	0.0	Not Enrolled	0.0
07/27/2023	0.0	Not Enrolled	0.0
06/27/2023	1.1	Not Enrolled	0.0
05/25/2023	6.5	Not Enrolled	0.0
04/26/2023	57.0	Not Enrolled	0.0
03/29/2023	76.0	Not Enrolled	0.0

Current balance

$82.00

Due in 20 days, on April 17th

Previous balance: $0.00

Pay Now

Other ways to pay → Payment and Bill History →

Payments are made on our Customer Payment Portal.

It may take up to two business days for online payments to be posted to your account and reflected on this page.

Usage Comparison | Smart Energy



614

CO_2 offset each month in lbs

Keep up the good work! You're addressing the carbon emissions from your natural gas use, and supporting projects that reduce, or prevent the release of, greenhouse gases.

Stay enrolled and keep making a difference!

BEFORE THE

PUBLIC UTILITY COMMISSION OF OREGON

UG 435

NW Natural

Direct Testimony of Cory A. Beck

CUSTOMER COMMUNICATIONS
EXHIBIT 900

December 17, 2021

EXHIBIT 900 - DIRECT TESTIMONY - CUSTOMER COMMUNICATIONS

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I. INTRODUCTION AND SUMMARY

Q. Please state your name and position at Northwest Natural Gas Company ("NW Natural" or "the Company").

A. My name is Cory Beck. I am the Senior Manager of External Communications and User Experience for NW Natural. My responsibilities include customer and general public communications, advertising, website and digital portal services, marketing communications and public safety awareness. I have worked for NW Natural since 2005.

Q. Please describe your education and employment background.

A. I received my undergraduate degree in Graphic Design from Oregon State University and a Master of Business Administration from Marylhurst University. From 1994 to 1998, I worked as an account executive at a design agency, Electro Art in Portland, Oregon. From 1998 to 2000, I worked as an account executive at an advertising agency, Gerber Advertising in Portland, Oregon. From 2000 to 2005, I worked as an account supervisor at a marketing and advertising agency, CMD (Creative Media Development) also in Portland, Oregon.

Q. Please summarize your testimony.

A. In my testimony, I:

- Describe Category A communications as defined in Oregon Administrative Rule ("OAR") 860-026-0022 and discuss the Company's Category A communications plan for the November 2022-October 2023 test year ("Test Year");

- Explain why the Company's Category A Test Year expense level is reasonable under OAR 860-026-0022;
- Present the Company's Test Year Category B proposed expense; and
- Describe the level of Category C (corporate imaging) expense the Company has excluded from Test Year expense.

II. CATEGORY A - COMMUNICATIONS PLAN

Q. Please describe Category A customer communications.

A. The Public Utility Commission of Oregon's (the "Commission" or "OPUC") administrative rules categorize utility customer communications and set forth ratemaking standards applicable to each category. Category A communications are defined as "Energy efficiency or conservation advertising expenses that do not relate to a Commission-approved program, utility service advertising expenses, and utility information advertising expenses."

Q. What topics does the Company's Test Year Category A communications plan address?

A. The Company's Test Year Category A communications plan addresses the following topics:

- The efficient use of natural gas;
- Payment options and programs for customers;
- Online customer service options and information;
- Bill credits, and natural gas price changes;

- Cost, performance, and environmental benefits of high-efficiency natural gas equipment;
- Information about the ways both NW Natural's pipeline system and customers can reduce greenhouse gas emissions;
- Education about Senate Bill 98 ("SB 98"), renewable natural gas ("RNG"), and associated benefits for customers and the climate improvement goals in Oregon;
- Education about climate regulation that the Company will be subject to in Oregon and how it will comply with those regulations;
- Phone numbers and contact information.

Q. How does the Company plan to communicate with customers on these topics?

A. The Company plans to continue communicating with customers through bill inserts, our website, customer e-newsletters, new customer information packets, telephone directory advertising, digital advertising, community events, broadcast television, cable television and streaming media. A newer communication channel is through text message for customers that select that option.

Q. How does the requested Test Year Category A communications expense compare to the Base Year?

A. The Test Year request of $2.60 per customer is lower than the Category A communications expense in the Base Year of $2.70 per customer.

Q. Why is the requested Test Year Category A communications expense lower than the Base Year?

A. In response to increasing concerns regarding its carbon emissions, NW Natural incurred additional advertising and media expense during the Base Year that focuses on how it will decarbonize. Specifically, new advertising during the Base Year delivered the facts about RNG supply, sources, and carbon reduction benefits for customers, as well as NW Natural's plans for acquiring it. The new advertising will continue to be used during the Test Year, which lowers advertising production costs for the Test Year.

Q. How does NW Natural's proposed Test Year Category A communications expense compare to the level that is presumed just and reasonable under OAR 860-026-0022?

A. Under OAR 860-026-0022(3)(a), expenditures for Category A advertising up to 0.125 percent of gross retail operating revenues are presumed just and reasonable. In NW Natural's case, that percentage results in $796,789 for Category A communications based on 2020 revenues, which is equivalent to about $1.17 per customer.

Q. Does NW Natural believe that the "gross retail operating revenues" formula provides an amount that is appropriately scaled to NW Natural's customer communications?

A. No, we do not. The gross retail revenue-based formula produces a skewed result because the Company's gross retail revenues are, in part, driven by natural gas commodity costs. This means that when natural gas prices are relatively low (as

they currently still are, despite recent increases), the Company's gross retail revenues will be lower, and in turn, so will the results of the formula. For this reason, we find it difficult to make a correlation between the amounts presumed reasonable per rule OAR 860-026-0022(3)(a) and the amounts needed to effectively communicate Category A topics to our customers.

Additionally, the revenue-based formula applicable to all energy utilities results in natural gas utilities having far less Category A expense presumed reasonable as compared to electric utilities. NW Natural should be allowed rate recovery for communications that are generally in line with electric utilities in Oregon on a per customer basis. NW Natural's request for $2.60 per customer achieves this goal. For example, based on 2020 data, the revenue-based formula translates into an allowance of $2.68 per customer for PacifiCorp and $2.56 per customer for Portland General Electric Company compared to $1.17 per customer for NW Natural (see NW Natural/901, Beck). This funding gap seems inappropriate given NW Natural's extensive Oregon service territory, which includes the Oregon coast from Astoria to Coos Bay, the Willamette Valley from Portland to Eugene, and the Columbia River Gorge. In addition, the funding gap does not take into consideration that NW Natural delivers more energy than any other Oregon utility, meets 74 percent of home heating needs in the areas we serve, and provides 90 percent of energy needs for our residential space and water heating customers on the coldest winter days.

Q. Does OAR 860-026-0022 prevent NW Natural from recovering more than $1.17 per customer for Category A communications expense?

A. No, it does not. Under OAR 860-026-0022(4), an energy utility seeking to include expenditures in excess of 0.125 percent of revenues bears the burden of demonstrating that the expenditures are just and reasonable. In other words, the rule sets an amount that is presumed reasonable, but allows for more to be recovered as long as support is provided, and the Commission approves it.

Q. Please explain why NW Natural is requesting $2.60 per customer for Category A expense.

A. First, media consumption habits and audience demographics continue to evolve to include a diversified mix of multiple media channels including TV, streaming media services, online, and mobile as well other traditional media, requiring a larger media investment to effectively reach customers where they seek information. Second, our service territory is geographically broad, requiring the Company to enter two distinct media markets (Portland and Eugene) to reach our customers throughout the State. Third, in addition to providing information about payment options and programs, online customer service, billing, payment, and rate information, NW Natural has continued to invest in its educational and informational communications about the detriments of greenhouse gas emissions, the options available to customers, and the Company's actions that include acquiring RNG under SB 98 legislation. Fourth, Executive Order 20-04 directs the Department of Environmental Quality and the Environmental Quality Commission to develop a cap-and-reduce program. Additional communications to customers

are needed to describe the complex program and how the Company will comply with it while keeping natural gas service affordable.

Q. Starting with the first stated reason for the Company's requested Category A expense, how have media consumption habits and audience demographics evolved requiring a segmented approach, more diversified mix and, consequently, additional costs?

A. Television remains the preferred media channel, but simultaneous online viewing via a digital device while watching traditional TV has risen since 2018 and is projected to continue through 2022.[1] This phenomenon has created media fragmentation. Thanks to media fragmentation, U.S. adults will share their daily viewing time watching live and time-shifted TV, internet-connected TV devices, smartphones, tablets, and computers. Today, U.S. adults ages 35-49 are spending more than 12 hours a day on average consuming media in some form.[2] That number increases to nearly 14 hours per day for adults ages 50-64. In fact, multimedia consumption has risen each year since 2015.[3] According to a 2020 survey, the average American had access to more than ten internet connected devices in their household.[4] People had access to more than two computers on average and more than two mobile phones. Furthermore, the connected TV

[1] Statista, U.S. simultaneous internet and TV users 2018-2022, https://www.statista.com/statistics/783461/simultaneous-internet-and-tv-users-usa/

[2] Statista, Time spent with media in the U.S. 2020, by age group, https://www.statista.com/statistics/233386/average-daily-media-use-of-us-adult-population-by-medium

[3] Statista, Daily time spent with media in the U.S. 2015-2020, https://www.statista.com/statistics/246698/daily-time-spent-with-tv-in-the-us-by-type-of-use/

[4] Statista, Average number of connected devices in U.S. households 2020, https://www.statista.com/statistics/1107206/average-number-of-connected-devices-us-house/

penetration rate (streaming TV) in the United States rose to an all-time high in 2021, with 82 percent of American households owning at least one internet-connected TV device.[5] This is up from 74 percent in 2019.

Q. How has NW Natural's media plan evolved to address media fragmentation?

A. NW Natural plans its media mix based upon industry data, audience trends and demographic profiles. To address media fragmentation, the percentage of investment by media channel has evolved over time, requiring more investment in digital and streaming media while continuing to keep TV as a major channel as well. Since 2019, spending on digital advertising has increased from 28 percent of the total media buy, to 41 percent. Streaming media has increased from 8 percent to 15 percent since 2020. Audience demographics are also evolving requiring more investment to reach a larger portion of customers. According to Oregon Census data, the demographics in our service area is trending younger. In 2017, 27.3 percent of Oregon's population was aged 25-45.[6] In 2019, that percentage rose to 27.8 percent.[7] While the younger demographic is increasing, the older demographic is declining. In 2017, 25.7 percent of Oregon's population was aged

[5] Statista, Connected TV penetration rate in the U.S. 2014-2021, https://www.statista.com/statistics/294654/connected-tv-penetration-rate-usa/

[6] United States Census Bureau, 2017 ACS Demographic and Housing Estimates, https://data.census.gov/cedsci/table?q=Oregon%20Populations%20and%20People&tid=ACSDP1Y2017.DP05

[7] United States Census Bureau, 2019 ACS Demographic and Housing Estimates, https://data.census.gov/cedsci/table?q=Oregon%20Populations%20and%20People&tid=ACSDP1Y2019.DP05

45-65.[8] In 2019, that percentage declined to 24.9 percent.[9] Another proof-point is that Portland (our largest service area) is ranked number one for millennial population change in the country; a 22.8 percent growth representing 18.6 percent of the population.[10] To address this, the Company's media plan expanded to accommodate the 25-45 age group in addition to the 45-65 age group, thereby incurring additional costs. Further, in addition to reaching our audience where they consume information and segmented across appropriate demographics, the frequency of the messages being delivered involves cost considerations and is an evolving dynamic. For decades, the marketing industry stated that the rule of seven is an effective benchmark for the number of times a person needs to be exposed to a message to remember the message. Today, given media fragmentation, the marketing and advertising industry believes that a frequency between 7 and 26 times is needed to be effective.[11] As a result of these trends, and segmented strategy, the increasing integration of digital media and streaming media into our overall message delivery plans is essential to the Company's communications efforts.

[8] United States Census Bureau, 2017 ACS Demographic and Housing Estimates, https://data.census.gov/cedsci/table?q=Oregon%20Populations%20and%20People&tid=ACSDP1Y2017.DP05

[9] United States Census Bureau, 2019 ACS Demographic and Housing Estimates, https://data.census.gov/cedsci/table?q=Oregon%20Populations%20and%20People&tid=ACSDP1Y2019.DP05

[10] https://havenlife.com/blog/where-are-millennials-moving/

[11] Illumination Marketing, Marketing Rule of 7s, https://www.marketingillumination.com/single-post/marketing-rule-of-7s

Q. Should the Company continue to include television media for its media plan?

A. Yes. TV is still the dominant source for news and information of any media channel. NW Natural has followed that direction by including TV as a major portion of its media buy to reach the most customers. In fact, according to a Forbes article in 2019, TV is still an excellent way to reach large numbers of the public.[12] And the percentage of U.S. homes with televisions receiving traditional TV signals was 96.5 percent. In a September 2020 study, 68 percent of U.S. adults said they had seen ads on TV– more than any other media channel.[13] Another study from 2021 states the majority share of viewers spend twelve or more hours per week watching live TV.[14] In a separate 2019 study, live TV was the preferred media by respondents 45 years-old and older,[15] which represents more than 63 percent of homeowners in Oregon.[16] Additionally, attentiveness is the highest while watching television—ahead of smartphones, computers and tablets.[17] NW Natural customers have rated television above radio, social media and local newspaper for how important the source is to receive news and information (see NW

[12] Forbes, Why Do Big Companies Still Advertise On TV Instead Of Social Media?, https://www.forbes.com/sites/quora/2019/03/01/why-do-big-companies-still-advertise-on-tv-instead-of-social-media/?sh=27811957dd41

[13] Statista, TV Still the Top Medium for Ads in the U.S., https://www.statista.com/chart/22966/most-seen-types-of-ads-us/

[14] Statista, Weekly time spent watching live TV in the U.S. 2021, https://www.statista.com/statistics/707084/time-spent-live-tv/

[15] Statista, Channel surfing: preference between online and live TV U.S. 2019, by age group, https://www.statista.com/statistics/1132814/preference-online-and-live-tv-us-by-age/

[16] United States Census Bureau, Demographic Characteristics for Occupied Housing Units, https://data.census.gov/cedsci/table?q=Oregon%20Housing&tid=ACSST1Y2019.S2502

[17] Marketing Charts, TV Said to Top Digital Devices in Viewer Ad Recall, https://www.marketingcharts.com/television-68800

Natural/902, Beck). As of February 2021, research also reveals that local television news is the leading source for accessing news.[18] With those facts in mind, the majority of the NW Natural TV media purchases occur during local news programming. Additionally, on average 60 percent of customers recall seeing advertising from the Company from March 2020 through September 2021 (see NW Natural/903, Beck), proving TV is a highly watched media and needs to be included in the media mix.

Q. Is television an allowed communication channel under OAR 860-026-0022?

A. Yes. Among other broad-based media channels identified in OAR 860-026-0022 (1) (a), television is listed as an allowed means of delivering communications to inform, influence, and/or educate customers.

Q. Why has the investment in digital advertising increased over time?

A. As stated, media fragmentation calls for a multi-channel approach. In addition, the COVID-19 pandemic has dramatically altered how the public works, requiring more of a digital presence. Now, 71 percent of workers who can work from home all or most of the time are doing their job from home. And more than half say, given a choice, they would want to keep working from home even after the pandemic, according to a new Pew Research Center survey.[19] Additionally, according to a current Nielsen Audience Report, mobile and work-related device use has

[18] Statista, Share of consumers who have used selected offline news sources to access news in the last week in the United States as of February 2021, https://www.statista.com/statistics/262519/leading-offline-news-brands-in-the-us/

[19] Pew Research Center, How the Coronavirus Outbreak Has – and Hasn't – Changed the Way Americans Work, https://www.pewresearch.org/social-trends/2020/12/09/how-the-coronavirus-outbreak-has-and-hasnt-changed-the-way-americans-work/

increased to 13:28 hours per day, up from 10:09 hours per day since before the pandemic.[20] NW Natural addressed the public spending more time in front of a computer screen by increasing the investment in digital advertising 82 percent since 2019.

In summary, the communications landscape has changed, and increased media fragmentation and demographic changes require broader, multi-channel investment. To effectively communicate to our customer base, it is essential that the Company deploy a diversified media mix (delivered multiple times), which includes streaming services, digital, social networks, and website display advertising, in addition to television, radio, community events and print advertising.

Q. Turning to the second stated reason for the Company's requested Category A expense, how does the nature of NW Natural's service territory support a per-customer allocation higher than the amount automatically allowed under OAR 860-026-0022?

A. NW Natural must communicate across 126 cities and towns within its Oregon service territory making our service territory geographically diverse and more expensive from a communications delivery standpoint. The OAR 860-026-0022 formula does not address the differences utilities have in service territories, and yet these differences increase the number of media channels and associated costs needed to effectively deliver information to customers.

[20] EyeSafe, COVID-19: Screen Time Spokes to Over 13 Hours per Day, https://eyesafe.com/covid-19-screen-time-spike-to-over-13-hours-per-day/

Q. How does NW Natural's geographically broad service territory serving two Designated Market Areas ("DMAs") incur additional costs?

A. NW Natural serves customers in two DMAs – Portland and Eugene. Satellite areas such as Coos Bay are also purchased separately. To reach customers in the Eugene DMA, NW Natural must divert more than 14 percent of an already modest annual media budget. This results in a reduction in media spend to effectively reach customers in the Portland DMA – an area that ranks 21st in the nation[21] in terms of media costs, making Portland among the more expensive media markets in which to operate. This fact further reinforces the challenge the gross retail revenue allowable creates for NW Natural in effectively reaching our customers. Because NW Natural serves the same Portland DMA as our electric utility counterparts, I believe that our funding levels should be in line with theirs.

Q. Transitioning to the third stated reason for the requested Category A expense, why is an increase to environmental education necessary?

A. Concerns about climate change continue to weigh heavily on customer minds. In a September 2018 study, 71 percent of NW Natural customers stated they are extremely concerned or very concerned about climate change (see NW Natural/904, Beck/4). This is up from 64 percent of customers who believed climate change to be a serious problem from a 2017 survey of NW Natural customers *(*see NW Natural/905, Beck*).*

[21] https://oaaa.org/Portals/0/Public%20PDFs/OAAA%202021%20NIELSEN%20DMA%20Rankings%20Report.pdf

Additionally, Oregon's focus on climate and related changes to energy policy to address climate change is in the forefront. To that end, NW Natural sees the need for additional education and has been delivering communications about the environmental concerns within the "Less We Can" initiative about the Company's energy supply strategy, State emissions reduction goals, sources of energy and climate benefits of RNG. The "Less We Can" initiative supports:

- Ways customers can reduce energy use and associated emissions through conservation and energy efficiency, and by offsetting their emissions through the Smart Energy program;
- The efforts NW Natural and others are taking to support RNG development and technology advancements that can help lower emissions; and
- The role natural gas and RNG can play to lower the emissions and air pollutants of heavy-duty vehicles and associated fleets in the transportation sector.

To enhance the effectiveness in communicating the impacts and benefits to customers of the above efforts, the Company's communications plan employs a diversified mix of bill inserts, streaming media services, online and mobile content, as well as TV, video and other traditional media.

Q. Are NW Natural's customers familiar with RNG?

A. Education efforts to customers about RNG are beginning to make an impact. In a NW Natural survey performed in 2018, we found that our customers had little awareness or familiarity with RNG. Of those surveyed, only 14 percent of

respondents were extremely or very familiar with RNG (see NW Natural/906, Beck/3), while 52 percent were not familiar or only slightly familiar (see NW Natural/906, Beck/3). In a recent NW Natural study that measured advertising message awareness, we are seeing our multi-channel advertising efforts making an impact. From March 2020 through September 2021, awareness for RNG has risen each quarter and is currently at 48 percent awareness (see NW Natural/907, Beck/3).

Q. Are there additional reasons to increase Category A expense to educate customers about carbon saving initiatives and RNG?

A. Yes. In 2019, Governor Kate Brown signed into law SB 98, which allows local distribution companies to purchase RNG for end-use delivery to its sales customers. Over the next 30 years, the law sets targets for local distribution companies to have RNG comprise 30 percent of their annual gas portfolios. NW Natural intends to meet or exceed these targets and has begun purchasing RNG.[22] We believe it is necessary to educate our customers about this relatively new product, including the environmental benefits of RNG.

Q. Does OAR 860-026-0022 include this type of communication in Category A?

A. Yes, it does. The definition of "Utility Information Advertising Expense" (OAR 860-026-0022(g)) is "advertising expenses, the primary purpose of which is to increase customer understanding of utility systems and the function of those systems, and to discuss generation and transmission methods, utility expenses, rate structures,

[22] *See In the Matter of Northwest Natural Gas Company, dba NW Natural, Request for Amortization of Certain Deferred Accounts Related to Gas Costs, Schedules P, 162, 164,* UG 432 (Oct. 28, 2021).

rate increases, load forecasting, environmental considerations, and other contemporary items of customer interest."

Q. The fourth stated reason for the requested Category A expense is the need to provide additional customer information and education with regard to Executive Order 20-04 to implement the Oregon Department of Environmental Quality's ("ODEQ") proposed Climate Protection Program ("CPP"). Why is that necessary?

A. At the time of finalizing this general rate revision filing, the CPP has not been finalized by ODEQ, but ODEQ's proposed CPP establishes a cap-and-reduce program. The emissions cap and corresponding compliance instruments distributed to covered fuel suppliers, which include NW Natural, will gradually but meaningfully decline each year through 2050. To meet their compliance obligations, covered fuel suppliers can directly reduce their GHG emissions, lower the carbon intensity of their fuel, trade compliance instruments with other covered fuel suppliers, or obtain additional compliance instruments by funding Community Climate Investment projects administered by ODEQ. As currently proposed, NW Natural is responsible for the emissions reductions associated with all of its customers' direct end-use of natural gas. Given this impact, the Company needs to explain to our customers what the program is, how NW Natural will comply with it, and how it will impact customers. While NW Natural is already engaged on several fronts to reduce carbon emissions, improve energy efficiency and transition more of our supply to renewable energy, the CPP will place new compliance obligations on the Company, and customers should understand these obligations.

This important topic is another reason why additional investment in communications is needed to make sure customers have all the information needed to make educated decisions regarding their gas use, carbon savings and options available for heating, cooking, and water heating.

Q. What action does the Company request the Commission take with respect to Category A communications expense?

A. The Company requests that the Commission find that the proposed level of Test Year Category A communications expense is just and reasonable under OAR 860-026-0022. The Company's proposed expense level is necessary for the Company to effectively deliver Category A communications to customers and is reasonable given the factors discussed in my testimony.

III. CATEGORY B - SAFETY-RELATED COMMUNICATIONS

Q. What are safety-related communications?

A. Safety-related communications are legally mandated messages intended to ensure that NW Natural's customers, contractors, public officials, emergency officials and the general public within the NW Natural service territory know how to use natural gas safely, are prepared in the event of an earthquake, know how to recognize, react, and respond to a potential leak or safety issue related to natural gas, and know how to prevent damages to underground utility pipelines. Safety-related communications are also referred to as Category B communications, as defined in OAR 860-026-0022. Under OAR 860-026-0022(3)(b), Category B communications are presumed to be just and reasonable for ratemaking purposes.

Q. Please identify the legal mandates requiring this expenditure.

A. The Company's Category B communications meet federal Pipeline and Hazardous Materials Safety Administration requirements for Public Safety Awareness Plans outlined in Recommended Practice API 1162 ("RP-1162") and enforced by the OPUC Safety Staff. In 2020, Staff completed an audit of the NW Natural Public Safety Awareness Plan and communications and advertising distributed to support the plan. The result of the audit was the Company followed State and Federal Regulations without infringement. In compliance with federally mandated RP-1162, the Company executes a robust public safety awareness plan each year supported by paid media, customer communications, public relations, sponsored community events, and a school program. In addition, the Company distributes audience-specific pipeline safety information to required groups, including emergency officials, first responders, public officials, excavators, multi-family property managers, floating homes, and residents and businesses located along transmission pipelines, in high-consequence areas, or along rights-of-way.

Q. What Category B communications expenses are included in the Test Year?

A. The Company has included $1,080,000 for Category B communications and media outreach expenses in the Test Year, which is an increase of $135,000 to the expected Base Year spending level.

Q. Please describe any new Category B expenses since NW Natural's 2019 Rate Case (UG 388).

A. The primary source of new Category B expense since NW Natural's 2020 general rate revision (Docket UG 388) is focused on damage prevention, emergency

preparedness awareness and education. Third-party damages to NW Natural pipelines still pose a significant threat to our system and public safety. The Company's Test Year enhanced damage prevention effort includes higher levels of paid media across more channels, including TV, streaming media, radio, print, digital and social media, and community events. Also, the Company has increased investment for the contractor audience through prevention outreach and a media campaign in English and Spanish to encourage behavior change to reduce damages to our system.

Further, the plan includes additional outreach through targeted mailings, online content, and training materials for the contractor and first responder audience, and a school program through a contract with Culver Company. The $135,000 additional expense for this rate case is to expand the contract with Culver Company to administer the Public Safety Awareness Program materials to all stakeholder audiences and conduct research to aid in continual improvement of the program.

Q. Is Culver Company qualified to administer a turn-key Public Safety Awareness Program for NW Natural?

Yes. Culver Company delivers nationally recognized utility public safety awareness programs that are valuable because they help save lives, prevent injuries, reduce damages, build trust, and provide assurance to regulators and communities that utilities are safe and managed according to industry standards. Their approach to RP 1162 natural gas pipeline public safety awareness will help

the Company exceed goals—and provide cost-effective options for mitigating aspects of enterprise risk.

Q. Has Culver Company increased the reach of the Public Safety Awareness Program?

A. Yes, it has. Culver Company has managed the safety outreach and training material distribution for the contractor and first responder audiences since the 2018 campaign. During that time, Culver Company has delivered more than 725 safety training kits requested by contractor agencies and more than 325 safety training kits requested by fire and police agencies that would otherwise not happen if not for the Culver Company program. Additionally, the Culver Company materials have maintained high message awareness among survey respondents. Consolidating the program distribution with Culver Company also saves on mailing and printing costs.

IV. CATEGORY C – CORPORATE IMAGING COMMUNICATIONS

Q. Please describe the level of Category C (corporate imaging) expense NW Natural has excluded from Test Year expense.

A. An amount of $600,000 in administrative, marketing and advertising activities is budgeted in Category C during the Test Year period, none of which is proposed to be included in rates. These activities are designed to aid in the retention of customers and attract new customers by promoting the cost and performance benefits of natural gas and a variety of natural gas products.

Q. Does this conclude your direct testimony?

A. Yes.

BEFORE THE

PUBLIC UTILITY COMMISSION OF OREGON

UG 435

NW Natural

Exhibits of Cory A. Beck

CUSTOMER COMMUNICATIONS
EXHIBITS 901 – 907

December 17, 2021

EXHIBITS 901-907 – CUSTOMER COMMUNICATIONS

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BEFORE THE

PUBLIC UTILITY COMMISSION OF OREGON

UG 435

NW Natural

Exhibit of Cory A. Beck

CUSTOMER COMMUNICATIONS
EXHIBIT 901

December 17, 2021

NW Natural 901, Beck

2020 Category A per Customer Based on Operating Revenue

	Year	Operating Revenue	CAT A - 0.125%	# of Customers	CAT A per Customer
NW Natural	2020	637,431,354	796,789	679,693	1.17
PGE	2020	1,846,082,453	2,307,603	902,237	2.56
Pacificorp	2020	1,293,711,531	1,617,139	603,954	2.68

Source of Revenues and Customers - OPUC Oregon Utility Statistics - 2020

BEFORE THE

PUBLIC UTILITY COMMISSION OF OREGON

UG 435

NW Natural

Exhibit of Cory A. Beck

CUSTOMER COMMUNICATIONS
EXHIBIT 902

December 17, 2021

2020 Natural Gas Safety Customer Survey

Market Intelligence, Strategic Planning
January 2021

NW Natural

Research Background

Methodology: Online Survey fielded in December 2020

Sample: 2,000 emails are randomly drawn from gas customer database.

Completion: 265 completed the survey.

Confidence level: 95%

Margin of error: +/-6%

Importance of News Sources

please rate how important the following sources of news and information are to you on 5 point scale. (5 – extremely important, 1 – not at all important)



BEFORE THE

PUBLIC UTILITY COMMISSION OF OREGON

UG 435

NW Natural

Exhibit of Cory A. Beck

CUSTOMER COMMUNICATIONS
EXHIBIT 903

December 17, 2021

NW Natural Advertising Awareness Public Sentiment Tracking - Q3 2021

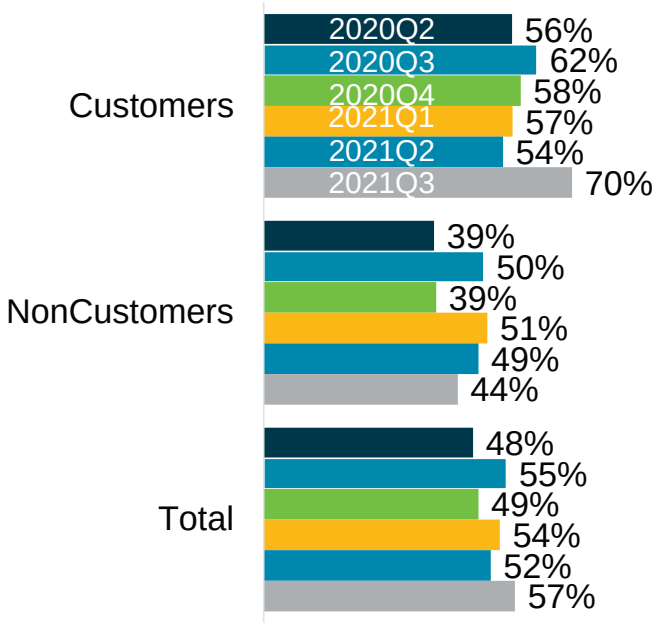
Methodology

- Online research panels
- Primary residence within NW Natural service territory
- 250 respondents each quarter
  - 125 gas customers
  - 125 non-gas customers
- Repeat every three months
  - September
  - December
  - March
  - June

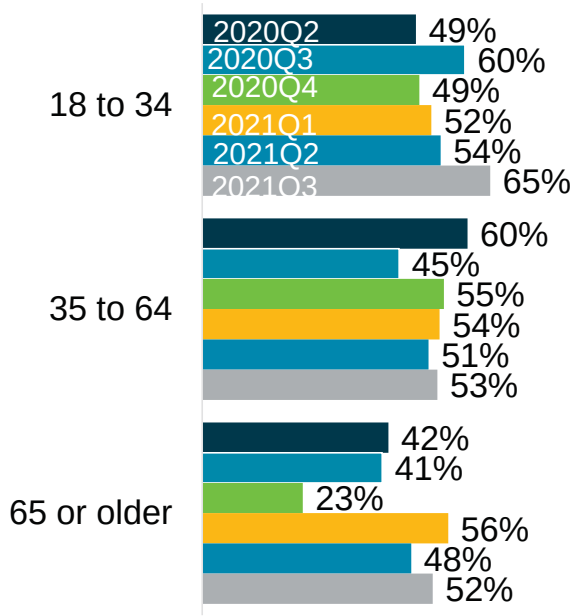
NW Natural Advertising Awareness

During the past three months, how many advertisements do you recall seeing, reading, or hearing from your natural gas company - NW Natural?

By Customers/Non-customers



By Age Group



BEFORE THE

PUBLIC UTILITY COMMISSION OF OREGON

UG 435

NW Natural

Exhibit of Cory A. Beck

CUSTOMER COMMUNICATIONS
EXHIBIT 904

December 17, 2021

Renewable Natural Gas

NW Natural Customer Insight Panel Study

September 2018

NW Natural

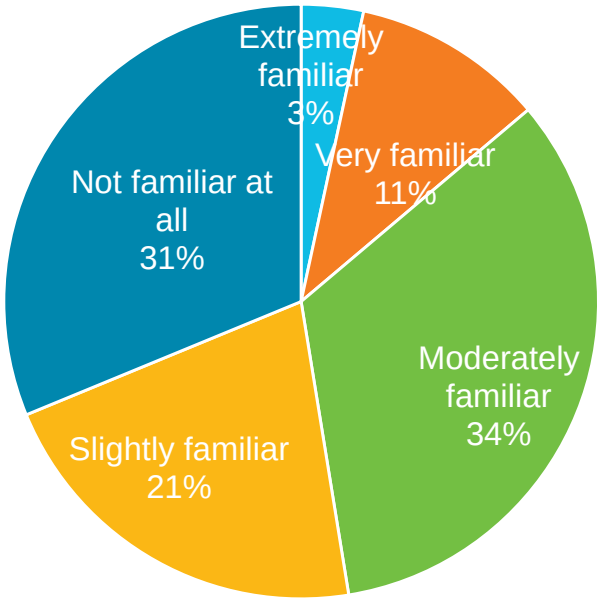
Background

Field time: September, 2018
# of Customer Respondents: 1,893

Objective:

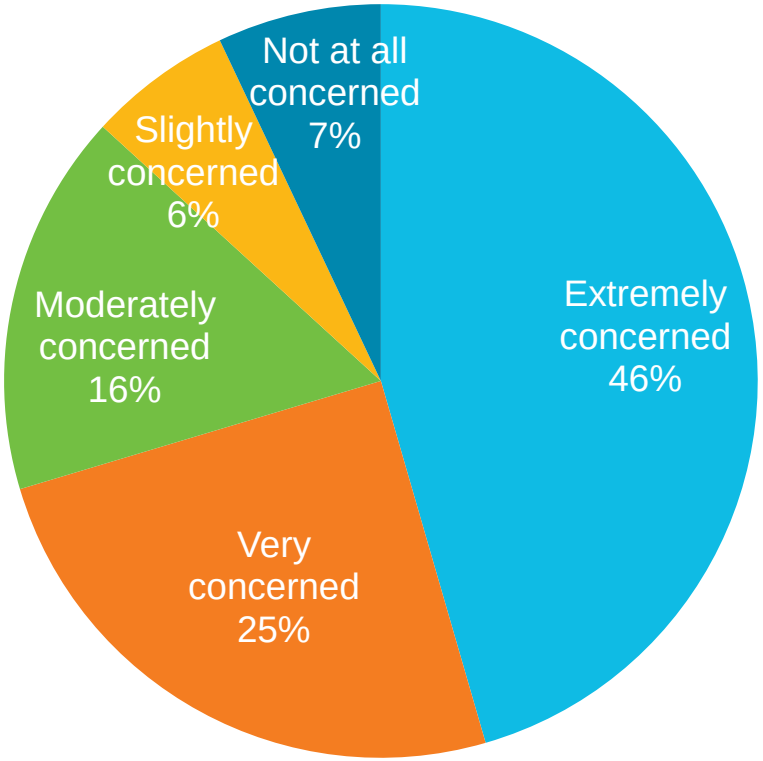
- Gain feedback about the RNG advertising video
- Evaluate customer willingness to pay for RNG
- Test RNG statements

Familiarity with RNG



- Only 14% respondents are extremely or very familiar with RNG, while 31% are not familiar at all.
- Awareness about RNG is consistent across different geographic areas.

Concern About Climate Change



BEFORE THE

PUBLIC UTILITY COMMISSION OF OREGON

UG 435

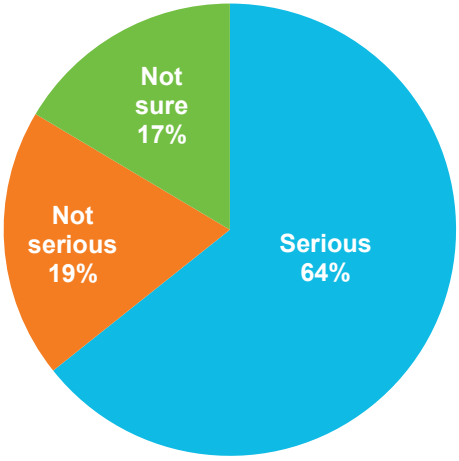
NW Natural

Exhibit of Cory A. Beck

CUSTOMER COMMUNICATIONS
EXHIBIT 905

December 17, 2021

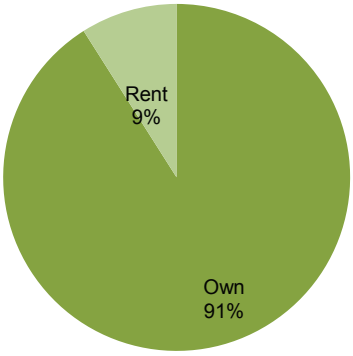
Environmental Issues Customer Research
October, 2017



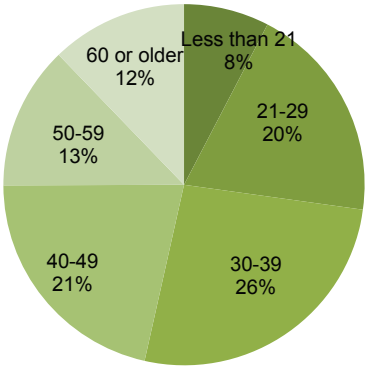
In your opinion, how serious of a problem is climate change?

RESEARCH DESIGN
Research firm: C & T Marketing Group provided the survey participants
Methodology: Online survey through Qualtrics, fielded in October 2017
Sample size: 322 gas customers
Sample design: 3rd party research panel members who reside within NW Natural service territory
Confidence level: 95%
Margin of error: +/-5%
Demographics:

Homeownership



Age



BEFORE THE

PUBLIC UTILITY COMMISSION OF OREGON

UG 435

NW Natural

Exhibit of Cory A. Beck

CUSTOMER COMMUNICATIONS
EXHIBIT 906

December 17, 2021

Renewable Natural Gas

NW Natural Customer Insight Panel Study

September 2018

NW Natural

Background

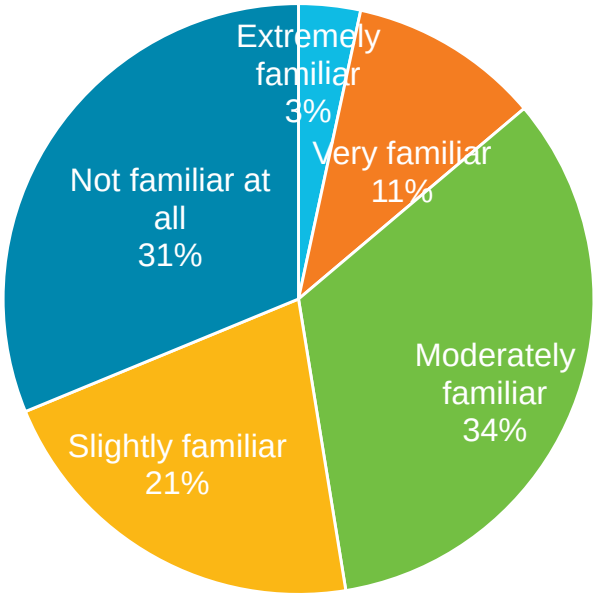
Field time: September, 2018

# of Customer Respondents: 1,893

Objective:

- Gain feedback about the RNG advertising video
- Evaluate customer willingness to pay for RNG
- Test RNG statements

Familiarity with RNG



- Only 14% respondents are extremely or very familiar with RNG, while 31% are not familiar at all.
- Awareness about RNG is consistent across different geographic areas.

BEFORE THE

PUBLIC UTILITY COMMISSION OF OREGON

UG 435

NW Natural

Exhibit of Cory A. Beck

CUSTOMER COMMUNICATIONS
EXHIBIT 907

December 17, 2021

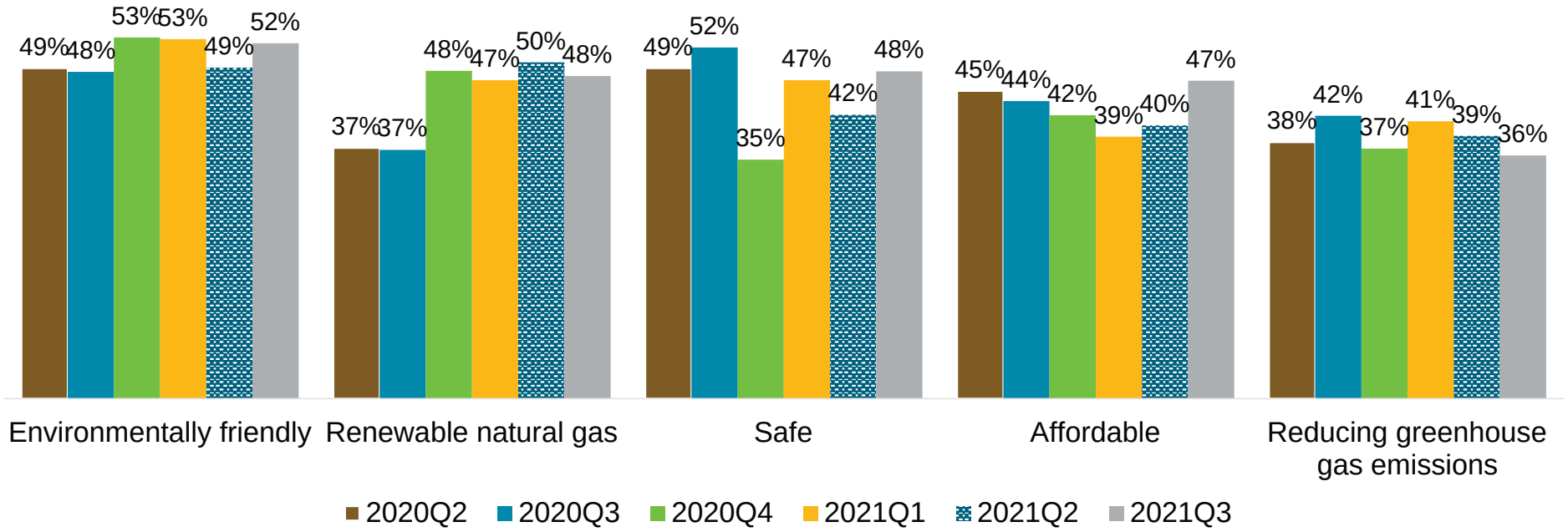
NW Natural Advertising Awareness Public Sentiment Tracking - Q3 2021

Methodology

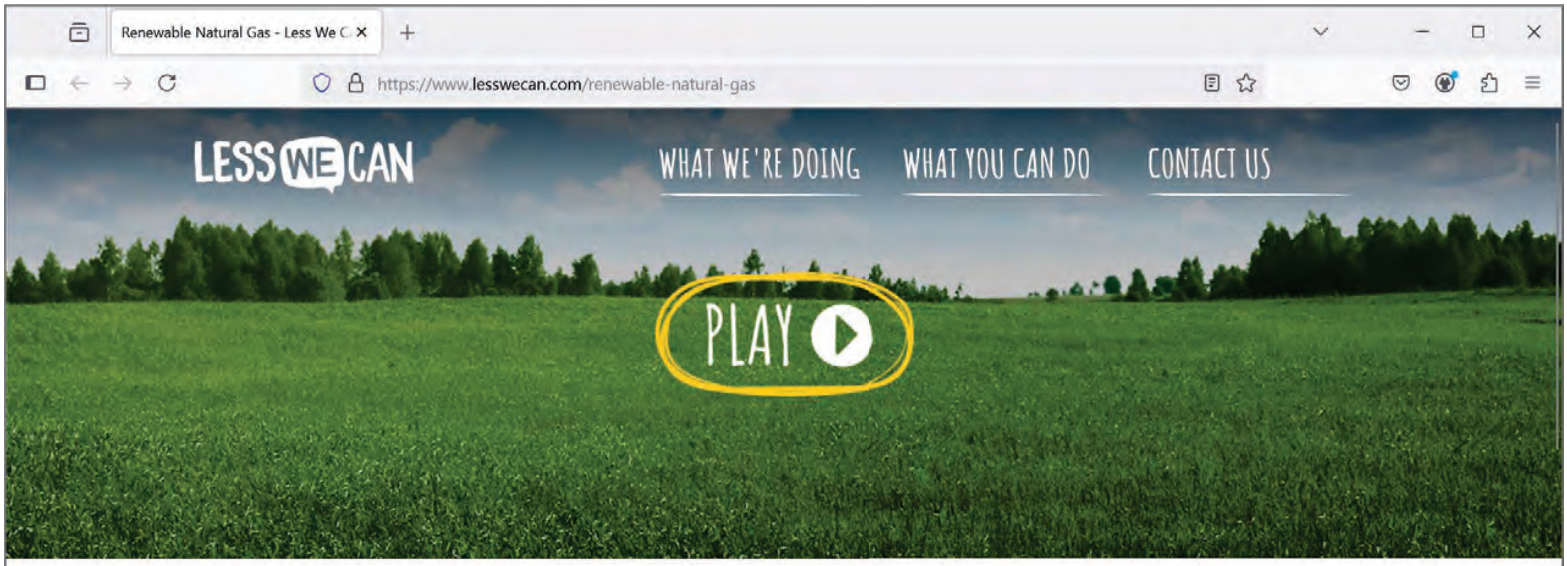
- Online research panels
- Primary residence within NW Natural service territory
- 250 respondents each quarter
  - 125 gas customers
  - 125 non-gas customers
- Repeat every three months
  - September
  - December
  - March
  - June

NW Natural Ad Message Recall

Think about the advertisement(s) you recall from NW Natural, what were the message(s) about? Mark all that apply.



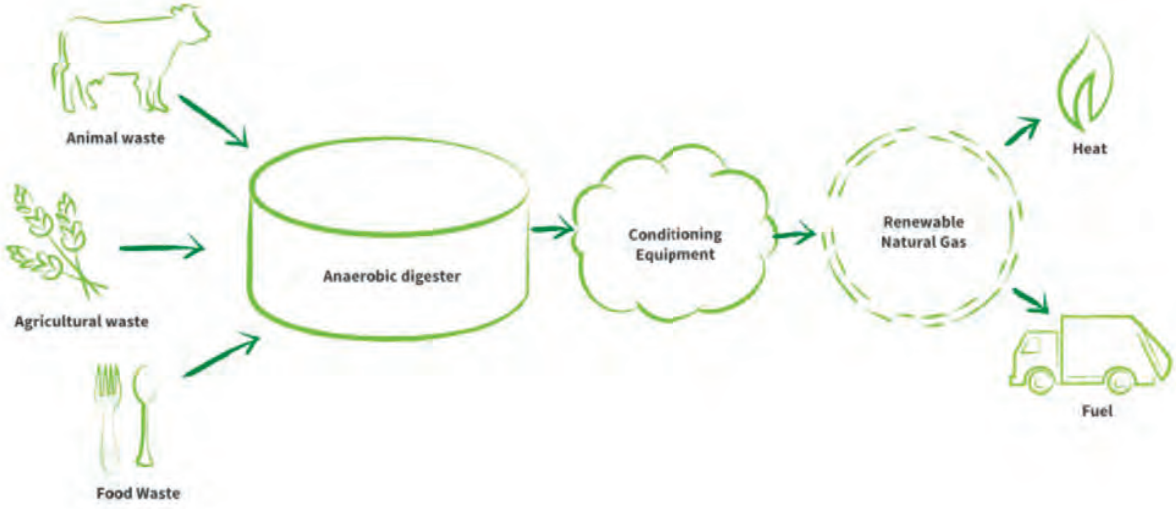

Renewable Natural Gas | Less We Can
OVER 80% CARBON REDUCTION
sustainably reducing emissions and
closing the loop on waste.



Renewable Natural Gas

Renewable natural gas is a zero-carbon resource produced from local, organic materials like food, agricultural and forestry waste, wastewater, or landfills. As these materials decompose, they produce methane. That methane can be captured, conditioned to pipeline quality and delivered in the existing pipeline system to homes and businesses where it can be used in existing appliances and equipment. It can also be used in natural gas vehicles. This process closes the loop on waste and provides a renewable energy option for the natural gas system, in the same way that wind and solar are used to generate renewable electricity.

Data for waste sources provided by: The Coalition for Renewable Natural Gas.

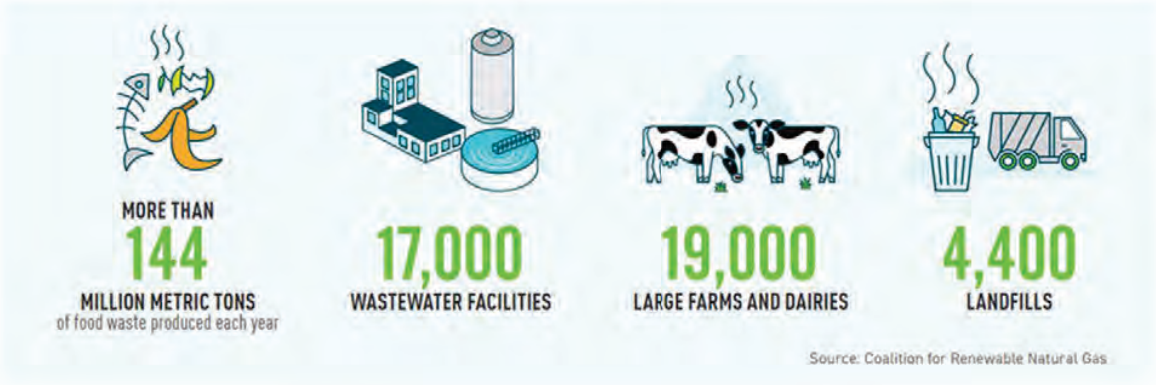


Renewable Natural Gas - Less We C

https://www.lesswecan.com/renewable-natural-gas

LESS WE CAN

WHAT WE'RE DOING WHAT YOU CAN DO CONTACT US



GET THE FACTS ABOUT RENEWABLE NATURAL GAS

RNG FACT SHEET

RENEWABLE NATURAL GAS IS ON ITS WAY HOME



How much renewable natural gas is possible?

In 2018, the Oregon Department of Energy released its first inventory of technical potential and estimated there are enough sources statewide to produce nearly 50 billion cubic feet (BCF) of renewable natural gas. That's equivalent to the total amount of natural gas used by all Oregon residential customers today.

On a national level, the technical potential for renewable natural gas is correspondingly greater. A recent study, conducted by ICF Consulting through the American Gas Foundation, estimates the technical potential of renewable natural gas supply is substantial when compared to current natural gas throughput. In fact, when looking at development costs and existing technologies, the report estimates there is enough potential renewable natural gas to achieve a 95% reduction in emissions in the residential sector.

The supply estimates from the ICF report do not include the potential for renewable hydrogen for the pipeline network or the impacts of deep energy efficiency to reduce future energy use. With these collective innovations pursued together, the company believes a carbon neutral vision for the gas pipeline network is possible.

Read the ICF study.

Check out NW Natural's plans for RNG: https://www.nwnatural.com/about-us/environment/renewable-natural-gas.



Oregon legislation creates a pathway for RNG

NW Natural worked collaboratively with legislators and renewable natural gas stakeholders to create Senate Bill 98, a groundbreaking bill that enables natural gas utilities to procure renewable natural gas on behalf of customers. The 2019 bill was passed with bipartisan support and signed into law by Oregon Governor Kate Brown. Over the next year, the Public Utility Commission of Oregon (OPUC), consumer groups and natural gas utilities worked to finalize rulemaking, which wrapped up in July

gas.



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SB 98 goes further than any other law by setting voluntary goals for adding as much as 30% renewable natural gas into the state's pipeline system by 2050. The law allows up to 5% of a utility's revenue requirement to be used to cover the incremental cost of investments in renewable natural gas infrastructure.

Similar to a renewable portfolio standard, volumetric goals have been set, as well as other parameters for the procurement:

- Voluntary targets of 5% by 2020, 10% by 2025, 15% by 2030, 20% by 2035 and 30% by 2050 are now in place.
- Utilities can invest in and own the cleaning and conditioning equipment required to bring raw biogas and landfill gas up to pipeline quality, as well as the facilities to connect to the local gas distribution system.

Further, the new law supports all forms of renewable natural gas including renewable hydrogen, which can made from excess wind, solar and hydro power. Renewable hydrogen can be used as transportation fuel, industrial processes, or blended into the natural gas pipeline system.

Learn more: https://www.nwnatural.com/about-us/environment/renewable-natural-gas.

City of Portland Wastewater Treatment Plant

NW Natural partnered with the city of Portland to put renewable natural gas — converted from the city's largest wastewater treatment plant — into our pipeline and then into vehicles. In March 2018, Commissioner Nick Fish and the Bureau of Environmental Services announced the opening of a natural gas fueling station at the City's wastewater treatment plant. The station will offer a clean-air alternative to diesel for City vehicles operating at the plant in industrial North Portland.

According to the city, this will be Portland's single largest climate action infrastructure project:

Cutting greenhouse gas emissions by 21,000 tons annually

Generating upwards of $3 million in revenue a year for the city

Replacing 1.34 million gallons of dirty diesel fuel

NW Natural will build and maintain the fueling station, as well as the pipeline monitoring and interconnection. This is an important first step toward promoting RNG in Oregon. Through partnerships like these, our pipeline system can help communities close the loop on waste, which reduces air pollution and carbon emissions, and supports diverse and innovative energy opportunities.



Potential Uses

RNG can be used in combination with or in place of conventional natural gas. It can fuel heavy-duty vehicles or be blended into our pipeline system to serve homes and businesses.

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Potential Uses

RNG can be used in combination with or in place of conventional natural gas. It can fuel heavy-duty vehicles or be blended into our pipeline system to serve homes and businesses.

RNG Advocacy

The Coalition for Renewable Natural Gas (RNG Coalition) serves as the public policy advocate and education platform for the Renewable Natural Gas industry in North America. The RNG Coalition advocates for increased development, deployment and utilization of renewable natural gas so that present and future generations will have access to this domestic, renewable, clean fuel and energy supply.

Learn more

THE COALITION FOR RENEWABLE NATURAL GAS

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PROPUBLICA

Environment

Oregon’s Largest Natural Gas Company Said It Was Going Green. It Sells as Much Fossil Fuel as Before.



Simon Bailly, special to ProPublica

by McKenzie Funk

Sept. 13, 2024, 5 a.m. EDT

ProPublica is a nonprofit newsroom that investigates abuses of power. Sign up for Dispatches, a newsletter that spotlights wrongdoing around the country, to receive our stories in your inbox every week.

Reporting Highlights

- **Soothing Message:** NW Natural’s “Less We Can” campaign promoted renewable natural gas as: “Change for the better. Without changing a thing.”
- **Failure to Deliver:** Seven years in, the company has not come close to meeting its climate goals with the alternative fuel.
- **Core Business Preserved:** The company’s actions ensured it faced few consequences while its sales of fossil natural kept going.

These highlights were written by the reporters and editors who worked on this story. Were they helpful?

Seven years ago, Oregon’s biggest natural gas company set out to convince lawmakers and residents that an abundant new source of green energy was out there, just waiting to be tapped.

Renewable natural gas is derived from decomposing organic waste at sites like landfills or dairy farms. It could, in theory, replace fossil natural gas in our pipelines with something far better for the environment.

The company, NW Natural, sent a bow-tied lobbyist to the state capital to talk up renewable natural gas, and it helped write a new law promoting development of the new fuel. The company worked with the Oregon Department of Energy to prepare a statewide inventory of potential resources. And, with more than $1 million in customer money, the company targeted those customers with ads, introducing a slogan that highlighted its commitment to lowering carbon emissions: “Less We Can.”

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These and subsequent efforts became a template for NW Natural’s industry peers — and effectively tamped down a growing push by climate activists to phase out gas use in Oregon homes and electrify everything instead.

Seven years on, the utility has not delivered on its clean-energy sales pitch. NW Natural has more retail gas customers than ever. It supplies them little, if any, renewable natural gas. It sells them as much fossil natural gas in an average year as it did before. And it wages steady battles in the courts and in local city halls to keep the gas flowing.

Internal industry documents obtained by ProPublica, coupled with an analysis of regulatory filings and testimony before the state Legislature, reveal how NW Natural pursued an approach that perpetuated its core fossil fuel business while the company painted a picture of going green.

“The story they’re telling us is simply not possible,” said former state Rep. Phil Barnhart, a Democrat who voted for some of the company’s legislation when in office.

“What they’re trying to do,” Barnhart said, “is to prevent being put out of business.”

NW Natural, for its part, says that its renewables goals remain attainable and that it firmly believes in them. But “uncertain support from policy makers and regulators along with ongoing barriers demanded by certain climate advocates” have made the company’s path needlessly difficult, spokesperson David Roy wrote in an email. “It’s baffling how a relatively small but loud group of stakeholders have been in opposition to our many efforts to lower system emissions,” he continued. Roy defended the Less We Can campaign as “providing customers with valuable information.”

NW Natural operates in a state where residents and their Democratic leaders demand real action on climate change. Unlike many other public utilities, it does not sell electricity in addition to gas; if a home switches from gas ranges and furnaces to electric, the company likely loses that customer.

> **“The story they’re telling us is simply not possible. … What they’re trying to do is to prevent being put out of business.**
>
> —Phil Barnhart, former Oregon state representative

As it navigates the new climate economy, the utility has followed a course that other companies, especially energy companies, have taken in the face of public pressure: a loud embrace of environmental goals; then a complicated, often unproven solution; then a continuation of the status quo if and when that solution falls short. The company’s actions ensured that even as it has failed to hit its targets on renewables, and as the planet has kept heating up, it has faced few consequences.

An early ad from the Less We Can campaign suggested that Oregonians — and maybe NW Natural itself — could save the world with little in the way of personal sacrifice. It shows the sun emerging from a cloud. “Renewable Natural Gas is on the way home,” it reads. “Change for the better. Without changing a thing.”

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Ads from NW Natural's "Less We Can" campaign, from a 2022 filing with the Oregon Public Utility Commission Obtained by ProPublica

The story of NW Natural's long fight against the movement to phase out gas emerges from a trove of more than 100 insider documents from the Northwest Gas Association, a trade group that includes the company and five of its regional peers. The utility watchdog Energy and Policy Institute obtained the documents — four years' worth of meeting minutes, strategy papers and PowerPoint presentations from 2017 through 2020 — and recently shared them with ProPublica.

The documents capture a moment when the natural gas industry realized it was becoming a target. Barely a decade before, fossil natural gas had been hailed as a bridge to a low-carbon future. The Obama administration promoted it as a cleaner alternative to coal and diesel, an energy source to rely on until more wind and solar could come online. Until 2010, even the Sierra Club supported it.

But pipelines carrying natural gas leaked more than was first understood, releasing uncombusted methane, a greenhouse gas more than 28 times as harmful as carbon dioxide. And North America's fracking boom was making fossil natural gas so plentiful and cheap that environmentalists increasingly worried the world would get stuck on this energy bridge forever. Going all-electric, they argued, was the way forward.

The Northwest Gas Association decided it had to confront what internal documents alternately called the "anti-fossil fuel chorus," "zero fossil fuel paradigm," "zero carbon threat" or, simply, an "existential challenge."

Board members met to plan their response one June morning in 2017 at Washington state's Skamania Lodge, where floor-to-ceiling windows frame the Cascade Mountains and Columbia River Gorge, then again for two days in September at another luxury lodge, Cedarbrook, set on 18 acres of gardens and wetlands outside Seattle.

The gas executives agreed that climate change needed to be addressed but that climate policies in the Northwest should not penalize natural gas utilities or their customers.

They adopted a new strategic plan to push a unified message: Natural gas can be compatible with a low-carbon Northwest economy, thanks in part to emerging concepts like renewable natural gas. (Today, the association and NW Natural say more specifically that policies favoring electric stoves and heat pumps won't necessarily cut emissions because the region's strained electrical system relies increasingly on gas-fired power plants.)

To sell the idea of continued gas use, the strategic plan said the industry should adopt a more “assertive advocacy style” that borrows insights from psychological research. People first make value judgments “via intuition and emotion,” the strategic plan noted, not facts. So the association would place “greater emphasis on the heart, in the public battle for the ‘hearts and minds.’”

NW Natural’s representative at the trade association, an executive named Kim Rush (Kim Heiting, at the time), gave her industry colleagues a look inside Less We Can. It was just the kind of play for the heart the strategic plan envisioned.

“It’s a theme line,” Rush’s slideshow, dated July 2017, explained. “A rallying cry. A movement. A coalition with customers. A celebration. A call to action. A clean energy stake-in-the-ground… in 3 words or less.”

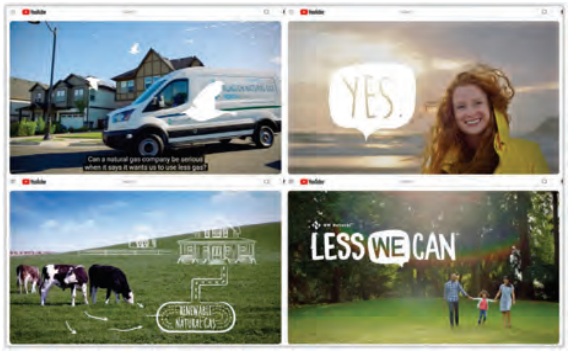
NW Natural had already road-tested the new slogan across four focus groups, via a consumer survey with 864 respondents and through television-ad concepts shown to 100 customers and 100 noncustomers. It had readied a new website, www.lesswecan.com, which featured cows and green fields and a FAQ about renewable natural gas.

One of Rush’s slides contained the campaign’s takeaways. Among them: “NW Natural and natural gas have an important, long-term role to play in our energy future”; “NW Natural has a plan, a goal and a running start”; and “Renewable natural gas is an exciting part of that plan.”

The campaign went live in fall 2017. Residents of Portland and other Oregon cities saw Less We Can TV spots, Less We Can YouTube videos, Less We Can newsletters, Less We Can billboards and Less We Can water bottles.

“Can a natural gas company be serious when it says it wants us to use less gas?” one video asked before showing a scene of a couple chopping vegetables together in the kitchen. “Can we really raise our families and lower emissions? Can we heat our homes and fight climate change? Can we expand our economy and use less?”

“Yes,” a narrator answered, as the video cut to an image of free-range cows and hand-drawn arrows pointing to the words “renewable natural gas.”



Stills from a NW Natural Less We Can video ad Screenshots by ProPublica

At the time the Less We Can campaign was getting off the ground, not a single public utility in the United States regularly piped renewable natural gas to customers’ homes. The market for such organics-based gas was mainly clean fuels programs for vehicle fleets. Residential use would be pioneering, even experimental.

But if NW Natural’s ads had gotten ahead of reality, the company was already backing legislation that

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seemed to portend widespread use of the alternative fuel.

It started earlier in 2017 with a bill in the Oregon Legislature that put forward a seemingly straightforward proposition. Oregon would take stock of its every landfill, every dairy farm, every sewage plant and every conceivable pile of woody debris: sites that could emit methane as organic matter broke down. Why not study how much was out there? The bill, a precursor to similar bills in other states, including Washington, sailed through with little opposition.

The ensuing inventory was a rigorous, yearlong process led by the Oregon Department of Energy that produced a 110-page report to the Legislature in September 2018 — which NW Natural quickly turned into a valuable talking point.

The report’s authors found that Oregon’s “technical potential” for renewable natural gas was significant: nearly 50 billion cubic feet. “That’s equivalent to the total amount of natural gas used by all Oregon residential customers today,” read a NW Natural press release. The company would go on to use variations of this phrase on its website, in annual sustainability reports and in statements to lawmakers.

But “technical potential” represents the amount Oregon could produce if money was no obstacle. NW Natural said little about another, more problematic finding: Using currently available technologies and waste streams, the state could produce just 10 billion cubic feet of gas from organic sources.

Barnhart, the former state lawmaker, says the utility’s selective interpretation of the study not only overstated the size of the resource, it left out “the real denominator” by ignoring industrial and commercial gas use. Including those and transportation customers in the equation would put total gas demand in Oregon at three times the figure NW Natural cited; the state’s potential renewable natural gas resources, using current technology, could meet less than 7% of that demand.

“NW Natural has done a very, very good job of saying true things in a way that is grossly misleading,” Barnhart said.

Roy, the company spokesperson, said it was reasonable to call out Oregon’s full theoretical capacity to make the biogas, noting that all renewable energy sources have required innovation to bring them to market. As for focusing on residential use alone, NW Natural said highlighting a single sector was a useful way to “help people understand the magnitude of the resource.”

The company leaned on the state’s most optimistic numbers in early 2019 when it returned to lawmakers with a second, far more expansive bill that was the first of its kind in the country.

The new bill aimed to address another key barrier to NW Natural’s plans for renewable natural gas. Under existing state rules, utilities had to purchase gas for their customers at the lowest available price, and gas made from biomass could be 10 times more expensive than fossil natural gas. But the bill would allow NW Natural to pursue renewable natural gas and recoup the added cost from its customers. It would be able to spend up to 5% of its annual revenues, some $40 million or more, to secure a dedicated supply.

The legislation also set out ambitious but voluntary goals for NW Natural and other large gas utilities: to produce or acquire renewable natural gas equivalent to 5% of deliveries to retail customers by 2024, 10% by 2029 and 30% by 2050.

The company sent an executive named Anna Chittum to testify before an Oregon Senate committee, and she cited the inventory almost immediately. “They found about 50 billion cubic feet of potential in the state of Oregon,” she said.

Chittum emphasized that this would be a boon not only for the planet but for Oregon businesses.

“Renewable natural gas is a local resource, first and foremost,” she continued. “We believe that Oregon entities like wastewater treatment plants and landfills, some of the dairies in our region and other

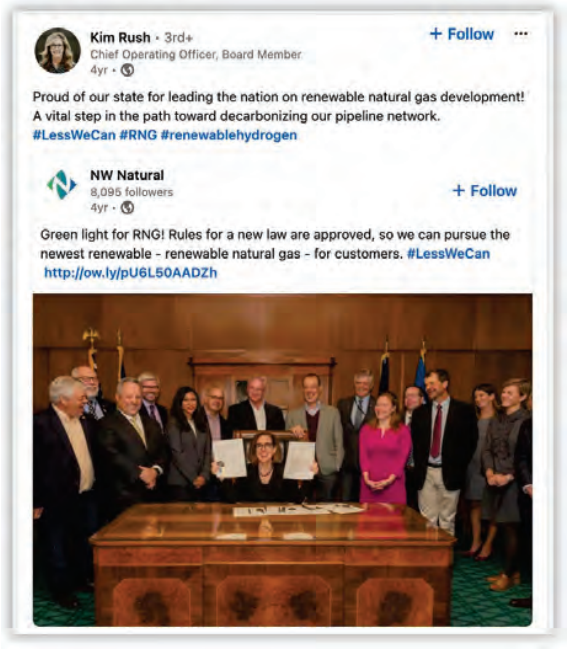
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companies, as well as our natural gas customers, will directly benefit.”

The bill passed easily and with support from both parties just a day before a partisan meltdown tanked a more controversial piece of climate legislation, an effort to create a California-style carbon cap-and-trade system. The changes called for by cap-and-trade would have been mandatory, unlike those created by the renewable gas legislation. (The company now says it wanted binding targets for renewable gas but “other stakeholders,” whom it declined to name, opposed them.)

On social media, the company’s Kim Rush soon cheered the bill’s success, sharing a photo of Oregon Gov. Kate Brown at a September 2019 signing ceremony, flanked by fellow lawmakers, NW Natural CEO David Anderson and at least three other employees of the company.

“Proud of our state for leading the nation on renewable natural gas development!” Rush wrote. “A vital step in the path toward decarbonizing our pipeline network. #LessWeCan.”



In a post on LinkedIn, Kim Rush of NW Natural shared this photo of a signing ceremony for a landmark 2019 bill allowing her utility to be one of the first in the nation to acquire renewable natural gas for customers. Oregon Gov. Kate Brown, center, posed with legislators and numerous NW Natural representatives. Anna Chittum, in pink, led the company’s renewables effort. Screenshot by ProPublica

Despite the victory lap with Oregon’s chief executive, behind the scenes NW Natural and its allies were preparing to quash measures that activist groups and government officials said were needed to reduce the gas industry’s footprint.

For this mission the Northwest Gas Association initially hired Kelly Evans, a public affairs consultant who once ran the successful reelection campaign of Washington Gov. Christine Gregoire. Evans recommended creating a formal coalition with partners outside the gas industry to lobby for continued natural gas use. It would draw in restaurant associations, labor unions, appliance manufacturers, homebuilders and more.

The winner of a million-dollar contract to build just such a coalition and launch a pro-gas campaign

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across the Northwest was the communications firm Quinn Thomas. It had helped Washington business interests win fights against cap-and-trade and a carbon tax in that state in 2015 and 2016. Now the firm pledged to “defeat policies detrimental to the natural gas industry” once again.

“When the time comes to ‘turn on’ the coalition to combat a specific proposal,” Quinn Thomas wrote in its bid, “we have extensive experience training and deploying spokespeople for public hearings.”

Evans and Quinn Thomas did not respond to ProPublica’s requests for comment.

Northwest cities including Bellingham, Washington, and Eugene, Oregon, were beginning to consider natural gas restrictions. Evans had outlined a messaging plan for such fights, one focused on affordability, reliability and resiliency, on solutions like renewable natural gas, and, most of all, on consumer choice: “There are policies being advanced to limit YOUR choice…” and “people want to take it away,” she wrote when describing the plan.

After activists in Eugene accused NW Natural of overstating Oregon’s potential for renewable natural gas, Rush prepared a letter in 2021 to the city manager repeating the consultant’s talking points — “affordability, reliability and choice” — almost verbatim.

Eugene’s City Council nevertheless passed a partial natural gas ban in early 2023. Three days later, a group formed to collect signatures to revoke the ban, its name another apparent echo of the talking points: “Eugene Residents for Energy Choice.” Belying its grassroots name, the group’s work was bankrolled by $1,014,300 in donations — all but $220 of them from NW Natural. (The council eventually revoked the ban on its own.)

Another fight loomed at the state level. With cap-and-trade dead in the Oregon Legislature, Brown had issued an executive order mandating statewide controls on greenhouse gas emissions. For much of 2020 and 2021, the state prepared new rules to put Brown’s order in action.

The Oregon Public Utility Commission, which determines which costs NW Natural can pass along to consumers, soon began to question whether renewable natural gas was the most economical way for the company to meet the new climate rules. What if money spent on renewable natural gas went instead to home weatherization or more efficient appliances? What if it wasn’t spent on natural gas at all?

NW Natural filed suit against regulations stemming from the governor’s executive order in early 2022, serving as the lead plaintiff. The company noted in a letter to its customers that it was committed to addressing climate change, citing its support for past “landmark” renewable natural gas legislation among other actions. It said its legal challenge to the state’s climate program came only “after exhausting all other options.”

NW Natural’s public messaging around renewable natural gas, meanwhile, remained upbeat. Starting in the summer of 2021, its events team visited at least two dozen street fairs and town festivals across Oregon with what it called the Cowthouse (“think cow + outhouse,” the utility explained): a fake toilet with cow legs sticking out below the door.

Those who approached the Cowthouse were challenged to a riddle: “What do a cow, a toilet and a banana peel have in common?” The answer, “RNG,” for renewable natural gas, was stamped on sugar cookies the company handed out.

As it pitched Oregonians on renewable natural gas, NW Natural had gone all out in emphasizing the vast amounts of rotting matter their state could use to produce it. In the end, the company opted not to use a bit of homegrown waste. It turned instead to other states, especially Nebraska.

Meat and poultry giant Tyson Foods kept two of its biggest beef slaughterhouses there, each week churning through tens of thousands of cows that, in turn, churned out hundreds of thousands of

pounds of manure as they awaited their end at the facility.



Cattle pens at Tyson Fresh Meats in Dakota City, Nebraska Google Maps

Rotting manure lets off methane. Rotting carcasses let off methane. Rotting garbage lets off methane. The gas is so much worse for the climate than carbon dioxide, ounce for ounce, that capturing a farm or landfill’s uncontrolled methane and purifying it to pipeline quality could, under the right circumstances, offset the harm from emissions it creates when burned.

NW Natural has described renewable natural gas as “carbon neutral” in corporate reports and a “zero-carbon resource” in news releases. But in more recent filings with Oregon regulators, the company estimates that gas from its project in Dakota City, Nebraska, while cleaner than ordinary natural gas, still packs 25% of the climate impact. At the Tyson slaughterhouse in Lexington, Nebraska, it’s 40%.

In an interview, Chittum noted that there is no universal standard to measure how much a renewable natural gas project actually helps the climate. By the standards followed by some state programs, including in California, she said the Tyson projects could possibly be certified as carbon-zero, or even carbon-negative. But it’s expensive to hire someone to do a full accounting, and Oregon doesn’t require NW Natural to prove any benefit — so “we just haven’t spent … the third-party dollars to go calculate all of that,” she said.

Methane from the Tyson operations is captured and piped not to Oregon, but to customers mainly near the two plants. NW Natural counts it as a credit against the fossil natural gas its own customers burn.

For 2023, NW Natural reported renewable natural gas from the Tyson projects, some dairy digesters in Wisconsin, a sewage treatment plant in New York and a food-waste project in Utah.

“It doesn’t matter where the renewable molecule of RNG comes from if reducing emissions is the goal,” NW Natural’s Roy told ProPublica.

NW Natural has notched a series of wins in recent months.

For the fourth year in a row, it was named one of the best gas utilities in the West by the survey company J.D. Power. For the third year in a row, it was named one of the world’s most ethical companies by Ethisphere, a for-profit company that rates other companies’ ethics for a fee.

In late December, the Oregon Court of Appeals ruled in favor of NW Natural in overturning the state climate program that resulted from Brown’s executive order.

In May, NW Natural touted the results of a poll it had commissioned: It said 72% of Oregon voters opposed bans on natural gas in new homes and buildings, a 9-point increase since 2019. “Voters’ attention is more focused on what they believe are pressing concerns, such as homelessness,” a press release said. More than 75% of respondents supported efforts promoting renewable natural gas.

But the renewable gas business has not gone as billed.

The company’s data for 2023 showed that even as it harnesses the waste streams of one of the world’s biggest meatpackers — at an anticipated cost of $38 million, if two more planned Tyson projects come online — NW Natural is falling far short of the share of its supply it said would come from the alternative fuel.

In a document filed in August with the Public Utility Commission, the company said it had slowed its procurement and did not expect to hit the goal of 5% it had set for 2024. It blamed “policy and regulatory uncertainty,” particularly the commission’s skepticism of its renewable natural gas plans.

> **“It doesn’t matter where the renewable molecule of RNG comes from if reducing emissions is the goal.**
>
> —David Roy, NW Natural spokesperson

Less We Can is taking on a new meaning.

After years of fanfare about renewable natural gas, what’s its share of NW Natural’s gas supply today?

Less than 1%.

McKenzie Funk
McKenzie Funk is a reporter at ProPublica’s Northwest hub and is based in Bellingham, Washington.
MORE STORIES



EXHIBIT 14
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SER-098



Voluntary Carbon Markets Joint Policy Statement and Principles



May 2024

Voluntary Carbon Markets Joint Policy Statement

High-integrity voluntary carbon credit markets (VCMs), as well as carbon credit markets more broadly, have the potential to support decarbonization efforts within the United States and globally, accelerating net emissions reductions while reducing their cost. They can achieve this by further unlocking capital and demand for real, additional, lasting, and independently verified emissions reductions and removals. Such markets can also provide myriad co-benefits by supporting economic development, sustaining livelihoods of local communities, and conserving land and water resources and biodiversity.

As leaders of U.S. Federal departments and offices, we have issued this statement and associated principles on VCMs because we believe they can and should play a meaningful role in facilitating global greenhouse gas emissions ("emissions") reductions and removals and helping to reach global net-zero emissions by 2050 and limit warming to 1.5 °C. While VCMs remain relatively small today, they have the potential to grow in the coming years and channel a significant amount of private capital to support the energy transition and combat climate change, with the right incentives and guardrails in place. At the same time, we believe fully achieving the potential of these markets requires further action to address challenges that have emerged, promote robust standards for carbon credit ("credit") supply and demand, improve market functioning, ensure fair and equitable treatment of all participants, and instill needed market confidence.

This statement provides observations on the current state of VCMs and their potential. It then outlines voluntary principles that U.S. market participants should embrace as they engage in these markets. These principles will also guide how the U.S. Government engages with VCMs. While the focus of this statement is on VCMs, much of the content speaks to the development and operation of carbon credit markets generally.

* * *

Widespread confidence in the integrity of credited emissions reductions and removals is critical for VCMs to reach their potential. Unlike many commodities, the physical delivery of the tonnes of emissions reductions or removals that underpin credits is not typically taken by the buyer, but instead by the earth's atmosphere. Though decarbonization outcomes can and *must* be accurately

measured or estimated, they generally cannot be directly examined by the buyer.[1] As a result, credit integrity is paramount.

However, researchers, journalists, and other observers have found that several popular crediting methodologies and activities that rely on them have not produced the decarbonization outcomes they claim. Important questions have emerged about how to ensure that VCMs genuinely drive additional decarbonization action (rather than reward what would have happened anyway) that is sustained over time and does not simply shift emissions elsewhere. In addition, barriers to market participation have inhibited market efficiency and opportunity.

Put simply, stakeholders must be certain that one credit truly represents one tonne of carbon dioxide (or its equivalent) reduced or removed from the atmosphere, beyond what would have otherwise occurred.

At the activity level, we observe mounting attention to the need for measures that ensure credited activities respect local communities and human rights and identify, mitigate, and address any negative environmental or social impacts. Moreover, policymakers require technical assurances that these activities *and* their credited results are compatible with ambitious emissions pathways, national climate change policies, and sustainable development goals. In addition, clearer rules of the road would enhance market certainty for credit buyers and businesses and individuals undertaking activities to supply this market.

Concerns about the credible *use* of credits (for example, to address a portion of Scope 3 emissions) must also be adequately addressed for VCMs to truly drive decarbonization. Stakeholders have raised concerns regarding the integrity of credit demand—including that some purchasers may prioritize price and quantity over credit integrity, use credits to offset their emissions in place of feasible direct abatement actions, or make resulting claims about their emissions performance that are not credible and grounded in science.

These demand integrity concerns must also be addressed in order for credits to truly drive decarbonization outcomes that are complementary to the other ambitious actions and policies required to combat climate change.

1 Unlike what happens with commodities that can be sampled or measured on delivery, such as soybeans or nickel, a credit buyer cannot consistently and easily ascertain quality through examination of physically delivered emissions reductions or removals. While the credits themselves can be delivered to the buyer, the underlying asset (emissions reduction or removal) does not typically transfer to the buyer's possession and use.

Fortunately, we see a renewed wave of civil society, corporate, and government resolve to address these challenges. Notable developments include:

- The emergence of multi-stakeholder initiatives that have set out standards and principles for high-integrity credit development and responsible credit use;
- Improvements to key crediting methodologies, their guiding standards, and tracking systems;
- New and improved analytical products and services that aim to strengthen credit transparency and quality comparability, such as carbon credit rating services;
- Technologies to support robust measurement, monitoring, reporting, and verification (MMRV);
- Multilateral rules, guidance, and procedures developed under Article 6 of the Paris Agreement and the international aviation sector's global carbon market-based measure, which shape certified emissions reductions and removals that often find their home in VCMs[2]; and
- Advances in the development of market infrastructure to improve transparency and liquidity, as well as the integrity of market transactions.

High-functioning VCMs can connect buyers to cost-effective, high-quality emissions reduction and removal credits, creating meaningful economic opportunities for credit sellers. They can also help private sector buyers drive additional climate ambition today, through large-scale efforts such as nature-based decarbonization. Demand signals in VCMs can also help technologies for carbon removal and long-term storage become more cost effective in the future and support greater purchase volumes of associated carbon removal credits.[3] Consistent with science-based

2 Examples include the G7's Principles for High-Integrity Carbon Markets; multilateral standards such as the International Civil Aviation Organization's Emissions Units Criteria that underpin the Carbon Offsetting and Reduction Scheme for International Aviation (ICAO CORSIA), which guides approval of credits for use under CORSIA; the crediting mechanism established under Article 6.4 of the Paris Agreement; and agreed guidance for countries to robustly account for and report at a principle-level on the environmental and social integrity of emissions reductions or removals that they authorize and transfer to meet their Paris Agreement emissions targets.

3 According to the Intergovernmental Panel on Climate Change (IPCC) (Sixth Assessment Report, Working Group III), "carbon dioxide removal (CDR) is necessary to achieve net zero CO2 and GHG emissions both globally and nationally, counterbalancing 'hard-to-abate' residual emissions. CDR is also an essential element of scenarios that limit warming to 1.5°C or below 2°C (>67%) by 2100…." Several stakeholders recommend that, over time, credit buyers allocate more spend to removals with durable storage as the price of such activities decreases (see, e.g., Oxford Principles for Net Zero Aligned Carbon Offsetting, 2024 revision).

pathways, we expect removal credits to constitute a growing share of the market over time.

To help advance this outcome, the U.S. Government is playing an increasingly important role in carbon credit markets. For example, regulators have incorporated carbon credit disclosure standards into securities regulation and proposed guidance aimed at safeguarding the integrity of voluntary carbon credit derivatives and associated trading platforms, including by promoting the use of high-integrity credits. Land management agencies are making significant investments in improved soils, grassland, and forest data at home and abroad that will reduce measurement uncertainty and support the integrity of VCMs. The U.S. Government also continues to support investments in robust enabling environments for projects and programs generating credits through high-integrity approaches, including in developing countries. Federal efforts have and will continue to make vital contributions to the integrity and functioning of VCMs by supporting critical market infrastructure and advancing responsible market practices.

To demonstrate our commitment to high-integrity VCMs, we are today publishing a fact sheet with relevant federal government actions, outlining how the U.S. Government has and will continue to shape this market in line with these principles. These efforts complement—and are not in place of—other actions the United States and other governments are taking to combat the climate crisis, including preparing and implementing ambitious 1.5°C-aligned nationally determined contributions under the Paris Agreement and investing in technologies and practices to decarbonize high-emitting sectors—including the power, transportation, buildings, industry, and agriculture sectors.

We encourage the U.S. private sector and other stakeholders in the carbon credit value chain to responsibly participate in VCMs, consistent with the principles below. These principles recognize the need for: credit integrity, including protections regarding climate and environmental justice (i.e., "supply integrity") (Principles 1 and 2); credible credit use (i.e., "demand integrity") (Principles 3, 4, and 5); and market-level integrity, including facilitating efficient market participation and lowering transaction costs (Principles 6 and 7). These principles are non-exhaustive, and they seek to elevate concepts already developed by civil society, international organizations, governments, and multilateral fora. We are publishing

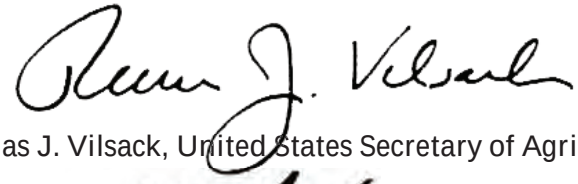
these principles primarily to inform and support ongoing efforts to address the challenges and opportunities associated with VCMs.[4]

We applaud organizations that are engaging with these markets in ways consistent with these principles and encourage more to do so. In the meantime, the U.S. Government will continue working to tackle the global climate crisis while expanding economic opportunities for Americans and our partners across the world.

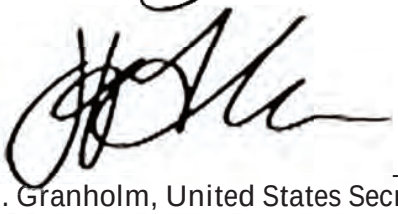
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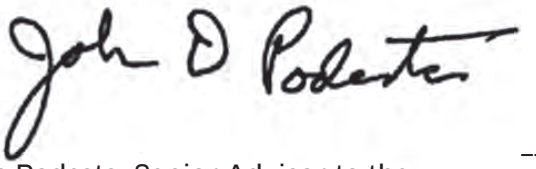
Janet L. Yellen, United States Secretary of the Treasury



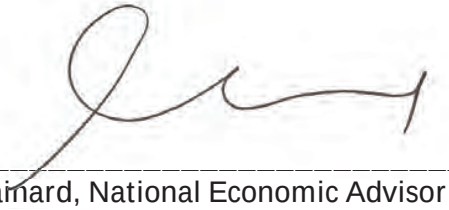
Thomas J. Vilsack, United States Secretary of Agriculture



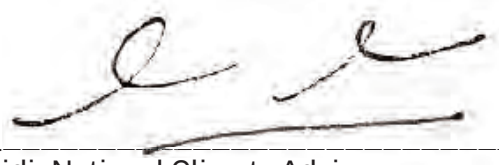
Jennifer M. Granholm, United States Secretary of Energy



John Podesta, Senior Advisor to the
President for International Climate Policy



Lael Brainard, National Economic Advisor



Ali Zaidi, National Climate Advisor

4 We recognize that the concepts in these principles may, in some instances, be applicable to carbon credit markets more generally. International carbon market negotiations are ongoing and nothing in this statement prejudges the outcome of those negotiations.

Principles for Responsible Participation in Voluntary Carbon Markets (VCMs)

1. Carbon credits and the activities that generate them should meet credible atmospheric integrity standards and represent real decarbonization.[5]

Activities that generate credits and the credits themselves should be certified to a robust standard for activity design and MMRV of emission reductions or removals, applying procedures that deliver on core integrity principles, including these elements:

- Additional. The activity would not have occurred in the absence of the incentives of the crediting mechanism and is not required by law or regulation.
- Unique. One credit corresponds to only one tonne of carbon dioxide (or its equivalent) reduced or removed from the atmosphere and is not double-issued.
- Real and Quantifiable. Claimed emissions reductions or removals represent genuine atmospheric impact that is determined in a transparent and replicable manner using robust, credible methodologies. Relevant activities are designed to prevent emissions from occurring, being shifted, or intensifying beyond their boundaries as a result of the activity ("leakage").
- Validation and verification. Activity design is validated, and results are verified, by a qualified, accredited, independent third party.
- Permanence of greenhouse gas benefits. The emissions removed or reduced will be kept out of the atmosphere for a specified period of time during which any credited results that are released back into the atmosphere are fully remediated.
- Robust baselines. Baselines for emissions reduction and removal activities are based on rigorous methodologies that avoid over-crediting, prioritizing the use of performance benchmarks where applicable, and that evolve over

5 Concepts in Principles 1-2 draw from existing best practices for credit certification standards, including key concepts from the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), the G7's Principles for High-Integrity Carbon Markets; the Commodity Futures Trading Commission's proposed guidance regarding the listing of voluntary carbon credit derivative contracts (December 2023), the Integrity Council for Voluntary Carbon Markets (IC-VCM), and relevant decisions under Article 6 of the Paris Agreement.

time to reflect advancements in national climate policy, emissions pathways and decarbonization practices, and technology.

Some criteria, such as those for avoiding emissions leakage or for ensuring additionality of more capital-intensive infrastructure and policy alignment, can be more readily achieved through sector-wide or jurisdictional-scale approaches to crediting and nesting of project-level activities into jurisdictional-scale programs and accounting.[6] Buyers and sellers should account for these differences in their market activities.[7]

Credit certification standards bodies—which register activities and issue credits on the basis of verification against standards and approved methodologies—play an essential role in ensuring credit integrity. These bodies and their standards should:

- Effectively govern their standards to ensure transparency, accountability, responsiveness (e.g., to evolving best practice, science, and policy landscapes), and, when applicable, the longevity necessary to responsibly certify removal activities;
- Operate or make use of a registry to transparently track the attributes, issuance, ownership, and retirement and/or cancellation of credits, coordinating where appropriate to ensure that activities are not registered with more than one registry;
- Ensure robust MMRV of emissions reductions and removals;
- Have procedures in place to effectively address double-counting risks, including to prevent double-registration and -issuance, to prohibit double-selling and -use, and to transparently reinforce multi-stakeholder efforts to avoid double-claiming as applicable;
- Require publicly available and accessible, comprehensive, and transparent information on crediting activities;
- Ensure verification of reported emissions reductions and removals, and validation of the relevant project or program, is undertaken by independent, accredited third parties;
- Ensure their governance procedures address real or perceived conflicts of interest in relation to the standards body's own governance, as well as in

6 See, for example, recent guidance from the Tropical Forest Credit Integrity (*Tropical Forest Credit Integrity Guide for Companies Version 2*, 2023).

7 Some project-level procedures, such as tools for project-based additionality testing, are not directly applicable to sector-scale or jurisdictional programs. As a result, attention should be paid to alternative approaches to robust baseline-setting and related measures that collectively support confidence in the integrity of these larger-scale programs' results.

registry administration and in validation and verification activities; and

- Support a robust enabling environment for equitable participation, including by projects and programs in developing countries.

2. Credit-generating activities should avoid environmental and social harm and should, where applicable, support co-benefits and transparent and inclusive benefits-sharing.

Climate and environmental justice impacts of credited activities are important to understand, and project and program developers should seek to avoid negative externalities for the communities in which they operate. Safeguards should be put in place to identify and avoid potential adverse impacts on people and the environment, including as they relate to local communities, land use and tenure rights, food security, nature, and biodiversity. They should proactively monitor and mitigate any adverse impacts that remain. Where appropriate, they should also seek to enhance positive impacts. To that end, the identification and delivery of verified "co-benefits" associated with credit-generating projects and programs, such as sustainable economic development and increased biodiversity, are encouraged. Projects and programs, including any benefits-sharing arrangements, should also be designed and implemented in consultation with—and, where applicable, in partnership with—relevant stakeholders and respect Free, Prior and Informed Consent where it applies.

3. Corporate buyers that use credits ("credit users")[8] should prioritize measurable emissions reductions within their own value chains.

"Use of credits" pertains to the purchase and cancellation or retirement[9] of credits, and any subsequent public-facing "claim" based on the climate impact of those credits (see Principle 5). Achieving long-term climate goals requires transforming business models across economies. Accordingly, credit users should use VCMs to complement measurable within-value-chain emissions reductions as part of their net-zero strategies. Such efforts should include taking inventory of Scope 1, 2, and 3 emissions and regularly reporting them, setting near-term emissions reduction targets and longer-term net-zero targets, and adopting and executing transition plans. Where feasible, companies should work collaboratively with their

8 "Credit users" are a subset of "credit buyers." A "credit user" not only purchases a credit, but also retires it.

9 Credit retirement refers to the act of redeeming or using a credit (e.g., toward a claim or sustainability goal) and subsequently removing that credit from market circulation so that it cannot be resold or claimed by another entity. It is distinct from (and can only happen after) purchasing or acquiring a credit. There are several reasons an entity may purchase but not retire a credit. For example, an entity may purchase a credit for purposes of investment or as part of a market-making function.

suppliers on efforts to undertake decarbonization activities, including in ways that are mutually beneficial. This could include directly funding within-value-chain decarbonization activities (e.g., by insetting or purchasing supplier-generated credits). Credit users seeking further guidance on credible approaches to climate strategies that reduce value chain emissions should refer to Treasury's Principles for Net-Zero Financing and Investment or similarly robust guidance.

4. Credit users should publicly disclose the nature of purchased and retired credits.

Disclosure of purchased, cancelled, or retired credits[10] should be made on at least an annual basis and include details that enable outside observers and relevant stakeholders to assess whether purchased and retired credits are of high integrity and avoid negative environmental and social impacts (i.e., relating to the parameters discussed in Principles 1 and 2).[11] In some cases, adherence to this principle may involve voluntary public disclosures exceeding those required by applicable law.

Credit users should determine the optimal format in which to publish information about purchased and retired credits in light of evolving practices while seeking to disclose information in a standardized manner that enables comparability across credit users. Regardless of format, such information should be made easily accessible to stakeholders, such as in a regular publication. Credit users should consider reporting to resources that aggregate and publicly disseminate this information.

5. Public claims[12] by credit users should accurately reflect the climate impact of retired credits and should only rely on credits that meet high integrity standards.

Demand-side credit standards, codes of conduct, and other frameworks that define what constitutes an appropriate claim are evolving. As these frameworks continue to develop, they should increase incentives to purchase high-integrity credits on an ongoing, regular basis without reducing incentives for companies to expeditiously pursue within-value-chain emissions reductions. For example, those

10 Retired credits refer to credits that were redeemed or used (e.g., toward a claim or sustainability goal) and subsequently removed from market circulation.

11 For example, disclosed information on purchased, cancelled, or retired credits should include the relevant certification standard name, project name, project ID, host country, credit vintage, methodology, and project type, as well as whether the credits met relevant third-party principles for integrity.

12 Public claims by credit users often extend beyond disclosure (see Principle 4) and are intended to communicate the users' commitment to emissions mitigation efforts.

developing such frameworks should consider incorporating approaches that allow companies to count credits toward a portion of their Scope 3 emissions associated with science-aligned emission pathways in cases where it would be unreasonable to expect a company to be able to fully abate those emissions within a given timeframe.[13]

Claims should rely only on the impact of credits that meet current high integrity standards at the time the claim is made and that avoid adverse impacts (see Principles 1 and 2). These claims should be in the context of a corporate climate strategy that prioritizes within-value-chain emissions reductions (see Principle 3). Credited emissions reductions or removals that have been reversed, revealed as inflated, or exposed as failing environmental or social safeguards should not be used as the basis for any claims unless remediation, such as replacement by buffer pool credits, has taken place.

6. Market participants should contribute to efforts that improve market integrity.[14]

While issues of market integrity are distinct from those of credit and demand integrity (i.e., those referenced in Principles 1–5), improvements to the latter can positively impact the former. The market structures underpinning VCMs are quickly evolving. Today, credits are traded both through private contracts (over-the-counter) and on exchanges. While not pre-supposing any particular market structure, stakeholders should seek to improve market functionality for a variety of market participants. This includes: creating incentives to develop and purchase high-integrity credits; improving transparency and the publicly available data of credit-generating projects and programs, including transaction volumes and prices; promoting fair and equitable treatment of suppliers involved in credit generation, including fair distribution of revenue; controlling for potential conflicts of interest among VCM service providers; preventing fraud and manipulation by bad-faith actors undermining credit integrity; providing for the appropriate accounting and legal treatment of credits and resolving any related ambiguities; enabling global interoperability of relevant standards, market infrastructure, and reporting; supporting robust and equitable participation in these markets,

13 The Voluntary Carbon Markets Integrity Initiative (VCMI), which has issued guidance (the "Claims Code of Practice") on how companies can make voluntary use of credits as part of credible science-aligned net-zero decarbonization pathways, has published a "beta version" of a Scope 3 Flexibility Claim under which companies could use credits to bridge the gap between their scope 3 emissions and a science-aligned pathway. The Science Based Targets initiative (SBTi) has announced it "will consult [...] on the revision of the scope 3 framework, including the responsible use of environmental attribute certificates in target setting."

14 In the context of VCMs, "market integrity" refers to issues other than credit and demand integrity that affect the functionality and health of these markets; this includes issues related to credit price transparency, liquidity, and price dispersion.

including by projects and programs in developing countries; and taking other measures separate from credit and demand integrity to improve the functioning and health of these markets. Addressing these issues will require collaboration between the private sector, civil society, and the public sector.

7. Policymakers and market participants should facilitate efficient market participation and seek to lower transaction costs.

Expanding market opportunities for credible credit providers is an important component of the United States' climate strategy. Addressing the barriers (e.g., high transaction costs) facing credit-generating suppliers—including farmers, ranchers, forest owners, small businesses, developing country jurisdictions, and others—can improve the overall ability of VCMs to produce high-integrity credits that advance decarbonization and generate economic opportunity. Policymakers and buyers should consider ways to enhance market certainty for credit providers undertaking long-term and often significant investments in decarbonization that plan to rely on VCM revenues to finance their actions. Where appropriate, including for land-based credits, the use of scientifically robust models—including those supported by government investment—can help reduce MMRV costs and improve credit integrity when paired with appropriate safeguards.

Agriculture and Aquaculture: Food for Thought

October 2020

When ruminant animals such as goats, sheep, and especially cattle digest their food, it gets processed in their systems by way of fermentation. This process breaks the food down over time and produces methane, a powerful greenhouse gas that contributes to our rapidly warming planet when expelled to the atmosphere in the traditional biologic routes; i.e., flatulence or burps. Researchers have found that 37% of methane emissions from human activity are the direct result of our livestock and agricultural practices.

The problem becomes more apparent considering the sheer scale of livestock raised for meat production throughout the world. A single cow produces between 154 to 264 pounds of methane gas per year. Not counting for the emissions of any other livestock, 1.5 billion cattle, raised specifically for meat production worldwide, emit at least 231 billion pounds of methane into the methane into the atmosphere each year (Our World in Data). Because methane is such a potent greenhouse gas (see Box), there is great interest in curbing its production. A number of companies and start-ups are investing in plant-based products that mimic meat's flavor and and texture, while others focus on lab-grown

Methane is More Potent than CO2?

Gases that trap heat in the atmosphere are called greenhouse gases. Water vapor is the most abundant greenhouse gas in our atmosphere, but carbon dioxide and methane are the principal greenhouse

alternatives, both of which would lessen the need for animal farms and their associated emissions if more widely adopted.

The hunt is already on to investigate whether similar results can be produced from aquaculture products in animal feed with a type of red seaweed, Asparagopsis taxiformis, showing the most promise. This seemingly innocuous plant could one day lower methane emissions by as much as 98% in cattle with only a 0.20 percent addition to that animal's feed per day. While not as efficient, other aquaculture products such as Asparagopsis armata, native to the Northeastern Atlantic and Mediterranean Sea, have been shown to be effective in dairy cows, reducing their methane emissions by 67% with only a 1% seaweed mix. Although results are promising, scaling up production as a widely available feed additive is still in the developing stages, as is the ability to introduce and market these products. Nevertheless, the aquaculture industry is well-positioned to enter this innovative field in a way that will one day provide local and global benefits by offering a reproducible emissions reduction technology at an affordable price. Regional aquaculture ventures – based on regional availability of effective seaweed varieties – could become local sources of feed additive, supporting local economies worldwide and keeping production costs low.

Aquaculture's potential goes well beyond animal feed, especially in the Southeast New England Program (SNEP) region where it is still a nascent industry reliant on oysters for greatest economic value. According to the Massachusetts Aquaculture Association, aquaculture ranks fifth in value of all

gases contributing to our increasingly warm planet; and their impacts vary greatly. By percentage, carbon dioxide (CO_2) is the major component of greenhouse gases, but methane is the second highest and its impacts are both more potent and less widely understood. Although it persists in the atmosphere for much less time than CO_2, its warming impact is much more powerful. "According to Drew Shindell, a professor of climate sciences at Duke University's Nicholas School of the Environment, three factors determine the power of a gas to alter the earth's climate: how efficiently it absorbs heat, how long it lasts in the atmosphere, and how much of it is present. As it turns out, methane performs

agricultural products and is among the state's fastest growing agricultural sectors, with oyster farming alone ranking third in value of all landed seafood in Massachusetts. Beyond their value as food, shellfish (primarily oysters) are also seen as a low-tech nitrogen reduction intervention for waterbodies impaired by nutrients. Although the continued efficacy of this application is still being quantified, oyster reefs have a demonstrated effect on water quality, filtering up to 50 gallons of water per oyster per day. Oysters can remove nitrogen (stored in their tissue and shells) and promote higher denitrification in the sediment. Oyster reefs also promote biodiversity by serving as shelters for thousands of species. In an ongoing SNEP-funded project, a team at UMass Dartmouth has been determining baseline conditions at Cockeast Pond – a saltwater pond with a high level of nitrogen enrichment – in order to measure the total potential restorative impacts of newly deployed oyster populations. After compiling nearly a decade's-worth of data, the team plans to apply their technique for water quality restoration via oyster aquaculture to several areas along the Westport River.

pretty well on all fronts" (NRDC). Though CO_2 is more abundant and stays in our atmosphere longer, methane is more damaging. In fact, as a greenhouse gas, methane is 28-times more powerful than CO_2 on a 100-year timescale and 80-times more powerful over 20 years.

In the Town of Orleans, oyster aquaculture is being used as a nitrogen reduction approach in Lonnie's Pond, where excess nitrogen has impaired the water and habitat. Aquaculture at this site will help the town meet the goal of reducing roughly 660 pounds of Nitrogen per year (lbs-N/yr) as part of the town's overall Nitrogen Management Plan. Partnered with Ward AquaFarms, the town deployed approximately 1.5 million oysters into Lonnie's Pond in 2019 with the goal of removing 165 lbs-N/yr through oyster farming, constituting 25% nitrogen removal of the total 660 lbs-N/yr target. The oysters were deployed in mid-July and harvested in December. The total net removal was 136 lbs-N, fulfilling 82.5% of the goal. Previous years showed that longer deployments can increase nitrogen removal, therefore future considerations should include increasing the deployment time by deploying earlier.

As these industries continue to develop throughout the SNEP region, there are additional opportunities to innovate. For aquaculture oysters, questions remain as to how much of an increase in supply the wild oyster market can absorb without seeing an equal increase in demand. Although the potential benefits of oystering are large, new uses for the increased supply will be required to allow the aquaculture industry to continue its expansion. One potential avenue could include their sale as nutrient-rich fertilizers, which could negate some of the need for new fertilizers currently being brought into the region. Throughout Cape Cod, fertilizer use is the second highest controllable source of nutrient pollution in coastal embayments (Cape Cod Commission).

In aquaculture production, multi-crop ventures that cultivate oysters, salmon, and kelp within the same area in a closed-loop production process are known as Integrated Multi-Trophic Aquaculture (IMTA); species grown in this system require zero inputs (no fertilizers) and benefit from cohabitation of other species within the system. The presence of kelp provides habitat and shelter for fish and shellfish, whose excrement then nurtures the kelp. In addition, IMTA allows for increased nutrient removal, as seaweed can sequester five times more carbon than land plants and uses dissolved inorganic nitrogen to grow. Studies from the Lindell Lab at Woods Hole Institution of Oceanography have shown that a multi-crop farming of seaweed in conjunction with oysters can remove more nitrogen from impaired waters than a traditional mono-crop venture alone. This innovative aquaculture concept can help to rebuild ecosystems and can be used to restore nutrient impaired waters, while also creating a lucrative industry for famers in the area without requiring much additional space.

The potential to expand aquaculture throughout the SNEP region is significant. with numerous designs to emulate and markets to tap. Benefits abound from improving regional water quality, to supporting agricultural ventures while simultaneously reducing powerful greenhouse gases emitted from livestock or strengthening local economies in the sale of aquaculture products. Not to mention the knock-on benefits associated with cleaner water and air. Aquaculture is a nascent industry that deserves further research and local investment – this is just the beginning.

Last updated on January 15, 2025

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November 10, 2021

CERTIFIED MAIL: 7018 1830 0001 5906 3022

Farm Power Misty Meadow LLC
c/o Jason Mitchell
9550 Hurliman Hill Rd.
Tillamook, OR 97141

Re: Notice of Civil Penalty Assessment and Order
Case No. AQ-ACDP-NWR-2021-132

DEQ is committed to balancing its vital obligation to enforce the law and protect the environment with a consideration of the dramatic disruptions to public health and the economy caused by the COVID-19 outbreak. We understand the outbreak may impact your ability to timely appeal, pay the assessed civil penalty, or comply with this order. You may submit to DEQ documentation identifying whether COVID-19-related disruption affects your ability to comply with this order. Visit our webpage https://www.oregon.gov/deq/Pages/covid-19.aspx for more information about documenting specific COVID-19 disruptions your facility may be encountering and how that affects your ability to comply. DEQ will exercise reasonable discretion regarding settlement of this order.

This letter is to inform you that the Oregon Department of Environmental Quality (DEQ) has issued you a civil penalty of $18,701 for violations of the air contaminant discharge permit for your agricultural waste-to-energy facility located at 23 Evergreen Drive, Tillamook, Oregon 97141. Specifically, during 13% of your total operating time between July 3, 2019 and May 4, 2021, you failed to operate a flare at the facility to combust biogas being vented through the flare to the atmosphere. In addition, you failed to accurately report flare malfunctions to DEQ in your annual reports required under the permit. The attached Notice of Civil Penalty Assessment and Order (Notice) also cites you, without penalty, for failing to install a warning signal connected to the flare and failing to keep records of flare malfunctions.

DEQ issued this penalty because the proper operation of the flare is essential to control emissions when there is excess digester gas venting through the flare. When there is no flame present at the flare, air pollutants including volatile organic compounds (VOC) and methane are emitted at uncontrolled rates. VOCs are ozone precursors that lead to the formation of smog and methane is a potent greenhouse gas that contributes to climate change. In addition, without combustion, hydrogen sulfide (H2S) emissions from the anaerobic digester are high and produce foul odors that can be a public nuisance.

DEQ is in the process of reviewing protocols for reporting the uncontrolled biogas emissions under OAR Chapter 340, Division 215 and will follow up with you regarding how to amend your greenhouse gas reports submitted to DEQ. Any violation of the Greenhouse Gas Reporting Program requirements will be addressed separately by the DEQ Office of Greenhouse Gas Programs.

Included in Section IV of the attached Notice is an order requiring you to:

- Within 10 days of the order becoming final by operation of law or on appeal, submit to DEQ for approval a Notice to Construct, to construct a shield tower around the flare at the Facility; and
- Within 60 days of DEQ's approval of the Notice to Construct, complete construction of the shield and submit a Notice of Completion to DEQ according to OAR 340-210-0240(3), including photographs demonstrating that a shield tower has been constructed around the flare as described in the Notice to Construct.

$8,007 of the civil penalty represents the economic benefit you gained by avoiding the cost of installing a shield tower for the flare. If you complete the shield tower installation, DEQ will consider recalculating the costs as delayed rather than avoided and will reduce the civil penalty accordingly.

DEQ appreciates your efforts to ensure that the violations would not be repeated by installing a text messaging warning system connected to the flare. DEQ considered these efforts when determining the amount of civil penalty.

If you wish to appeal this matter, DEQ must receive a request for a hearing within 20 calendar days from your receipt of this letter. The hearing request must be in writing. Send your request to DEQ Office of Compliance and Enforcement:

Via mail – 700 NE Multnomah Street, Suite 600, Portland, Oregon 97232
Via email – DEQappeals@deq.state.or.us
Via fax – 503-229-6762

Once DEQ receives your request, we will arrange to meet with you to discuss this matter. If DEQ does not receive a timely written hearing request, the penalty will become due. Alternatively, you can pay the penalty by sending a check or money order to the above address.

The attached Notice further details DEQ's reasons for issuing the penalty and provides further instructions for appealing the penalty. Please review and refer to it when discussing this case with DEQ.

DEQ may allow you to resolve part of your penalty through the completion of a Supplemental Environmental Project (SEP). SEPs are environmental improvement projects that you sponsor instead of paying a penalty. Further information is available by calling the number below or at http://www.oregon.gov/deq/Regulations/Pages/SEP.aspx.

DEQ's rules are available at http://www.oregon.gov/deq/Regulations/Pages/Statutes.aspx or by calling the number below.

If you have any questions, please contact Becka Puskas at 503-229-5058 or toll free in Oregon at 800-452-4011, extension 5058.

Sincerely,

Kieran O'Donnell, Manager
Office of Compliance and Enforcement

Enclosures

cc: Kevin Mass, President, Farm Power Misty Meadow LLC, P.O. Box 1228, Mount Vernon, WA 98273
Weston Li, DEQ
Matt Hoffman, DEQ
Accounting, DEQ
Donald Hendrix, AQ, DEQ
US EPA, Region 10, c/o Katie McClintock, 1200 Sixth Avenue, Seattle, WA 98101

BEFORE THE ENVIRONMENTAL QUALITY COMMISSION

OF THE STATE OF OREGON

IN THE MATTER OF: FARM POWER MISTY MEADOW LLC, Respondent.	))))	NOTICE OF CIVIL PENALTY ASSESSMENT AND ORDER CASE NO. AQ/ACDP-NWR-2021-132

I. AUTHORITY

The Department of Environmental Quality (DEQ) issues this Notice of Civil Penalty Assessment and Order (Notice) pursuant to Oregon Revised Statutes (ORS) 468.100, ORS 468.126 through 468.140, ORS Chapters 183 and 468A, and Oregon Administrative Rules (OAR) Chapter 340, Divisions 011, 012, 200, 214 and 216.

II. FINDINGS OF FACT

1. Respondent owns and operates an anaerobic digester facility that produces electricity by combusting biogas generated from agricultural waste, located at 23 Evergreen Drive, Tillamook, Oregon 97141 (the Facility).

2. On June 13, 2019, DEQ issued Air Contaminant Discharge Permit No. 29-0008-SI-01 (the Permit) to Respondent. The Permit authorizes Respondent to discharge air contaminants associated with its operation of the Facility in conformance with the requirements, limitations and conditions set forth in the Permit.

3. The Permit was in effect at all material times.

4. A flare is operated at the Facility to combust biogas when the Facility's engine is down for maintenance or when biogas is produced in quantities greater than the facility can safely process. Biogas that is not combusted is rich in methane (a greenhouse gas) and in volatile organic compounds (VOCs).

5. Condition 3.3 of the Permit requires Respondent to operate the flare at all times when biogas may be vented to it.

6. Condition 3.3.b of the Permit requires that a flame must be present at all times when biogas is routed to the flare.

7. Respondent measures and records the flow of biogas through the flare. In addition, the flare is fitted with a thermocouple that measures temperature continuously and the temperature data are recorded at fifteen minute intervals.

8. Between July 3, 2019 and May 4, 2021, there were a total of 8,385 data points, each representing a fifteen-minute interval, when there was biogas flowing to the flare, but the temperature of the flare was less than 200 degrees Fahrenheit, indicating no combustion was taking place. The 8,385 fifteen-minute periods translates to 13 percent of the Facility's total operating time during that time period or a total of 87 equivalent days.

9. Condition 3.3.d of the Permit requires that the flare be connected to a warning signal that is visible to the plant operator. Additionally, any instance of malfunction must be recorded, including date/times, cause, and remedial actions taken.

10. From on or before July 3, 2019 to October 13, 2021, the flare was not connected to a warning signal that was visible to the plant operator and Respondent did not keep any records of flare malfunctions.

11. On or about October 13, 2021, Respondent installed a text-messaging system to alert the plant operator to flare malfunction.

12. Condition 7.1.g of the Permit requires that Respondent keep records of any instance of malfunction of the flare and remedial actions taken, upon occurrence.

13. Respondent did not keep any records of flare malfunctions other than the records of biogas flow and thermocouple temperature described in Section II, Paragraph 7, above. Respondent did not record any remedial actions until August 31, 2021, when Respondent submitted a flare operation plan to DEQ.

14. Condition 8.4.a.iii of the Permit requires Respondent to submit in its Annual Report to DEQ flare malfunctions, dates/times, causes and remedial actions taken.

15. In its 2019 Annual Report for the Facility, submitted to DEQ on February 10, 2020, Respondent stated that there were no flare malfunctions in 2019.

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16. In its 2020 Annual Report for the Facility, submitted to DEQ on February 17, 2021, Respondent stated that there were no flare malfunctions in 2020.

III. CONCLUSIONS

1. Between July 3, 2019 and May 4, 2021, Respondent violated Condition 3.3.b of the Permit and ORS 468A.045(2) by failing to ensure that a flame was present at all times when biogas was routed to the flare, as described in Section II, Paragraphs 4-8, above. Specifically, during 13% of the total operating time between July 3, 2019 and May 4, 2021 (the equivalent of 87 days), Respondent failed to ensure that a flame was present in the flare to combust the biogas that was flowing through it, and thus released uncontrolled biogas into the atmosphere. These are Class II violations according to OAR 340-012-0054(2)(b). DEQ hereby assesses an $11,501 civil penalty for these violations.

2. From on or before July 3, 2019 to October 13, 2021, Respondent violated Condition 3.3.d of the Permit by failing to keep the Facility's flare connected to a warning signal that is visible to the plant operator, as described in Section II, Paragraphs 9-11, above. These are Class II violations according to OAR 340-012-0054(2)(b). DEQ has not assessed a civil penalty for these violations.

3. Respondent violated Condition 7.1.g of the Permit by failing to keep records of flare malfunctions, as described in Section II, Paragraphs 12-13, above. This is a Class II violation according to OAR 340-012-0054(2)(b). DEQ has not assessed a civil penalty for this violation.

4. Respondent violated Condition 8.4.a.iii of the Permit by submitting inaccurate annual reports to DEQ, as described in Section II, Paragraphs 7-8 and 14-16, above. Specifically, Respondent's 2019 and 2020 Annual Reports stated that there were no flare malfunctions during those years, despite the fact that the flare was not operating for 13% of the total operating time between July 3, 2019 and May 4, 2021. These are Class I violations according to OAR 340-012-0053(1)(b). DEQ hereby assesses a $7,200 civil penalty for these violations.

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IV. ORDER TO PAY CIVIL PENALTY AND TO COMPLY

Based upon the foregoing FINDINGS OF FACTS AND CONCLUSIONS, Respondent is hereby ORDERED TO:

1. Pay a total civil penalty of $18,701. The determination of the civil penalties are attached as Exhibits 1 and 2 and are incorporated as part of this Notice.

If you do not file a request for hearing as set forth in Section V below, your check or money order must be made payable to "**State Treasurer, State of Oregon**" and sent to the **DEQ, Business Office, 700 NE Multnomah Street, Suite 600, Portland, Oregon 97232**.

2. Within 10 days of this order becoming final by operation of law or on appeal, submit to DEQ for approval a Notice to Construct, to construct a shield tower around the flare at the Facility.

3. Within 60 days of DEQ's approval of the Notice to Construct described in Section IV, Paragraph 2, above, complete construction of the shield and submit a Notice of Completion to DEQ according to OAR 340-210-0240(3), including photographs demonstrating that a shield tower has been constructed around the flare as described in the Notice to Construct.

4. Written documentation demonstrating compliance with the requirements in Section IV, Paragraphs 2 and 3 above must be sent to Weston Li at weston.li@deq.state.or.us.

V. NOTICE OF RIGHT TO REQUEST A CONTESTED CASE HEARING

You have a right to a contested case hearing on this Notice, if you request one in writing. DEQ must receive your request for hearing **within 20 calendar days** from the date you receive this Notice. If you have any affirmative defenses or wish to dispute any allegations of fact in this Notice or attached exhibits, you must do so in your request for hearing, as factual matters not denied will be considered admitted, and failure to raise a defense will be a waiver of the defense. (See OAR 340-011-0530 for further information about requests for hearing.) You must send your request to: **DEQ, Office of Compliance and Enforcement, 700 NE Multnomah Street, Suite 600, Portland, Oregon 97232**, fax it to **503-229-6762** or email it to **DEQappeals@deq.state.or.us**. An administrative law judge employed by the Office of Administrative Hearings will conduct the hearing, according to ORS Chapter 183, OAR Chapter 340, Division 011 and OAR 137-003-0501 to 0700. You have a right to be

represented by an attorney at the hearing, however you are not required to be. If you are an individual, you may represent yourself. If you are a corporation, partnership, limited liability company, unincorporated association, trust or government body, you must be represented by an attorney or a duly authorized representative, as set forth in OAR 137-003-0555.

Active duty Service members have a right to stay proceedings under the federal Service Members Civil Relief Act. For more information contact the Oregon State Bar at 1-800-452-8260, the Oregon Military Department at 503-584-3571, or the nearest United States Armed Forces Legal Assistance Office through http://legalassistance.law.af.mil. The Oregon Military Department does not have a toll free telephone number.

If you fail to file a timely request for hearing, the Notice will become a final order by default without further action by DEQ, as per OAR 340-011-0535(1). If you do request a hearing but later withdraw your request, fail to attend the hearing or notify DEQ that you will not be attending the hearing, DEQ will issue a final order by default pursuant to OAR 340-011-0535(3). DEQ designates the relevant portions of its files, including information submitted by you, as the record for purposes of proving a prima facie case.

11/10/2021
Date

Kieran O'Donnell, Manager
Office of Compliance and Enforcement

EXHIBIT 1

FINDINGS AND DETERMINATION OF RESPONDENT'S CIVIL PENALTY
PURSUANT TO OREGON ADMINISTRATIVE RULE (OAR) 340-012-0045

VIOLATION NO. 1 — Failing to ensure that a flame was present at all times when biogas was routed to the flare, in violation of Condition 3.3.b of the Permit and ORS 468A.045(2).

CLASSIFICATION: This is a Class II violation pursuant to OAR 340-012-0054(2)(b).

MAGNITUDE: The magnitude of the violation is moderate pursuant to OAR 340-012-0130(1), as there is no selected magnitude specified in OAR 340-012-0135 applicable to this violation, and the information reasonably available to DEQ does not indicate a minor or major magnitude.

CIVIL PENALTY FORMULA: The formula for determining the amount of penalty of each violation is: $BP + [(0.1 \times BP) \times (P + H + O + M + C)] + EB$

"BP" is the base penalty, which is $2,000 for a Class II, moderate magnitude violation in the matrix listed in OAR 340-012-0140(3)(b)(B)(ii) and applicable pursuant to OAR 340-012-0140(3)(a)(A) because Respondent has an ACDP permit.

"P" is whether Respondent has any prior significant actions, as defined in OAR 340-012-0030(19), in the same media as the violation at issue that occurred at a facility owned or operated by the same Respondent, and receives a value of 0 according to OAR 340-012-0145(2)(a)(A), because there are no prior significant actions.

"H" is Respondent's history of correcting prior significant actions, and receives a value of 0 according to OAR 340-012-0145(3)(c) because there is no prior history.

"O" is whether the violation was repeated or ongoing, and receives a value of 4 according to OAR 340-012-0145(4)(d) because there were more than 28 occurrences of the violation. Each day is a separate occurrence of the violation. Respondent failed to ensure that a flame was present at all times when biogas was routed to the flare during 13% of the total operating time between at least July 3, 2019 and May 4, 2021.

"M" is the mental state of the Respondent, and receives a value of 4 according to OAR 340-012-0145(5)(c) because Respondent's conduct was negligent. According to OAR 340-012-0030(15), negligent means the respondent failed to take reasonable care to avoid a foreseeable risk of conduct constituting or resulting in a violation. In this case, Respondent failed to ensure that the flare was connected to a warning signal that is visible to the plant operator, as required under Condition 3.3.d. the Permit. Such a warning signal would have alerted operators regarding flare malfunctions. Thus, Respondent failed to take reasonable care to avoid a foreseeable risk of conduct resulting in a violation Permit

Condition 3.3.b, which requires that a flame must be present at all times when biogas is routed to the flare.

"C" is Respondent's efforts to correct or mitigate the violation, and receives a value of -1 according to OAR 340-012-0145(6)(e) because Respondent made reasonable efforts to ensure that the violation would not be repeated. On or about October 13, 2021, Respondent put in place a text messaging warning system to alert operators whenever biogas flow vents to the flare but the thermocouple temperature is too low (currently set at 275 degrees Fahrenheit). When the operators receive a text, they check the digester interface to see if the automatic igniter re-lights the flare (shown by the temperature rising again). If the igniter does not re-light the flare, the operator will manually re-light the flare with a propane torch and check the igniter for proper function.

"EB" is the approximate dollar value of the benefit gained and the costs avoided or delayed as a result of the Respondent's noncompliance. It is designed to "level the playing field" by taking away any economic advantage the entity gained and to deter potential violators from deciding it is cheaper to violate and pay the penalty than to pay the costs of compliance. In this case, "EB" receives a value of $8,101. Of this total, $94 is the amount Respondent gained by delaying spending approximately $1,000 to install a text messaging warning system connected to the flare. The warning system should have been installed on or before July 3, 2019, but was actually installed on or about October 13, 2021. $8,007 is the amount Respondent gained by avoiding spending approximately $10,000 to install a shield tower around the flare. The shield tower should have been installed on or before July 3, 2019. As of the date of this Notice, the shield tower has not yet been installed. This "EB" was calculated pursuant to OAR 340-012-0150(1) using the U.S. Environmental Protection Agency's BEN computer model.

PENALTY CALCULATION: Penalty = BP + [(0.1 x BP) x (P + H + O + M + C)] + EB
= $2,000 + [(0.1 x $2,000) x (0 + 0 + 4 + 4 + -1)] + $8,101
= $2,000 + ($200 x 7) + $8,101
= $2,000 + $1,400 + $8,101
= $11,501

EXHIBIT 2

FINDINGS AND DETERMINATION OF RESPONDENT'S CIVIL PENALTY
PURSUANT TO OREGON ADMINISTRATIVE RULE (OAR) 340-012-0045

VIOLATION NO. 4 — Submitting inaccurate annual reports to DEQ, in violation of Condition 8.4.a.iii of the Permit.

CLASSIFICATION: — This is a Class I violation pursuant to OAR 340-012-0053(1)(b).

MAGNITUDE: — The magnitude of the violation is moderate pursuant to OAR 340-012-0130(1), as there is no selected magnitude specified in OAR 340-012-0135 applicable to this violation, and the information reasonably available to DEQ does not indicate a minor or major magnitude.

CIVIL PENALTY FORMULA: — The formula for determining the amount of penalty of each violation is: $BP + [(0.1 \times BP) \times (P + H + O + M + C)] + EB$

"BP" is the base penalty, which is $4,000 for a Class I, moderate magnitude violation in the matrix listed in OAR 340-012-0140(3)(b)(B)(ii) and applicable pursuant to OAR 340-012-0140(3)(a)(A) because Respondent has an ACDP permit.

"P" is whether Respondent has any prior significant actions, as defined in OAR 340-012-0030(19), in the same media as the violation at issue that occurred at a facility owned or operated by the same Respondent, and receives a value of 0 according to OAR 340-012-0145(2)(a)(A), because there are no prior significant actions.

"H" is Respondent's history of correcting prior significant actions, and receives a value of 0 according to OAR 340-012-0145(3)(c) because there is no prior history.

"O" is whether the violation was repeated or ongoing, and receives a value of 2 according to OAR 340-012-0145(4)(b) because there were more than one but less than seven occurrences of the violation. Respondent submitted inaccurate annual reports to DEQ for 2019 and 2020. Therefore, there were two occurrences of the violation.

"M" is the mental state of the Respondent, and receives a value of 4 according to OAR 340-012-0145(5)(c) because Respondent's conduct was negligent. According to OAR 340-012-0030(15), negligent means the respondent failed to take reasonable care to avoid a foreseeable risk of conduct constituting or resulting in a violation. In this case, Respondent failed to ensure that the flare was connected to a warning signal that is visible to the plant operator, as required under Condition 3.3.d. the Permit. Such a warning signal would have alerted operators regarding flare malfunctions. Even without a warning signal, Respondent could have checked its records of biogas flow to the flare and the temperature of the flare thermocouple to determine if flare malfunctions had occurred. Thus, Respondent failed to take reasonable care to avoid a foreseeable risk of conduct

resulting in a violation of Condition 8.4.a.iii of the Permit, which requires Respondent to submit information to DEQ about flare malfunctions in its annual reports.

"C" is Respondent's efforts to correct or mitigate the violation, and receives a value of 2 according to OAR 340-012-0145(6)(g) because Respondent did not address the violation as described in paragraphs (6)(a) through (6)(e) and the facts do not support a finding under paragraph (6)(f).

"EB" is the approximate dollar value of the benefit gained and the costs avoided or delayed as a result of the Respondent's noncompliance. It is designed to "level the playing field" by taking away any economic advantage the entity gained and to deter potential violators from deciding it is cheaper to violate and pay the penalty than to pay the costs of compliance. In this case, "EB" receives a value of $0 because DEQ has insufficient information to calculate an economic benefit for this violation.

PENALTY CALCULATION: Penalty = BP + [(0.1 x BP) x (P + H + O + M + C)] + EB
= $4,000 + [(0.1 x $4,000) x (0 + 0 + 2 + 4 + 2)] + $0
= $4,000 + ($400 x 8) + $0
= $4,000 + $3,200 + $0
= $7,200

Oregon
Kate Brown, Governor

Department of Environmental Quality
Office of Compliance and Enforcement
700 NE Multnomah Street, Suite 600
Portland, OR 97232-4100
(503) 229-5696
FAX (503) 229-5100
TTY 711

April 12, 2022

CERTIFIED MAIL: 7018 1830 0001 5906 3466

Farm Power Misty Meadow LLC
c/o Jason Mitchell, Registered Agent
9550 Hurliman Hill Rd.
Tillamook, OR 97141

Re: Notice of Civil Penalty Assessment and Order
Case No. AQ-ACDP-NWR-2022-002

This letter is to inform you that the Oregon Department of Environmental Quality (DEQ) has issued you a civil penalty of $20,369 for violations of the air contaminant discharge permit for your agricultural waste-to-energy facility located at 2075 McCormick Loop Drive, Tillamook, Oregon 97141. Specifically, between January 1, 2019, and November 9, 2021, you failed to consistently operate a flare at the facility to combust biogas being vented through the flare to the atmosphere. In addition, you failed to accurately report flare malfunctions to DEQ in your annual reports required under the permit. The attached Notice of Civil Penalty Assessment and Order (Notice) also cites you, without penalty, for failing to keep records of flare malfunctions.

DEQ issued this penalty because the proper operation of the flare is essential to control emissions when there is excess digester gas venting through the flare. When there is no flame present at the flare, air pollutants including volatile organic compounds (VOC) and methane are emitted at uncontrolled rates. VOCs are ozone precursors that lead to the formation of smog and methane is a potent greenhouse gas that contributes to climate change. In addition, without combustion, hydrogen sulfide (H2S) emissions from the anaerobic digester are high and produce foul odors that can be a public nuisance.

DEQ is in the process of reviewing protocols for reporting the uncontrolled biogas emissions under OAR Chapter 340, Division 215 and will follow up with you regarding how to amend your greenhouse gas reports submitted to DEQ. Any violation of the Greenhouse Gas Reporting Program requirements will be addressed separately by the DEQ Office of Greenhouse Gas Programs.

Included in Section IV of the attached Notice is an order requiring you to:

- Within 30 days of the order becoming final by operation of law or on appeal, submit to DEQ for approval a Notice to Construct, to construct a shield tower around the flare at the Facility; and
- Within 60 days of DEQ's approval of the Notice to Construct, complete construction of the shield and submit a Notice of Completion to DEQ according to OAR 340-210-0240(3), including photographs demonstrating that a shield tower has been constructed around the flare as described in the Notice to Construct.

$8,769 of the civil penalty represents the economic benefit you gained by avoiding the cost of installing a shield tower for the flare. If you complete the shield tower installation, DEQ will consider recalculating the costs as delayed rather than avoided and will reduce the civil penalty accordingly.

DEQ appreciates your efforts to provide accurate information about your flare operations and emissions to DEQ when requested in January 2022. DEQ considered these efforts when determining the amount of civil penalty.

If you wish to appeal this matter, DEQ must receive a request for a hearing within 20 calendar days from your receipt of this letter. The hearing request must be in writing. Send your request to DEQ Office of Compliance and Enforcement:

Via mail – 700 NE Multnomah Street, Suite 600, Portland, Oregon 97232
Via email – DEQappeals@deq.state.or.us
Via fax – 503-229-6762

Once DEQ receives your request, we will arrange to meet with you to discuss this matter. If DEQ does not receive a timely written hearing request, the penalty will become due. Alternatively, you can pay the penalty by sending a check or money order to the above address.

The attached Notice further details DEQ's reasons for issuing the penalty and provides further instructions for appealing the penalty. Please review and refer to it when discussing this case with DEQ.

DEQ may allow you to resolve part of your penalty through the completion of a Supplemental Environmental Project (SEP). SEPs are environmental improvement projects that you sponsor instead of paying a penalty. Further information is available by calling the number below or at http://www.oregon.gov/deq/Regulations/Pages/SEP.aspx.

DEQ's rules are available at http://www.oregon.gov/deq/Regulations/Pages/Statutes.aspx or by calling the number below.

If you have any questions, please contact Becka Puskas at 503-229-5058 or toll free in Oregon at 800-452-4011, extension 5058.

Sincerely,

Kieran O'Donnell, Manager
Office of Compliance and Enforcement

Enclosures
cc: Kevin Mass, President, Farm Power Tillamook LLC, P.O. Box 1228, Mount Vernon, WA 98273
Weston Li, DEQ
Matt Davis, DEQ
Jackson Dougan, DEQ
Accounting, DEQ
Donald Hendrix, AQ, DEQ

BEFORE THE ENVIRONMENTAL QUALITY COMMISSION

OF THE STATE OF OREGON

IN THE MATTER OF: FARM POWER TILLAMOOK LLC, Respondent.	))))	NOTICE OF CIVIL PENALTY ASSESSMENT AND ORDER CASE NO. AQ/ACDP-NWR-2022-022

I. AUTHORITY

The Department of Environmental Quality (DEQ) issues this Notice of Civil Penalty Assessment and Order (Notice) pursuant to Oregon Revised Statutes (ORS) 468.100, ORS 468.126 through 468.140, ORS Chapters 183 and 468A, and Oregon Administrative Rules (OAR) Chapter 340, Divisions 011, 012, 200, 214 and 216.

II. FINDINGS OF FACT

1. Respondent owns and operates an anaerobic digester facility located at 2075 McCormick Loop Drive, Tillamook, Oregon 97141 (the Facility). The Facility produces electricity by using a generator to combust biogas from agricultural waste.

2. On May 24, 2011, DEQ issued Air Contaminant Discharge Permit No. 29-0003-SI-01 (the Permit) to Respondent. The Permit authorizes Respondent to discharge air contaminants associated with its operation of the Facility in conformance with the requirements, limitations and conditions set forth in the Permit.

3. The Permit was in effect at all material times.

4. A flare is operated at the Facility to combust biogas when the Facility's generator is down for maintenance or when biogas is produced in quantities greater than the generator can safely process. Biogas that is not combusted is rich in methane (a greenhouse gas) and in volatile organic compounds (VOCs). It also contains hydrogen sulfide (H_2S), which can produce foul odors.

5. Condition 3.1 of the Permit requires Respondent ensure that all biogas produced by the anaerobic digester is combusted in the generator or the flare.

6. Condition 3.3 of the Permit requires Respondent to operate the flare at all times when biogas may be vented to it.

7. Respondent measures and records the flow of biogas through the flare. In addition, the flare is fitted with a thermocouple that measures temperature continuously and the temperature data are recorded at fifteen-minute intervals.

8. Between January 1, 2019, and November 9, 2021, the flare was operated intermittently when there was biogas flowing to the flare. More specifically, there were a total of 13,402 data points, each representing a fifteen-minute interval, when there was biogas flowing to the flare, but the temperature of the flare was less than 200 degrees Fahrenheit, indicating no combustion was taking place. The 13,402 fifteen-minute periods translate to approximately 13.5 percent of the Facility's total operating time or a total of 141 equivalent days between January 1, 2019, and November 9, 2021. Exhibit 3, attached and incorporated into this Notice, shows this information by calendar month.

9. Condition 3.3.a of the Permit requires that the flare be connected to a warning signal that is visible to the plant operator. Additionally, any instance of malfunction must be recorded, including date/times, cause, and remedial actions taken.

10. From on or before January 1, 2019, to November 9, 2021, the flare was connected to a warning signal that was visible to the Facility operators. However, the Facility operators disregarded the warning signal indicating flare malfunctions. In addition, Respondent did not keep any records of flare malfunctions.

11. Condition 8.1.e of the Permit requires that Respondent keep records of any instance of malfunction of the flare, dates/times of the malfunctions, and remedial actions taken, upon occurrence.

12. Respondent did not keep any records of flare malfunctions other than the records of biogas flow and thermocouple temperature described in Section II, Paragraph 7, above.

13. Respondent did not record any remedial actions until on or about February 7, 2022, when Respondent submitted a letter to DEQ indicating the Respondent intended to construct a shield around the flare to prevent it from failing to light or being blown out in windy conditions. Respondent also stated that it had retrained its operators to respond to text-message warning signal connected to the flare.

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14. As of the date of this Notice, Respondent has not submitted a Notice to Construct a shield around the flare.

15. Condition 9.2.a.iii of the Permit requires Respondent to submit in its Annual Report to DEQ flare malfunctions, dates/times, causes and remedial actions taken.

16. In its 2019 Annual Report for the Facility, submitted to DEQ in February 2020, Respondent stated that there were no flare malfunctions in 2019.

17. In its 2020 Annual Report for the Facility, submitted to DEQ in February 2021, Respondent stated that there were no flare malfunctions in 2020.

III. CONCLUSIONS

1. Between January 1, 2019, and November 9, 2021, Respondent violated Condition 3.3 the Permit and ORS 468A.045(2) by failing to operate the flare at all times when biogas was vented to it, as described in Section II, Paragraphs 4-8, above. Specifically, during 13.5 percent of the total operating time between January 1, 2019, and November 9, 2021 (the equivalent of 141 days), Respondent failed to ensure that a flame was present in the flare to combust the biogas that was flowing through it, and thus released uncontrolled biogas into the atmosphere. These are Class II violations according to OAR 340-012-0054(2)(b). DEQ hereby assesses an $13,569 civil penalty for these violations.

2. Respondent violated Condition 8.1.e of the Permit by failing to keep records of flare malfunctions, as described in Section II, Paragraphs 11-12, above. This is a Class II violation according to OAR 340-012-0054(2)(b). DEQ has not assessed a civil penalty for this violation.

3. Respondent violated Condition 9.2.a.iii of the Permit by submitting inaccurate annual reports to DEQ, as described in Section II, Paragraphs 7-8 and 13-15, above. Specifically, Respondent's 2019 and 2020 Annual Reports stated that there were no flare malfunctions during those years, despite the fact that the flare was not operating intermittently during those years and warning signals were being delivered to the Facility personnel. These are Class I violations according to OAR 340-012-0053(1)(b). DEQ hereby assesses a $6,800 civil penalty for these violations.

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IV. ORDER TO PAY CIVIL PENALTY AND TO COMPLY

Based upon the foregoing FINDINGS OF FACTS AND CONCLUSIONS, Respondent is hereby ORDERED TO:

1. Pay a total civil penalty of $20,369. The determination of the civil penalties are attached as Exhibits 1 and 2 and are incorporated as part of this Notice.

If you do not file a request for hearing as set forth in Section V below, your check or money order must be made payable to "**State Treasurer, State of Oregon**" and sent to the **DEQ, Business Office, 700 NE Multnomah Street, Suite 600, Portland, Oregon 97232**.

2. Within 30 days of this order becoming final by operation of law or on appeal, submit to DEQ for approval a Notice to Construct, to construct a shield tower around the flare at the Facility.

3. Within 60 days of DEQ's approval of the Notice to Construct described in Section IV, Paragraph 2, above, complete construction of the shield and submit a Notice of Completion to DEQ according to OAR 340-210-0240(3), including photographs demonstrating that a shield tower has been constructed around the flare as described in the Notice to Construct.

4. Written documentation demonstrating compliance with the requirements in Section IV, Paragraphs 2 and 3 above must be sent to Weston Li at weston.li@deq.oregon.gov.

V. NOTICE OF RIGHT TO REQUEST A CONTESTED CASE HEARING

You have a right to a contested case hearing on this Notice, if you request one in writing. DEQ must receive your request for hearing **within 20 calendar days** from the date you receive this Notice. If you have any affirmative defenses or wish to dispute any allegations of fact in this Notice or attached exhibits, you must do so in your request for hearing, as factual matters not denied will be considered admitted, and failure to raise a defense will be a waiver of the defense. (See OAR 340-011-0530 for further information about requests for hearing.) You must send your request to: **DEQ, Office of Compliance and Enforcement, 700 NE Multnomah Street, Suite 600, Portland, Oregon 97232**, fax it to **503-229-6762** or email it to **DEQappeals@deq.state.or.us**. An administrative law judge employed by the Office of Administrative Hearings will conduct the hearing, according to ORS Chapter 183, OAR Chapter 340, Division 011 and OAR 137-003-0501 to 0700. You have a right to be

represented by an attorney at the hearing, however you are not required to be. If you are an individual, you may represent yourself. If you are a corporation, partnership, limited liability company, unincorporated association, trust or government body, you must be represented by an attorney or a duly authorized representative, as set forth in OAR 137-003-0555.

Active duty Service members have a right to stay proceedings under the federal Service Members Civil Relief Act. For more information contact the Oregon State Bar at 1-800-452-8260, the Oregon Military Department at 503-584-3571, or the nearest United States Armed Forces Legal Assistance Office through http://legalassistance.law.af.mil. The Oregon Military Department does not have a toll free telephone number.

If you fail to file a timely request for hearing, the Notice will become a final order by default without further action by DEQ, as per OAR 340-011-0535(1). If you do request a hearing but later withdraw your request, fail to attend the hearing or notify DEQ that you will not be attending the hearing, DEQ will issue a final order by default pursuant to OAR 340-011-0535(3). DEQ designates the relevant portions of its files, including information submitted by you, as the record for purposes of proving a prima facie case.

4/12/2022
Date

Kieran O'Donnell, Manager
Office of Compliance and Enforcement

EXHIBIT 1

FINDINGS AND DETERMINATION OF RESPONDENT'S CIVIL PENALTY
PURSUANT TO OREGON ADMINISTRATIVE RULE (OAR) 340-012-0045

VIOLATION NO. 1 — Failing to operate the flare at all times when biogas was vented to it, in violation of Condition 3.3 the Permit and ORS 468A.045(2).

CLASSIFICATION: This is a Class II violation pursuant to OAR 340-012-0054(2)(b).

MAGNITUDE: The magnitude of the violation is moderate pursuant to OAR 340-012-0130(1), as there is no selected magnitude specified in OAR 340-012-0135 applicable to this violation, and the information reasonably available to DEQ does not indicate a minor or major magnitude.

CIVIL PENALTY FORMULA: The formula for determining the amount of penalty of each violation is: $BP + [(0.1 \times BP) \times (P + H + O + M + C)] + EB$

"BP" is the base penalty, which is $2,000 for a Class II, moderate magnitude violation in the matrix listed in OAR 340-012-0140(3)(b)(B)(ii) and applicable pursuant to OAR 340-012-0140(3)(a)(A) because Respondent has an ACDP permit.

"P" is whether Respondent has any prior significant actions, as defined in OAR 340-012-0030(19), in the same media as the violation at issue that occurred at a facility owned or operated by the same Respondent, and receives a value of 0 according to OAR 340-012-0145(2)(a)(A), because there are no prior significant actions.

"H" is Respondent's history of correcting prior significant actions, and receives a value of 0 according to OAR 340-012-0145(3)(c) because there is no prior history.

"O" is whether the violation was repeated or ongoing, and receives a value of 4 according to OAR 340-012-0145(4)(d) because there were more than 28 occurrences of the violation. Each day is a separate occurrence of the violation. Respondent failed to ensure that a flame was present at all times when biogas was routed to the flare during approximately 13.5% of the total operating time (141 equivalent days) between at least January 1, 2019 and November 9, 2021.

"M" is the mental state of the Respondent, and receives a value of 8 according to OAR 340-012-0145(5)(d) because Respondent's conduct was reckless. According to OAR 340-012-0030(20), reckless means the respondent consciously disregarded a substantial and unjustifiable risk that the result would occur or that the circumstance existed. The risk must be of such a nature and degree that disregarding that risk constituted a gross deviation from the standard of care a reasonable person would observe in that situation. Respondent's operators ignored warning signals sent when the flare was malfunctioning. The alarm system connected for the flare is required for the express purpose of helping Respondent

ensure that the flare is operated on a continuous basis, and to allow Respondent to respond promptly to any flare malfunctions. In addition, Respondent Farm Power Tillamook LLC has the same Registered Agent, Member, and Manager as Farm Power Misty Meadows LLC (FPMM), which owns and operates a similar waste-to-energy facility at another location in Tillamook, Oregon, also permitted with an air quality permit by DEQ. The FPMM facility also has a flare that is required to be operated any time that biogas if flowing to the flare. DEQ notified FPMM in April 2021 of a complaint regarding its Facility. On July 27, 2021, after obtaining flare data from FPMM, DEQ issued Pre-Enforcement Notice No. 2021-PEN-6428, notifying FPMM of violations related to intermittent operation of the FPMM flare since 2019. FPMM submitted a flare operation plan to DEQ on August 31, 2021. As a permittee, Respondent should have known it's Farm Power Tillamook Facility was subject to similar requirements in its air quality permit. Also, because of the commonality in ownership and management between FPMM and Respondent, Respondent knew that there were similar issues with flare design and flare malfunctions at the Farm Power Tillamook Facility. However, Respondent failed to promptly address those issues between the spring of 2021 and November 2021. The flare at Respondent's Facility vented uncombusted biogas during 22% of the operating hours (or approximately 15 equivalent days) between September 1, 2021 and November 9, 2021. By failing to ensure that its operators responded appropriately to warnings from the alarm system attached to the flare, and by failing to take action to prevent flare operation violations at the Facility, despite awareness of violations at a very similar neighboring facility, Respondent consciously disregarded a substantial and unjustifiable risk of violating its air quality permit. Disregarding the risk of violating the permit requirement to properly operate the flare constituted a gross deviation from the standard of care a reasonable person would observe in that situation because failure to operate the flare led the emission of uncombusted biogas in excess of the emissions authorized by the permit. Uncombusted biogas is rich in methane (a greenhouse gas) and in volatile organic compounds (VOCs). It also contains hydrogen sulfide (H_2S), which can produce foul odors.

"C" is Respondent's efforts to correct or mitigate the violation, and receives a value of 2 according to OAR 340-012-0145(6)(g) because Respondent did not address the violation as described in paragraphs (6)(a) through (6)(e) and the facts do not support a finding under paragraph (6)(f).

"EB" is the approximate dollar value of the benefit gained and the costs avoided or delayed as a result of the Respondent's noncompliance. It is designed to "level the playing field" by taking away any economic advantage the entity gained and to deter potential violators from deciding it is cheaper to violate and pay the penalty than to pay the costs of compliance. In this case, "EB" receives a value of $8,769, which is the amount Respondent gained by avoiding spending approximately $10,000 to install a shield tower around the flare. The shield tower should have been installed on or before January 1, 2019. As of the date of this Notice, the shield tower has not yet been installed. This "EB" was calculated pursuant to OAR 340-012-0150(1) using the U.S. Environmental Protection Agency's BEN computer model.

PENALTY CALCULATION: Penalty = BP + [(0.1 x BP) x (P + H + O + M + C)] + EB

= $2,000 + [(0.1 x $2,000) x (0 + 0 + 4 + 8 + 2)] + $8,769
= $2,000 + ($200 x 14) + $8,769
= $2,000 + $2,800 + $8,769
= $13,569

EXHIBIT 2

FINDINGS AND DETERMINATION OF RESPONDENT'S CIVIL PENALTY
PURSUANT TO OREGON ADMINISTRATIVE RULE (OAR) 340-012-0045

VIOLATION NO. 4 — Submitting inaccurate annual reports to DEQ, in violation of Condition 8.4.a.iii of the Permit.

CLASSIFICATION: — This is a Class I violation pursuant to OAR 340-012-0053(1)(b).

MAGNITUDE: — The magnitude of the violation is moderate pursuant to OAR 340-012-0130(1), as there is no selected magnitude specified in OAR 340-012-0135 applicable to this violation, and the information reasonably available to DEQ does not indicate a minor or major magnitude.

CIVIL PENALTY FORMULA: — The formula for determining the amount of penalty of each violation is: $BP + [(0.1 \times BP) \times (P + H + O + M + C)] + EB$

"BP" is the base penalty, which is $4,000 for a Class I, moderate magnitude violation in the matrix listed in OAR 340-012-0140(3)(b)(B)(ii) and applicable pursuant to OAR 340-012-0140(3)(a)(A) because Respondent has an ACDP permit.

"P" is whether Respondent has any prior significant actions, as defined in OAR 340-012-0030(19), in the same media as the violation at issue that occurred at a facility owned or operated by the same Respondent, and receives a value of 0 according to OAR 340-012-0145(2)(a)(A), because there are no prior significant actions.

"H" is Respondent's history of correcting prior significant actions, and receives a value of 0 according to OAR 340-012-0145(3)(c) because there is no prior history.

"O" is whether the violation was repeated or ongoing, and receives a value of 2 according to OAR 340-012-0145(4)(b) because there were more than one but less than seven occurrences of the violation. Respondent submitted inaccurate annual reports to DEQ for 2019 and 2020. Therefore, there were two occurrences of the violation.

"M" is the mental state of the Respondent, and receives a value of 4 according to OAR 340-012-0145(5)(c) because Respondent's conduct was negligent. According to OAR 340-012-0030(15), negligent means the respondent failed to take reasonable care to avoid a foreseeable risk of conduct constituting or resulting in a violation. In this case, Respondent failed to ensure that the flare was connected to a warning signal that is visible to the plant operator, as required under Condition 3.3.d. the Permit. Such a warning signal would have alerted operators regarding flare malfunctions. Even without a warning signal, Respondent could have checked its records of biogas flow to the flare and the temperature of the flare thermocouple to determine if flare malfunctions had occurred. Thus, Respondent failed to take reasonable care to avoid a foreseeable risk of conduct

resulting in a violation of Condition 8.4.a.iii of the Permit, which requires Respondent to submit information to DEQ about flare malfunctions in its annual reports.

"C" is Respondent's efforts to correct or mitigate the violation, and receives a value of 2 according to OAR 340-012-0145(6)(g) because Respondent did not address the violation as described in paragraphs (6)(a) through (6)(e) and the facts do not support a finding under paragraph (6)(f).

"EB" is the approximate dollar value of the benefit gained and the costs avoided or delayed as a result of the Respondent's noncompliance. It is designed to "level the playing field" by taking away any economic advantage the entity gained and to deter potential violators from deciding it is cheaper to violate and pay the penalty than to pay the costs of compliance. In this case, "EB" receives a value of $0 because DEQ has insufficient information to calculate an economic benefit for this violation.

PENALTY CALCULATION: Penalty = BP + [(0.1 x BP) x (P + H + O + M + C)] + EB
= $4,000 + [(0.1 x $4,000) x (0 + 0 + 2 + 4 + 2)] + $0
= $4,000 + ($400 x 8) + $0
= $4,000 + $3,200 + $0
= $7,200

Application No. B0037

Staff Summary

Sacramento Municipal Utility District (SMUD)
Van Warmerdam Dairy Farm, Elk Grove, California
Dairy Manure Biogas to Low-CI Electricity

Deemed Complete: 09/20/2019
Posted for Comment: 12/10/2019
Certified and Posted: 12/31/2019
CI Effective: 7/1/2019
Fuel Pathway Code: ELC026B00370100

Pathway Summary

Sacramento Municipal Utility District (SMUD) seeks certification of a dairy manure biogas-to-electricity pathway for electricity produced by a reciprocating internal combustion (IC) engine and generator at the Van Warmerdam dairy farm and supplied to electric vehicle charging using book-and-claim accounting for low-CI electricity.[1] Maas Energy Works (MEW) is the third party owner and operator of the dairy electricity project. SMUD has a power purchase agreement with MEW. The Van Warmerdam digester project has generated voluntary emission reduction credits under the Climate Action Reserve U.S. Livestock Project Protocol (CAR998, listed date: 9/16/2013, crediting period expiration: 7/1/2023).

The dairy farm operates a flush manure collection system to provide manure to the covered lagoon digester. The effluent from the covered lagoon is directly land applied at Van Warmerdam farm. The lagoon digester is covered by high-density polyethylene. The digester is operated with supplemental heat recovered from the biogas engine, and mixers are used to improve methane generation. The raw biogas captured undergoes cleanup to remove hydrogen sulfide. The cleaned biogas is metered and used to fuel a 600 kW IC engine and generator. The reciprocating engine is fitted with selective catalytic reduction (SCR) equipment to control NOx emissions. The reciprocating engine converts roughly one third of energy in biogas to electricity.

Carbon Intensity of Dairy Manure Biogas to Electricity Pathways

SMUD is seeking to register a Tier 2 carbon intensity (CI) for a dairy manure biogas-to-electricity pathway. The applicant has provided operational data and supporting documentation for the digester, gas cleanup, and electricity generation for a period of 24 months, from November 2017 to October 2019. The CI is determined from life cycle analysis conducted using the Board-approved Tier 1 Simplified CI Calculator for

[1] All citations to the LCFS Regulation are found in Title 17, California Code of Regulations (CCR), section 95480-95503. Book-and-claim accounting is primarily addressed in section 95488.8(i) of the LCFS Regulation.
See also LCFS Guidance 19-01: Book-and-Claim Accounting for Low-CI Electricity. Available at: https://www.arb.ca.gov/fuels/lcfs/guidance/guidance.htm#guidance

Biomethane from Anaerobic Digestion of Dairy and Swine Manure.[2] The calculator has been modified consistent with regulatory requirements and guidance discussion in LCFS Guidance 19-06,[3] and has been determined to be equivalent to CA-GREET3.0 pursuant to section 95488.3(a) of the LCFS regulation.

The following table lists the proposed CI for this pathway.

Proposed Pathway CI

Fuel	Pathway FPC	Pathway Description	Carbon Intensity (gCO2e/MJ)		
			Direct Emissions	Land Use Change	Total
Low-CI Electricity from Dairy Manure Biogas	ELC026B00370100	Low-CI electricity from dairy manure biogas using reciprocating engine at Van Warmerdam Dairy in Galt, California for use as transportation fuel in California.	-592.68		-592.68

Operating Conditions

The certified CI value in the above table may be used to report and generate credits for fuel quantities that are produced at the facility in the manner described in the applicant's LCA report, and dispensed for transportation use in California, subject to the following requirements and conditions:

1. The Fuel pathway holder is subject to the requirements of the California Air Resources Board's (CARB) Low Carbon Fuel Standard (LCFS) regulation, which appears at sections 95480 to 95503 of title 17, California Code of Regulations. Requirements include ongoing monitoring, reporting, recordkeeping, and third-party verification of operational CI and a controlled process for providing product transfer documents or other similar records to counterparties or CARB.

2. No later than October 1, 2020, equipment to continuously measure and record methane concentration in biogas at least every 15 minutes must be installed to report the monthly weighted average methane concentration in fields 2.5 and 2.7 in the Annual Fuel Pathway Report submitted to CARB for third-party verification of the operational CI.

3. The electricity, including the environmental attributes associated with the electricity, claimed under this pathway shall not be claimed under any other program notwithstanding the exceptions listed in LCFS Regulation section

[2] The Tier 1 Simplified CI Calculator for Biomethane from Anaerobic Digestion of Dairy and Swine Manure (August 13, 2018), incorporated by reference in the LCFS Regulation, section 95488.3(b).
[3] Low Carbon Fuel Standard (LCFS) Guidance 19-06. Determining Carbon Intensity of Dairy and Swine Manure Biogas to Electricity Pathways. Available at https://ww3.arb.ca.gov/fuels/lcfs/guidance

95488.8(i)(1). The LCFS places no restriction on the use of any voluntary emission reduction credits generated by the project for emissions that are demonstrated to be additional to reductions claimed under the LCFS.

4. The fuel pathway holder must include the assumptions and calculations used to establish the fraction of solids input to each manure management system in its annual Fuel Pathway Report submitted to CARB for third-party verification of the operational CI.

Staff Analysis and Recommendation

Staff has reviewed the SMUD application and has replicated, using the Tier 2 modified version of the Simplified CI Calculator for Biomethane from Anaerobic Digestion of Dairy and Swine Manure, the CI values calculated by the applicant. On the basis of this finding, CARB staff recommends that the SMUD application for LCFS Tier 2 pathways stated in above table be certified after all the comments received during the 10-day comment period are addressed satisfactorily by the applicant. The certification is subject to the operating conditions set forth in this document.

December 26, 2019

California Air Resources Board
Fuels Evaluation Section
Attn: Mr. Anil Prabhu
P.O. Box 2815
Sacramento, CA 95812

RE: **Tier 2 Pathway Application B0037; SMUD (S338): Low-CI Electricity from Dairy Manure Biogas Digester Genset System in Van Warmerdam Dairy Farm; Electricity use to charge electric vehicles in Sacramento County, California.**

Dear Mr. Prabhu,

The Association of Irritated Residents, Central California Asthma Collaborative, and Leadership Counsel for Justice and Accountability ("Commenters") submitted four comments regarding the Tier 2 Pathway Application (No. B0037; SMUD (S3338)) for Low-CI Electricity from Dairy Manure Biogas Digester Genset System in Van Warmerdam Dairy Farm for electricity production to charge electric vehicles within SMUD's service territory in Sacramento County, California. This letter addresses those comments.

In accordance with the Low Carbon Fuel Standard, Section 95488.7(d)(5)(A): "Only comments related to potential factual or methodological errors will require responses from the fuel pathway applicant."

Sacramento Municipal Utility District ("SMUD"), as the fuel pathway applicant, offers the following responses to such potential factual and methodological errors identified by Commenters.

Comment No. 1. Lack of Available Information and Data Transparency

The applicants and / or the California Air Resources Control Board (CARB) withheld and redacted information regarding both dairy operations (including herd size, amount of manure managed) and energy generation (including biogas conditioning, and kilowatts produced) such that it is impossible to determine both the air quality and water quality impacts that the project will produce, as well as the energy conversion and energy production rates which, along with information regarding dairy operations, is necessary to assess the veracity of the claimed project benefits and the carbon intensity value. In short, based on the public's review of the available documents there is no way to comment in any informed way on the proposed project or assess the accuracy and value of the justification presented.

…

The materials available for review also leave out critical information regarding the demand for generated electricity for vehicles taking into consideration other sources of electricity.

Additionally, CARB withheld the following information, alleging that they contain confidential business information: Attestation Letter, Utilities Invoices and Electricity Bills, Facility Process Flow Diagram, and Monthly Data and Calculation for GREET Input Values.

Without access to data critical to allow an independent analysis of truly monumental carbon intensity values or environmental and ecological impacts of the proposed project, the application must not be approved.

Response:
Information about dairy operations, including herd size, energy generation, biogas conditioning, kilowatts usage, kilowatts production and carbon intensity value are shown in Attachment A of this letter. The information redacted from and/or unavailable in the publicly

posted version of the Application includes personal information or competitive trade data that is appropriately maintained as confidential in accordance with the California Air Resources Board's (ARB's) practices. The Application together with carbon intensity (CI) calculator as submitted provides sufficient data to ensure that necessary calculation and analysis can be performed. Commenters do not identify any factual or methodological error in the Application.

Comment No. 2. Air and Water Quality Impact

This project will threaten environmental degradation in the local community and throughout the region due to increased air pollution and groundwater contamination. This project, by generating methane and then combusting methane to produce electricity will create NOx. Furthermore, due to the information redacted in the application and supporting paperwork, it is impossible to understand the scope and severity of the air quality impacts of this project. NOx is key to ozone formation in the warm months and similarly catalytic in the formation of PM2.5 in the cooler months. Reducing NOx emissions in the Sacramento Valley is key to the Valley reaching compliance with the federal clean air standards and protecting the health of the region. Additionally, studies find that manure exiting a digester emits as much as 81% more ammonia than raw manure. Increased ammonia together with increases in NOx creates an even more intensive ammonium nitrate PM 2.5 impact.

This project, because it will worsen local air quality, is in conflict with the language of AB32 which, in summary, says that efforts to reduce GHG emissions should not compromise or conflict with efforts to reduce air pollution. Additionally, this project and similar projects undermines the state's efforts to make truly clean, zero emissions electricity available to the public. We have access – and can increase access – to zero emission electricity sources, including wind and solar for electric. There is simply no need to generate polluting electricity when other sources are available and expanding.

Large scale dairies are a primary contributor to groundwater contamination crisis communities throughout the Central Valley are facing. Cow manure, and in particular liquefied manure applied to cropland, contributes nitrate to groundwater, which impacts the health and economic well-being of residents and communities in nearby towns and cities. Digesters, like the digester at issue in this application, rely on manufactured, liquefied manure that is so deleterious to the environment and nearby communities to generate profits through energy production. As no information is available with respect to herd size, volume of liquefied manure produced, or application of manure applied to land, it is impossible to know the extent to which this project could exacerbate the quality of already very polluted water.

Response:

The dairy farm, animals, manure lagoon, land application of manure, and all the other practices whose environmental impacts the commenters are concerned about are existing agriculture operations that predate the dairy digester project. These facilities and practices are permitted by the applicable regulatory authorities and their impacts (if any) occur with or without the presence of the digester. The digester proposed by the LCFS Electricity Pathway Application captures existing air emissions from an existing uncovered lagoon or pond. This results in a negative Carbon Intensity (CI) as demonstrated in the calculations reflected in the Application and described on Attachment A to this letter. Thus, the project will reduce methane emissions reported in $CO_{2equivalent}$ from existing pond.

The digester does create one new emissions source—a lean-burn internal combustion engine with selective catalytic reduction emissions control technology. This system includes the most current air emission reduction technology and is fully permitted by the Sacramento County Air Quality Management District. It has successfully met various inspection, reporting, and testing requirements, and the jurisdictional regulator has determined it satisfies air quality requirements.

The Commenters appear to disagree with the presence of dairy farms or the policies of Sacramento County and the Regional Water Quality Control Board in allowing dairy farming,

but do not provide details to any inaccuracies in the pathway calculations or other factual or methodological errors in the Application.

Notwithstanding the foregoing, SMUD provides additional information in Attachment B to this letter demonstrating that the proposed pathway provides reduction of CO_2e, NOx, PM10 and PM2.5. While this additional information is outside the scope of the LCFS Pathway review requirements it is illustrative of the beneficial impact from the proposed pathway.

Comments on water quality and groundwater contamination do not pertain to factual or methodological errors of the pathway application.

Comment No 3. Incomplete GHG Analysis

Similarly, the calculation of GHG emissions and alleged reductions ignore the GHG emissions of manure production. The GHG emissions from the dairy —including methane released from manure, enteric emissions, and other dairy operations—are not regulated. Therefore, these emissions must be calculated and applied to the lifecycle GHG analysis for this project.

Response:
The pathway is designed to calculate the voluntary reduction in emissions compared to the baseline conditions on the dairy. These baseline conditions are governed by applicable regulations that are not a part of the LCFS program. All emissions reductions claimed must be "additional to any legal requirement for the capture and destruction of biomethane" according to the LCFS regulation. The data presented demonstrates the digester's voluntary reductions below the dairy's legal baseline conditions, meeting the requirements of the LCFS rule. If Commenters disagree with the methodology of LCFS regulation or believe that dairy farms should be more stringently regulated, there are other resources for them to pursue. However, the concerns they identify in their comments are not germane to the calculations of CI in the pathway under consideration in the Application and do not identify any factual or methodological errors.

The calculations of GHG emissions and CI reduction provided in the Application meet all LCFS Regulation requirements. Calculation of enteric fermentation is not included in the protocol as it can be easily manipulated by changing the animal diets.

Commenters express concern that all related GHG emissions of manure production, were ignored. This concern is unfounded. A complete life-cycle GHG emission or CI was calculated and a life cycle assessment report (LCA Report) describing the Van Warmerdam digester and associated electric generation was completed following the requirements of LCFS Regulation as identified in section 95488.7(a)(2). The GREET 3 model calculates the CI or life-cycle GHG emissions associated with the manure in great details with all inputs and variables. Computational algorithms were drawn from ARB's Compliance Offset Protocol Livestock Projects, which has been in use since 2011 in partial fulfillment of the Global Warming Solutions Act of 2006 (AB32) that CARB reviewed and provided Applicants with a state-approved computation tool applying them to the case of LCFS electricity generated from dairy manure.

Comment No.4 Incentivized Production of Methane

This project and similar projects do not just undermine California's climate and environmental justice goals, but actually

incentivize increased production of methane (and the concomitant pollution that accompanies methane production). To the extent that dairies are making manure and waste management decisions to increase methane production – such as increasing herd size to increase manure production, opting out of solid separation to increase methane, taking in food wastes for digestion, and even opting for liquefied manure management instead of methods that prevent production of methane in the first place – Van Warmerdam Dairy should not reap the benefits of the LFCS program, designed to reduce greenhouse gases, instead of incentivize production thereof.

In conclusion, this project should be denied because it will harm local air quality, threaten water quality, and fails to consider the full lifecycle emissions of methane production from dairies. Furthermore, there is inadequate data to determine the extent to which the project will reduce greenhouse gas emissions and fails to take into consideration how the project will incentivize production and emission of greenhouse gases. Unless and until there is publicly available and verifiable data demonstrating that this project will not produce negative local air and water impacts, and the extent to which this project will actually reduce, this project will reduce greenhouse gas emissions that could not otherwise be reduced, CARB must deny this application.

Response:

Under the LCFS Regulation Dairy farms are not rewarded for increasing methane, but only for reducing methane emissions that would have occurred in the absence of the digester project. In addition, as discussed above, the dairy farm must implement voluntary reductions of methane emissions over and above the legal requirements already placed upon their dairies. Commenters have not identified any factual or methodological errors in the Application or process.

The life-cycle CI calculation described in the LCA Report is a comparative life-cycle assessment, meaning it reports differences between the LCFS pathway (the Van Warmerdam electricity generation to charge EVs) and a counterfactual baseline that would have likely occurred without the fuel pathway. The Van Warmerdam Dairy digester project simply adds a cover to the conventional lagoon allowing the methane to be captured rather than released to the atmosphere.

Conclusion:

SMUD appreciates the opportunity to respond to the comments pertaining to factual or methodological issues with the pathway Application for the Van Warmerdam Dairy Digester project. The Pathway Application meets the requirements of the LCFS Regulations and SMUD requests that the Executive Officer certify the pathway.

If the Executive Officer would like any further input or supporting information regarding these issues, please contact me and SMUD will promptly supplement this response. Thank you.

Sincerely,

Valentino Tiangco, Ph.D.
Biomass Program Manager
6201 S St, Mail Stop B305,
Sacramento, CA 95817
Tel: 916.732.6795
Email address: Valentino.Tiangco@smud.org

Attachment A. Some Information for Van Warmerdam Dairy Digester GREET Pathway to Produce Electricity to Charge Electric Vehicles in SMUD Region

Result Summary

The full life cycle carbon intensity (CI) result for Van Warmerdam dairy digester to produce electricity and charge electric vehicle pathway (Tier 2 Electricity Pathway) is **-592.68 gCO2/MJ** .

Figure 1 shows the discrete components that form the Van Warmerdam dairy digester to produce electricity and charge electric vehicle pathway.

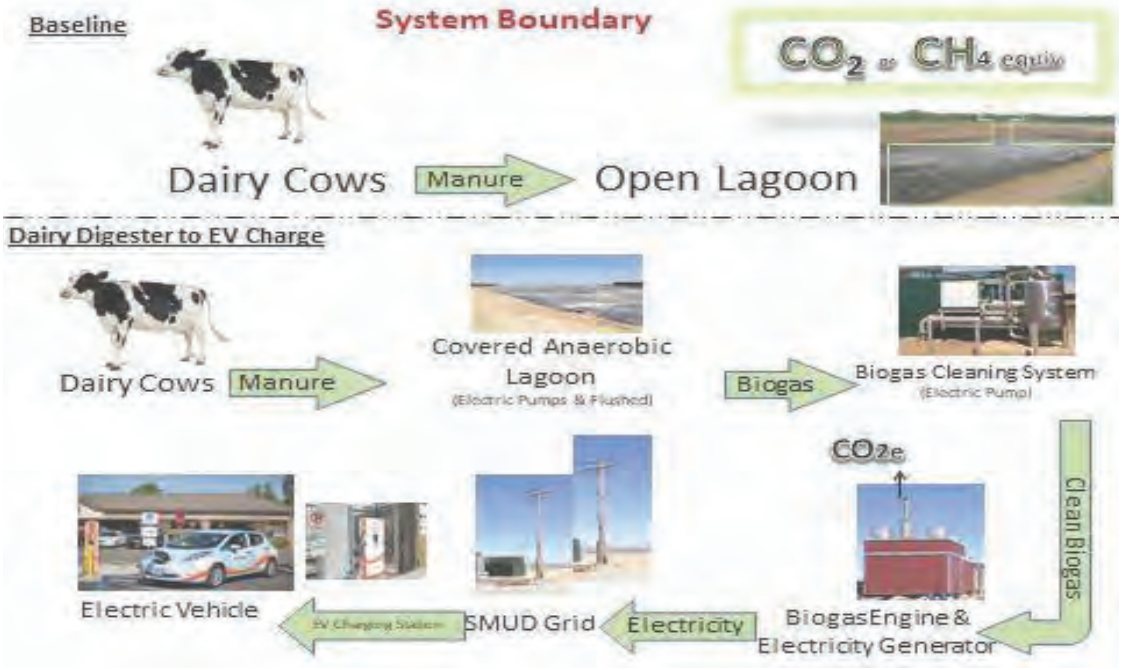


Figure 1: System Boundary Diagram for Van Warmerdam Dairy Digester to EV Pathway

1. Feedstock Phase (Biogas Production)

The feedstock for this pathway is biogas produced from anaerobic digestion of dairy manure or dairy waste using covered lagoon at Van Warmerdam dairy farm located in Sacramento County, California . Van Warmerdam dairy farm has a total 1,297 cows (including milking cows, non-milking cows and heifers) for November 2017 to October 2019 reporting period of 24 months. The third-party owner/developer of Van Warmerdam dairy digester system is Maas Energy Works (MEW). Van Warmerdam dairy owners receive monthly lease payments from MEW from the use of dairy manures and the site. MEW has a power purchase agreement with SMUD. Components of the feedstock or biogas production are described below that include covered lagoon digester and biogas clean-up (or upgrading system) for electricity generation.

Covered lagoon digester description: The covered lagoon digester at Van Warmerdam employs an earthen pond approximately 525 ft. by 125 ft., with a total operational fluid volume of about 8,000,000 gallons. The pond is covered with 80/1000-inch-high density poly-ethylene (HDPE) membrane to contain the biogas. The cover is designed to allow directional flow through the digester to ensure retention time and using mixers in the digester to help improve biogas production. The digester operates at ambient temperatures and is supplemented by waste heat recovered from the engine. The collected manure is retained in the digester for approximately 30 days and recirculated several times. As the manure decomposes, biogas is produced and accumulates under the cover. The digester's flexible cover enables biogas storage, allowing the engine to run during peak power periods when prices paid for electricity are highest, and store gas during lower prices. The effluent from the digester is used as a liquid fertilizer via irrigating forage crops at Van Warmerdam farm.

Biogas cleaning or treatment description: Biogas clean-up at Van Warmerdam dairy digester uses two systems to remove hydrogen sulfide (H_2S) from the biogas. First, a small amount of air is injected under the cover at multiple points. This very small injection of air, spread across the cover, induces naturally-occurring bacteria to grow on the slurry surface and digester cover. Via a process known as biological fixation, these bacteria metabolize H_2S back into elemental sulfur, which collects on the surface rather than entering the biogas stream. The biological fixation system reduces H_2S significantly but may not consistently meet the project's air permit's 50 parts per million (ppm) limits on H_2S. For this reason, the biogas can be routed through a canister containing approximately 80 gallons of activated carbon media. This media (which must be replaced on a periodic basis) absorbs the remaining sulfur and ensures continuous permit compliance.

The total volumetric flow in standard cubic feet (SCF) of biogas combusted was recorded each day using a Sage SIP-05-10-DC24-DIG GAS (Model 35934) biogas flow meter installed in the biogas feed pipe upstream of the genset. The biogas is conveyed underground from the covered lagoon digester to fuel the engine generator system to generate electricity (as fuel for GREET 3.0 Model), as described below.

Engine-Generator Description: The engine generator chosen for Warmerdam is a Guascor SFGLD-560 1,800 RMP, 12-cylinder internal combustion engine rated at over 900 horsepower (> 600 kW) and operating on biogas fuel with Selective Catalytic Reduction as nitrogen oxides (NOx) control technology including an oxidation catalyst capable of meeting the permit limitations. The engine is coupled to a Stamford HCI 534F with 600 kW synchronous generator, generating at 480 V, which is connected to SMUD's distribution feeder via a 750-kVA interconnection transformer.

Heat Recovery Description: The genset recovers heat from three sources at Warmerdam dairy digester system. The engine block's jacket water is pumped out via the engine water pump. Additionally, the exhaust from the engine is routed through a series of parallel pipes where a heat exchanger extracts energy from the exhaust in the form of more hot water. Finally, the engine's intercooler loop coolant is pumped out to catch more hot water.

Together, these three sources allow the system to recover hot water for a total well in excess of 40% of the engine's energy input. After collection, the hot water is transferred to a pipe-in-pipe heat exchanger where the heat is transferred to manure pumped from the covered lagoon. With its large volume, the lagoon can supply essentially unlimited cooling potential to the engine. The heated manure in the heat exchanger is then dumped back into the lagoon to increase the overall lagoon temperature and thus help improve biogas production by about 10%.

Grid Interconnection: The facility is directly connected to a SMUD's 12.47 kV distribution feeder, which also serves the host dairy farm. Interconnection improvements included the installation of a pad mounted Delta-Y 750 kVA transformer and two new poles, one of which included a new broken delta bank with lockable 800 amp disconnect and a Beckwith M3520 protective relay on the project's site of the transformer.

Process Configuration: Figure 2 shows the process configuration of Van Warmerdam dairy digester to produce electricity and charge electric vehicle pathway.

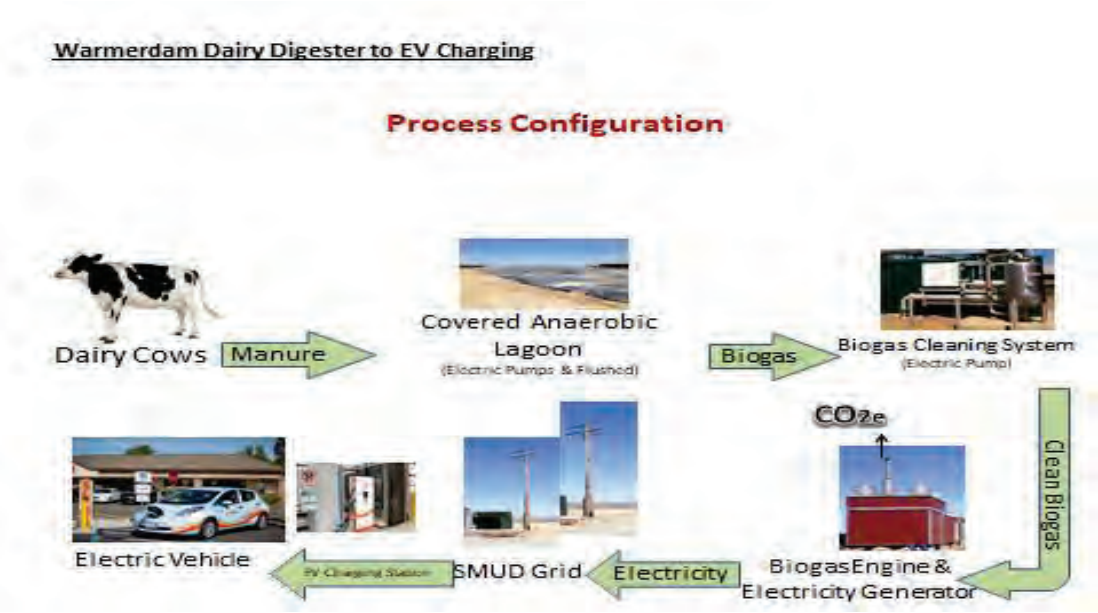


Figure 2: Van Warmerdam Dairy Digester to Produce Electricity and Charge EV Pathway

2. Data Sources and Pathway Inputs

Biogas Production

Biogas production for period of November 1, 2017 to October 31, 2017 (or period of 24 months) were recorded with **CH_4** content data and used as inputs in the CI calculator. The raw biogas and cleaned biogas are assumed as the same flow and CH4 concentration were measured. Then, the cleaned or conditioned biogas is conveyed underground to fuel

the engine generator system with rated output of 600 kW manufactured by Martin Machinery.

The inputs for baseline methane emissions (without covered lagoon) for the GREET 3.0 model using the "Livestock Protocol" are shown included in the Application and CI calculation using Livestock Protocol. All data inputs can be found in the Climate Action Reserve (CAR) tool for the reporting period but cannot be viewed publicly.

A fugitive methane emission or loss of 2% is assumed, as indicated in GREET 3.0. This loss was taken into consideration in calculating the biogas input for conversion efficiency determination of the reciprocating engine.

Conversion Efficiency of Van Warmerdam Dairy Digester Engine Genset

The conversion efficiency of Van Warmerdam Dairy Digester Engine Genset is calculated based on 2-year or 24-month metered data for electricity and biogas production, as shown below.

$$Engine\ Efficiency = \frac{kWh\ production\ x\ 3.6/1055.056}{Biogas\ Production\ x\ Lower\ Heating\ Value\ of\ Biogas}$$

The total electricity production for 2-year reporting period was 3,515,877 kWh.

Using the total kWh production and the total biogas production with corresponding lower heating value (LHV) of biogas as indicated in GREET 3.0 Reference Table, the resulting efficiency of Van Warmerdam Dairy Digester Engine Genset was calculated. Efficiency using higher heating value (HHV) was also calculated. For the proposed pathway, this efficiency was used as input in the GREET 3.0 model to calculate CI. Adjustment factor was also used as prescribed by CARB.

Electricity Usage

The electricity usages for all auxiliary or parasitic loads (like pumps, lights, motors, thermal load, etc.) have a separate meter and were recorded at Van Warmerdam digester facility. The total electricity usage was 80,761 kWh for the reporting period.

Indirect Land Use Change

The digester facility is located at Van Warmerdam dairy farm and accordingly in the site of agricultural land use. So, there is no indirect land use change or zero gCO_2/MJ.

Attachment B: Supplemental Response for the Review Process

The scope of an LCFS pathway applicant's duty to respond to comments is established by Low Carbon Fuel Standard Section 95488.7(d)(5)(A): "Only comments related to potential factual or methodological errors will require responses from the fuel pathway applicant."

SMUD recognizes air and water quality concerns are of vital importance not only to Sacramento County but to the entire State of California and local communities. The comments about air quality and water issues are outside the scope of the pathway review. The following supplemental response is therefore provided on these issues.

This Van Warmerdam dairy digester project is mitigating emissions from the dairy farm operation by utilizing the **very negative carbon intensity** (-592.68 gCO2/MJ) electricity source from biogas (produced from anaerobic digestion of dairy manure) towards charging electric vehicles in SMUD Service Territory. This project provides myriad benefits to the community and the local economy.

With regards to air quality impacts, the Dairy Digester Emissions Matrix (see https://ww3.arb.ca.gov/cc/dairy/dsg2/dairy-emissions-matrix-113018.pdf) which was developed by a diverse group of stakeholders including representatives from Central Valley Air Quality Coalition, Central California Asthma Collaborative, and the American Lung Association, as well as other stakeholders in collaboration with CARB pursuant to SB 1383 has indicated that the destruction of methane in a stationary reciprocating engine to produce electricity for an for EV charging produces less NOx and PM2.5 than the alternative method of methane destruction within mobile natural gas engines. Uncovered lagoon has the worst emission profile as shown in the matrix.

The summary net benefits of onsite or stationary reciprocating engine to charge EVs is shown below.

	Net Benefits							
Scenario	CO_2e (20-yr GWP)	CO_2e (100-yr GWP)	NOx	PM_{10}	$^{PM}2.5$	CO	SOx	VOCs
Onsite Reciprocating Engine to Grid and EVs	-60,934	-24,356	-4.9	-0.9	-0.4	3.2	-2.3	-3.4
Pipeline Injection to NG Vehicles	-54,491	-19,402	-4.1	-0.2	<0.1	52.1	-1.0	-14.1
Pipeline Injection to Power Plant, Grid and EVs	-63,190	-26,853	-7.1	-1.5	-0.8	-5.8	-3.1	-4.0
Pipeline Injection to Hydrogen Vehicles	-56,702	-21,066	-1.3	-0.4	0.1	-1.7	0.3	-3.2
Pipeline Injection to Fuel Cell, Grid and Evs	-64,565	-28,073	-7.8	-1.7	-0.9	-6.6	-3.6	-4.2
Uncovered Lagoon	70,581	24,519	0.1	0.1	0.1	0.1	0.1	3.0

The electricity from biogas to charge EVs and Renewable Natural Gas or biomethane to be used in compressed natural gas (CNG) engines show net NOx and PM benefits to local communities and residents. The criteria pollutant emissions are less than in diesel-fueled vehicles.

The comments made on water quality do not pertain to factual or methodological errors, so SMUD has no response.

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Digester Developers In The Agricultural Sector

BioCycle July 2011, Vol. 52, No. 7, p. 36

Two-part series examines a new breed of commercial project developers in the anaerobic digestion industry. This month's article focuses on manure management. Part I

Diane Greer

AS the anaerobic digestion industry matures, a new breed of commercial project developers is focusing on the agricultural and regional mixed organic waste substrate sectors. What sets these companies apart are experienced management teams using build-own-operate business models to develop larger scale projects that can successfully attract outside financing.

Part I of this article profiles four developers of farm-based digester projects. In these examples, pow purchase agreements with utilities are the lion's share of the revenues. Part of the location/site sele

Privacy - Terms

process certainly involves finding the best opportunities for maximizing the price for the power. Another commonality is taking advantage of federal financing incentives, such as the U.S. Treasury Department's Section 1603 funds and grants under the U.S. Department of Agriculture's REAP program, while they are available. "It is nice to have some Federal incentives to prop up the technology but if that is not going to happen we are going to have to become more efficient and more effective," says Leslie White, cofounder of The New Energy Company, one of the developers profiled in this article.

AGPOWER GROUP

Typically farmers who want to install a digester must cobble together financing, obtain necessary permits, figure out interconnect options with the local utility and then contract with a third party to design and build the system. Once the digester is completed the farmer is responsible for operating the system.

Bob Joblin, partner at AgPower Group, LLC, thinks there is a better way: financing, building, owning and operating the system for the farmer. "We don't require an investment from our host facility," Joblin explains. "We require a long-term land lease, longer than our financing, and we have to be assured that the feedstock will be there for that term. We take it from there and go get financing. A partner puts in equity and we build and operate the system."

Joblin, whose background includes real estate development, construction, energy and project finance, says he knows what lenders are looking for and adapts his projects to acceptable underwriting criteria. he says. "From what lenders have told me there is less risk."

In Jerome, Idaho, AgPower is partnering with Camco Global, a developer of greenhouse gas emission reductions and clean energy projects, to construct an anaerobic digestion system on a 15,000-cow dairy. When completed in early 2012, the $24 million system will employ GHD modified plug flow digesters to generate biogas used to fuel generators with a combined capacity of 4.5 MW. The deal includes a 20-year power purchase agreement (PPA) with Idaho Power and multiyear contracts for the sale of the solids from the digestate. Renewable energy certificates (RECs) are available for this project through a California Energy Commission program called "Transferable Renewable Energy Credits." Renewable energy sources in Idaho qualify for credits under this program.

AgPower partnered with Dean Foods, the largest processor and producer of dairy products in the U.S., on the company's first digester project at the Big Sky Dairy near Gooding, Idaho. Dean Foods wanted to show the dairies they do business with that digesters work, are sustainable and can make money, Joblin explains.

The Big Sky project processes manure from the dairy's 4,700 cows to generate up to 1.2 MW of electricity that is sold to Idaho Power. Digestate is separated, with the liquid returned to the dairy's lagoons for land application; solids are shared with the dairy, which uses them for bedding. AgPower sells its share.

For now, the developer is not incorporating codigestion with off-farm substrates into its business model. "When we do the economics and design the project we are not dependent on any additional substrates," explains Joblin. "We feel that would be too risky. We are concerned about projects that are

dependent on tipping fees for substrates because there is a lot of energy in those substrates and the people who own them are getting smarter and smarter, especially with more digesters out there. I think tipping fees for those substrates are short lived." He adds that AgPower permits its projects for receiving cattle manure "and so we are not going to get so much additional substrate that we change our category."

Joblin sees controlling digester operations as critical to his model. When he started, he looked at existing digester installations and how they were operated. "We found that dairymen took care of their digesters the same way they ran their tractors and combines," he says. "Some did preventive maintenance and some waited for the equipment to break down before taking action." On all projects AgPower contracts with third party operators to run its systems. "We think third party operation is very, very important," Joblin says. "Our lenders think so too."

THE NEW ENERGY COMPANY

Just south of AgPower's projects in Idaho, The New Energy Company (TNEC) is building digesters at Bettencourt Dairies' Rock Creek Dairy near Filer. The $13.1 million New Energy One project will feed manure from 8,900 cows on three dairies into a central system composed of six, 1.026-million gallon UTS digesters. Over 1-mcf of biogas produced daily will drive gensets with installed capacity of 2.4 MW. Completion is slated for the fourth quarter of 2011.

Liquid separated from the digestate will undergo a chemical/mechanical separation to remove phosphorus and then get applied as fertilizer to adjacent cropland. The solids will be split with the dairy, which will use them for bedding. TNEC will sell some of the material into the compost market.

Leslie White and Laura Knothe started Middleton, Idaho-based TNEC in 2008. White is a chemical engineer with 20 years of energy industry experience. Knothe has 17 years of engineering and construction management experience. While researching business opportunities in the anaerobic digestion industry, White and Knothe saw a need for a group to put together all the pieces of the development puzzle, such as the PPA and market incentives, which would help dairy operations obtain equity financing.

"Securing equity in an agricultural based system is often difficult," says White. "The dairy owners are facing increasing environmental and regulatory pressures centered on their waste management systems, yet obtaining financing, securing off-take agreements, obtaining permits and selecting the best technology for a system that directly addresses their waste management issues is a distraction from their core business. We've put together a business model and a team that can produce a return to the investor and provide a service to the dairy that owners are unable to achieve on their own."

TNEC developed detailed operating and capital cost models to help structure projects that are economically feasible and provide returns required by investors. "One of the biggest pieces of the puzzle is providing adequate returns to equity investors when the markets do not attach a monetary value to environmental and regulatory concerns impacting dairy farmers," White says.

During the business start-up phase, White and Knothe spent considerable time touring digester facilities and talking with operators. "We saw that operations were a leading cause of failure," White explains.

Based on the findings, TNEC will control digester operations through an operating subsidiary of the company or negotiate operations and maintenance contracts with the technology provider.

Several other projects are currently under development: New Energy Two and New Energy Three have financing, the PPAs and permitting in place and the projects are in the technical design stage. New Energy Two will process manure from 4,100 cows in three, 1.1 million gallon UTS digesters to produce 1.1 MW of electricity. New Energy Three is composed of three, 1-million UTS digesters processing the manure from 10,000 cows to generate 1.3 MW of electricity. Both projects are utilizing MWM GmbH gensets. Codigestion of other substrates is expected to boost biogas production and increase power generation closer to 2 MW at each project, White says.

TNEC is developing New Energy Two and New Energy Three with Exergy Development Group, a multifaceted renewable energy company entrenched in solar, bioenergy, geothermal and hydro. “Exergy has grown to be one of the largest independent renewable energy companies in the United States and the company’s experience in the renewable energy industry is an asset to the development and placement of AD systems,” White says. “In an industry where the margins are tight, we have to be focused on increasing efficiencies.”

R-QUBED ENERGY

On a 64-acre farm in Mesquite, New Mexico, R-Qubed Energy of El Paso, Texas, is developing an anaerobic digestion complex to process manure from 40,000 dairy cows located on seven farms along a 6-mile corridor between Mesquite and Vado. Entec USA, a partnership between Reynolds, Inc. in Orleans, Indiana, and Austria-based Entec Biogas GmbH, is designing and will build the project.

The facility, owned and to be operated by R-Qubed, will help alleviate environmental and regulatory problems facing the dairies. “The farmers were in violation of the Clean Water Act for improperly handling and disposing of waste from their operations,” explains Keith Hughes, R-Qubed’s vice president of business development. “The EPA was ready to shut them down.”

When fully built-out, the plant will include four identical digestion systems (quads) composed of two digester tanks, two mixing tanks and two post digestion tanks. Manure from the dairies will be pumped or trucked to the site.

Liquid digestate from the process will be converted into a fertilizer. Solid digestate will be combined with raw manure and other organic materials in an on-site composting operation housed in fully enclosed buildings equipped with scrubber systems to purify the air, reduce odor and collect particulates. Unused liquid digestate will be processed in an on-site wastewater treatment plant to reduce nitrogen and total dissolved solids levels to meet discharge standards as specified by the New Mexico Water Quality Control Commission.

The $25-million pilot phase of the project, expected to break ground in September, will construct the first digester quad with a capacity to convert manure from 11,000 cows into 2.5 MW of electricity. The pilot will include composting, liquid fertilizer and wastewater treatment operations.

R-Qubed negotiated long-term contracts with the dairies for the manure. Farmers receive a percentage of the gross sales of the electricity, the RECs, the liquid fertilizer and the compost. Much of the power

produced by the pilot facility will be used to heat the digesters and power the process. Excess power, estimated at 0.5 to 1 MW, will be sold to Public Service Co. of New Mexico under a 15-year PPA.

Biogas produced by future phases of the project will be cleaned and upgraded for injection into natural gas pipelines. This will be more cost-effective, and allows R-Qubed to avoid legal, permitting and regulatory costs incurred when third-party producers put over 1 MW of power on the grid, Hughes explains. “We have a lot more sales opportunity once we go to the pipeline.”

Successful marketing of the backend materials, such as compost, is critical to project economics. “We’ve figured out how to make money off of every bit of the buffalo,” he adds. Contracts for the ‘backend’ materials are expected to be completed by the end of July.

The project raised $6 million in private equity and will take advantage of the Treasury Department’s 1603 program, which provides grants for 30 percent of eligible project investments in lieu of tax credits. “Final financing goes to bank in late July, early August,” Hughes says.

CARGILL, INC.

Anaerobic digestion technology is not new to Minneapolis-based Cargill, an international producer and marketer of food, agricultural, financial and industrial products and services. The company has used digesters for decades and currently operates 14 systems in the U.S., primarily at its meat processing operations where the biogas replaces 20 percent of the natural gas used at the plants. About five years ago, the company went looking for greenhouse gas reduction projects in the U.S. As part of that search, Cargill sought opportunities to build small renewable power plants while gaining institutional knowledge in the environmental attributes market.

“Cargill has a strong presence in commodity trading and environmental attributes, whether that is carbon credits or renewable energy credits,” explains Craig Maetzold, general manager of biofactory facilities at Cargill. “Environmental attributes were a new commodity that entered the market a couple of years ago and we were investing in opportunities around them from a trading standpoint.”

Between 2007 and 2010, Cargill built three anaerobic digestion systems on farms in southern Idaho. The company financed, owns and operates the facilities, located on land leased from the host dairies. Installing digesters on dairy farms allowed the company to become a small renewable electrical generation, Maetzold says. The projects also allowed Cargill to enhance customer relationships within its agricultural and food supply chains and differentiate itself from a customer standpoint. The three host dairies selected for the project have historical relationships with Cargill’s animal nutrition business.

Cargill spent between $8 million and $12 million to build each system, all located in Idaho. The first digester, installed at the Bettencourt Dairy’s Dry Creek Dairy in Hansen, processes manure from 10,000 cows in GHD digesters with a total capacity of 4.7-million gallons. The facility produces 700-scfm of biogas and can generate up to 2.25 MW of electricity.

The other two systems employ low rate modified plug flow reactors developed by Cargill. At Bettencourt Dairy’s B6 Farm in Jerome, a 5.4-million gallon digester system converts manure from 6,000 cows into 515-scfm of biogas to drive gensets with generating capacity of 2.28 MW. This facility was designed with excess generation capacity allowing for codigesting other wastes in the future. The third project is at

Kettle Butte Dairy in Roberts, a 5,500 cow facility near Idaho Falls. A 3.9-million gallon digester system produces 490-scfm of biogas that is used to fuel generators with an installed capacity of 1.7 MW. The digester fibers produced by the systems are shared with the farms. Approximately half are used by the dairies as bedding; the remainder available for Cargill to market as a soil amendment product. Cargill does not have any additional projects in the pipeline. "We are focusing on optimizing the operation of these three projects while we continue to monitor and build knowledge around the market and investigate opportunities as they may show themselves," Maetzold says. One of the challenges is the commercial return, he adds "We want to make sure our capital is utilized so that we get an attractive return."

Diane Greer is a Contributing Editor to BioCycle. Part II of this series, appearing next month, will profile three developers of regional mixed substrate projects.

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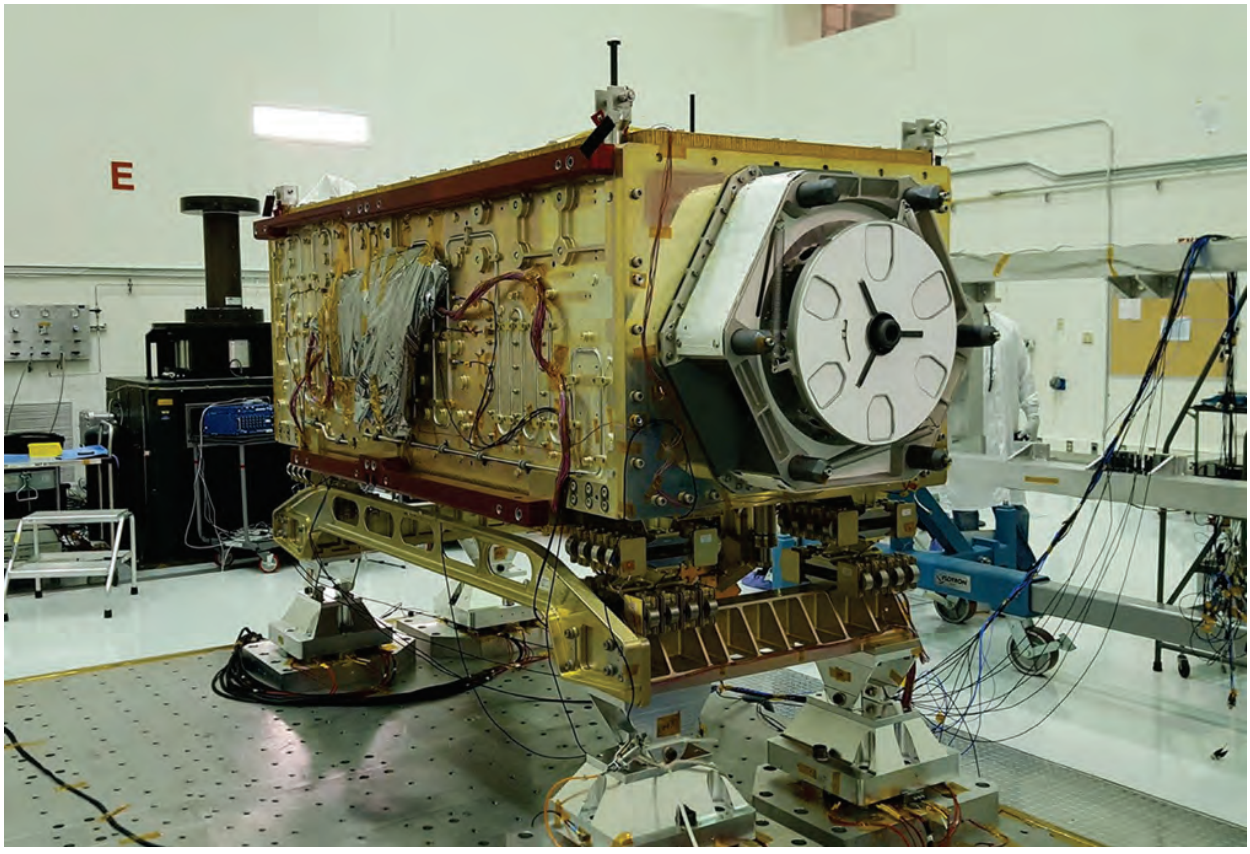
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Part Two

Earth's atmosphere is resilient to many of the changes humans have imposed on it. But, says atmospheric scientist David Crisp of NASA's Jet Propulsion Laboratory in Pasadena, California, that doesn't necessarily mean that our society is.

"The resilience of Earth's atmosphere has been proven throughout our planet's climate history," said Crisp, science team lead for NASA's Orbiting Carbon Observatory-2 (OCO-2) satellite and its successor instrument, OCO-3, which launched to the International Space Station on May 4. "Humans have increased the abundance of carbon dioxide by 45 percent since the beginning of the Industrial Age. That's making big changes in our environment, but at the same time, it's not going to lead to a runaway greenhouse effect or something like that. So, our atmosphere will survive, but, as suggested by UCLA professor and Pulitzer-Prize-winning author Jared Diamond, even the most advanced societies can be more fragile than the atmosphere is."



NASA's OCO-3 instrument sits on the large vibration table (known as the "shaker") in the Environmental Test Lab at NASA's Jet Propulsion Laboratory. Thermal blankets were later added to the instrument at NASA's Kennedy Space Center, where a Space-X

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Dragon capsule carrying OCO-3 launched on a Falcon 9 rocket to the space station on May 4, 2019.
NASA/JPL-Caltech

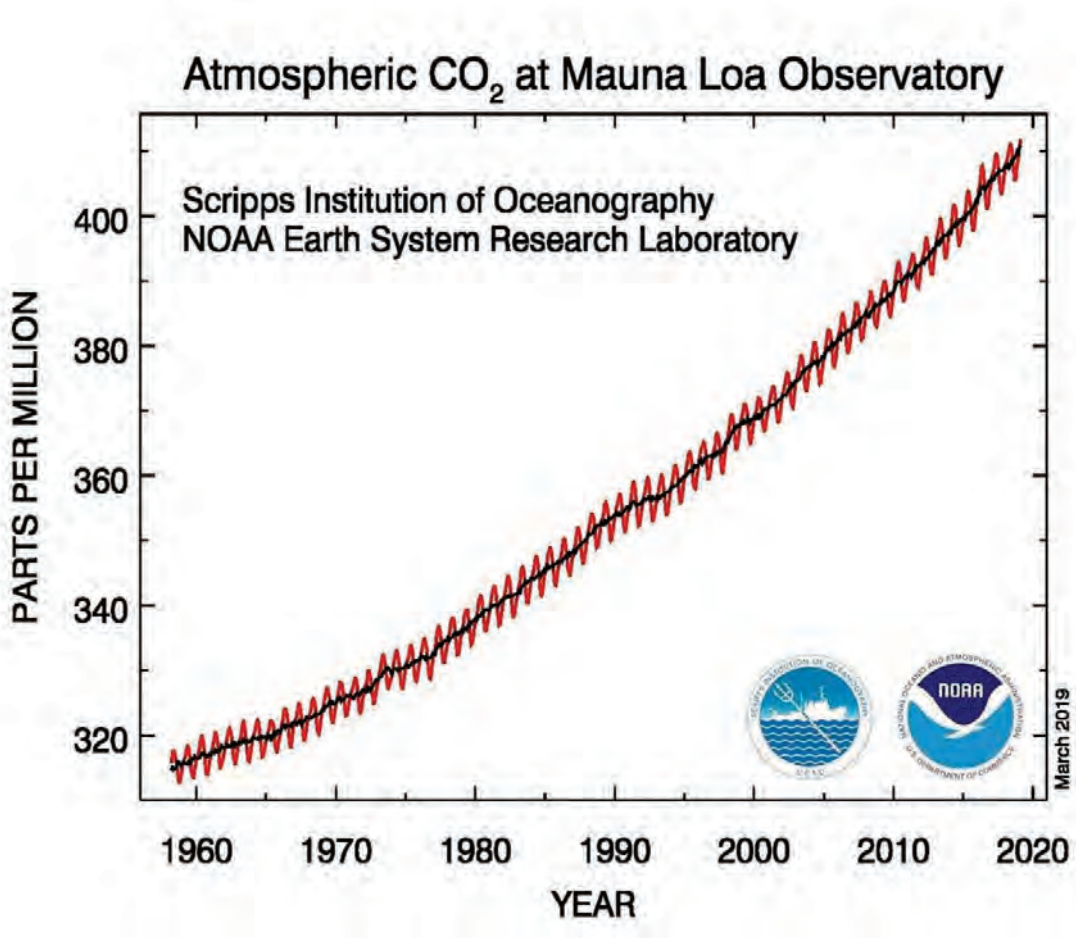
Changes to our atmosphere associated with reactive gases (gases that undergo chemical reactions) like ozone and ozone-forming chemicals like nitrous oxides, are relatively short-lived. Carbon dioxide is a different animal, however. Once it's added to the atmosphere, it hangs around, for a *long* time: between 300 to 1,000 years. Thus, as humans change the atmosphere by emitting carbon dioxide, those changes will endure on the timescale of many human lives.

Earth's atmosphere is associated with many types of cycles, such as the carbon cycle and the water cycle. Crisp says that while our atmosphere is very stable, those cycles aren't.

"Humanity's ability to thrive depends on these other planetary cycles and processes working the way they now do," he said. "Thanks to detailed observations of our planet from space, we've seen some changes over the last 30 years that are quite alarming: changes in precipitation patterns, in where and how plants grow, in sea and land ice, in entire ecosystems like tropical rain forests. These changes should attract our attention.

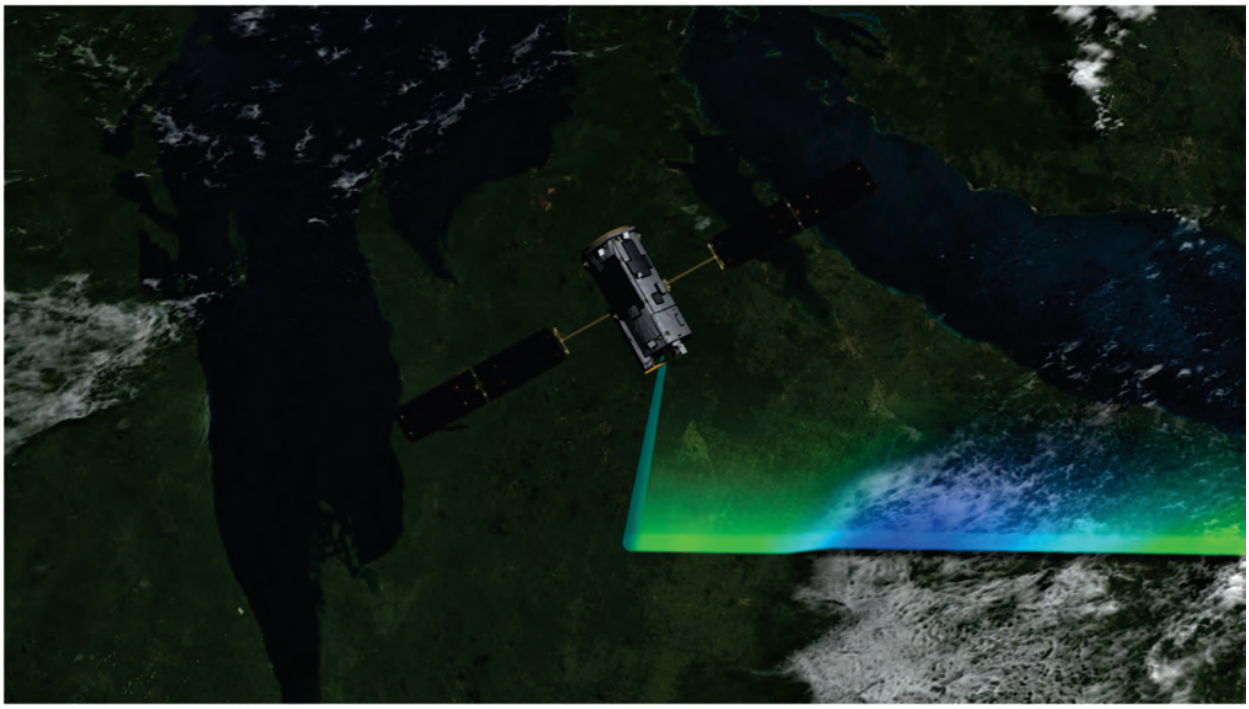
"One could say that because the atmosphere is so thin, the activity of 7.7 billion humans can actually make significant changes to the entire system," he added. "The composition of Earth's atmosphere has most certainly been altered. Half of the increase in atmospheric carbon dioxide concentrations in the last 300 years has occurred since 1980, and one quarter of it since 2000. Methane concentrations have increased 2.5 times since the start of the Industrial Age, with almost all of that occurring since 1980. So changes are coming faster, and they're becoming more significant."

The concentration of carbon dioxide in Earth's atmosphere is currently at nearly 412 parts per million (ppm) and rising. This represents a 47 percent increase since the beginning of the Industrial Age, when the concentration was near 280 ppm, and an 11 percent increase since 2000, when it was near 370 ppm. Crisp points out that scientists know the increases in carbon dioxide are caused primarily by human activities because carbon produced by burning fossil fuels has a different ratio of heavy-to-light carbon atoms, so it leaves a distinct "fingerprint" that instruments can measure. A relative decline in the amount of heavy carbon-13 isotopes in the atmosphere points to fossil fuel sources. Burning fossil fuels also depletes oxygen and lowers the ratio of oxygen to nitrogen in the atmosphere.



A chart showing the steadily increasing concentrations of carbon dioxide in the atmosphere (in parts per million) observed at NOAA's Mauna Loa Observatory in Hawaii over the course of 60 years. Measurements of the greenhouse gas began in 1959.
NOAA

OCO-2, launched in July 2014, gathers global measurements of atmospheric carbon dioxide with the resolution, precision and coverage needed to understand how this important greenhouse gas — the principal human-produced driver of climate change — moves through the Earth system at regional scales, and how it changes over time. From its vantage point in space, OCO-2 makes roughly 100,000 measurements of atmospheric carbon dioxide every day.



Artist's rendering of NASA's Orbiting Carbon Observatory (OCO)-2 in orbit above the U.S. upper Great Plains.
NASA-JPL/Caltech

Crisp says OCO-2 has already provided new insights into the processes emitting carbon dioxide to the atmosphere and those that are absorbing it.

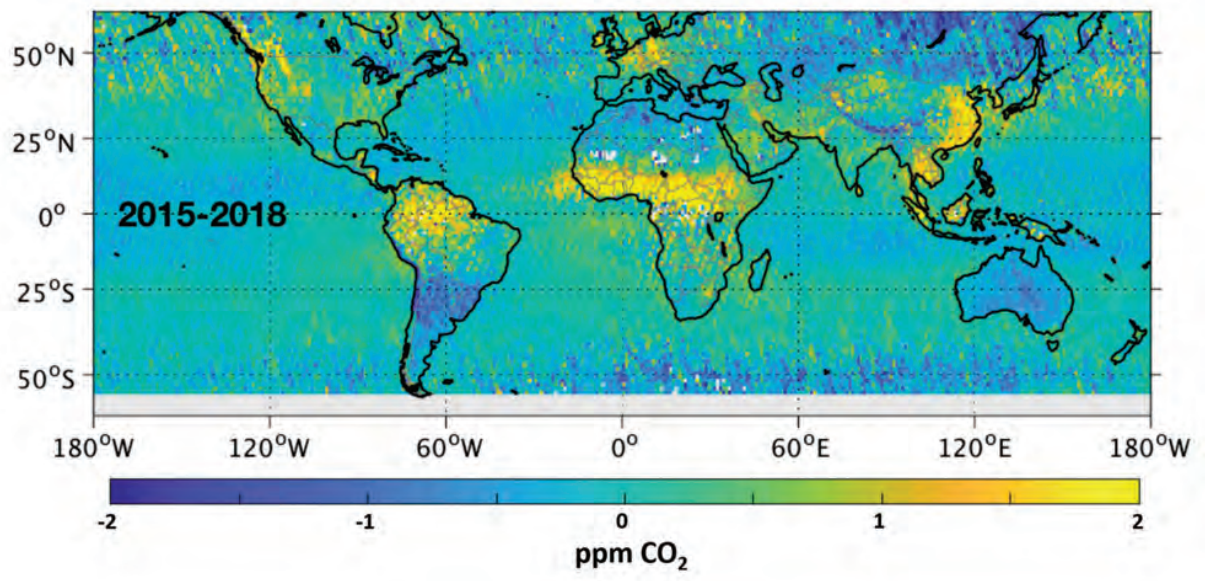


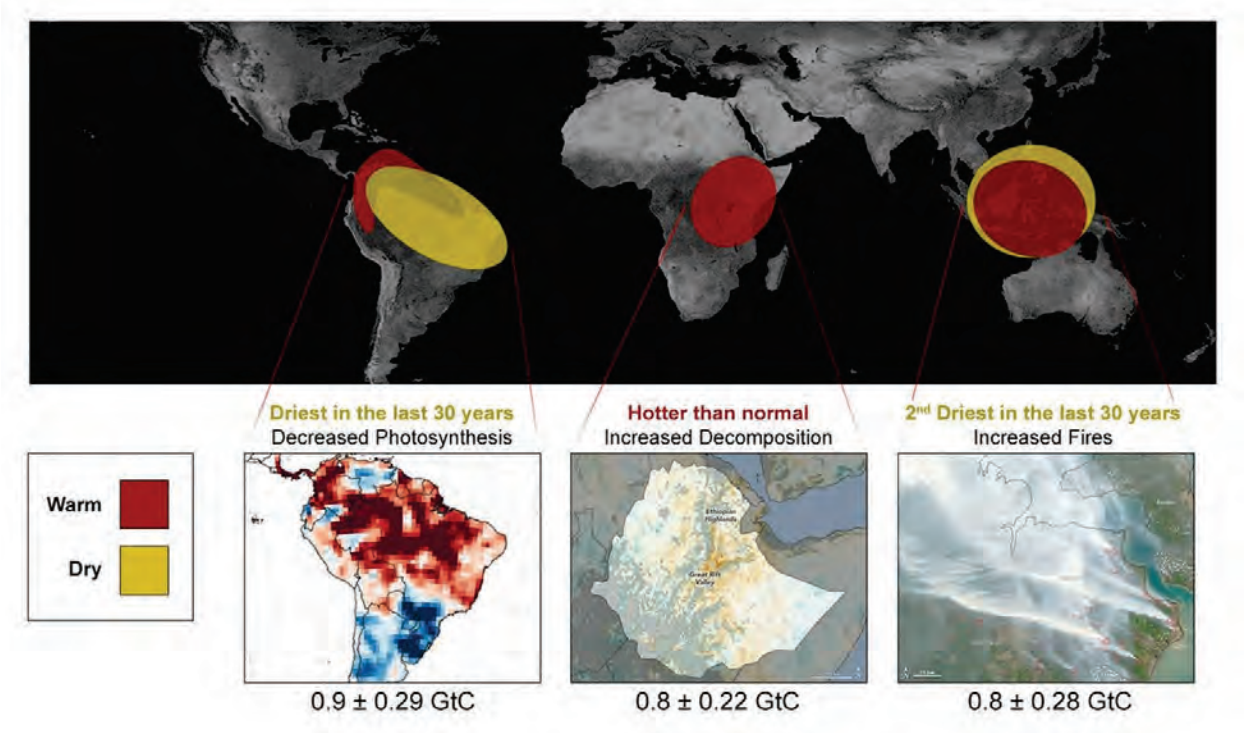
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Map of the most persistent carbon dioxide “anomalies” seen by OCO-2 (i.e. where the carbon dioxide is always systematically higher or lower than in the surrounding areas). Positive anomalies are most likely sources of carbon dioxide, while negative anomalies are most likely to be sinks, or reservoirs, of carbon dioxide.
NASA/JPL-Caltech

“For as long as we can remember, we’ve talked about Earth’s tropical rainforests as the ‘lungs’ of our planet,” he said. “Most scientists considered them to be the principal absorber and storage place of carbon dioxide in the Earth system, with Earth’s northern boreal forests playing a secondary role. But that’s not what’s being borne out by our data. We’re seeing that Earth’s tropical regions are a net *source* of carbon dioxide to the atmosphere, at least since 2009. This changes our understanding of things.”

Measurements of atmospheric carbon dioxide in the tropics are consistently higher than anything around them, and scientists don’t know why, Crisp said. OCO-2 and the Japan Aerospace Exploration Agency’s Greenhouse gases Observing SATellite (GOSAT) are tracking plant growth in the tropics by observing solar-induced fluorescence (SIF) from chlorophyll in plants. SIF is an indicator of the rate at which plants convert light from the Sun and carbon dioxide from the atmosphere into chemical energy.

“We’re finding that plant respiration is outstripping their ability to absorb carbon dioxide,” he said. “This is happening throughout the tropics, and almost all of the time. When we first launched OCO-2, our first two years of on-orbit operations occurred during a strong El Niño event, which had a strong impact on global carbon dioxide emissions. Now we have more than five years of data, and we see that the tropics are always a source (of carbon dioxide), in every season. In fact, the only time we see significant absorption of carbon dioxide in the tropics is in Africa during June, July and August. So that’s half the story.



The last El Niño in 2015-16 impacted the amount of carbon dioxide that Earth's tropical regions released into the atmosphere, , leading to Earth's recent record spike in atmospheric carbon dioxide. The effects of the El Nino were different in each region. NASA-JPL/Caltech

“The other half is also quite interesting,” he added. “We’re seeing northern mid- and high-latitude rainforests becoming better and better absorbers for carbon dioxide over time. One possible explanation for this is that the growing season is getting longer. Things that didn’t used to grow well at high latitudes are growing better and things that were growing well there before are growing longer. We’re seeing that in our data set. We see that South America’s high southern latitudes — the so-called cone of South America — are also strong absorbers for carbon. We don’t know if it was always this way and our previous understandings were incomplete or wrong, or if climate change has increased the intensity of the growing season. So we’ve established a new baseline, and it appears to be somewhat of a paradigm shift. Our space-based measurements are beginning to change our understanding of how the carbon cycle works and are providing new tools to allow us to monitor changes in the future in response to climate change.”

Crisp says OCO-2, OCO-3 and other new satellites are giving us new tools to understand how, where and how much carbon dioxide human activities are emitting into the atmosphere and how

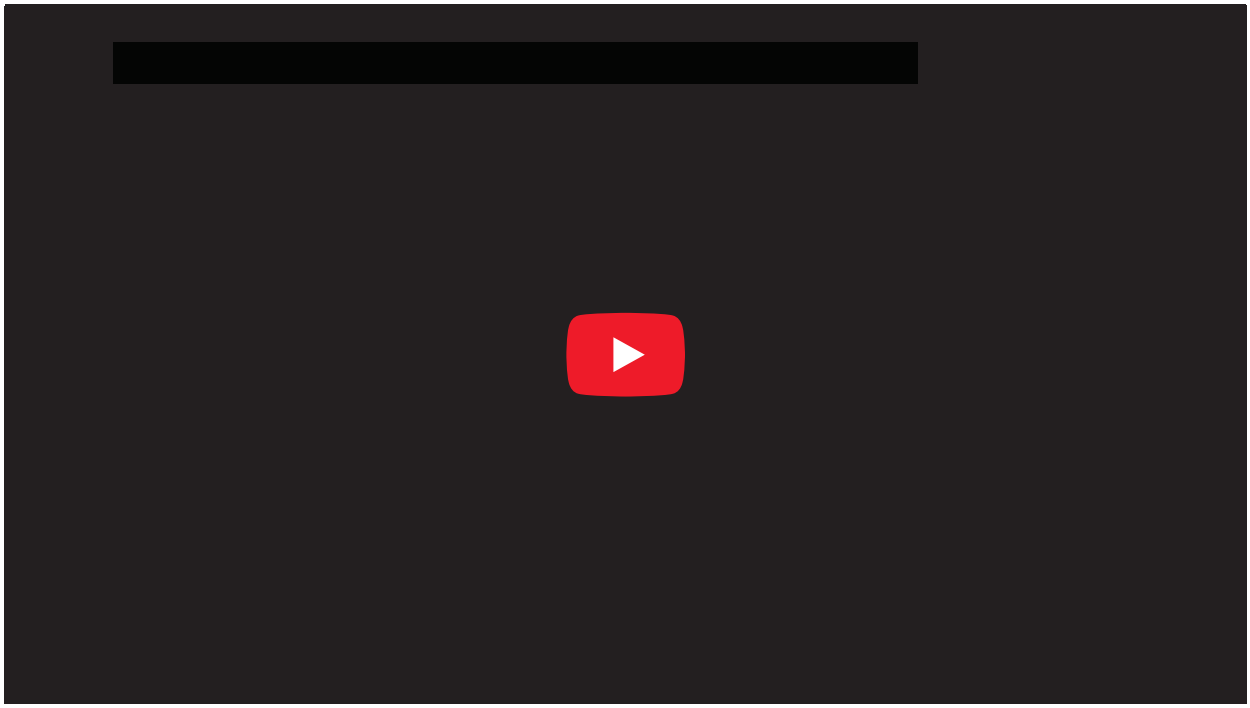
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those emissions are interacting with Earth's natural cycles. "We're getting a sharper picture of those processes," he said.

Impacts from agricultural activities also seem to be changing, he says. During summer in the U.S. upper Midwest, scientists are seeing an intense absorption of carbon dioxide associated with agricultural activities. The same thing is being observed in Eastern and Southern Asia. The strong absorption of carbon dioxide across China is erasing all but a thin strip of fossil fuel emissions along the coast, with Central China now functioning as a net absorber of carbon dioxide during the growing season. Thanks to the development of big, sophisticated computer models combined with wind and other measurements, we're able to quantify these changes for the first time.

In response to the rapid changes observed in carbon dioxide concentrations and their potential impact on our climate, 33 of the world's space agencies, including participants from the United States, Europe, Japan and China, are now working together to develop a global greenhouse gas monitoring system that could be implemented as soon as the late 2020s, Crisp added. The system would include a series of spacecraft making coordinated measurements to monitor these changes. Key components of the system would include the OCO-2 and OCO-3 missions, Japan's GOSAT and GOSAT-2, and Europe's Copernicus missions. The system would be complemented by ground-based and aerial research.

Crisp said he and his fellow team members are eagerly poring over the first science data from OCO-3. The new instrument, installed on the exterior of the space station, will extend and enhance the OCO-2 data set by collecting the first dawn-to-dusk observations of variations in carbon dioxide from space over tropical and mid-latitude regions, giving scientists a better view of emission and absorption processes. This is made possible by the space station's unique orbit, which carries OCO-3 over locations on the ground at slightly different times each orbit.



NASA's OCO-3 mission launched to the International Space Station on May 4, 2019. This follow-on to OCO-2 brings new techniques and new technologies to carbon dioxide observations of Earth from space.
NASA-JPL/Caltech

The Copernicus CO2 Mission, scheduled for launch around 2025, will be the first operational carbon dioxide monitoring satellite constellation. Crisp, who's a member of its Mission Advisory Group, said the constellation will include multiple satellites with wide viewing swaths that will be able to map Earth's entire surface at weekly intervals. While its basic measurement technique evolved from the GOSAT and OCO-2 missions, there's a key difference: the earlier satellites are sampling systems focused on improving understanding of Earth's natural carbon cycle, while Copernicus will be an imaging system focused on monitoring human-produced emissions. In fact, it will have the ability to estimate the emissions of every large power plant in every city around the world.

Crisp says as time goes on the objective is to build an operational system that will monitor all aspects of Earth's environment. Pioneering satellites like OCO-2, OCO-3, GOSAT and GOSAT-2 are adding greenhouse gas measurements to the data on temperature, water vapor, cloud cover, air quality and other atmospheric properties that have been collected for decades.

"We know our atmosphere is changing and that these changes may affect our civilization," he said. "We now have the tools to monitor our atmosphere very carefully so that we can give

policymakers the best information available. If you've invested in a carbon reduction strategy, such as converting from coal to natural gas or transitioning from fossil fuels to renewables, wouldn't you like to know that it worked? You can only manage what you can measure."

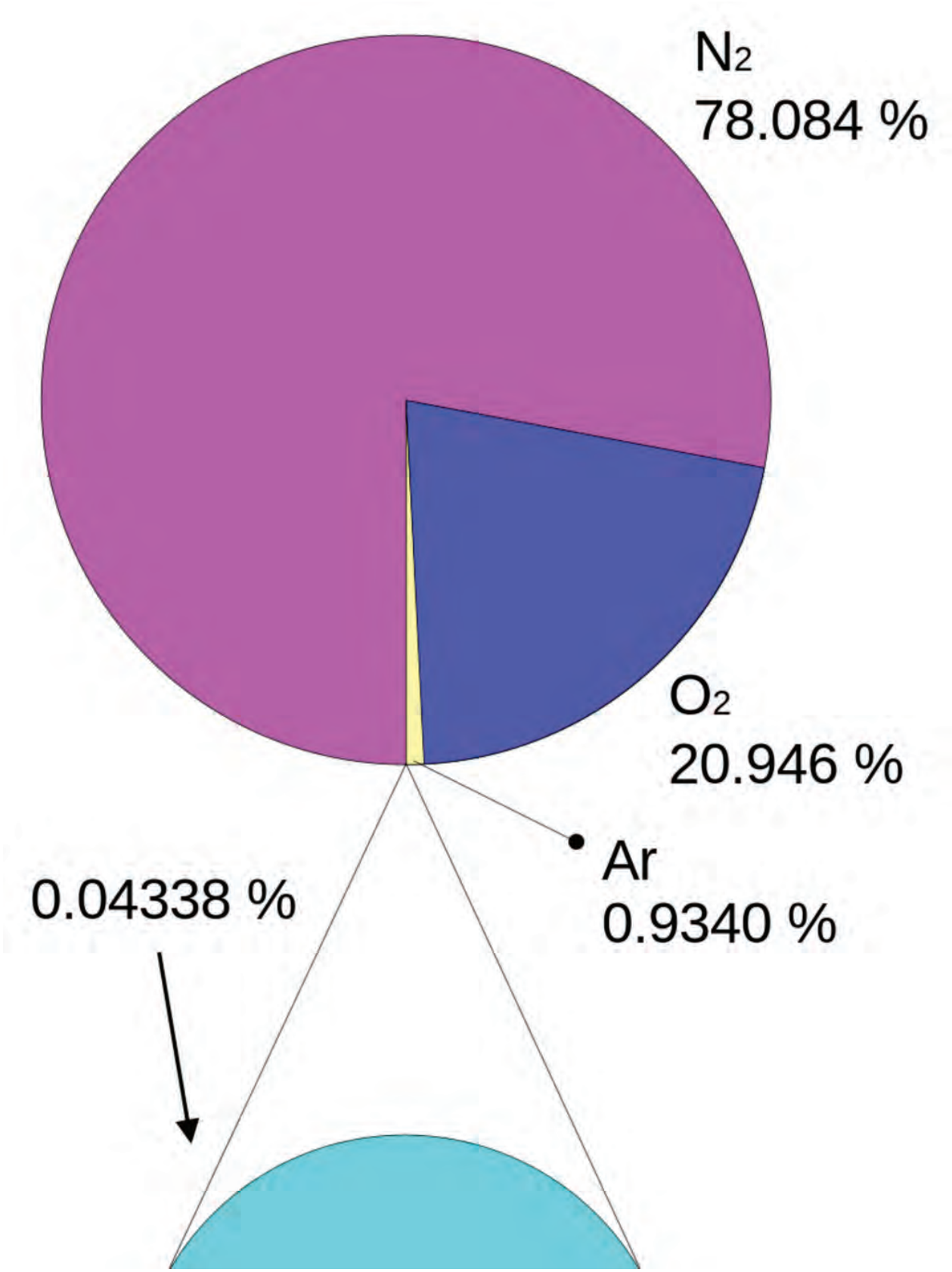
For more on OCO-2, visit https://ocov2.jpl.nasa.gov/.

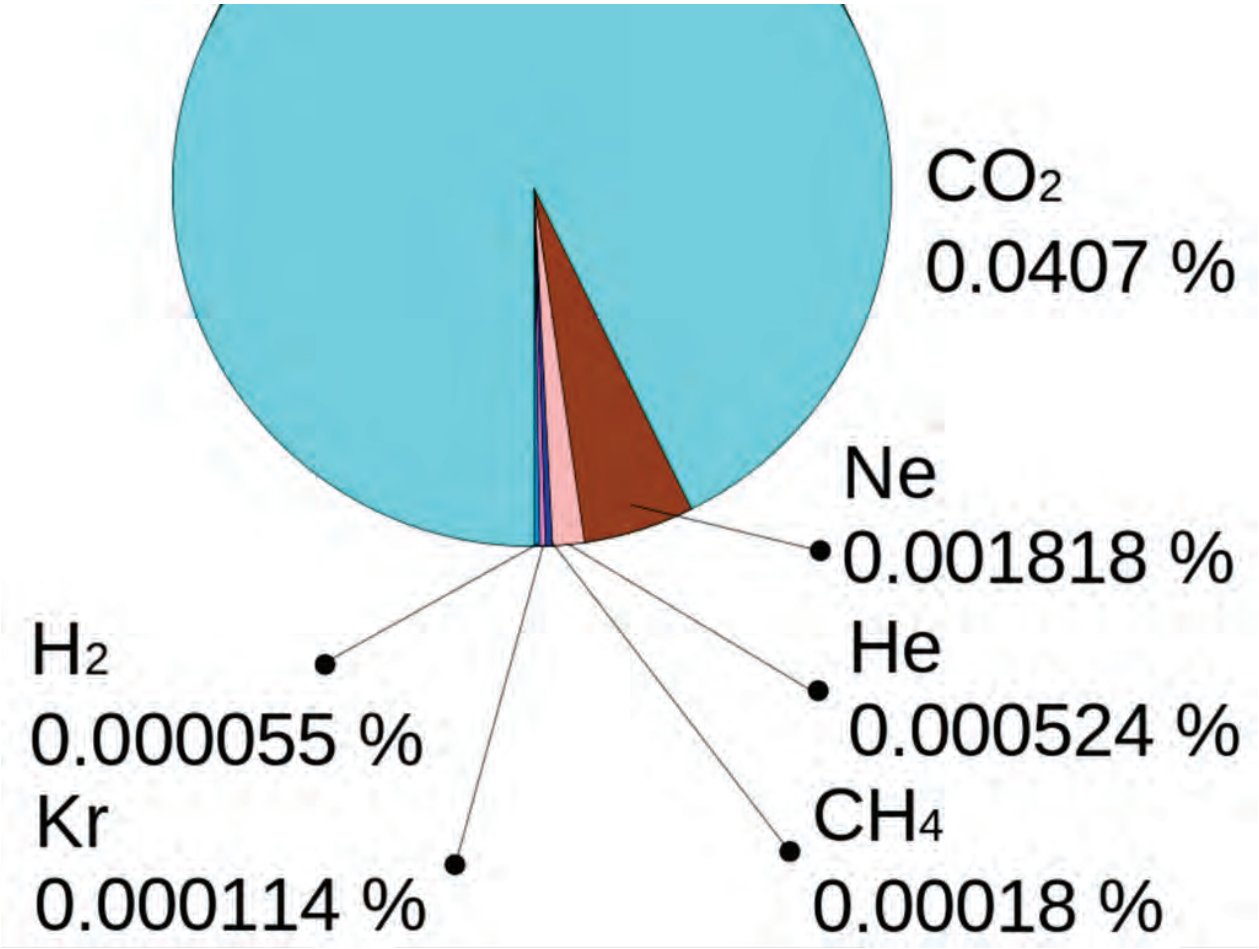
For more on OCO-3, visit https://ocov3.jpl.nasa.gov/.

Part One of this series: 'The Atmosphere: Earth's Security Blanket'

Next up: 'The Atmosphere: Tracking the Ongoing Recovery of Earth's Ozone Hole'

What's in the Air?


N2
78.084 %
O2
20.946 %
Ar
0.9340 %
0.04338 %



Composition of Earth's atmosphere by volume. Lower pie represents trace gases that together compose about 0.04% of the atmosphere (0.041197% at March 2019 concentration). Numbers are mainly from 1987, with carbon dioxide and methane from 2009, and do not represent any single source. Credit: Public domain

By volume, the dry air in Earth's atmosphere is about 78.08 percent nitrogen, 20.95 percent oxygen, and 0.93 percent argon.

A brew of trace gases accounts for the other approximately 0.04 percent, including the greenhouse gases carbon dioxide, methane, nitrous oxide and ozone. Yet while these greenhouse gases make up just a tiny percentage of our atmosphere, they play major roles in trapping Earth's radiant heat and keeping it from escaping into space, thereby warming our planet and contributing to Earth's greenhouse effect.

The largest greenhouse gas by volume is actually the one most people tend to overlook: water vapor, whose concentration varies significantly depending on temperature. As the temperature of the atmosphere increases, the amount of humidity in the atmosphere also goes up, further

heating our planet in a vicious cycle.

Tiny solid or liquid particles known as aerosols, which are produced both naturally and by human activities, are also present in variable amounts, along with human-produced industrial pollutants and natural and human-produced sulfur compounds.

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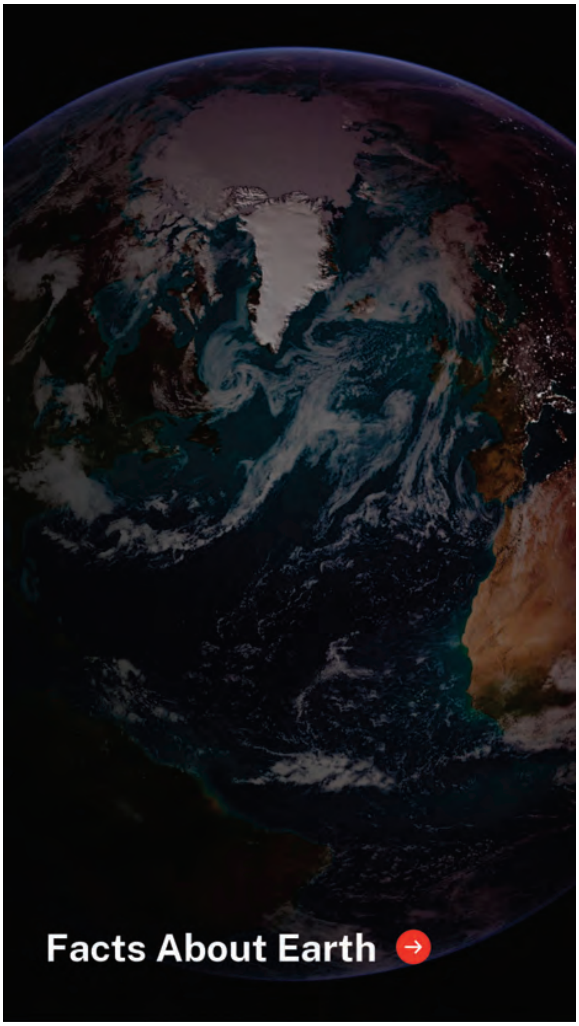
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Errata + Protocol

CLIMATE ACTION RESERVE

U.S. Livestock Project Protocol
Version 4.0
ERRATA AND CLARIFICATIONS

The Climate Action Reserve (Reserve) published its U.S. Livestock Project Protocol Version 4.0 (LSPP V4.0) in January 2013. While the Reserve intends for the LSPP V4.0 to be a complete, transparent document, it recognizes that correction of errors and clarifications will be necessary as the protocol is implemented and issues are identified. This document is an official record of all errata and clarifications applicable to the LSPP V4.0.[1]

Per the Reserve's Program Manual, both errata and clarifications are considered effective on the date they are first posted on the Reserve website. The effective date of each erratum or clarification is clearly designated below. All listed and registered livestock projects must incorporate and adhere to these errata and clarifications when they undergo verification. The Reserve will incorporate both errata and clarifications into future versions of the protocol.

All project developers and verification bodies must refer to this document to ensure that the most current guidance is adhered to in project design and verification. Verification bodies shall refer to this document immediately prior to uploading any Verification Statement to assure all issues are properly addressed and incorporated into verification activities.

If you have any questions about the updates or clarifications in this document, please contact Policy at policy@climateactionreserve.org or (213) 891-1444 x3.

[1] See Section 4.3.4 of the Climate Action Reserve Program Manual for an explanation of the Reserve's policies on protocol errata and clarifications. "Errata" are issued to correct typographical errors. "Clarifications" are issued to ensure consistent interpretation and application of the protocol. For document management and program implementation purposes, both errata and clarifications are contained in this single document.

Please ensure that you are using the latest version of this document

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Section 3

1. Regulatory Compliance at Centralized Digesters (CLARIFICATION – July 21, 2016)

Section: 3.6 (Regulatory Compliance)

Context: This section states that, where a verifier determines that project activities have caused a material violation, no CRTs will be issued during the period(s) when the violation occurred. The guidance in this section does not specify how to address regulatory compliance for projects where manure is received from multiple farms and managed in a centralized BCS.

It is unclear whether a violation with respect to one manure source facility would jeopardize the ability of the project to receive credit from emission reductions related to manure from other source facilities. It may be possible for an offset project at a centralized digester to have CRTs issued to it for manure from compliant manure source facilities during a period of time when one or more manure source facilities are materially noncompliant with a regulation.

Clarification: The following text shall be inserted on page 7, at the end of Section 3.6:

"With respect to projects that accept and manage manure from multiple, discrete source facilities (separate from the project BCS in both physical location and management), it may be possible for a project developer to demonstrate that a regulatory violation at one source facility does not affect the eligibility of the entire project under this section. Project developers should contact the Reserve to discuss potential regulatory non-compliance issues."

Section 5

2. Accounting for Methane Emissions during Temporary Project Shutdown (CLARIFICATION – October 29, 2013)

Section: 5.3 (Calculating Project Methane Emissions)

Context: The last full paragraph on page 24 reads: "Although not common under normal digester operation, it is possible that a venting event may occur due to catastrophic failure of digester cover materials, the digester vessel, or the gas collection system. In the event that a catastrophic system failure results in the venting of biogas, the quantity of methane released to the atmosphere shall be estimated according to Equation 5.7 below."

Equation 5.7 on page 26 provides guidance for calculating the quantity of methane released during a venting event, which is added to the total Project Methane Emissions from the BCS, as calculated in Equation 5.6. Equation 5.7 accounts for two releases of biogas: the initial release of biogas being stored in the digester, and then the daily release of additional gas that is generated in the digester until the gas collection system is functional.

The intent of the current guidance is to account for situations where the project digester continues to receive and treat manure, but the gas collection system is discovered to be compromised. In situations where the project digester has been shut down for longer periods of

time, biogas is typically released from the digester and then project manure directed to an anaerobic system (e.g. either the covers are taken off the digester or manure is diverted to open lagoons) that would meet the definition in Section 3.4. During such longer shutdowns, it has not been clear whether this entire period of time should be considered a venting event and, if so, how quantification of emissions should proceed.

Clarification: The following text shall be inserted between Equation 5.7 and Equation 5.8 on page 26:

"A venting event occurs when the project digester continues to process manure, but biogas is vented directly to the atmosphere (e.g. through a rip in a lagoon cover or a broken pipe). Projects that experience a venting event shall continue to use Equation 5.7 to calculate the resulting project methane emissions.

A project shutdown occurs when the project digester is no longer functional. This occurs when the project reverts to an open, uncontrolled, anaerobic manure treatment system (e.g. the manure is redirected to open, anaerobic lagoons, or the cover is completely removed from a covered lagoon digester and no heating or mixing occurs). A project shutdown is defined as a venting event on the day of the shutdown, and then a cessation of project operations until the BCS is once again operable.

In the case where the project BCS is shut down and the manure is treated in an open, uncontrolled, anaerobic system (meeting the definition in Section 3.4), the project scenario shall be assumed to be equal to the baseline scenario. In this case the project must quantify the release of stored biogas (MS_{BCS} in Equation 5.7) at the time that the system is shut down, but not the subsequent daily release of biogas from the open lagoons. In these situations the project will cease quantification of emission reductions until the BCS is once again operational."

3. Service Providers for Site-Specific Destruction Efficiency Testing (CLARIFICATION – January 21, 2014)

Section: 5.3 (Calculating Project Methane Emissions)

Context: Footnote 19 on page 25 provides guidelines for service provider accreditation. It is not clear what specific options are available and permissible for projects located in a state or locality which does not have an accreditation program for source test service providers. Footnote 26 on page 29 and the first full paragraph on page 69 in Appendix B contain similar language.

Clarification: The intent of this requirement is to ensure that any source testing conducted for the determination of a site-specific value for methane destruction efficiency is of a quality that would be acceptable for compliance by a regulatory body. The following text shall replace the last sentence of footnote 19 on page 25, of footnote 26 on page 29, and of the first full paragraph on page 69 of Appendix B:

> "If neither the state nor locality relevant to the project site offer accreditation for source testing service providers, projects may use an accredited service provider from another U.S. state or domestic locality. Alternatively, projects may choose a non-accredited service provider, under the following conditions: 1) the service provider must provide verifiable evidence of prior testing which was accepted for compliance by a domestic regulatory agency, and 2) the prior testing procedures must be substantially similar to

the procedures used for determining methane destruction efficiency for the project destruction device(s)."

Section 6

4. Monitoring Operational Status (CLARIFICATION – October 29, 2013)

Section: 6.2 (Biogas Control System Monitoring Requirements)

Context: The first and second paragraphs of page 35 in Section 6.2 states that "[o]perational activity of the destruction devices shall be monitored and documented at least hourly to ensure actual methane destruction. … If for any reason the destruction device or the operational monitoring equipment…is inoperable, then all metered biogas going to the particular device shall be assumed to be released to atmosphere…[and] the destruction efficiency of the device must be assumed to be zero."

Certain types of destruction devices, such as internal combustion engines and most large boiler systems, are designed in such a way that gas may not flow through the device if it is not operational. It has not been clear how the requirements of Section 6.2 apply to these devices.

Clarification: The first sentence of the first paragraph on page 35 shall be read to apply to all destruction devices in use during the reporting period. The paragraph on page 34 of Section 6.2 starting, "[a] single flow meter may be used…," shall not be construed to relax the requirement for hourly operational data for all destruction devices. Rather, that paragraph is allowing a specific metering arrangement during periods when one or more devices are known to be not operating. All destruction devices must have their operational status monitored and recorded at least hourly. If these data are missing or never recorded for a particular device, that device will be assumed to be not operating and will be assigned a destruction efficiency of zero for all flow data that are assigned to that device.

5. Instrument QA/QC for a Stationary Flow Meter in Use for 60 Days or More that is Removed and Not Reinstalled During the Same Reporting Period (CLARIFICATION – July 19, 2023)

Section: 6.3 (Biogas Measurement Instrument QA/QC)

Context: Section 6.2 of the protocol states that:

"If a stationary meter that was in use for 60 days or more is removed and not reinstalled during a reporting period, that meter shall either be field-checked for calibration accuracy prior to removal or calibrated (with percent drift documented) by the manufacturer or a certified calibration service prior to quantification of emission reductions for that reporting period."

The intent of the requirement above is to ensure accurate flow meter data is being recorded and used for emission reduction calculations. However, the timeline and requirement to perform a field-check for calibration accuracy or calibration by the manufacturer is unclear.

Clarification: The following language has replaced the requirement mentioned above:

"If a stationary meter that was in use for 60 days or more is removed and not reinstalled during a reporting period, that meter shall either be:

- field-checked for calibration accuracy within 2 months of removal; or
- calibrated (with percent drift documented) by the manufacturer or a certified calibration service (with as-found results recorded) no more than 12 months prior to use of the meter to quantify emission reductions and no later than the commencement of verification activities for the relevant reporting period.

6. Meter Field Check Procedures (CLARIFICATION – October 29, 2013)

Section: 6.3 (Biogas Measurement Instrument QA/QC)

Context: The second paragraph below the first bulleted list of page 36 in Section 6.3 states that "[i]f the field check on a piece of equipment reveals accuracy outside of a +/- 5% threshold, calibration by the manufacturer or a certified service provider is required for that piece of equipment…"

Certain types of biogas flow meters and methane analyzers are susceptible to measurement drift due to buildup of moisture or contaminants on the metering sensor, even if the equipment itself is not out of calibration. If the as-found condition of the meter is outside of the accuracy threshold, but the as-left condition (after cleaning) is within the accuracy threshold, it is not clear whether a full calibration is still required for this piece of equipment. In some cases the manufacturer provides specific guidance to this effect.

Clarification: The following text shall be inserted after the second paragraph following the bulleted list on page 36:

"The as-found condition (percent drift) of a field check must always be recorded. If the meter is found to be measuring outside of the +/- 5% threshold for accuracy, the data must be adjusted for the period beginning with the last successful field check or calibration event up until the meter is confirmed to be in calibration. If, at the time of the failed field check, the meter is cleaned and checked again, with the as-left condition found to be within the accuracy threshold, a full calibration is not required for that piece of equipment. This shall be considered a failed field check, followed by a successful field check. The data adjustment shall be based on the percent drift recorded at the time of the failed field check. However, if the as-left condition remains outside of the +/- 5% accuracy threshold, calibration is required by the manufacturer or a certified service provider for that piece of equipment."

7. Methane Analyzer Factory Calibrations (CLARIFICATION – November 16, 2017)

Section: 6.3 (Biogas Measurement Instrument QA/QC)

Context: The fourth bullet in the list at the beginning of this section (page 36) states that "[all gas flow meters and continuous methane analyzers must be] calibrated by the manufacturer or a certified calibration service per manufacturer's guidance or every 5 years, whichever is more frequent."

The principle underlying this requirement is the need to ensure data integrity. More specifically, the intent of this requirement is that meters meet such requirement every time they are used to gather data that is used in project emission reduction quantification. If a meter was out of conformance with this calibration requirement during a portion of the reporting period when it is not in use, but is brought back into conformance with this requirement before again being used to gather data which is used for project emission reduction calculations, then the underlying intent of this requirement is met.

Clarification: The following text shall be inserted after the fourth bulleted point at the beginning of Section 6.3:

"Conformance with this requirement is only required during periods of time where data gathered by the meter are used for emission reduction quantification. Periods where the meter did not meet this requirement will not cause the project to fail this requirement, provided the meter was not being used for project emission reduction quantification during such periods, and provided the meter was brought back into conformance before being employed to gather data which is used for project emission reduction quantification."

Appendix D

8. Data Substitution when Operational Data are Missing (ERRATUM – October 29, 2013)

Section: Appendix D (Data Substitution)

Context: There are three parameters necessary for the quantification of biogas destruction: biogas flow volume, methane concentration, and operational status of the destruction device. Section D.1 on page 80 provides a methodology for the substitution of missing biogas flow or methane concentration data. Data on the operational status of a destruction device are not eligible for substitution. Substitution of one parameter (i.e. flow or concentration) is only allowed if both other parameters are successfully recorded during the data gap. Thus, to employ the data substitution methodology, it is required that the record of operational status be intact during the gap.

This data substitution methodology was originally developed to resolve incidents of missing methane destruction data in landfill gas projects. Under that project type, excluding the data gap entirely is equivalent to the use of a destruction efficiency (DE) value of zero, whereas the same is not true for a livestock project. In the case of the Livestock Project Protocol, there is additional guidance on page 35 of Section 6.2 that requires the use of a DE value of zero for periods where the destruction device is inoperable, or the operational data are missing. This procedure effectively provides substitution of missing operational data with the assumption that the device was inoperable during the data gap. The effect of this substitution is an increase in project emissions, resulting in a more conservative estimate of emission reductions, regardless of whether the ultimate estimate of emission reductions is based on the modeled baseline or the metered methane destruction.

Because of the nature of the quantification methodology for livestock projects, and the ways that it differs from that of landfill projects, it is appropriate and conservative to carry out flow or methane data substitution, even if the destruction device is inoperable. Under this protocol, the quantification of emission reductions will be more conservative than if the data substitution were not employed.

Correction: The guidance on page 35 of Section 6.2 shall supersede the guidance in Appendix D. The following text shall be inserted after the second paragraph of Section D.1 in Appendix D:

"If the destruction device is inoperable, or its operational data are missing, the destruction efficiency for the device shall be zero during that period of time. Data substitution may be employed for missing biogas flow or methane concentration data during periods of missing operational data, provided the dataset is able to fulfill all other requirements of this data substitution methodology. The data substitution methodology shall be employed in the manner resulting in the greatest level of conservativeness for the quantification of emission reductions."

9. Data Substitution for Continuous Methane Data (CLARIFICATION – October 29, 2013)

Section: Appendix D (Data Substitution)

Context: The data substitution methodology in Appendix D may not be used for data gaps that are greater than seven days. However, the minimum measurement frequency for methane concentration data is once per quarter (three months). For projects that measure methane concentration at a frequency that is greater than quarterly, it is not clear how methane values should be applied during gaps of more than one week but less than an entire quarter.

Clarification: As long as a livestock project has at least one methane concentration reading per quarter, the project may satisfy the monitoring requirements in Section 6.2. A livestock project may have gaps between methane concentration readings that are greater than one week without this being considered "missing data" as it is conceived in Appendix D. Thus, project developers may devise a reasonable approach by which to assign a value to periods of time between recorded methane concentration values. The verifier shall confirm that the value(s) applied by the project is reasonable and conservative. No data substitution may be applied if there are no methane concentration readings during an entire quarter.

U.S. Livestock

Protocol | Version 4.0 | January 23, 2013

CLIMATE ACTION RESERVE

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Abbreviations and Acronyms

BCS	Biogas control system
CARB	California Air Resources Board
CH_4	Methane
CNG	Condensed natural gas
CO_2	Carbon dioxide
CRT	Climate Reserve Tonne
EPA	U.S. Environmental Protection Agency
GHG	Greenhouse gas
GWP	Global warming potential
IPCC	Intergovernmental Panel on Climate Change
lb	Pound
LNG	Liquefied natural gas
MCF	Methane conversion factor
MT	Metric ton or tonne
N_2O	Nitrous oxide
NG	Natural gas
QA/QC	Quality Assurance/Quality Control
Reserve	Climate Action Reserve
scf	Standard cubic foot at 1 atm pressure and 60°F temperature
SSR	Sources, sinks, and reservoirs
t	Metric ton or tonne
TAM	Typical animal mass
VS	Volatile solids

1 Introduction

The Climate Action Reserve's (Reserve) Livestock Project Protocol provides guidance to account for and report greenhouse gas (GHG) emission reductions associated with the installation of a biogas control system (BCS) for manure management on dairy cattle and swine farms. The protocol focuses on quantifying the change in methane emissions, but also accounts for potential increases in carbon dioxide emissions.

The Climate Action Reserve is the most experienced, trusted and efficient offset registry to serve the California cap-and-trade program and the voluntary carbon market. With deep roots in California and a reach across North America, the Reserve encourages actions to reduce greenhouse gas emissions and works to ensure environmental benefit, integrity and transparency in market-based solutions to address global climate change. It operates the largest accredited registry for the California compliance market and has played an integral role in the development and administration of the state's cap-and-trade program. For the voluntary market, the Reserve establishes high quality standards for carbon offset projects, oversees independent third-party verification bodies and issues and tracks the transaction of carbon credits (Climate Reserve Tonnes) generated from such projects in a transparent, publicly-accessible system. The Reserve program promotes immediate environmental and health benefits to local communities and brings credibility and value to the carbon market. The Climate Action Reserve is a private 501(c)(3) nonprofit organization based in Los Angeles, California.

Project developers that install manure biogas capture and destruction technologies use this document to register GHG reductions with the Reserve. The protocol provides eligibility rules, methods to calculate reductions, performance-monitoring instructions, and procedures for reporting project information to the Reserve. Additionally, all project reports receive independent verification by Reserve-approved verification bodies. Guidance for verification bodies to verify reductions is provided in the Verification Program Manual and Section 8 of this protocol.

This project protocol facilitates the creation of GHG emission reductions determined in a complete, consistent, transparent, accurate, and conservative manner, while incorporating relevant sources.[1]

[1] See the WRI/WBCSD GHG Protocol for Project Accounting (Part I, Chapter 4) for a description of GHG accounting principles.

2 The GHG Reduction Project

Manure treated and stored under anaerobic conditions decomposes to produce methane, which, if uncontrolled, is emitted to the atmosphere. This predominantly occurs when livestock operations manage waste with anaerobic, liquid-based systems (e.g. in lagoons, ponds, tanks, or pits). Within the livestock sector, the primary drivers of methane generation include the amount of manure produced and the fraction of volatile solids (VS) that decompose anaerobically. Temperature and the retention time of manure during treatment and storage also affect methane production.

2.1 Project Definition

For the purpose of this protocol, the GHG reduction project is defined as the installation and operation of a biogas control system[2] that captures and destroys methane gas from anaerobic manure treatment and/or storage facilities on livestock operations. The biogas control system must destroy methane gas that would otherwise have been emitted to the atmosphere in the absence of the project from uncontrolled anaerobic treatment and/or storage of manure.

Captured biogas can be destroyed on-site, or transported for off-site use (e.g. through gas distribution or transmission pipeline), or used to power vehicles. Regardless of how project developers take advantage of the captured biogas, the ultimate fate of the methane must be destruction.

"Centralized digesters" that integrate waste from more than one livestock operation also meet the definition of a GHG reduction project.

Note that the protocol does not preclude project developers from co-digesting organic matter in the biogas control system. However, the additional organics could impact the nutrient properties of digester effluent; project developers should consider this when assessing the project's associated water quality impacts. The Reserve has also developed the Organic Waste Digestion Project Protocol that provides a quantification methodology for crediting the co-digestion of eligible waste streams with livestock manure. The protocol is available at http://www.climateactionreserve.org/how/protocols/adopted/organic-waste-digestion/current/.

2.2 The Project Developer

The "project developer" is an entity that has an active account on the Reserve, submits a project for listing and registration with the Reserve, and is ultimately responsible for all project reporting and verification. Project developers could be livestock facility owners and operators, GHG project financiers, or other entities. The project developer must have clear ownership of the project's GHG reductions. Ownership of the GHG reductions must be established by clear and explicit title, and the project developer must attest to such ownership each time the project is verified by signing the Reserve's Attestation of Title form.[3]

Under this protocol, the project developer is the only party required to be involved with project implementation.

[2] Biogas control systems encompass anaerobic digester systems – which may be designed and operated in a variety of ways, from ambient temperature covered lagoons to heated lagoons to mesophilic plug flow or complete mix concrete tank digesters—as well as methane destruction systems, such as flares or engines.

[3] Attestation of Title form available at http://www.climateactionreserve.org/how/projects/register/project-submittal-forms/.

3 Eligibility Rules

Project developers using this protocol must satisfy the following eligibility rules to register reductions with the Reserve. The criteria only apply to projects that meet the definition of a GHG reduction project.

Eligibility Rule I:	Location	→	*U.S., its territories, and tribal lands*
Eligibility Rule II:	Project Start Date	→	*No more than 6 months prior to project submission*
Eligibility Rule III:	Anaerobic Baseline	→	*Demonstrate anaerobic baseline conditions*
Eligibility Rule IV:	Additionality	→	*Meet performance standard*
		→	*Exceed regulatory requirements*
Eligibility Rule V:	Regulatory Compliance	→	*Compliance with all applicable laws*

3.1 Location

Only projects located in the United States and its territories, or on U.S. tribal lands, are eligible to register reductions with the Reserve under this protocol. Livestock projects located in Mexico must use the Mexico Livestock Project Protocol if seeking to register GHG reductions with the Reserve.

3.2 Project Start Date

The start date for a livestock project is defined as the date on which the project's biogas control system becomes operational. For the purposes of this protocol, a BCS is considered *operational* on the date that the system begins producing and destroying methane gas following an initial start-up period. This date can be selected by the project developer within the 6 month period following the date on which manure is first loaded into the digester or on the date that the cover installation was completed (for a covered lagoon digester where the lagoon already contained manure).

Projects must be submitted to the Reserve no more than six months after the project start date.

3.3 Project Crediting Period

Project developers are eligible to register GHG reductions with the Reserve according to this protocol for a period of ten years following the project's start date. All projects that initially pass the eligibility requirements set forth in this protocol are eligible to register GHG reductions with the Reserve for the duration of the project's first crediting period (ten years), even if a regulatory agency with authority over a livestock operation passes a rule obligating the installation of a BCS during this initial crediting period.

If a project developer wishes to apply for eligibility under a second crediting period, they must do so within the final six months of the initial crediting period. Thus, the Reserve may issue CRTs for GHG reductions quantified and verified according to the U.S. Livestock Project Protocol for a maximum of two ten year crediting periods after the project start date. Section 3.5.1 and 3.5.2 describe the requirements to qualify for a second crediting period. Deadlines and requirements

for reporting and verification, as laid out in this protocol, the Program Manual, and the Verification Program Manual, will continue to apply without interruption.

3.4 Uncontrolled Anaerobic Baseline

The installation of a BCS at a livestock operation where the primary manure management system is aerobic (produces little to no methane) may result in an increase of the amount of methane emitted to the atmosphere. Thus, the BCS must digest manure that would primarily be treated in an anaerobic system in the absence of the project in order for the project to meet the definition of a GHG reduction project. Sections 3.4.1, 3.4.2, and 3.4.3 explain the specific baseline scenario options. Under any one of these scenarios, the uncontrolled anaerobic baseline requirement may be temporarily disrupted for the purposes of construction of the project digester. In these cases, the verifier may use professional judgment to confirm that the requirements of this section have been met.

3.4.1 Existing Livestock Facilities

For livestock facilities that have been in operation for more than five years, developers of livestock projects must demonstrate that an uncontrolled anaerobic manure management system was in place for the five years immediately prior to the date that manure was first loaded into the project digester. That anaerobic system may include a lagoon or a pond as long as the depth of the system was sufficient to prevent algal oxygen production and create an oxygen-free bottom layer (i.e. greater than 1 meter in liquid depth).[4]

For livestock facilities that have been in operation for more than two years, but less than five years, developers of livestock projects must demonstrate that an uncontrolled anaerobic manure management system was in place at all times up until the project's start date.

3.4.2 New Livestock Facilities (Greenfields)

Greenfield livestock projects (i.e. projects that are implemented at livestock facilities that have been in operation for less than two years at a site that had no prior manure management infrastructure) are eligible only if the project developer can demonstrate that there are no restrictions to the construction and operation of an open, uncontrolled, anaerobic manure storage system. Since a greenfield project will not have an existing manure management system that can be used to model the baseline methane emissions, all greenfield projects shall utilize a set of standardized baseline management assumptions (see Table B.10).

3.4.3 Centralized Digesters

For projects that employ a centralized digester that will be accepting manure from more than one livestock operation, each individual source of manure (identified by livestock facility) must meet the anaerobic baseline requirements above as of the project start date. In other words, if a new facility begins sending manure to the project digester after the project start date, the anaerobic baseline of that manure must still be assessed as of the project start date.

[4] This is consistent with the United Nations Framework Convention on Climate Change (UNFCCC) Clean Development Mechanism (CDM) methodology ACM00010 (available at: http://cdm.unfccc.int/methodologies/PAmethodologies/approved.html). For additional information on the design and maintenance of anaerobic wastewater treatment systems, see U.S. Department of Agriculture Natural Resources Conservation Service, Conservation Practice Standard, Waste Storage Facility, No. 313; and U.S. Department of Agriculture Natural Resources Conservation Service, Conservation Practice Standard, Waste Treatment Lagoon, No. 359.

3.5 Additionality

The Reserve will only accept projects that yield surplus GHG reductions that are additional to what would have otherwise occurred. That is, the reductions are above and beyond business-as-usual operation.

Project developers satisfy the "additionality" eligibility rule by passing two tests:

1. The Performance Standard Test
2. The Legal Requirement Test

3.5.1 The Performance Standard Test

Projects pass the Performance Standard Test by meeting a program-wide performance threshold – i.e. a standard of performance applicable to all manure management projects, established on an *ex-ante* basis. The performance threshold represents "better than business-as-usual" manure management. If the project meets the threshold, then it exceeds what would happen under the business-as-usual scenario and generates surplus/additional GHG reductions.

For this protocol, the Reserve uses a technology-specific threshold; sometimes also referred to as a practice-based threshold, where it serves as "best-practice standard" for managing livestock manure. By installing a BCS, a project developer passes the Performance Standard Test.

The Reserve defined this performance standard by evaluating manure management practices in California and the United States. A summary of the study to establish the threshold is provided in Appendix C.

The Performance Standard Test is applied at the time of the project's start date. All projects that pass this test at the project's start date are eligible to register reductions with the Reserve for the duration of the first project crediting period, even if the Reserve revises the Performance Standard Test in subsequent versions of this protocol during that period. As stated in Section 3.3, the project crediting period is ten years.

If a project developer wishes to apply for a second crediting period, the project must meet the eligibility requirements of the most current version of this protocol at the time of the submittal for the second crediting period, including any updates to the Performance Standard Test.

3.5.2 The Legal Requirement Test

All projects are subject to a Legal Requirement Test to ensure that the GHG reductions achieved by a project would not otherwise have occurred due to federal, state, or local regulations, or other legally binding mandates. A project passes the Legal Requirement Test when there are no laws, statutes, regulations, court orders, environmental mitigation agreements, permitting conditions, or other legally binding mandates requiring the installation of a BCS at the livestock operation.

The Legal Requirement Test is applied at the time of a project's start date. To satisfy the Legal Requirement Test, project developers must submit a signed Attestation of Voluntary Implementation form[5] prior to the commencement of verification activities for the first verification

[5] Attestation forms are available at http://www.climateactionreserve.org/how/projects/register/project-submittal-forms/.

period. All projects that pass this test at the project's start date are eligible to register reductions with the Reserve for the duration of their first crediting period, even if legal requirements change or new legal requirements are enacted during that period.

If a project developer wishes to apply for a second crediting period, the project must meet the eligibility requirements of the most current version of this protocol, including any updates to the Legal Requirement Test. Furthermore, during a project's second crediting period, it must demonstrate that it passes the Legal Requirement Test during each reporting period. To satisfy the Legal Requirement Test, project developers must submit a signed Attestation of Voluntary Implementation form prior to the commencement of verification activities for each verification period. If project activities become legally required during a project's second crediting period, the project will only be eligible to receive CRTs up to the date that the system is required to be operational.

The Reserve's analysis of manure management practices in the U.S. identified no regulations that obligate livestock owners to invest in a manure BCS. The analysis looked most closely at recent, stringent California air quality regulations (e.g. SJVAPCD Rule 4570 and Sacramento AQMD Rule 496), and found that installing an anaerobic digester is one of several compliance options, although high capital costs appear to prohibit the use of anaerobic digesters as a practical compliance mechanism for these air quality regulations.

3.6 Regulatory Compliance

As a final eligibility requirement, project developers must attest that project activities do not cause material violations of applicable laws (e.g. air, water quality, safety, etc.). To satisfy this requirement, project developers must submit a signed Attestation of Regulatory Compliance form[6] prior to the commencement of verification activities each time the project is verified. Project developers are also required to disclose in writing to the verifier any and all instances of legal violations – material or otherwise – caused by the project or project activities.

A violation should be considered to be "caused" by project activities if it can be reasonably argued that the violation would not have occurred in the absence of the project activities. If there is any question of causality, the project developer shall disclose the violation to the verifier.

If a verifier finds that project activities have caused a material violation, then CRTs will not be issued for GHG reductions that occurred during the period(s) when the violation occurred. Individual violations due to administrative or reporting issues, or due to "acts of nature," are not considered material and will not affect CRT crediting. However, recurrent administrative violations directly related to project activities may affect crediting. Verifiers must determine if recurrent violations rise to the level of materiality. If the verifier is unable to assess the materiality of the violation, then the verifier shall consult with the Reserve.

[6] Attestation forms are available at http://www.climateactionreserve.org/how/projects/register/project-submittal-forms/.

4 The GHG Assessment Boundary

The GHG Assessment Boundary delineates the GHG sources, sinks, and reservoirs (SSRs) that shall be assessed by project developers to determine the net change in emissions associated with installing a BCS. This protocol's assessment boundary captures sources from waste production to disposal, including off-site manure disposal.

CH_4 emissions from the land application of manure and digester effluent are excluded from the GHG Assessment Boundary. As these emission sources will either remain the same or decrease from the baseline to the project scenario, this exclusion is considered to be conservative.

N_2O emissions associated with manure management and disposal are also excluded from the GHG Assessment Boundary. Again, as these emission sources will either remain the same or decrease from the baseline to the project scenario, this exclusion is also considered to be conservative. Significant uncertainty remains regarding the quantification of potential N_2O changes. While some projects may result in a significant decrease in N_2O emissions, at this time there is no project-level methodology available to appropriately account for this uncertainty.

CO_2 emissions associated with the capture and destruction of biogas are considered biogenic emissions[7] (as opposed to anthropogenic) and are not included in the GHG Assessment Boundary.

This protocol does not account for CO_2 emission reductions associated with displacing grid-delivered electricity or fossil fuel use. However, project developers may reduce the project emissions associated with increased use of grid-connected electricity by utilizing project-generated electricity for project equipment.

Figure 4.1 provides a general illustration of the GHG Assessment Boundary, indicating which SSRs are included or excluded from the boundary. All SSRs within the dashed line are accounted for under this protocol.

Table 4.1 provides greater detail on each SSR and provides justification for the inclusion or exclusion of SSRs and gases from the GHG Assessment Boundary.

[7] The rationale is that carbon dioxide emitted during combustion represents the carbon dioxide that would have been emitted during natural decomposition of the manure. Emissions from the biogas control system do not yield a net increase in atmospheric carbon dioxide because they are theoretically equivalent to the carbon dioxide absorbed during plant/feed growth.

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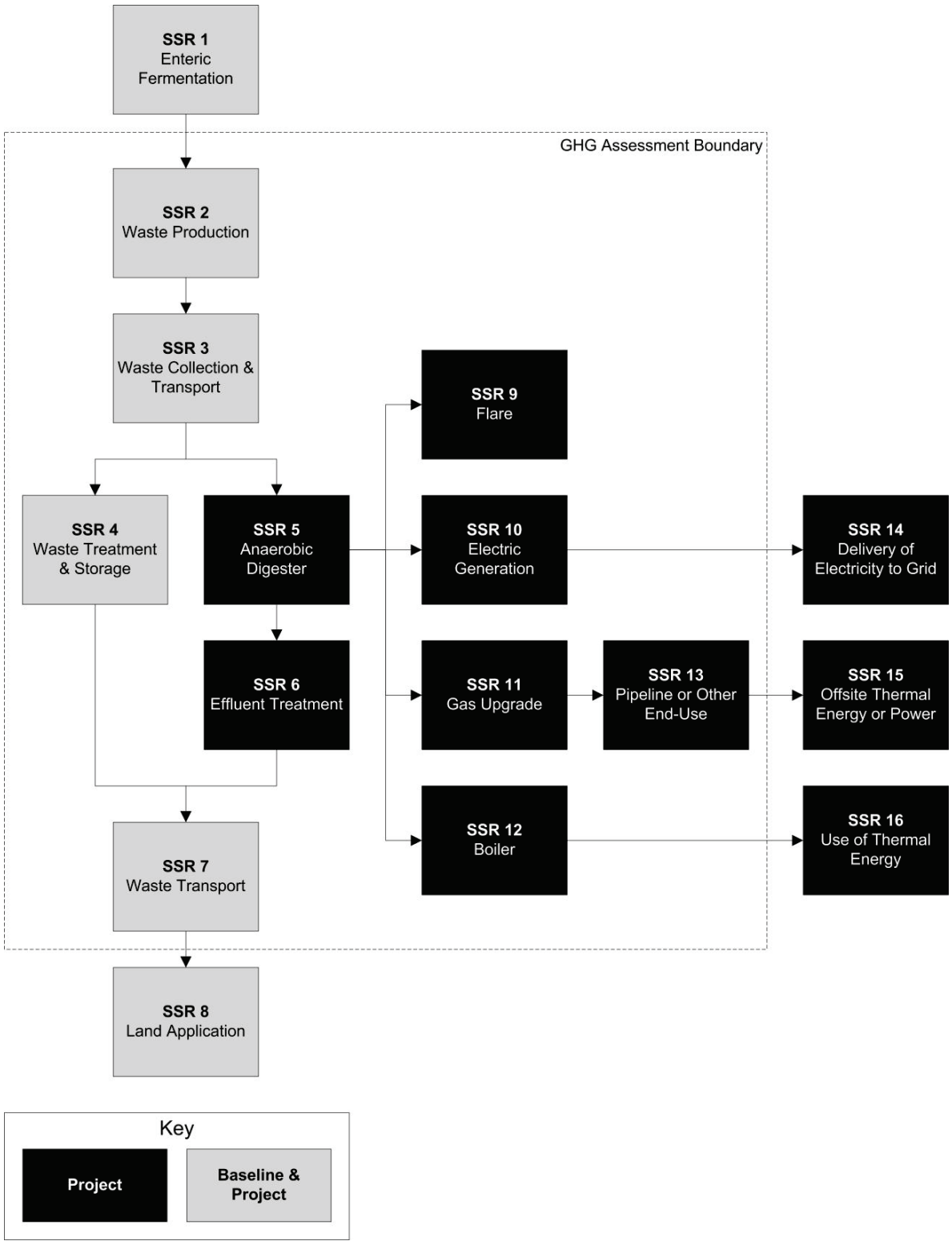


Figure 4.1. General Illustration of the GHG Assessment Boundary

Table 4.1 relates GHG source categories to sources and gases, and indicates inclusion in the calculation methodology. It is intended to be illustrative – GHG sources are indicative for the source category, GHGs in addition to the main GHG are also mentioned, where appropriate.

Table 4.1. Description of all Sources, Sinks, and Reservoirs

SSR	GHG Source	Gas	Relevant to Baseline (B) or Project (P)	Included/ Excluded	Justification/Explanation
1	Emissions from enteric fermentation	CH_4	B, P	*Excluded*	It is very unlikely that a livestock operation would change its feeding strategy to maximize biogas production from a digester; thus impacting enteric fermentation emissions from ruminant animals.
2	Emissions from waste deposits in barn, milking parlor or pasture/corral	N_2O	B, P	*Excluded*	This exclusion is conservative as emissions will either remain the same or decrease from the baseline to the project scenario, see page 8 for further explanation.
	Emissions from mobile and stationary support equipment	CO_2	B, P	*Included*	If any additional vehicles or equipment are required by the project beyond what is required in the baseline, emissions from such sources shall be accounted for.
		CH_4		*Excluded*	Emission source is assumed to be very small.
		N_2O		*Excluded*	Emission source is assumed to be very small.
3	Emissions from mechanical systems used to collect and transport waste (e.g. engines and pumps for flush systems; vacuums and tractors for scrape systems)	CO_2	B, P	*Included*	If any additional vehicle or equipment use is required by the project beyond what is required in the baseline, emissions from such sources shall be accounted for.
		CH_4		*Excluded*	Emission source is assumed to be very small.
		N_2O		*Excluded*	Emission source is assumed to be very small.
	Vehicle emissions (e.g. for centralized digesters)	CO_2		*Included*	If any additional vehicles or fuel use is required by the project beyond what is required in the baseline, emissions from such equipment shall be accounted for.
		CH_4		*Excluded*	Emission source is assumed to be very small.
		N_2O		*Excluded*	Emission source is assumed to be very small.

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SSR	GHG Source	Gas	Relevant to Baseline (B) or Project (P)	Included/ Excluded	Justification/Explanation
4	Emissions from waste treatment and storage including: anaerobic lagoons, dry lot deposits, compost piles, solid storage piles, manure settling basins, aerobic treatment, storage ponds, etc.	CO_2	B, P	*Excluded*	Biogenic emissions are excluded.
		CH_4		*Included*	Primary source of emissions in the baseline.
		N_2O		*Excluded*	This exclusion is conservative as emissions will either remain the same or decrease from the baseline to the project scenario, see page 8 for further explanation.
	Emissions from support equipment	CO_2		*Included*	If any additional equipment is required by the project beyond what is required in the baseline, emissions from such equipment shall be accounted for.
		CH_4		*Excluded*	Emission source is assumed to be very small.
		N_2O		*Excluded*	Emission source is assumed to be very small.
5	Emissions from the anaerobic digester due to biogas collection inefficiencies and venting events	CH_4	P	*Included*	Project may result in leaked emissions from anaerobic digester.
6	Emissions from effluent treatment system	CH_4	P	*Included*	Primary source of emissions from project activities.
		N_2O		*Excluded*	See page 8.
7	Vehicle emissions for land application and/or off-site transport	CO_2	B, P	*Included*	If any additional vehicle use is required by the project beyond what is required in the baseline, associated additional emissions shall be accounted for.
		CH_4		*Excluded*	Emission source is assumed to be very small.
		N_2O		*Excluded*	Emission source is assumed to be very small.
8	Emissions from land application	CH_4	B, P	*Excluded*	Project activity is unlikely to increase emissions relative to baseline activity.
		N_2O	B, P	*Excluded*	This exclusion is conservative as emissions will either remain the same or decrease from the baseline to the project scenario, see page 8 for further explanation

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SSR	GHG Source	Gas	Relevant to Baseline (B) or Project (P)	Included/ Excluded	Justification/Explanation
9	Emissions from combustion during flaring, including emissions from incomplete combustion of biogas	CO_2	P	*Excluded*	Biogenic emissions are excluded.
		CH_4		*Included*	Primary source of emissions from project activities.
		N_2O		*Excluded*	Emission source is assumed to be very small.
10	Emissions from combustion during electric generation, including incomplete combustion of biogas	CO_2	P	*Excluded*	Biogenic emissions are excluded.
		CH_4		*Included*	Primary source of emissions from project activities.
		N_2O		*Excluded*	Emission source is assumed to be very small.
11	Emissions from upgrading biogas for pipeline injection or use as CNG/LNG fuel	CO_2	P	*Included*	Emissions resulting from on-site fossil fuel use and/or grid electricity may be significant.
		CH_4		*Excluded*	Emission source is assumed to be very small.
		N_2O		*Excluded*	Emission source is assumed to be very small.
12	Emissions from combustion at boiler, including emissions from incomplete combustion of biogas	CO_2	P	*Excluded*	Biogenic emissions are excluded.
		CH_4		*Included*	Primary source of emissions from project activities.
		N_2O		*Excluded*	Emission source is assumed to be very small.
13	Emissions from combustion of biogas by end user of pipeline or CNG/LNG, including incomplete combustion	CO_2	P	*Excluded*	Biogenic emissions are excluded.
		CH_4		*Included*	Primary source of emissions from project activities.
		N_2O		*Excluded*	Emission source is assumed to be very small.
14	Use of project-generated electricity	CO_2	P	*Excluded*	This protocol does not cover displacement of GHG emissions from the use of biogas-generated electricity.
		CH_4			
		N_2O			
15	Off-site use of project-generated thermal energy or power	CO_2	P	*Excluded*	This protocol does not cover displacement of GHG emissions from the use of biogas delivered through pipeline or other end uses.
		CH_4			
		N_2O			
16	Use of project-generated thermal energy	CO_2	P	*Excluded*	This protocol does not cover displacement of GHG emissions from the use of biogas-generated thermal energy.
		CH_4			
		N_2O			
	Project construction and decommissioning emissions	CO_2	P	*Excluded*	Emission source is assumed to be very small.
		CH_4			
		N_2O			

5 Quantifying GHG Emission Reductions

GHG emission reductions from a livestock project are quantified by comparing actual project emissions to baseline emissions at the project site. Baseline emissions are an estimate of the GHG emissions from sources within the GHG Assessment Boundary (see Section 4) that would have occurred in the absence of the livestock project. Project emissions are actual GHG emissions that occur at sources within the GHG Assessment Boundary during the reporting period. Project emissions must be subtracted from the baseline emissions to quantify the project's total net GHG emission reductions (Equation 5.1).

GHG emission reductions are generally quantified and verified on an annual basis. Project developers may choose to verify GHG emission reductions on a more frequent or less frequent basis if they desire (see Section 7.3). The length of time over which GHG emission reductions are quantified and reported to the Reserve is called the "reporting period." The length of time over which GHG reductions are verified is called a "verification period." Under this protocol, a verification period may cover multiple reporting periods (see Section 7.3.4). Project developers should take note that some equations to calculate baseline and project emissions are run on a month-by-month basis and activity data monitoring takes place at varying levels of frequency. As applicable, monthly emissions data (for baseline and project) are summed together to calculate emission reductions over a given reporting period. Projects whose reporting periods begin or end with incomplete calendar months shall only quantify the baseline and project emissions for the portion of the month that is included within the reporting period.
The calculations provided in this protocol are derived from internationally accepted methodologies.[8] Project developers shall use the calculation methods provided in this protocol to determine baseline and project GHG emissions in order to quantify GHG emission reductions.

To support project developers and facilitate consistent and complete emissions reporting, the Reserve has developed an Excel-based calculation tool. This tool is available to all Reserve account holders and their designated representatives. Instructions for obtaining the most recent version of this tool are available on the U.S. Livestock Project Protocol webpage. The Reserve *recommends* the use of the Livestock Calculation Tool for all project calculations and emission reduction reports. Only the most recent version of this tool should be used, unless otherwise recommended by Reserve staff. In any case where there is potential disagreement between guidance provided in the protocol and guidance provided in the calculation tool, the protocol shall take precedence.

The current methodology for quantifying the GHG impact associated with installing a BCS requires the use of both modeled reductions (following Equation 5.2 to Equation 5.4 and Equation 5.6 to Equation 5.9) as well as the utilization of *ex-post* metered data from the BCS to be used as a check on the modeled reductions.

The Reserve recognizes that there can be material differences between modeled methane emission reductions and the actual metered quantity of methane that is captured and destroyed by the BCS due to digester start-up periods, venting events, and other BCS operational issues.

[8] The Reserve's GHG reduction calculation method is derived from the Kyoto Protocol's Clean Development Mechanism (ACM0010 V.5), the EPA's Climate Leaders Program (Manure Offset Protocol, August 2008), and the RGGI Model Rule (January 5, 2007).

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These operational issues have the potential to result in substantially less methane destruction than is modeled, leading to an overestimation of GHG reductions in the modeled case.

To address this issue and maintain consistency with international best practice, the Reserve requires the modeled methane emission reduction results to be compared to the *ex-post* metered quantity of methane that is captured and destroyed by the BCS. The lesser of the two values will represent the total methane emission reductions for the reporting period. Equation 5.1 below outlines the quantification approach for calculating the emission reductions from the installation of a BCS.

5.1 Required Parameters for Modeling Baseline and Project Emissions

The following parameters must be determined for the modeling of baseline and project emissions:

Population – P_L

The procedure requires project developers to differentiate between livestock categories (*L*) (e.g. lactating dairy cows, non-milking dairy cows, heifers, etc.). This accounts for differences in methane generation across livestock categories. See Appendix B, Table B.2 for methane generation values. The population of each livestock category shall be monitored on a monthly basis, and for Equation 5.4 is averaged for an annual total population.

Volatile solids – VS_L

This value represents the daily organic material in the manure for each livestock category and consists of both biodegradable and non-biodegradable fractions. The VS content of manure is a combination of excreted fecal material (the fraction of a livestock category's diet consumed and not digested) and urinary excretions, expressed in a dry matter weight basis (kg/animal).[9] This protocol requires that the VS value for all livestock categories be determined as outlined in Box 5.1.

$Mass_L$

This value is the annual average live weight of the animals, per livestock category. These data are necessary because default VS values are supplied in units of kg/day/1000kg mass, therefore the average mass of the corresponding livestock category is required in order to convert the units of VS into kg/day/animal. Site specific livestock mass is preferred for all livestock categories. If site-specific data are unavailable, Typical Animal Mass (TAM) values may be used (see Appendix B, Table B.2).

Maximum methane production – $B_{0,L}$

This value represents the maximum methane-producing capacity of the manure, differentiated by livestock category (*L*) and diet. Project developers shall use the default B_0 factors from Appendix B, Table B.3. Alternatively, project developers may follow the sampling and testing procedure contained in Section 6.1 in order to determine a site-specific B_0 value for a particular animal category.

[9] IPCC 2006 Guidelines volume 4, chapter 10, p. 10.42.

MS_S

The MS value apportions manure from each livestock category to appropriate manure management system component (*S*), and is a critical factor in determining a project baseline, as well as project emissions from effluent treatment. It reflects the reality that waste from the operation's livestock categories are not managed uniformly. The MS value accounts for the operation's multiple types of manure management systems. It is expressed as a percent (%), relative to the total amount of VS produced by the livestock category. As waste production is normalized for each livestock category, the percentage shall be calculated as percent of population for each livestock category. For example, a dairy operation might send 85% of its milking cows' waste to an anaerobic lagoon and 15% could be deposited in a corral. In this situation, an MS value of 85% would be assigned to Equation 5.3 and 15% to Equation 5.4.

Importantly, the MS value indicates where the waste would have been managed in the baseline scenario. If a portion of the VS was removed from the waste stream through some sort of separation procedure, the MS value shall be adjusted to accurately reflect the baseline treatment of the VS. To account for VS removal from solids separation equipment, project developers may use a default value for the particular type of separation mechanisms employed (Table B.9), or a site-specific value based on the removal efficiency of the baseline system.

MS_{BCS}, which represents the fraction of manure that is sent to the BCS in the project scenario, follows the same logic as above, but is used to accurately quantify the project methane emissions from effluent treatment (see Equation 5.8).

MGS_{BCS}

The MGS_{BCS} value represents the maximum biogas storage capacity of the BCS system. This value is needed only in the case of a venting event during the reporting period, which is quantified using Equation 5.7. If the BCS consists of multiple digester tanks or covered lagoons, the project only need quantify the maximum storage (MGS_{BCS}) and biogas flow (F_{pw}) of the component(s) of the BCS that experienced the venting event.

Methane conversion factor – MCF

This method to calculate methane emissions reflects the site-specific monthly biological performance of the operation's baseline anaerobic manure management systems, as predicted using the van't Hoff-Arrhenius equation and farm-level data on temperature, as well as VS loading and system VS retention time.[10]

Each manure management system component has a volatile solids-to-methane conversion efficiency that represents the degree to which maximum methane production (B_0) is achieved. Methane production is a function of the extent of anaerobic conditions present in the system, the temperature of the system, and the retention time of organic material in the system.[11]

Default MCF values for non-anaerobic baseline manure management system components (as well as certain project BCS effluent treatment and Non-BCS sources) are available in Appendix B. These are used in Equation 5.4 and Equation 5.9.

Contrastingly, site-specific calculations of volatile solids-to-methane conversion efficiency are required for anaerobic baseline manure management system components and for the anaerobic

[10] The method is derived from Mangino et al., "Development of a Methane Conversion Factor to Estimate Emissions from Animal Waste Lagoons" (2001).
[11] IPCC 2006 Guidelines volume 4, chapter 10, p. 10.43.

treatment of project BCS effluent. For anaerobic lagoons, storage ponds, liquid slurry tanks etc., project developers perform a site-specific calculation of the mass of volatile solids degraded by the anaerobic storage/treatment system. This is expressed as "degraded volatile solids" or VS_{deg} in Equation 5.3, which equals the system's monthly available volatile solids multiplied by '*f*', the van't Hoff-Arrhenius factor. The '*f*' factor effectively converts total available volatile solids in the anaerobic manure storage/treatment system to methane-convertible volatile solids, based on the monthly temperature of the system. The multiplication of VS_{deg} by B_0 quantifies the maximum potential methane emissions that would have been produced for each livestock category's contribution of manure to that system.

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Equation 5.1 GHG Reductions from Installing a Biogas Control System

$$ER = \min\{ER_{modeled}, ER_{metered}\}$$

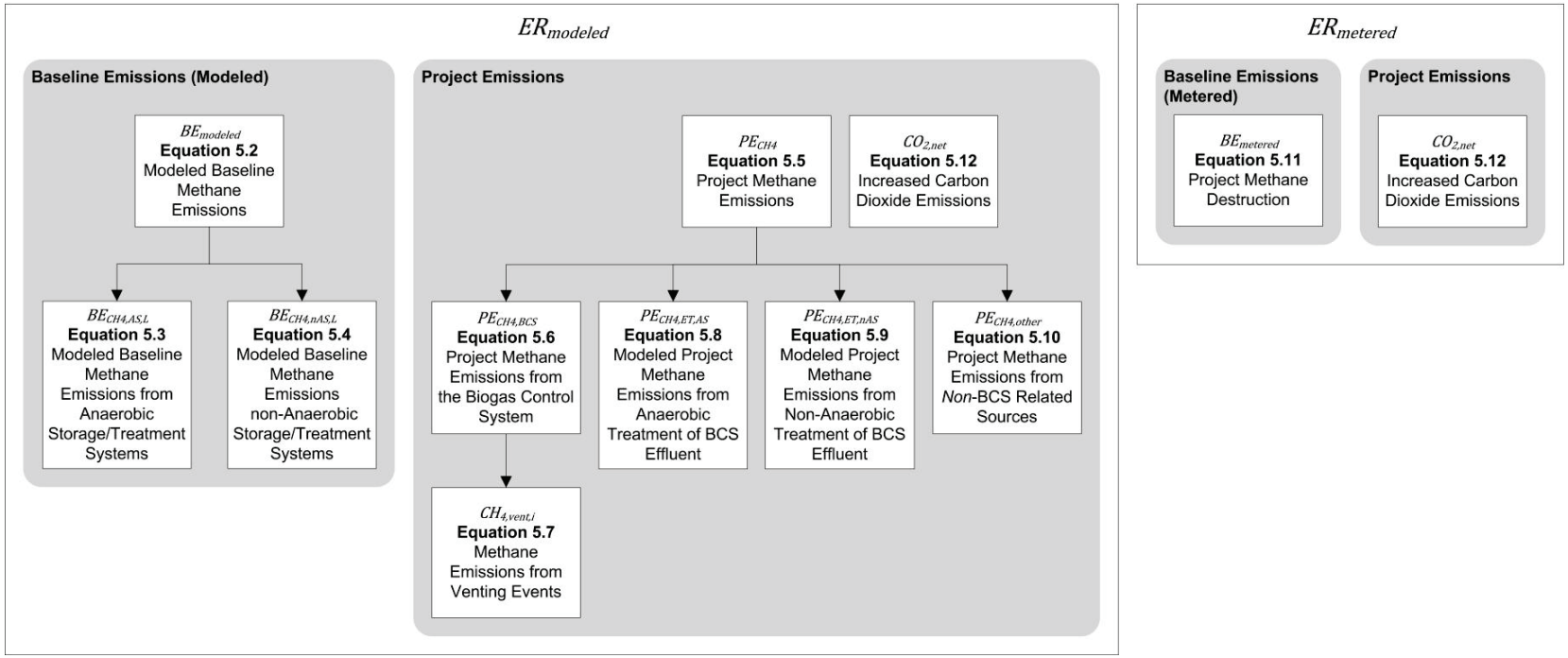


Figure 5.1. Organization of Equations in Section 5

Equation 5.1. GHG Reductions from Installing a Biogas Control System

$$ER = \min\{ER_{modeled}, ER_{metered}\}$$

$$ER_{modeled} = BE_{modeled} - PE_{CH_4} - CO_{2,net}$$

Where,			Units
$ER_{modeled}$	=	Avoided methane emissions associated with the project during the reporting period, quantified using a modeled baseline scenario	tCO_2e
$BE_{modeled}$	=	Modeled baseline emissions from the baseline scenario (Equation 5.2)	tCO_2e
PE_{CH4}	=	Total project methane emissions during the reporting period (Equation 5.5)	tCO_2e
$CO_{2,net}$	=	Net increase in anthropogenic CO_2 emissions from electricity consumption and mobile and stationary combustion sources resulting from project activity (Equation 5.12)	tCO_2e

$$ER_{metered} = BE_{metered} - CO_{2,net}$$

Where,			Units
$ER_{metered}$	=	Avoided methane emissions associated with the project during the reporting period, quantified using metered methane destruction data	tCO_2e
$BE_{metered}$	=	Aggregated quantity of methane collected and destroyed during the reporting period (Equation 5.11)	tCO_2e
$CO_{2,net}$	=	Net increase in anthropogenic CO_2 emissions from electricity consumption and mobile and stationary combustion sources resulting from project activity (Equation 5.12)	tCO_2e

5.2 Modeling Baseline Methane Emissions

Baseline emissions represent the GHG emissions within the GHG Assessment Boundary that would have occurred if not for the installation of the BCS. For the purposes of this protocol, project developers calculate their baseline emissions according to the manure management system in place prior to installing the BCS. Baseline emissions are then recalculated for each reporting period to reflect what the emissions would have been had the previous management system continued to function under current conditions. For Greenfield projects, as defined in Section 3.4.2, the baseline manure management practices shall be modeled according to the default values provided in Table B.10.

The procedure to determine the modeled baseline methane emissions follows Equation 5.2, which combines Equation 5.3 and Equation 5.4. The calculation procedures use a combination of site-specific values and default factors.

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Box 5.1. Daily Volatile Solids for All Livestock Categories

Consistent with international best-practice, it is recommended that appropriate VS_L values for dairy livestock categories be obtained from the state-specific lookup tables (Tables B.5.a – B.5.f) provided in Appendix B. When possible, use the year corresponding to the appropriate emission year. If the current year's table is not included in the protocol, use the most current year that is available from the Reserve. Updated tables will be provided in the Livestock Calculation Tool, as well as the Reserve website.[12]

VS_L values for all other livestock can be found in Appendix B, Table B.3.

Important – Units provided for all VS values in Appendix B are in (kg/day/1000kg), In order to get VS_L in the appropriate units (kg/animal/day), the following equation must be used:

$$\boldsymbol{VS_L = VS_{Table} \times \frac{Mass_L}{1000}}$$

Where,

			Units
VS_L	=	Volatile solid excretion on a dry matter weight basis	kg/animal/day
VS_{Table}	=	Volatile solid excretion from lookup table (Table B.3 and Table B.5a - B.5d)	kg/day/1000kg
$Mass_L$	=	Average live weight for livestock category *L*. If site specific data are unavailable, use values from Appendix B, Table B.2 corresponding to the appropriate emission year (or the most current year that is available from the Reserve)	kg

Equation 5.2. Modeled Baseline Methane Emissions

$$\boldsymbol{BE_{modeled} = \sum_{S,L}\left(BE_{CH_4,AS,L} + BE_{CH_4,nAS,L}\right)}$$

Where,

			Units
$BE_{modeled}$	=	Total baseline methane emissions during the reporting period, summed for each baseline treatment system *S* and livestock category *L*	tCO_2e
$BE_{CH4,AS,L}$	=	Total monthly baseline methane emissions from anaerobic storage/treatment system *AS* by livestock category *L*, aggregated for the reporting period. See Equation 5.3	tCO_2e
$BE_{CH4,nAS,L}$	=	Total baseline methane emissions for the reporting period from non-anaerobic storage/treatment systems by livestock category *L.* See Equation 5.4	tCO_2e

[12] http://www.climateactionreserve.org/how/protocols/us-livestock/

Equation 5.3. Modeled Baseline Methane Emissions from Anaerobic Storage/Treatment Systems

$$BE_{CH_4,AS,L} = \left(VS_{deg,AS,L} \times B_{0,L} \times days_{mo} \times 0.68 \times 0.001 \times 21\right) \times \left(\frac{rd_{mo}}{days_{mo}}\right)$$

Where,			Units
$BE_{CH4,AS,L}$	=	Total monthly baseline methane emissions from anaerobic manure storage/treatment system *AS* from livestock category *L*	tCO_2e/yr
$VS_{deg,AS,L}$	=	Monthly volatile solids degraded in anaerobic manure storage/treatment system *AS* from livestock category *L*	kg dry matter
$B_{0,L}$	=	Maximum methane producing capacity of manure for livestock category *L* – see Appendix B, Table B.3 for default values or Section 6.1 for guidance on determining a site-specific value	m^3 CH_4/kg of VS
0.68	=	Density of methane (1 atm, 60°F)	kg/m^3
0.001	=	Conversion factor from kg to metric tons	
21	=	Global Warming Potential of methane as carbon dioxide equivalent	tCO_2e/tCH_4
$days_{mo}$	=	Calendar days per month	days
rd_{mo}	=	Reporting days during the current month (see Box 5.2)	days

$$VS_{deg,AS,L} = \sum_{AS,L} \left(VS_{avail,AS,L} \times f\right)$$

Where,			Units
$VS_{deg,AS,L}$	=	Monthly volatile solids degraded by anaerobic manure storage/ treatment system *AS* by livestock category *L*	kg dry matter
$VS_{avail,AS,L}$	=	Monthly volatile solids available for degradation from anaerobic manure storage/treatment system *AS* by livestock category *L*	kg dry matter
f	=	The van't Hoff-Arrhenius factor = "the proportion of volatile solids that are biologically available for conversion to methane based on the monthly temperature of the system" [13]	

Equation 5.3 continued on next page.

[13] Mangino, et al.

Equation 5.3. Continued

$$VS_{avail,AS,L} = \left(VS_L \times P_L \times MS_{AS,L} \times days_{mo} \times 0.8\right) + \left(VS_{avail-1,AS} - VS_{deg-1,AS}\right)$$

Where,			Units
$VS_{avail,AS,L}$	=	Monthly volatile solids available for degradation in anaerobic storage/treatment system *AS* by livestock category *L*	kg dry matter
VS_L	=	Volatile solids produced by livestock category *L* on a dry matter basis. Refer to Box 5.1 for guidance on using appropriate units for VS_L values from Appendix B	kg/animal/day
P_L	=	Average population of livestock category *L* (based on population data for the current month)	
$MS_{AS,L}$	=	Percent of manure sent to (managed in) anaerobic manure storage/treatment system *AS* from livestock category *L* [14]	%
$days_{mo}$	=	Calendar days per month	days
0.8	=	Management and design practices factor[15]	
$VS_{avail-1,AS}$	=	Previous month's volatile solids available for degradation in anaerobic system *AS*[16]	kg
$VS_{deg-1,AS}$	=	Previous month's volatile solids degraded by anaerobic system *AS*	kg

$$f = exp\left[\frac{E\left(T_{mo} - T_{ref}\right)}{(R)\left(T_{ref}\right)(T_{mo})}\right]$$

Where,			Units
f	=	The van't Hoff-Arrhenius factor	
E	=	Activation energy constant (15,175)	cal/mol
T_{mo}	=	Monthly average ambient temperature (K = °C + 273). If T_{mo} < 5°C then *f* = 0.104. If T_{mo} > 29.5°C then *f* = 0.95	Kelvin
T_{ref}	=	303.16; Reference temperature for calculation	Kelvin
R	=	Ideal gas constant (1.987)	cal/Kmol

[14] The MS value represents the percent of manure that would be sent to (managed by) the anaerobic manure storage/treatment systems in the baseline case – as if the biogas control system was never installed.
[15] Mangino, et al. This factor was derived to "account for management and design practices that result in the loss of volatile solids from the management system." This reflects the difference between the theoretical modeled biological activity and empirical measurement of biological activity due to removal of liquid or other management practices that result in loss of VS from the treatment system. This does not account for removal of solids prior to the treatment system.
[16] IPCC 2006 Guidelines (Volume 4, Chapter 10, p. 42); ACM0010 (V2, p.8); and EPA Climate Leaders Manure Offset Protocol (August 2008).

Box 5.2. Calculating the Number of Reporting Days for a Reporting Period

For some projects, it may be necessary to exclude a number of days from the calculation of emission reductions. If the reporting period begins or ends mid-way through a month, the calculation shall be prorated to only include the number of days for each month that fall within the reporting period by setting *nrd* equal to the number of days that fall outside the reporting period. If the project is not eligible to report emission reductions for a certain period of time for other reasons (e.g. regulatory compliance issues, missing data), those days may also be included in the determination of *nrd*.

For example, if a reporting period begins on March 10, then nrd_{March} = 9. If the same reporting period ends on December 31st of the same year, then nrd_{rp} = 9, and *rd* = (306 – 9) = 297.

The following equation is used to determine the number of reporting days for the current period. This is to be applied for individual months for those equations that are run monthly, and for the entire reporting period for those equations that are run once per reporting period.

$$\boldsymbol{rd = days - nrd}$$

Where,

rd	=	Number of reporting days in the current period (month, reporting period, etc.)
days	=	Number of calendar days in the current period (e.g. equal to 30 for June)
nrd	=	Non-reporting days in the current period

Retention of Volatile Solids

Equation 5.3 calculates methane emissions from anaerobic manure storage/treatment systems based on site-specific information on the mass of volatile solids degraded by the anaerobic storage/treatment system and available for methane conversion.[17] It incorporates the effects of temperature through the van't Hoff-Arrhenius (*f*) factor and accounts for the retention of volatile solids through the use of monthly assumptions of baseline conditions. Each month, a certain quantity of VS is converted into methane (VS_{deg}). The VS that is available for conversion each month (VS_{avail}) is the sum of VS that enters the manure management system, as well as VS that remains in the system from the previous month ($VS_{avail-1} – VS_{deg-1}$).

Project developers shall not carry over volatile solids from one month to the next when modeling baseline anaerobic treatment systems where the retention time was 30 days or less. For these systems ($VS_{avail-1} – VS_{deg-1}$) = 0 in Equation 5.3 for every month.

Depending on the accumulation of sludge in the baseline manure storage system, it may have been necessary to drain and clean the system on a periodic basis. This cleaning removes the non-degraded VS that has accumulated in the system. For anaerobic lagoons with a retention time greater than 30 days, project developers shall zero out the VS retained in the system following the month when the system would have been completely drained and sludge removed under baseline operating conditions. For the month following the sludge removal, ($VS_{avail-1} – VS_{deg-1}$) = 0 in Equation 5.3. For projects where a BCS is being retrofit into existing operations, baseline anaerobic system management practices should reflect actual pre-project manure management practices on that farm.

[17] These system components must meet the Anaerobic Baseline requirement in Section 3.4.

If the farm utilized solids separation in the baseline (thus preventing or delaying sludge accumulation), this removal and alternative treatment of VS should be reflected in the MS values, as explained earlier in this section.

The removal of supernatant liquids for spraying on fields at agronomic rates does not affect the monthly carryover of VS, as long as the system maintains at least one meter of liquid depth. Projects therefore do not need to account for regular field spraying activities that meet this description.

Equation 5.4 applies to non-anaerobic storage/treatment systems. Both Equation 5.3 and Equation 5.4 reflect basic biological principles of methane production from available volatile solids, determine methane generation for each livestock category, and account for the extent to which the waste management system handles each category's manure.

Equation 5.4. Modeled Baseline Methane for Non-Anaerobic Storage/Treatment Systems

$$BE_{CH_4,nAS,L} = \left(P_L \times MS_{L,nAS} \times VS_L \times days_{rp} \times MCF_{nAS} \times B_{0,L}\right) \times 0.68 \times 0.001 \times 21 \times \left(\frac{rd_{rp}}{days_{rp}}\right)$$

Where,			Units
$BE_{CH4,nAS,L}$	=	Total baseline methane emissions during the reporting period from non-anaerobic storage/treatment systems	tCO_2e
P_L	=	Average population of livestock category *L* during the reporting period (based on monthly population data)	
$MS_{L,nAS}$	=	Percent of manure from livestock category *L* managed in non-anaerobic storage/treatment systems	%
VS_L	=	Volatile solids produced by livestock category *L* on a dry matter basis. Refer to Box 5.1 for guidance on using appropriate units for VS_L values from Appendix B	kg/animal/day
$days_{rp}$	=	Number of days in the reporting period	days
MCF_{nAS}	=	Methane conversion factor for non-anaerobic storage/treatment system. See Appendix B	%
$B_{0,L}$	=	Maximum methane producing capacity for manure for livestock category *L*. See Appendix B, Table B.3 for default values, or Section 6.1 for determining a site-specific value	m^3 CH_4/kg of VS dry matter
0.68	=	Density of methane (1 atm, 60°F)	kg/m^3
0.001	=	Conversion factor from kg to metric tons	
21	=	Global Warming Potential of methane as carbon dioxide equivalent	tCO_2e/tCH_4
rd_{rp}	=	Reporting days during the reporting period	days

5.3 Calculating Project Methane Emissions

Project emissions are actual GHG emissions that occur within the GHG Assessment Boundary after the installation of the BCS. Project emissions are calculated on an annual, *ex-post* basis. Like baseline emissions, some parameters are monitored on a monthly basis. Unlike baseline emission calculations, methane emissions from the BCS are calculated from metered data, rather than modeled projections. Methane emissions from manure storage and/or treatment systems other than the BCS are modeled much the same as in the baseline scenario.

As shown in Equation 5.5, project methane emissions equal:

- The amount of methane created by the BCS that is not captured and destroyed by the control system, plus
- Methane from the digester effluent treatment systems (where applicable), plus
- Methane from sources in the waste treatment and storage category other than the BCS and associated effluent treatment systems. This includes all other manure treatment systems such as compost piles, solids storage etc.

Consistent with this protocol's baseline methane calculation approach, the formula to account for project methane emissions incorporates all potential sources within the waste treatment and storage category. Non-BCS-related sources follow the same calculation approach as provided in the baseline methane equations. Several activity data for the variables in Equation 5.9 will be the same as those in Equation 5.2 to Equation 5.4.

If the project elects to install an impermeable cover on an effluent pond (potentially creating an additional anaerobic digester) and the biogas generated in this covered pond is collected and destroyed by the project BCS, then this covered pond shall be considered part of the project digester system. If the biogas generated by this covered pond is not destroyed, it must be quantified as project methane emissions using Equation 5.8.

Although not common under normal digester operation, it is possible that a venting event may occur due to catastrophic failure of digester cover materials, the digester vessel, or the gas collection system. In the event that a catastrophic system failure results in the venting of biogas, the quantity of methane released to the atmosphere shall be estimated according to Equation 5.7 below.

Equation 5.5. Project Methane Emissions

$$PE_{CH_4} = \left(PE_{CH_4,BCS} + PE_{CH_4,ET,AS} + PE_{CH_4,ET,nAS} + PE_{CH_4,other}\right) \times 21$$

Where,			Units
PE_{CH4}	=	Total project methane emissions for the reporting period,	tCO_2e
$PE_{CH4,BCS}$	=	Methane emissions from the BCS during the reporting period (Equation 5.6)	tCH_4
$PE_{CH4,ET,AS}$	=	Monthly methane emissions from the BCS effluent anaerobic treatment systems, aggregated for the reporting period (Equation 5.8)	tCH_4
$PE_{CH4,ET,nAS}$	=	Methane emissions from the BCS effluent non-anaerobic treatment systems during the reporting period (Equation 5.9)	tCH_4
$PE_{CH4,other}$	=	Methane emissions from sources in the waste treatment and storage category other than the BCS and associated effluent treatment systems, during the reporting period (Equation 5.10)	tCH_4
21	=	Global warming potential of methane as carbon dioxide equivalent	tCO_2e/tCH_4

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Equation 5.6. Project Methane Emissions from the Biogas Control System

$$PE_{CH_4,BCS} = \sum_i \left[\left[CH_{4,metered,i} \times \left(\left(\frac{1}{BCE} \right) - BDE_{i,weighted} \right) \right] + CH_{4,vent,i} \right]$$

Where,

			Units
$PE_{CH4,BCS}$	=	Methane emissions from the BCS, to be summed for each reporting period	tCH_4
$CH_{4,metered,i}$	=	Quantity of methane collected and metered in month *i*	tCH_4
BCE	=	Methane collection efficiency of the BCS. Project developers shall use the appropriate default value provided in Table B.4	fraction
$BDE_{i,weighted}$	=	Weighted average of all destruction devices used in month i	fraction
$CH_{4,vent,i}$	=	Quantity of methane that is vented to the atmosphere due to BCS venting events in month *i*, as quantified in Equation 5.7 below	tCH_4

$$CH_{4,metered,i} = F \times \frac{520}{T_b} \times \frac{P}{1} \times CH_{4,conc} \times 0.0423 \times 0.000454$$

Where,

			Units
$CH_{4,metered,i}$	=	Wuantity of methane collected and metered in month *i*[18]	tCH_4
F	=	Measured volumetric flow of biogas in month *i*	scf
T_b	=	Temperature of the biogas flow (°R = °F + 459.67)	°R
P	=	Pressure of the biogas flow	atm
$CH_{4,conc}$	=	Measured methane concentration of biogas for month *i*	fraction
0.0423	=	Density of methane gas (1 atm, 60°F)	lb CH_4/scf
0.000454	=	Conversion factor from lb to metric ton	

** The terms (520/T_b) and (P/1) should be omitted if the continuous flow meter internally corrects for temperature and pressure to 60°F and 1 atm.*

$$BDE_{i,weighted} = \frac{\sum_{DD}\left(BDE_{DD} \times F_{i,DD}\right)}{F_i}$$

Where,

			Units
$BDE_{i,weighted}$	=	Monthly weighted average of all destruction devices used in month *i*	fraction
BDE_{DD}	=	Default methane destruction efficiency of a particular destruction device 'DD'. See Appendix B for default destruction efficiencies[19]	fraction
$F_{i,DD}$	=	Monthly flow of biogas to a particular destruction device 'DD'	scf/month
F_i	=	Total monthly measured volumetric flow of biogas to all destruction devices	scf/month

[18] This value reflects directly measured biogas mass flow and methane concentration in the biogas to the combustion device.

[19] Project developers have the option to use either the default methane destruction efficiencies provided, or site specific methane destruction efficiencies, for each of the combustion devices used in the project. Site-specific values must be provided by an independent air emissions testing body that is accredited by a state or local agency, or the Stack Testing Accreditation Council (STAC). See Appendix B for more information. Where a state/region does not have an appropriate accreditation system or accredited service providers, the project developer may look to another state/region to find suitably qualified service providers.

Equation 5.7. Methane Emissions from Venting Events

$$CH_{4,vent,i} = \left(MGS_{BCS} + \left(F_{pw} \times t\right)\right) \times CH_{4,conc} \times 0.0423 \times 0.000454$$

Where,			Units
$CH_{4,vent,i}$	=	Quantity of methane that is vented to the atmosphere due to BCS venting events in month *i*	tCH_4
MGS_{BCS}	=	Maximum biogas storage of the BCS system[20]	scf
F_{pw}	=	Average total daily flow of biogas from the digester for the entire week prior to the venting event[20]	scf/day
t	=	Number of days of the month that biogas is venting uncontrolled from the BCS system (can be a fraction)	days
$CH_{4,conc}$	=	Measured methane concentration of biogas prior to the venting event	fraction
0.0423	=	Density of methane gas (1 atm, 60°F)	lb CH_4/scf
0.000454	=	Conversion factor from lb to metric ton	

Equation 5.8, along with Equation 5.9, shall be used to account for all treatment systems associated with the BCS effluent. The factor ETF_i shall be estimated by the project developer to determine what fraction of the VS in the effluent is sent to each treatment system, and is represented as a fraction (e.g. if 85% of the BCS effluent is sent to an effluent pond, then ETF_i for that system is equal to 0.85). Anaerobic effluent treatment systems are those which store liquid effluent in a lagoon, pond, or tank. This includes liquid storage systems that employ non-airtight covers (i.e. biogas is freely vented to the atmosphere) as long as the entire system is managed as a passive storage system, rather than an actively-managed treatment system (i.e. no heating, mixing, etc.).

Equation 5.8. Modeled Project Methane Emissions from Anaerobic Treatment of BCS Effluent

$$PE_{CH_4,ET,AS} = \sum_i \left(VS_{ET,i} \times B_{0,ET} \times days_{mo} \times 0.8 \times f \times 0.68 \times 0.001\right) \times \frac{rd_{mo}}{days_{mo}}$$

Where,			Units
$PE_{CH4,ET,AS}$	=	Monthly methane emissions from anaerobic effluent treatment systems	tCH_4
$VS_{ET,i}$	=	Volatile solids to anaerobic effluent treatment system *i* (see below)	kg/day
$B_{0,ET}$	=	Maximum methane producing capacity (of VS dry matter)[21]	m^3CH_4/kg VS
$days_{mo}$	=	Calendar days in the current month	days
0.8	=	Management and design practices factor[15]	fraction
f	=	The van't Hoff-Arrhenius factor, as calculated in Equation 5.3	
0.68	=	Density of methane (1 atm, 60°F)	kg/m^3
0.001	=	Conversion from kg to metric tons	t/kg
rd_{mo}	=	Reporting days in the current month	days

Equation 5.8 continued on next page

[20] If the BCS consists of multiple digester tanks or covered lagoons, the project only need quantify the maximum storage (MGS_{BCS}) and biogas flow (F_{pw}) of the component(s) of the BCS that experienced the venting event.

[21] The B_0 value for the project effluent pond is not differentiated by livestock category. Project developers shall use the B_0 value that corresponds with a weighted average of the operation's livestock categories that contribute manure to the BCS (weighted by the kg of VS contributed by each livestock category). Supporting laboratory data and documentation per Section 6.1 needs to be supplied to the verifier to justify an alternative value.

Equation 5.8. Continued

$$VS_{ET,i} = \left[\left(\sum_{L}\left(VS_L \times P_L \times MS_{L,BCS}\right)\right) \times 0.3\right] \times ETF_i$$

Where,			Units
$VS_{ET,i}$	=	Volatile solids to anaerobic effluent treatment system *i*	kg/day
VS_L	=	Volatile solids produced by livestock category 'L' on a dry matter basis. *Important* – refer to Box 5.1 for guidance on using appropriate units for VS_L values from Appendix B	kg/animal/ day
P_L	=	Average population of livestock category *L* during the reporting period (based on monthly population data)	
$MS_{L,BCS}$	=	Fraction of manure from livestock category *L* that is managed in the BCS	fraction
0.3	=	Default value representing the amount of VS that exits the digester as a fraction of the VS entering the digester[22]	fraction
ETF_i	=	Fraction of the effluent that exits the digester and is sent to effluent treatment system *i*	fraction

If the effluent from the project digester is directed to a covered liquid effluent storage system, and the biogas from this storage system is not collected and destroyed, then the following scenarios apply:

1. If the effluent from this system is applied directly to land and biogas flow and methane concentration are monitored in accordance with Section 6, then $PE_{CH4,ET,AS}$ for this system shall be determined using Equation 5.6, assuming a BCE value of 0.95 and a BDE value of 0.

   For any periods where biogas flow and/or methane concentration data from this system are missing (and not replaceable through data substitution) or not in conformance with Section 6, Equation 5.8 shall be used to determine the quantity of project methane emissions from this system component.

2. If the effluent from the covered liquid effluent storage system is directed to another treatment system (i.e. not land-applied), then an additional calculation is required. The methane released from the covered liquid effluent system shall be quantified using the guidance in Scenario 1 above, but the additional methane released by the further treatment system must also be quantified. Equation 5.9 shall be used to calculate the methane released from the additional treatment system using the default assumptions that 30% of the $VS_{ET,i}$ from the effluent storage system enters the additional treatment system.

[22] Per ACM0010 (V2 Annex I).

Equation 5.9. Modeled Project Methane Emissions from Non-Anaerobic Treatment of BCS Effluent[23]

$$PE_{CH_4,ET,nAS} = \sum_i \left(VS_{ET,i} \times B_{0,ET} \times rd_{rp} \times 0.68 \times MCF_{ET,i} \times 0.001\right)$$

Where,			Units
$PE_{CH4,ET,nAS}$	=	Project methane emissions from non-anaerobic effluent treatment systems during the reporting period	tCH_4
$VS_{ET,i}$	=	Volatile solids to non-anaerobic effluent treatment system *i* (see Equation 5.8)	kg/day
$B_{0,ET}$	=	Maximum methane producing capacity (of VS dry matter)[24]	m^3CH_4/kg
rd_{rp}	=	Number of reporting days in the current reporting period	days
0.68	=	Density of methane (1 atm, 60°F)	kg/m^3
$MCF_{ET,i}$	=	Methane conversion factor for effluent treatment system *i* (Table B.6)	fraction
0.001	=	Conversion factor from kg to metric tons	

Equation 5.10. Project Methane Emissions from *Non*-BCS Related Sources[25]

$$PE_{CH_4,other} = \sum_L \left(P_L \times VS_L \times B_{0,L} \times MCF_{non-BCS} \times rd_{rp} \times 0.68 \times 0.001\right)$$

Where,			Units
$PE_{CH4,other}$	=	Methane from sources in the waste treatment and storage category other than the BCS and associated effluent treatment systems during the reporting period	tCH_4
P_L	=	Average population of livestock category *L* during the reporting period	
VS_L	=	Volatile solids produced by livestock category 'L' on a dry matter basis. Refer to Box 5.1 for guidance on using appropriate units for VS_L values from Appendix B	kg/ animal/ day
$B_{0,L}$	=	Maximum methane producing capacity of VS dry matter for manure for livestock category *L*, (Appendix B, Table B.3)	m^3 CH_4/kg
$MCF_{non-BCS}$	=	Management-weighted methane conversion factor for waste treatment and storage systems other than the BCS and associated effluent treatment systems	fraction
rd_{rp}	=	Number of reporting days in the current reporting period	days
0.68	=	Density of methane (1 atm, 60°F)	kg/m^3
0.001	=	Conversion factor from kg to metric tons	

$$MCF_{non-BCS} = \sum_S \left(MCF_S \times MS_{L,S}\right)$$

Where,			Units
$MCF_{non-BCS}$	=	Management-weighted methane conversion factor for waste treatment and storage systems other than the BCS and associated effluent treatment systems	fraction
MCF_S	=	Methane conversion factor for system component *S* (Table B.9)	fraction
$MS_{L,S}$	=	Fraction of manure from livestock category *L* that is managed in non-BCS system component *S*	fraction

[23] Non-anaerobic effluent treatment systems are those which manage effluent in solid form, or those which manage liquid effluent in a way that would be considered aerobic (e.g. a pond with effective aeration equipment).

[24] The B_o value for the project effluent pond is not differentiated by livestock category. Project developers shall use the B_o value that corresponds with a weighted average of the operation's livestock categories that contribute manure to the BCS (weighted by the kg of VS contributed by each livestock category). Supporting laboratory data and documentation per Section 6.1, need to be supplied to the verifier to justify an alternative value.

[25] According to this protocol, non-BCS-related sources means manure management system components (system component 'S') other than the biogas control system and the BCS effluent treatment systems (if used).

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5.4 Metered Methane Destruction Comparison

As described above, the Reserve requires all projects to compare the modeled methane emission reductions for the reporting period, as calculated in Equation 5.2 to Equation 5.4 and Equation 5.6 to Equation 5.9, with the actual metered amount of methane that is destroyed in the BCS over the same period. The lesser of the two values is to be used as the total methane emission reductions for the reporting period in question.

In order to calculate the metered methane reductions, the monthly quantity of biogas that is metered and destroyed by the BCS must be aggregated over the reporting period. In the event that a project developer is reporting reductions for a period of time that is less than a full year, the total modeled methane emission reductions would be aggregated over this time period and compared with the metered methane that is destroyed in the BCS over the same period of time. Similarly, projects whose reporting periods begin or end with incomplete calendar months shall only quantify the baseline and project emissions for the portion of the month that is included within the reporting period. For example, if a project is reporting and verifying only 6 months of data (e.g. July to December), then the modeled emission reductions over this 6 month period would be compared to the total metered biogas destroyed over the same six month period, and the lesser of the two values would be used as the total methane emission reduction quantity for this six month period. See Equation 5.1 for calculation guidance.

Equation 5.11 below details the metered methane destruction calculation.

Equation 5.11. Metered Methane Destruction

$$BE_{metered} = \sum_{i} \left(CH_{4,metered,i} \times BDE_{i,weighted} \right) \times 21$$

Where,			Units
$BE_{metered}$	=	Aggregated quantity of methane collected and destroyed during the reporting period	tCO_2e
$CH_{4,metered,i}$	=	Quantity of methane collected and metered in month $_i$. See Equation 5.6 for calculation guidance	tCH_4/month
$BDE_{i,weighted}$	=	Weighted average of all destruction devices used in month *i*.[26] See Equation 5.6 for calculation guidance	fraction
21	=	Global warming potential of methane as carbon dioxide equivalent	tCO_2e/tCH_4

5.5 Calculating Baseline and Project Carbon Dioxide Emissions

Sources of carbon dioxide emissions associated with a project may include electricity use by pumps and equipment, fossil fuel generators used to power pumping systems or milking parlor equipment, tractors that operate in barns or free-stalls, on-site manure hauling trucks, or vehicles that transport manure off-site. Per Table 4.1, the carbon dioxide emissions from any additional equipment, vehicles, or fuel use that is required by the project beyond what is required in the baseline shall be accounted for. In practice, project developers shall account for the emissions from any new electric- or fuel-powered equipment or vehicles purchased and

[26] Project developers have the option to use either the default methane destruction efficiencies provided, or site specific methane destruction efficiencies, for each of the combustion devices used in the project. Site-specific values must be provided by an independent air emissions testing body that is accredited by a state or local agency, or the Stack Testing Accreditation Council (STAC). See Appendix B for more information.

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installed/operated specifically for the purpose of implementing the project, as well as any additional fuel used by old or new vehicles to collect or transport waste.

Project developers may either use Equation 5.12 below to calculate the net increase in carbon dioxide emissions, or, if they can demonstrate during verification that project carbon dioxide emissions are estimated to be equal to or less than 5% of the total baseline emissions, then the project developer may estimate baseline and project carbon dioxide emissions. If an estimation method is used, verifiers shall confirm based on professional judgment that project carbon dioxide emissions are equal to or less than 5% of the total baseline emissions based on documentation and the estimation methodology provided by the project developer. If emissions cannot be confirmed to be below 5%, then Equation 5.12 shall be used. Regardless of the method used, all estimates or calculations of anthropogenic carbon dioxide emissions within the GHG Assessment Boundary must be verified and included in emission reduction calculations.[27]

If calculations or estimates indicate that the project results in a net decrease in carbon dioxide emissions from grid-delivered electricity, mobile and stationary sources, then for quantification purposes the net increase in these emissions must be specified as zero (i.e. $CO_{2,net} = 0$ in Equation 5.12).

Carbon dioxide emissions from the combustion of biogas are considered biogenic emissions and are excluded from the GHG Assessment Boundary.

Equation 5.12 below calculates the net increase in anthropogenic carbon dioxide emissions resulting from the project activity.

[27] This is consistent with guidance in WRI's GHG Project Protocol regarding the treatment of significant secondary effects.

Equation 5.12. Increased Carbon Dioxide Emissions

$$CO_{2,net} = BE_{CO_2,MSC} - PE_{CO_2,MSC}$$

Where,

			Units
$CO_{2,net}$	=	Net increase in anthropogenic CO_2 emissions from electricity consumption and mobile and stationary combustion sources resulting from project activity during the reporting period. If result is <0, use a value of 0	tCO_2
$BE_{CO2,MSC}$	=	Total baseline CO_2 emissions from electricity consumption and mobile and stationary combustion sources during the reporting period (see equation below)	tCO_2
$PE_{CO2,MSC}$	=	Total project CO_2 emissions from electricity consumption and mobile and stationary combustion sources during the reporting period (see equation below)	tCO_2

All CO_2 emissions associated with electricity consumption and stationary and mobile combustion are calculated using the equation:

$$CO_{2,MSC} = \left(\sum_c QE_c \times EF_{CO_2,e}\right) + \left[\left(\sum_c QF_c \times EF_{CO_2,f}\right) \times 0.001\right]$$

Where,

			Units
$CO_{2,MSC}$	=	Anthropogenic CO_2 emissions from electricity consumption and mobile and stationary combustion sources	tCO_2
QE_c	=	Quantity of grid-connected electricity consumed for each emissions source 'c'[28] during the reporting period	MWh
$EF_{CO2,e}$	=	CO_2 emission factor for electricity used[29]	tCO_2/MWh
QF_c	=	Quantity of fuel consumed for each mobile and stationary emission source 'c' during the reporting period	MMBtu or gallons
$EF_{CO2,f}$	=	Fuel-specific emission factor *f* from Appendix B	kg CO_2/MMBtu or kg CO_2/gallon
0.001	=	Conversion factor from kg to metric tons	

[28] Emissions from electricity generated by the BCS and consumed onsite, do not need to be reported, as the resulting CO_2 emissions are considered biogenic, CH_4 is captured by the BDE calculation and N_2O emissions are excluded as negligible.

[29] Refer to the version of the U.S. EPA eGRID most closely corresponding to the time period during which the electricity was used. Projects shall use the annual total output emission rates for the subregion where the project is located, not the annual non-baseload output emission rates. The eGRID tables are available from the U.S. EPA website: http://www.epa.gov/cleanenergy/energy-resources/egrid/index.html

6 Project Monitoring

The Reserve requires a Monitoring Plan to be established for all monitoring and reporting activities associated with the project. The Monitoring Plan will serve as the basis for verification bodies to confirm that the monitoring and reporting requirements in this section and Section 7 have been and will continue to be met, and that consistent, rigorous monitoring and record-keeping is ongoing at the project site. The Monitoring Plan must cover all aspects of monitoring and reporting contained in this protocol and must specify how data for all relevant parameters in Table 6.1 (below) will be collected and recorded.

At a minimum the Monitoring Plan shall stipulate the frequency of data acquisition; a record keeping plan (see Section 7.2 for minimum record keeping requirements); the frequency of instrument field check and calibration activities; and the role of individuals performing each specific monitoring activity, as well as QA/QC provisions to ensure that data acquisition and meter calibration are carried out consistently and with precision. The Monitoring Plan shall also contain a detailed diagram of the BCS, including the placement of all meters and equipment that affect SSRs within the GHG Assessment Boundary (see Figure 4.1 and Appendix F).

For a project's second crediting period, the Monitoring Plan must also include procedures that the project developer will follow to ascertain and demonstrate that the project at all times passes the Legal Requirement Test (Section 3.5.2).

Project developers are responsible for monitoring the performance of the project and operating each component of the biogas collection and destruction system in a manner consistent with the manufacturer's recommendations.

6.1 Site-Specific Determination of Maximum Methane Potential (B_0)[30]

The determination of a site-specific value for maximum methane potential (B_0) is optional for manure from dairy facilities. Swine facilities must use the default values. For projects that choose this option for the quantification of emission reductions related to one or more manure streams being digested in the project's BCS, or the BCS effluent, the following criteria must be met in order to ensure accuracy and consistency of the site-specific B_0 values:

1. Manure samples for each eligible livestock category must be sampled prior to mixing with manure from other animal categories or any other waste streams. These samples shall be taken from the manure collection system, rather than from an individual animal.
    a. Scrape systems: Samples shall be collected from the freshly scraped manure.
    b. Flush systems: Samples shall be collected at the point that the flushed manure leaves the barn. Additional samples must be collected of the flush water prior to mixing with manure.
    c. BCS effluent: Samples shall be collected after the effluent has exited the digester and prior to any further treatment.

2. Sampling events shall occur during the time period between August and October, inclusive.
    a. Manure samples: For each eligible animal category, there shall be one single-day sampling event. A total of at least six samples of at least one half liter each must

[30] Background information on the development of this section can be found in Appendix E.

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be taken during the event. Samples shall be taken one to three hours apart, and all samples of the same type shall be combined (i.e. dairy cow manure samples in one container). The composite sample shall be delivered to the testing laboratory as soon as possible following the collection of the final sample.[31]

b. Flush water samples: If the farm utilizes a flush system for manure collection, the flush water must be sampled prior to mixing with manure. Two samples of at least one liter shall be collected, one to three hours apart, during the manure sampling event. These samples shall be combined into one container and delivered to the testing laboratory as soon as possible.
c. Effluent samples: Two samples of at least one liter shall be collected, one to three hours apart, during the manure sampling event. These samples shall be combined into one container and delivered to the testing laboratory as soon as possible.[32]

3. All samples must be analyzed using a Biochemical Methane Potential (BMP) Assay procedure at an independent, third-party laboratory that is familiar and experienced with this test and ISO 11734.[33] The laboratory must be able to document at least three years of experience with the BMP assay, and must have procedures in place to maintain a consistent inoculum. The laboratory must maintain and follow a standard operating procedure that outlines the process used in undertaking BMP analysis at that laboratory, and which can be made available to the verifier upon request.

4. At least six test runs shall be conducted using material from the mixed manure sample (i.e. split the sample into two and test each in triplicate). Tests shall report the weight of VS for the sample (as kg of dry matter) as well as the volume of methane produced, in order to determine the maximum methane potential as m^3 CH_4/kg VS. If applicable, the flush water sample and effluent sample shall each be used for one test run in triplicate. The laboratory shall conduct an assay on the seed inoculum itself in order to control for its contribution to the methane potential of the manure samples. The laboratory shall also conduct a control assay with a substrate of known methane potential (such as glucose or cellulose) to verify correct procedures were followed and that the inoculum was viable. If the control assay differs from its established expected value by greater than 15%, all results from that batch of assays shall be discarded. Measurement of gas flow shall be corrected to standard temperature and pressure (60°F and 1 atm). Devices used to measure gas flow and methane content shall be properly installed and calibrated, such that they can provide results within +/- 5% accuracy.

5. After the manure sample has been analyzed, there should be at least six estimates for the methane potential. The site specific value for B_0 shall equal the 90% lower confidence limit of all assay results. For flush systems, the mean methane potential of the flush water results must be subtracted from the calculated methane potential of the flushed manure sample. For BCS effluent, the mean methane potential of the test results

[31] Note, while there is no prescribed timeline regarding how quickly samples must be delivered to a laboratory, the longer a sample is retained before testing, the lower the methane generating potential will be. This loss can be mitigated by storing and transporting samples at temperatures below 5°C.
[32] *Ibid*.
[33] For more information on BMP Assay analysis and procedures, see: Moody et al. "Use of Biochemical Methane Potential (BMP) Assays for Predicting and Enhancing Anaerobic Digester Performance." (2009) http://sa.pfos.hr/sa2009/radovi/pdf/Radovi/r10-009.pdf

shall be used for the quantification. Additional sampling and assays may be carried out, and will reduce uncertainty and result in a final value that is closer to the mean.

Site-specific B_0 values determined using this procedure shall be valid for the reporting period during which the sampling occurred. Projects may elect to determine a site-specific B_0 value for only a subset of the eligible manure streams and utilize default values for the remainder. The verifier must confirm that sampling procedures conform to this section and that the personnel responsible for the sampling are trained and competent.

6.2 Biogas Control System Monitoring Requirements

The methane capture and control system must be monitored with measurement equipment that directly meters:

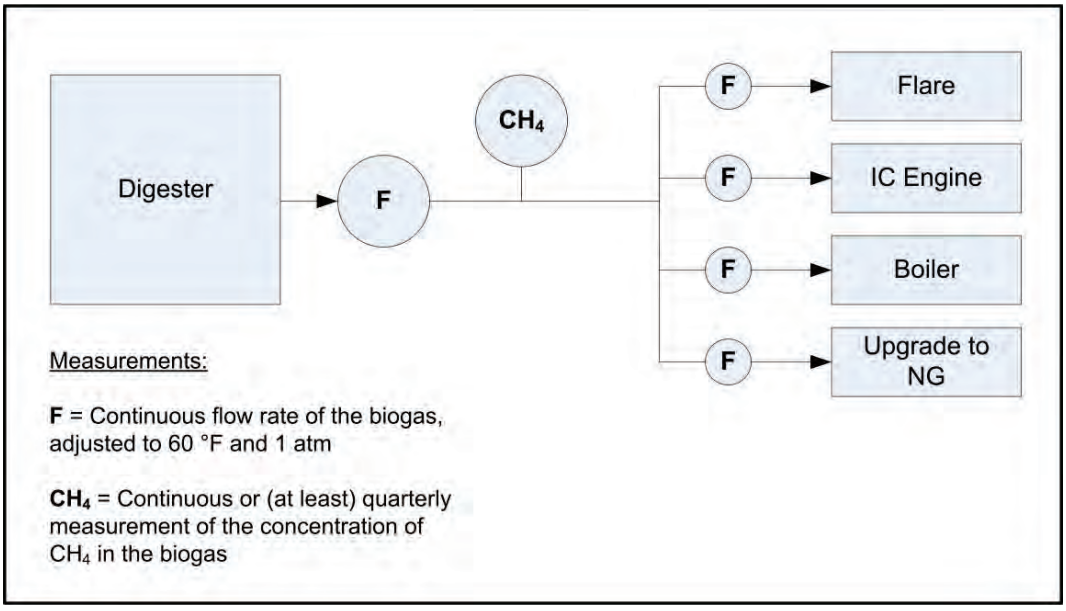
- The total flow of biogas, measured continuously and recorded every 15 minutes or totalized and recorded at least daily, adjusted for temperature and pressure, prior to delivery to the destruction device(s).
- The flow of biogas delivered to each destruction device (except as described below), measured continuously and recorded at least every 15 minutes or totalized and recorded at least daily, adjusted for temperature and pressure.
- The fraction of methane in the biogas, measured with a continuous analyzer or, alternatively, with at least quarterly measurements.
- The operational status of each destruction device (except as described below), measured and recorded at least hourly.

Flow data must be corrected for temperature and pressure at 60^{o}F and 1 atm, either internally or by following the guidance in Equation 5.6.

A single flow meter may be used to monitor the flow of gas to multiple destruction devices under certain conditions. If all destruction devices are of identical methane destruction efficiency (as described in Table B.7) and verified to be operational (i.e. there is recorded evidence of destruction), no additional steps are necessary for project registration. One example of this scenario would be a single meter used for a bank of multiple, identical engines that are in constant operation. If the destruction devices are not of identical efficiency, then the destruction efficiency of the least efficient device shall be applied to the flow data for this meter.
If there are any periods where the operational data show that one or more devices were not destroying methane, these periods are eligible for crediting, provided that the verifier can confirm all of the following conditions are met:

a. The destruction efficiency of the least efficient destruction device in operation shall be used as the destruction efficiency for all destruction devices monitored by this meter; and
b. All devices are either equipped with valves on the input gas line that close automatically if the device becomes non-operational (requiring no manual intervention), or designed in such a manner that it is physically impossible for gas to pass through while the device is non-operational; and
c. For any period where one or more destruction device(s) within this arrangement is not operational, it must be documented that the remaining operational devices have the capacity to destroy the maximum gas flow recorded during the period. For devices other than flares, it must be shown that the output corresponds to the flow of gas.

Figure 6.1 represents the suggested arrangement of the biogas flow meters and methane concentration metering equipment.



Note: The number of flow meters must be sufficient to track the total flow as well as the flow to each combustion device. The above example includes one more flow meter than would be necessary to achieve this objective.

Figure 6.1. Suggested Arrangement of Biogas Metering Equipment

Operational activity of the destruction devices shall be monitored and documented at least hourly to ensure actual methane destruction.

If for any reason the destruction device or the operational monitoring equipment (for example, the thermocouple on the flare) is inoperable, then all metered biogas going to the particular device shall be assumed to be released to atmosphere during the period of inoperability. In other words, during the period of inoperability, the destruction efficiency of the device must be assumed to be zero. In Equation 5.10, the monthly destruction efficiency (BDE) value shall be adjusted accordingly. See Box 6.1 below for an example BDE adjustment.

Box 6.1. Example BDE Adjustment

As an example, consider a situation where the primary destruction device is an open flare with a BDE of 96%, and it is found to be inoperable for a period of 5 days of a 30 day month. Assume that the total flow of biogas to the flare for the month is 3,000,000 scf, and that the total flow recorded for the 5 day period of inoperability is 500,000 scf. In this case the monthly BDE would be adjusted as follows:

$$BDE = \frac{[(0.96 \times 2{,}500{,}000) + (0.0 \times 500{,}000)]}{3{,}000{,}000} = 80\%$$

6.3 Biogas Measurement Instrument QA/QC

All gas flow meters[34] and continuous methane analyzers must be:

- In calibration (accurate to +/- 5% of the true value being measured) at time of installation. Calibration accuracy can be demonstrated through either a recent field check (as installed) or calibration by the manufacturer or a certified calibration service.

- Maintained per manufacturer's guidance, as well as cleaned and inspected on a quarterly basis, with the activities performed and as found/as left condition of the equipment documented.

- Field checked for calibration accuracy by an appropriately trained individual or a third-party technician with the percent drift documented, using either a portable instrument (such as a pitot tube)[35] or manufacturer specified guidance, at the end of but no more than 60 days prior to or after the end date of the reporting period.[36]

- Calibrated by the manufacturer or a certified calibration service per manufacturer's guidance or every 5 years, whichever is more frequent. Meters shall be calibrated to the range of conditions expected on site (e.g. pipe diameter, flow rate, temperature, pressure, gas composition) and as found/as left condition of the equipment documented.

If a stationary meter that was in use for 60 days or more is removed and not reinstalled during a reporting period, that meter shall either be field-checked for calibration accuracy prior to removal or calibrated (with percent drift documented) by the manufacturer or a certified calibration service prior to quantification of emission reductions for that reporting period.

If the field check on a piece of equipment reveals accuracy outside of a +/- 5% threshold, calibration by the manufacturer or a certified service provider is required for that piece of equipment, with as found/as left condition of the equipment documented.

For the interval between the last successful field check and any calibration event confirming accuracy below the +/- 5% threshold, all data from that meter or analyzer must be scaled according to the following procedure. These adjustments must be made for the entire period from the last successful field check until such time as the meter is properly calibrated and re-installed.

- For calibrations that indicate the flow meter was outside the +/- 5% accuracy threshold, the project developer shall estimate total emission reductions using i) the metered values without correction, and ii) the metered values adjusted based on the greatest calibration drift recorded at the time of calibration. The lower of the two emission reduction estimates shall be reported as the scaled emission reduction estimate.

[34] Field checks and calibrations of flow meters shall assess the volumetric output of the flow meter in SCF at 1 atm pressure and 60°F temperature.

[35] It is recommended that a professional third party calibration service be hired to perform flow meter field checks if using pitot tubes or other portable instruments, as these types of devices require professional training in order to achieve accurate readings.

[36] Instead of performing field checks, the project developer may instead have equipment calibrated by the manufacturer or a certified calibration service per manufacturer's guidance, at the end of but no more than 60 days prior to or after the end date of the reporting period to meet this requirement.

For example, if a project conducts field checks quarterly during a year-long verification period, then only three months of data will be subject at any one time to the penalties above. However, if the project developer feels confident that the meter does not require field checks or calibration on a greater than annual basis, then failed events will accordingly require the penalty to be applied to the entire year's data. Further, frequent calibration may minimize the total accrued drift (by zeroing out any error identified), and result in smaller overall deductions.

If a portable instrument is used (such as a handheld methane analyzer), the portable instrument shall be calibrated at least annually – or per the manufacturer's guidance, whichever is more frequent – by the manufacturer or at an ISO 17025 accredited laboratory. Portable methane analyzers shall be calibrated to a known reference gas prior to each use.

6.3.1 Missing Data

In situations where the flow rate or methane concentration monitoring equipment is missing data, the project developer shall apply the data substitution methodology provided in Appendix D. This methodology may also be used for periods where the project developer can show that the data are available but known to be corrupted (and where this corruption can be verified with reasonable assurance). If for any reason the monitoring equipment on any given destruction device is inoperable (for example, the thermocouple on the flare), then the destruction efficiency of that device must be assumed to be zero. For periods when it is not possible to use data substitution to fill data gaps, no emission reductions may be claimed. The methane flow volume for these days shall be zero, and the number of reporting days for that month shall be reduced to exclude the days of missing data (see Box 5.2).

During any period where the project is not claiming emission reduction credits and is not classifying the period as a venting event, the project developer must be able to demonstrate that project emissions were not greater than baseline emissions.

6.4 Monitoring Parameters

Provisions for monitoring other variables to calculate baseline and project emissions are provided in Table 6.1. The parameters are organized by general project factors then by the calculation methods.

Table 6.1. Project Monitoring Parameters

Equation Reference	Parameter	Description	Data Unit	Calculated (c) Measured (m) Reference (r) Operating Records (o)	Measurement Frequency	Comment
	Regulations	Project developer attestation to compliance with regulatory requirements relating to the manure digester project	All applicable regulations	n/a	Every verification period	Information used to demonstrate compliance with associated regulations and rules, e.g. criteria pollutant and effluent discharge limits.
	L	Type of livestock categories on the farm	Livestock categories	o	Monthly	See Appendix B, Table B.2.
Equation 5.1	$ER_{modeled}$	Avoided methane emissions associated with the project during the reporting period	tCO_2e	c	Every reporting period	Quantified using a modeled baseline scenario.
Equation 5.1	$BE_{modeled}$	Modeled baseline emissions during the reporting period	tCO_2e	c	Every reporting period	Quantified using a modeled baseline scenario.
Equation 5.1 Equation 5.5	PE_{CH4}	Total project methane emissions during the reporting period	tCO_2e	c	Every reporting period	Quantified using a modeled project scenario and metered methane destruction data.
Equation 5.1 Equation 5.12	$CO_{2,net}$	Net increase in anthropogenic CO_2 emissions from electricity and mobile/stationary combustion	tCO_2e	c	Every reporting period	
Equation 5.1	$ER_{metered}$	Avoided methane emissions associated with the project during the reporting period	tCO_2e	c	Every reporting period	Quantified using metered methane destruction data.
Equation 5.1 Equation 5.11	$BE_{metered}$	Aggregated quantity of methane collected and destroyed during the reporting period	tCO_2e	c	Every reporting period	Quantified using metered methane destruction data.

Equation Reference	Parameter	Description	Data Unit	Calculated (c) Measured (m) Reference (r) Operating Records (o)	Measurement Frequency	Comment
Equation 5.2	$BE_{CH4,AS,L}$	Total baseline methane emissions from anaerobic storage/treatment systems by livestock category, aggregated for reporting period	tCO_2e	c	Monthly	
Equation 5.2 Equation 5.4	$BE_{CH4,nAS,L}$	Total baseline methane emissions for the reporting period from non-anaerobic storage/treatment systems by livestock category	tCO_2e	c	Every reporting period	
Equation 5.3	$VS_{deg,AS,L}$	Monthly volatile solids degraded in each anaerobic storage system *AS*, for each livestock category *L*	kg	c, o	Monthly	Calculated value from operating records. Recommend Reserve Livestock Calculation Tool for all calculations.
Equation 5.3 Equation 5.4 Equation 5.10	$B_{0,L}$	Maximum methane producing capacity for manure by livestock category	(m^3 CH_4/ kg VS)	r	Every reporting period	See Appendix B, Table B.3.
Equation 5.3 Equation 5.8	$days_{mo}$	Calendar days per month	days	r	Monthly	See Box 5.2.
Equation 5.3 Equation 5.8	rd_{mo}	Reporting days during the current month	days	o	Monthly	See Box 5.2.
Equation 5.3	$VS_{avail,AS,L}$	Monthly volatile solids available for degradation in each anaerobic storage system, for each livestock category	kg	c, o	Monthly	Calculated value from operating records. Recommend Reserve Livestock Calculation Tool for all calculations.
Equation 5.3 Equation 5.8	*f*	van't Hoff-Arrhenius factor	n/a	c	Monthly	The proportion of volatile solids that are biologically available for conversion to methane based on the monthly temperature of the system. Recommend Reserve Livestock Calculation Tool for all calculations.
Equation 5.3 Equation 5.4 Equation 5.8 Equation 5.10	VS_L	Daily volatile solid production for each livestock category	(kg/animal/ day)	r, c	Every reporting period	Appendix B, Table B.3 and Table B.5a-d; see Box 5.1 for guidance on converting units from (kg/day/1000kg) to (kg/animal/day).

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Equation Reference	Parameter	Description	Data Unit	Calculated (c) Measured (m) Reference (r) Operating Records (o)	Measurement Frequency	Comment
Equation 5.3 Equation 5.4 Equation 5.8 Equation 5.10	P_L	Average number of animals for each livestock category	population (# head)	o	Monthly	
Equation 5.3	$MS_{AS,L}$	Fraction of manure from each livestock category managed in the anaerobic waste handling system	%	o	Every reporting period	Reflects the percent of waste handled by the system components *S* pre-project. Each system component must have an MS value per livestock category. Within each livestock category, the sum of MS values (for all treatment/storage systems) equals 100%. See Appendix B, Table B.1.
Equation 5.3	$VS_{avail-1,AS}$	Previous month's volatile solids available for degradation in anaerobic system	kg	c	Monthly	
Equation 5.3	$VS_{deg-1,AS}$	Previous month's volatile solids degraded by anaerobic system	kg	c	Monthly	
Equation 5.3	E	Activation energy constant	cal/mol	r		15,175 cal/mol
Equation 5.3	T_{mo}	Average monthly temperature at location of the operation	°C	m/o	Monthly	Used for van't Hoff calculation and for choosing appropriate MCF value.
Equation 5.3	T_{ref}	Reference temperature	K	r		303.16 Kelvins
Equation 5.3	R	Ideal gas constant	cal/Kmol	r		1.987 cal/Kmol
Equation 5.4	$MS_{L,nAS}$	Fraction of manure from each livestock category *L* managed in the non-anaerobic waste handling system	%	o	Every reporting period	Reflects the percent of waste handled by the system components *S* pre-project. Each system component must have an MS value per livestock category. Within each livestock category, the sum of MS values (for all treatment/storage systems) equals 100%. See Appendix B, Table B.1.
Equation 5.4	$days_{rp}$	Number of days in the reporting period	days	o	Every reporting period	See Box 5.2.
Equation 5.4	MCF_{nAS}	Methane conversion factor for non-anaerobic storage/treatment system	%	r	Every reporting period	From Appendix B. Differentiate by livestock category.

Equation Reference	Parameter	Description	Data Unit	Calculated (c) Measured (m) Reference (r) Operating Records (o)	Measurement Frequency	Comment
Equation 5.4 Equation 5.9 Equation 5.10	rd_{rp}	Reporting days during the reporting period	days		Every reporting period	See Box 5.2.
Equation 5.5 Equation 5.6	$PE_{CH4,BCS}$	Methane emissions from the BCS	tCH_4	m, c	Every reporting period	Calculated for each month and summed for the reporting period.
Equation 5.5 Equation 5.8	$PE_{CH4,ET,AS}$	Methane emissions from the BCS effluent anaerobic treatment systems	tCH_4	m, c	Every reporting period	Calculated for each month and summed for the reporting period.
Equation 5.5 Equation 5.9	$PE_{CH4,ET,nAS}$	Methane emissions from the BCS effluent non-anaerobic treatment systems	tCH_4	m, c	Every reporting period	Calculated for the reporting period.
Equation 5.5 Equation 5.10	$PE_{CH4,other}$	Methane emissions from sources in the waste treatment and storage category other than the BCS and associated effluent treatment systems	tCH_4	m, c	Every reporting period	Calculated for the reporting period.
Equation 5.6 Equation 5.11	$CH_{4,metered,i}$	Metered amount of methane collected and destroyed by the BCS in month *i*	tCH_4	m, c	Monthly calculation from continuous data	Calculated from biogas flow and methane fraction meter readings (See *F* and $CH_{4,conc}$ parameters below).
Equation 5.6	BCE	Biogas capture efficiency of the anaerobic digester, accounts for fugitive emissions	fraction	r	Every reporting period	Use default value from Table B.4.
Equation 5.6 Equation 5.11	$BDE_{i,weighted}$	Methane destruction efficiency of destruction device(s)	fraction	r, c	Monthly	Actual efficiency of the system to destroy captured methane gas – accounts for different destruction devices.
Equation 5.6 Equation 5.7	$CH_{4,vent,i}$	Quantity of methane that is vented to the atmosphere due to BCS venting events	scf	c	Monthly	Calculated from average total flow of biogas from the digester and the number of days biogas is venting.
Equation 5.6	F	Volume of biogas from digester to destruction devices	scf	m	Continuously, aggregated monthly	Measured continuously from flow meter and recorded every 15 minutes or totalized and recorded at least once daily. Data to be aggregated monthly.

Equation Reference	Parameter	Description	Data Unit	Calculated (c) Measured (m) Reference (r) Operating Records (o)	Measurement Frequency	Comment
Equation 5.6	T_b	Temperature of the biogas	°R (Rankine)	m	Continuously, averaged monthly	Measured to normalize volume flow of biogas to STP. No separate monitoring of temperature is necessary when using flow meters that automatically measure temperature and pressure, expressing biogas volumes in normalized cubic feet.
Equation 5.6	P	Pressure of the biogas	atm	m	Continuously, averaged monthly	Measured to normalize volume flow of biogas to STP. No separate monitoring of pressure is necessary when using flow meters that automatically measure temperature and pressure, expressing biogas volumes in normalized cubic feet.
Equation 5.6 Equation 5.7	$CH_{4,conc}$	Methane concentration of biogas	fraction	m	At least quarterly	Samples to be taken at least quarterly. See Section 6.2 for metering guidance.
Equation 5.6	BDE_{DD}	Default methane destruction efficiency of a particular destruction device	%	r	Monthly	See Appendix B for default destruction efficiencies by device.
Equation 5.6	$F_{i,DD}$	Flow of biogas to a particular destruction device	scf	m	Monthly	See Section 6.2 for metering guidance.
Equation 5.6	F_i	Total volumetric flow of biogas to all destruction devices	scf	m	Monthly	See Section 6.2 for metering guidance.
Equation 5.7	MGS_{BCS}	Maximum biogas storage of the BCS system	scf	r	Every reporting period	Obtained from digester system design plans. Necessary to quantify the release of methane to the atmosphere due to an uncontrolled venting event.
Equation 5.7	F_{pw}	Average total daily flow of biogas from the digester for the entire week prior to the uncontrolled venting event	scf/day	m	Weekly	Average flow of biogas can be determined from the daily records from the previous week.
Equation 5.7	t	Number of days of the month that biogas is venting uncontrolled from the BCS system	days	m, o	Monthly	

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Equation Reference	Parameter	Description	Data Unit	Calculated (c) Measured (m) Reference (r) Operating Records (o)	Measurement Frequency	Comment
Equation 5.8 Equation 5.9	$VS_{ET,i}$	Volatile solids to effluent treatment system *i*	kg/day	r, c	Every reporting period	If project uses effluent pond, equals 30% of the average daily VS entering the digester.
Equation 5.8 Equation 5.9	$B_{0,ET}$	Maximum methane producing capacity of VS dry matter	(m^3 CH_4/ kg VS)	c	Every reporting period	An average of the $B_{0,EF}$ value of the operation's livestock categories that contributes manure to the BCS.
Equation 5.8	$MS_{L,BCS}$	Fraction of manure from each livestock category managed in the BCS	fraction	o	Every reporting period	Used to determine the total VS entering the digester. The fraction should be tracked in operational records.
Equation 5.8	ETF_i	Fraction of the effluent that exits the digester that is sent to effluent treatment system		o, r	Every reporting period	Used to determine the amount of VS for each effluent treatment system. The percentage should be tracked in operational records, or the project developer may provide a technical reference to support this fraction.
Equation 5.9	$MCF_{ET,i}$	Methane conversion factor for effluent treatment system	%	r	Every reporting period	See Appendix B. Project developers should use the *liquid slurry* MCF value.
Equation 5.10	$MCF_{non\text{-}BCS}$	Management-weighted methane conversion factor for waste treatment and storage systems other than the BCS and associated effluent treatment systems	%	r	Every reporting period	Referenced from Appendix B.
Equation 5.10	MCF_S	Methane conversion factor for system component		r		See Table B.9.
Equation 5.10	$MS_{L,S}$	Manure from each livestock category managed in the baseline waste handling system	fraction	o	Every reporting period	Fraction of waste handled by the system component *S* pre-project. Each system component must have an MS value per livestock category. Within each livestock category, the sum of MS values (for all treatment/storage systems) equals 1. See Appendix B, Table B.1.
Equation 5.12	$BE_{CO2,MSC}$	Total baseline CO_2 emissions from electricity and mobile/stationary combustion during reporting period	tCO_2	c	Every reporting period	

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Equation Reference	Parameter	Description	Data Unit	Calculated (c) Measured (m) Reference (r) Operating Records (o)	Measurement Frequency	Comment
Equation 5.12	$PE_{CO2,MSC}$	Total project CO_2 emissions from electricity and mobile/stationary combustion during reporting period	tCO_2	c	Every reporting period	
Equation 5.12	$CO_{2,MSC}$	Anthropogenic CO_2 emissions from electricity and mobile/stationary combustion	tCO_2	c	Every reporting period	
Equation 5.12	QE_c	Quantity of electricity consumed	MWh	o, c	Every reporting period	Electricity used by project for manure collection, transport, treatment/storage, and disposal.
Equation 5.12	$EF_{CO2,e}$	Emission factor for electricity used by project	tCO_2/MWh	r	Every reporting period	See Appendix B. If biogas produced from digester is used to generate electricity consumed, the EF is zero.
Equation 5.12	QF_c	Quantity of fuel used for mobile/stationary combustion sources	MMBtu or gallons	o, c	Every reporting period	Fuel used by project for manure collection, transport, treatment/storage, and disposal, and stationary combustion sources including supplemental fossil fuels used in combustion device.
Equation 5.12	$EF_{CO2,f}$	Fuel-specific emission factor for mobile/stationary combustion sources	kg CO_2/ MMBtu or kg CO_2/ gallon	r	Every reporting period	Refer to EPA eGRID for emission factors. If biogas produced from digester is used as an energy source, the EF is zero.

7 Reporting Parameters

This section provides requirements and guidance on reporting rules and procedures. A priority of the Reserve is to facilitate consistent and transparent information disclosure among project developers. Project developers must submit either a project monitoring report or a verified emission reduction report to the Reserve annually at minimum, depending on the verification option selected by the project developer.

7.1 Project Documentation

Project developers must provide the following documentation to the Reserve in order to register a livestock project:

- Project Submittal form
- Project diagram from Monitoring Plan – see Appendix F (not public)
- Completed Reserve Livestock Calculation Tool, if used (not public)
- Signed Attestation of Title form
- Signed Attestation of Voluntary Implementation form[37]
- Signed Attestation of Regulatory Compliance form
- Verification Report
- Verification Statement

Project developers must provide the following documentation each verification period in order for the Reserve to issue CRTs for quantified GHG reductions:

- Verification Report
- Verification Statement
- Project diagram from Monitoring Plan – see Appendix F (not public)
- Completed Reserve Livestock Calculation Tool, if used (not public)
- Signed Attestation of Title form
- Signed Attestation of Regulatory Compliance form
- Signed Attestation of Voluntary Implementation form (second crediting period only)

Unless otherwise specified, the above project documentation will be available to the public via the Reserve's online registry. Further disclosure and other documentation may be made available on a voluntary basis through the Reserve. Project forms can be found athttp://www.climateactionreserve.org/how/program/documents/. .

7.2 Record Keeping

For purposes of independent verification and historical documentation, project developers are required to keep all information outlined in this protocol for a period of 10 years after the information is generated or 7 years after the last verification. This information will not be publicly available, but may be requested by the verifier or the Reserve.

[37] A project developer only needs to attest that the project passes the Legal Requirement Test during its first verification period of a crediting period. Meeting the Legal Requirement Test is not required for the remainder of the first crediting period after initial verification.

System Information:

- All data inputs for the calculation of the baseline emissions and project emission reductions
- CO_2e annual tonnage calculations (including copies of the Reserve Livestock Calculation Tool, if used)
- Relevant sections of the BCS operating permits
- Executed Attestation of Title forms, Attestation of Regulatory Compliance forms, and Attestation of Voluntary Implementation form
- BCS information (installation dates, equipment list, etc.)
- Biogas flow meter information (model number, serial number, manufacturer's calibration procedures)
- Cleaning and inspection records for all biogas meters
- Field check results for all biogas meters
- Calibration results for all biogas meters
- Methane monitor information (model number, serial number, calibration procedures)
- Biogas flow data (for each flow meter)
- Biogas temperature and pressure readings (only if flow meter does not correct for temperature and pressure automatically)
- Methane concentration monitoring data
- Destruction device monitoring data (for each destruction device)
- Destruction device, methane monitor and biogas flow monitor information (model numbers, serial numbers, calibration procedures)
- Initial and annual verification records and results
- All maintenance records relevant to the BCS, monitoring equipment, and destruction devices

If using a calibrated portable gas analyzer for CH_4 content measurement:

- Date, time, and location of methane measurement
- Methane content of biogas (% by volume) for each measurement
- Methane measurement instrument type and serial number
- Date, time, and results of instrument calibration
- Corrective measures taken if instrument does not meet performance specifications

7.3 Reporting and Verification Cycle

To provide flexibility and help manage verification costs associated with livestock projects, there are three verification options to choose from after a project's initial verification and registration. Regardless of the option selected, project developers must report GHG reductions resulting from project activities during each reporting period. A "reporting period" is a period of time over which a project developer quantifies and reports GHG reductions to the Reserve. Under this protocol, the reporting period cannot exceed 12 months. A "verification period" is the period of time over which GHG reductions are verified. Under this protocol, a verification period may cover multiple reporting periods (see Section 7.3.4). The end date of any verification period must correspond to the end date of a reporting period.

A project developer may choose to utilize one option for the duration of a project's crediting period, or may choose different options at different points during a single crediting period. Regardless of the option selected, reporting periods must be contiguous; there may be no time gaps in reporting during the crediting period of a project once the initial reporting period has commenced.

7.3.1 Initial Reporting and Verification Period

While a reporting period cannot exceed 12 months, a project developer may register multiple reporting periods (i.e. more than 12 months of data) during a project's initial verification period. A project developer may also register a project's initial verification period as a zero-credit reporting period (see the Reserve Program Manual for more information on zero-credit reporting periods).

Once a project is registered and has had at least 3 months of emission reductions verified, the project developer may choose one of the verification options below.

7.3.2 Option 1: Twelve-Month Maximum Verification Period

Under this option, the verification period may not exceed 12 months. Verification with a site visit is required for CRT issuance. The project developer may choose to have a sub-annual verification period (e.g. quarterly or semi-annually).

7.3.3 Option 2: Twelve-Month Verification Period with Desktop Verification

Under this option, the verification period cannot exceed 12 months. However, CRTs may be issued upon successful completion of a desktop verification as long as: (1) site-visit verifications occur at two-year intervals; and (2) the verifier has confirmed that there have been no significant changes in data management systems, equipment, or personnel since the previous site visit. Desktop verifications must cover all other required verification activities.

In order to utilize this option, there are two additional requirements that must be satisfied:

1. Prior to a desktop verification commencing, the project developer must attest to the verifier that there have been no significant changes to the project's data management systems, project set up/equipment, or site personnel involved with the project since the last site-visit verification. For each verification period, the project developer must provide the following documentation for review by the verifier prior to the desktop verification commencing:
    a. A schematic of system equipment and configuration, detailing any changes since the previous site visit, and any other supporting documentation for system or operation changes
    b. A list of personnel performing key functions related to project activities (personnel who manage and perform monitoring, measurement, and instrument QA/QC activities for the project), and documentation of any personnel or roles or changes since the pervious site visit; this shall include documented handover of personnel changes, including personnel change dates
    c. The sections from the Monitoring Plan that summarize the data management systems and processes in place and a summary of any changes to the systems or processes since the previous site visit

2. Desktop verifications must be conducted by the same verification body that conducted the most recent site-visit verification.

For projects using this option, the initial verification in this cycle shall be a full verification, including a site visit, and shall cover a minimum of 3 months and maximum 12 months of project data. All subsequent verification periods under this option shall be 12-month verification periods. Projects that wish to upgrade to the latest protocol version from a previous version whilst simultaneously taking advantage of the desktop verification option shall be allowed to do so, provided:

i. The verification of the previous verification period (e.g. under Version 2.1, 2.2 or 3.0) was a full verification, including site visit, and covered a minimum of 3 months of project data, and
ii. The two additional requirements specified in Section 7.3.3 are satisfied.

Taking into consideration the Reserve's policy that a verification body may provide verification services to a project for a maximum of six consecutive years (see the Verification Program Manual, Section 2.6 for more information), Table 7.1 below details what the verification cycle might look under Option 2.

Table 7.1. Sample Verification Cycle under Option 2

Reporting Period	Verification Activity	Verification Body (VB)
Year 1 *(initial verification)*	Site-visit verification	VB A
Year 2	Desktop verification	VB A
Year 3	Site-visit verification	VB A
Year 4	Desktop verification	VB A
Year 5	Site-visit verification	VB A
Year 6	Desktop verification	VB A
Year 7	Site-visit verification	VB B *(new verification body)*
Year 8	Desktop verification	VB B

7.3.4 Option 3: Twenty-Four Month Maximum Verification Period

Under this option, the verification period cannot exceed 24 months and the project's monitoring report must be submitted to the Reserve for the interim 12 month reporting period. The project monitoring report must be submitted for projects that choose Option 3 to meet the annual documentation requirement of the Reserve program. It is meant to provide the Reserve with information and documentation on a project's operations and performance, and adherence to the project's monitoring plan. It is submitted via the Reserve's online registry, but is not a publicly available document. A monitoring report template for livestock projects is available at http://www.climateactionreserve.org/how/program/documents/. The monitoring report shall be submitted within 30 days of the end of the interim reporting period. The only exception to this requirement is for projects that verify under Option 3 as part of a protocol upgrade, and fall within the specific timeline outlined below.

Project developers that wish to upgrade to Version 4.0 of this protocol and immediately utilize the 24-month verification period shall be allowed to do so, provided that the verification of the previous verification period (e.g. under Version 2.0, 2.1, 2.2, or 3.0) was a full verification, including a site visit, and covered a minimum of 3 months of project data.

All project developers utilizing the 24-month verification period must submit the monitoring report within 30 days of the end of the interim reporting period.

Under this option, CRTs may be issued upon successful completion of a site-visit verification for GHG reductions achieved over a maximum of 24 months. CRTs will not be issued based on the Reserve's review of project monitoring plans/reports. Project developers may choose to have a verification period shorter than 24 months.

Taking into consideration the Reserve's policy that a verification body may provide verification services to a project for a maximum of six consecutive years (see the Verification Program Manual, Section 2.6 for more information), Table 7.2 below details what the verification cycle might look under Option 3.

Table 7.2. Sample Verification Cycle under Option 3

Reporting Period	Verification Activity	Verification Body (VB)
Year 1 *(initial verification)*	Site-visit verification	VB A
Year 2	Project monitoring plan and report submitted to Reserve	n/a
Year 3	Site-visit verification for years 2 & 3	VB A
Year 4	Project monitoring plan and report submitted to Reserve	n/a
Year 5	Site-visit verification for years 4 & 5	VB A
Year 6	Project monitoring plan and report submitted to Reserve	n/a
Year 7	Site-visit verification for years 6 & 7	VB B *(new verification body)*
Year 8	Project monitoring plan and report submitted to Reserve	n/a

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8 Verification Guidance

This section provides verification bodies with guidance on verifying GHG emission reductions associated with installing a biogas control system for manure management on dairy cattle and swine farms. This verification guidance supplements the Reserve's Verification Program Manual and describes verification activities specifically related to livestock manure management projects.

Verification bodies trained to verify livestock projects must be familiar with the following documents:

- Climate Action Reserve Program Manual
- Climate Action Reserve Verification Program Manual
- Climate Action Reserve U.S. Livestock Project Protocol

The Reserve's Program Manual, Verification Program Manual, and project protocols are designed to be compatible with each other and are available on the Reserve's website at http://www.climateactionreserve.org.

In cases where the Program Manual and/or Verification Program Manual differ from the guidance in this protocol, this protocol takes precedent.

Only Reserve-approved verification bodies are eligible to verify livestock project reports. Verification bodies approved under other project protocol types are not permitted to verify livestock projects. Information about verification body accreditation and Reserve project verification training can be found on the Reserve website at http://www.climateactionreserve.org.

8.1 Standard of Verification

The Reserve's standard of verification for livestock projects is the U.S. Livestock Project Protocol (this document), the Reserve Program Manual, and the Verification Program Manual. To verify a livestock project report, verification bodies apply the guidance in the Verification Program Manual and this section of the protocol to the standards described in Sections 2 through 7 of this protocol. Sections 2 through 7 provide eligibility rules, methods to calculate emission reductions, performance monitoring instructions and requirements, and procedures for reporting project information to the Reserve.

8.2 Monitoring Plan

The Monitoring Plan serves as the basis for verification bodies to confirm that the monitoring and reporting requirements in Section 6 and Section 7 have been met, and that consistent, rigorous monitoring and record-keeping is ongoing at the project site. Verification bodies shall confirm that the Monitoring Plan covers all aspects of monitoring and reporting contained in this protocol and specifies how data for all relevant parameters in Section 6 are collected and recorded.

8.3 Verifying Project Eligibility

Verification bodies must affirm a livestock project's eligibility according to the rules described in this protocol. The table below outlines the eligibility criteria for livestock projects. This table does

not present all criteria for determining eligibility comprehensively; verification bodies must also look to Section 3 and the verification items list in Table 8.2.

Table 8.1. Summary of Eligibility Criteria for a Livestock Project

Eligibility Rule	Eligibility Criteria	Frequency of Rule Application
Start Date	Projects must be submitted for listing within 6 months of the project start date	Once during first verification
Location	United States, its territories, and U.S. tribal areas	Once during first verification
Performance Standard Test	Installation of a biogas control system that captures and destroys methane gas from anaerobic manure treatment and/or storage facilities on livestock operations	Once during first verification
Anaerobic Baseline	Projects must demonstrate that the depth of the anaerobic lagoons or ponds prior to the project's implementation were sufficient to prevent algal oxygen production and create an oxygen-free bottom layer; which means at least 1 meter in liquid depth	Once during first verification
Legal Requirement Test	Signed Attestation of Voluntary Implementation form and additional documentation demonstrating that the project passes the Legal Requirement Test	Once during first verification for first crediting period; every verification for second crediting period
Regulatory Compliance	Signed Attestation of Regulatory Compliance form and disclosure of all non-compliance events to verifier, and monitoring; project must be in material compliance with all applicable laws	Every verification

8.4 Core Verification Activities

The U.S. Livestock Project Protocol provides explicit requirements and guidance for quantifying the GHG reductions associated with installing a BCS to capture and destroy methane gas from livestock operations. The Verification Program Manual describes the core verification activities that shall be performed by verification bodies for all project verifications. They are summarized below in the context of a livestock project, but verification bodies must also follow the general guidance in the Verification Program Manual.

Verification is a risk assessment and data sampling effort designed to ensure that the risk of reporting error is assessed and addressed through appropriate sampling, testing, and review. The three core verification activities are:

1. Identifying emission sources, sinks, and reservoirs
2. Reviewing GHG management systems and estimation methodologies
3. Verifying emission reduction estimates

Identifying emission sources, sinks, and reservoirs

The verification body reviews for completeness the SSRs identified for a project, such as energy use waste collection and transport, treatment and storage, and uncombusted methane from the biogas control system.

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Reviewing GHG management systems and estimation methodologies

The verification body reviews and assesses the appropriateness of the methodologies and management systems that the livestock project operator uses to gather data and calculate baseline and project emissions. This includes the examination of assertions or assumptions regarding MS, the percentage of manure going to anaerobic treatment systems in the baseline, and the baseline lagoon cleaning frequency.

Verifying emission reduction estimates

The verification body further investigates areas that have the greatest potential for material misstatements and then confirms whether or not material misstatements have occurred. This involves site visits to the project to ensure the systems on the ground correspond to and are consistent with data provided to the verification body. In addition, the verification body recalculates a representative sample of the performance or emissions data for comparison with data reported by the project developer in order to double-check the calculations of GHG emission reductions.

8.5 Verification Period

Per Section 7.3, this protocol provides project developers three verification options for a project after its initial verification and registration in order to provide flexibility and help manage verification costs associated with livestock projects. The different options require verification bodies to confirm additional requirements specific to this protocol, and in some instances, to utilize professional judgment on the appropriateness of the option selected.

8.5.1 Option 1: Twelve-Month Maximum Verification Period

Option 1 does not require verification bodies to confirm any additional requirements beyond what is specified in the protocol.

8.5.2 Option 2: Twelve-Month Verification Period with Desktop Verification

Option 2 requires verification bodies to review the documentation specified in Section 7.3.3 in order to determine if a desktop verification is appropriate. The verifier shall use his/her professional judgment to assess any changes that have occurred related to a project's data management systems, equipment, or personnel and determine whether a site visit should be required as part of verification activities in order to provide a reasonable level of assurance on the project's verification. The documentation shall be reviewed prior to the COI/NOVA renewal being submitted to the Reserve, and the verification body shall provide a summary of its assessment and decision on the appropriateness of a desktop verification when submitting the COI/NOVA renewal. The Reserve reserves the right to review the documentation provided by the project developer and the decision made by the verification body on whether a desktop verification is appropriate.

8.5.3 Option 3: Twenty-Four Month Maximum Verification Period

Under Option 3 (see Section 7.3.4), verification bodies shall look to the project monitoring report submitted by the project developer to the Reserve for the interim 12 month reporting period as a resource to inform its planned verification activities. While verification bodies are not expected to provide a reasonable level of assurance on the accuracy of the monitoring report as part of verification, the verification body shall list a summary of discrepancies between the monitoring report and what was ultimately verified in the List of Findings.

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8.6 Livestock Verification Items

The following tables provide lists of items that a verification body needs to address while verifying a livestock project. The tables include references to the section in the protocol where requirements are further specified. The table also identifies items for which a verification body is expected to apply professional judgment during the verification process. Verification bodies are expected to use their professional judgment to confirm that protocol requirements have been met in instances where the protocol does not provide (sufficiently) prescriptive guidance. For more information on the Reserve's verification process and professional judgment, please see the Verification Program Manual.

Note: These tables shall not be viewed as a comprehensive list or plan for verification activities, but rather guidance on areas specific to livestock projects that must be addressed during verification.

8.6.1 Project Eligibility and CRT Issuance

Table 8.2 lists the criteria for reasonable assurance with respect to eligibility and CRT issuance for livestock projects. These requirements determine if a project is eligible to register with the Reserve and/or have CRTs issued for the reporting period. If any requirement is not met, either the project may be determined ineligible or the GHG reductions from the reporting period (or sub-set of the reporting period) may be ineligible for issuance of CRTs, as specified in Sections 2, 3, and 6.

Table 8.2. Eligibility Verification Items

Protocol Section	Eligibility Qualification Item	Apply Professional Judgment?
2.1	Verify that the project meets the definition of a livestock project	No
2.2	Verify ownership of the reductions by reviewing Attestation of Title and other relevant contracts, documentation	No
3.2	Verify eligibility of project start date	No
3.2	Verify accuracy of project start date based on operational records	Yes
3.3	Verify that project is within its 10-year crediting period	No
3.4	Verify that all pre-project manure treatment lagoons/ponds/tanks were of sufficient depth to ensure an oxygen free bottom layer (> 1m)	Yes
3.4	Verify that the pre-project manure management system met the requirements of this section for the relevant period of time	Yes
3.4	If the project is a greenfield project, verify that the project site meets the definition of a greenfield	Yes
3.5.1	Verify that the project meets the Performance Standard Test	No
3.5.2	Confirm execution of the Attestation of Voluntary Implementation form to demonstrate eligibility under the Legal Requirement Test (initial verification only)	No
3.6	Verify that the project activities comply with applicable laws by reviewing instances of non-compliance provided by the project developer and performing a risk-based assessment to confirm the statements made by the project developer in the Attestation of Regulatory Compliance form	Yes
6	Verify that monitoring meets the requirements of the protocol. If it does not, verify that variance has been approved for monitoring variations	No
6	Verify that all gas flow meters and continuous methane analyzers adhered to the inspection, cleaning, and calibration schedule specified in the protocol. If they do not, verify that a variance has been approved for	No

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Protocol Section	Eligibility Qualification Item	Apply Professional Judgment?
	monitoring variations or that adjustments have been made to data per the protocol requirements	
6	Verify that adjustments for failed calibrations were properly applied	No
6, Appendix D	If used, verify that data substitution methodology was properly applied	No

8.6.2 Quantification

Table 8.3 lists the items that verification bodies shall include in their risk assessment and re-calculation of the project's GHG emission reductions. These quantification items inform any determination as to whether there are material and/or immaterial misstatements in the project's GHG emission reduction calculations. If there are material misstatements, the calculations must be revised before CRTs are issued.

Table 8.3. Quantification Verification Items

Protocol Section	Quantification Item	Apply Professional Judgment?
4	Verify that all SSRs in the GHG Assessment Boundary are accounted for	No
5	Verify that the modeled baseline is compared with the total amount of methane metered and destroyed by the project, and the lesser of the two values is used as the baseline for the GHG reduction calculation	No
5.1	Verify that the livestock categories (L) are correctly differentiated	Yes
5.1	Verify that the project developer applied the correct VS and B_0 values for each livestock category	No
5.1, 6.1	If site-specific B_0 values were developed, verify that the sampling and analysis procedures were correctly followed	Yes
5.1	Verify that the fraction of manure (MS) handled by the different manure management system components (i.e. GHG source) is satisfactorily represented	Yes
5.1	Verify that the baseline lagoon cleaning frequency is satisfactorily represented	Yes
5.1	Verify that the project developer used methane conversion factors (MCF) differentiated by temperature	No
5.1	Verify that the methane baseline emissions calculations for each livestock category were calculated according to the protocol with the appropriate data	No
5.1	Verify that the project developer correctly aggregated methane emissions from sources within each livestock category	Yes
5.4	Verify that the project developer correctly monitored, quantified and aggregated electricity use	Yes
5.2, 5.4	Verify that the project developer correctly monitored, quantified and aggregated fossil fuel use	Yes
5.2, 5.4	Verify that the project developer applied the correct emission factors for fossil fuel combustion and grid-delivered electricity	No
5.2	Verify that the project developer applied the correct methane destruction efficiencies	No
5.2	Verify that the project developer applied the correct B_0 value for Modeled Project Methane Emissions from Anaerobic Treatment of BCS Effluent	No
5.2	Verify that the project developer correctly quantified the amount of uncombusted methane	No

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Protocol Section	Quantification Item	Apply Professional Judgment?
5.2	Verify that methane emissions resulting from any venting event are estimated correctly	Yes
5.2, 5.4	Verify that the project emissions calculations were calculated according to the protocol with the appropriate data	No
5.2, 5.1	Verify that the project developer assessed baseline and project emissions on a month-to-month basis	No
5.2	Verify that the project developer correctly monitored and quantified the amount of methane destroyed by the project	No
5.3	Verify that the modeled methane emission reductions are compared with the *ex-post* methane metered and destroyed by the project, and the lesser of the two values is used to quantify project emission reductions	No

8.6.3 Risk Assessment

Verification bodies will review the following items in Table 8.4 to guide and prioritize their assessment of data used in determining eligibility and quantifying GHG emission reductions.

Table 8.4. Risk Assessment Verification Items

Protocol Section	Item that Informs Risk Assessment	Apply Professional Judgment?
6	Verify that the project Monitoring Plan is sufficiently rigorous to support the requirements of the protocol and proper operation of the project	Yes
6	Verify that the BCS was operated and maintained according to manufacturer specifications	No
6	Verify that appropriate monitoring equipment is in place to meet the requirements of the protocol	No
6	Verify that the individual or team responsible for managing and reporting project activities are qualified to perform this function	Yes
6	Verify that appropriate training was provided to personnel assigned to greenhouse gas reporting duties	Yes
6	Verify that all contractors are qualified for managing and reporting greenhouse gas emissions if relied upon by the project developer. Verify that there is internal oversight to assure the quality of the contractor's work	Yes
7.2	Verify that all required records have been retained by the project developer	No

8.7 Completing Verification

The Verification Program Manual provides detailed information and instructions for verification bodies to finalize the verification process. It describes completing a Verification Report, preparing a Verification Statement, submitting the necessary documents to the Reserve, and notifying the Reserve of the project's verified status.

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9 Glossary of Terms

Accredited verifier	A verification firm approved by the Reserve to provide verification services for project developers.
Additionality	Manure management practices that are above and beyond business-as-usual operation, exceed the baseline characterization, and are not mandated by regulation.
Anaerobic	Pertaining to or caused by the absence of oxygen.
Anthropogenic emissions	GHG emissions resultant from human activity that are considered to be an unnatural component of the Carbon Cycle (i.e. fossil fuel combustion, deforestation etc.).
Biogas	The mixture of gas (largely methane) produced as a result of the anaerobic decomposition of livestock manure.
Biogas control system (BCS)	A system designed to capture and destroy the biogas that is produced by the anaerobic treatment and/or storage of livestock manure and/or other organic material. Commonly referred to as a "digester."
Biogenic CO_2 emissions	CO_2 emissions resulting from the combustion and/or aerobic decomposition of organic matter. Biogenic emissions are considered to be a natural part of the carbon cycle, as opposed to anthropogenic emissions.
Carbon dioxide (CO_2)	The most common of the six primary greenhouse gases, consisting of a single carbon atom and two oxygen atoms.
CO_2 equivalent (CO_2e)	The quantity of a given GHG multiplied by its total global warming potential. This is the standard unit for comparing the degree of warming which can be caused by different GHGs.
Direct emissions	Greenhouse gas emissions from sources that are owned or controlled by the reporting entity.
Emission factor	A unique value for determining an amount of a greenhouse gas emitted for a given quantity of activity data (e.g. metric tons of carbon dioxide emitted per barrel of fossil fuel burned).
Flare	A destruction device that uses an open flame to burn combustible gases with combustion air provided by uncontrolled ambient air around the flame.
Fossil fuel	A fuel, such as coal, oil, and natural gas, produced by the decomposition of ancient (fossilized) plants and animals.
Greenfield	For the purposes of this protocol, a livestock facility that has been in operation for less than two years at a site that had no prior manure management infrastructure.
Greenhouse gas	Carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O),

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(GHG)	sulfur hexafluoride (SF_6), hydrofluorocarbons (HFCs) or perfluorocarbons (PFCs).
Global warming potential (GWP)	The ratio of radiative forcing (degree of warming to the atmosphere) that would result from the emission of one unit of a given GHG compared to one unit of CO_2.
Indirect emissions	Emissions that are a consequence of the actions of a reporting entity, but are produced by sources owned or controlled by another entity.
Livestock project	Installation of a biogas control system that, in operation, causes a decrease in GHG emissions from the baseline scenario through destruction of the methane component of biogas.
Metric ton (tonne, MT, t)	A common international measurement for the quantity of GHG emissions, equivalent to about 2204.6 pounds or 1.1 short tons.
Methane (CH_4)	A potent GHG with a GWP of 21, consisting of a single carbon atom and four hydrogen atoms.
MMBtu	One million British thermal units.
Mobile combustion	Emissions from the transportation of materials, products, waste, and employees resulting from the combustion of fuels in company owned or controlled mobile combustion sources (e.g. cars, trucks, tractors, dozers, etc.).
Nitrous oxide (N_2O)	A GHG consisting of two nitrogen atoms and a single oxygen atom.
Project baseline	A business-as-usual GHG emission assessment against which GHG emission reductions from a specific GHG reduction activity are measured.
Project developer	An entity that undertakes a project activity, as identified in the Livestock Project Protocol. A project developer may be an independent third party or the dairy/swine operating entity.
Reporting period	The period of time over which a project developer quantifies and reports GHG reductions to the Reserve. Under this protocol, the reporting period cannot exceed 12 months.
Stationary combustion source	A stationary source of emissions from the production of electricity, heat, or steam, resulting from combustion of fuels in boilers, furnaces, turbines, kilns, and other facility equipment.
van't Hoff-Arrhenius factor (*f*)	The proportion of volatile solids that are biologically available for conversion to methane based on the monthly temperature of the system.[38]

[38] Mangino, et al.

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Verification	The process used to ensure that a given participant's greenhouse gas emissions or emission reductions have met the minimum quality standard and complied with the Reserve's procedures and protocols for calculating and reporting GHG emissions and emission reductions.
Verification body	An accredited firm that is able to render a verification opinion and provide verification services for operators subject to reporting under this protocol.
Verification period	The period of time over which GHG reductions are verified. Under this protocol, a verification period may cover multiple reporting periods (see Section 7.3.4). The end date of any verification period must correspond to the end date of a reporting period.

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10 References

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Appendix A Associated Environmental Impacts

Manure management projects have many documented environmental benefits, including air emission reductions, water quality protection, and electricity generation. These benefits are the result of practices and technologies that are well managed, well implemented, and well designed. However, in cases where practices or technologies are poorly or improperly designed, implemented, and/or managed, local air and water quality could be compromised.

With regard to air quality, there are a number of factors that must be considered and addressed to realize the environmental benefits of a biogas project and reduce or avoid potential negative impacts. Uncontrolled emissions from combustion of biogas may contain between 200 to 300 ppm NOx. The anaerobic treatment process creates intermediates such as ammonia, hydrogen sulfide, orthophosphates, and various salts, all of which must be properly controlled or captured. In addition, atmospheric releases at locations off-site where bio-gas is shipped may negate or decrease the benefit of emissions controls on-site. Thus, while devices such as Selective Catalyst Reduction (SCR) units can reduce NOx emissions and proper treatment system operation can control intermediates, improper design or operation may lead to violations of federal, state, and local air quality regulations as well as release of toxic air contaminants.

With regard to water quality, it is critical that project developers and managers ensure digester integrity and fully consider and address post-digestion management of the effluent in order to avoid contamination of local waterways and groundwater resources. Catastrophic digester failures; leakage from pipework and tanks; and lack of containment in waste storage areas are all examples of potential problems. Further, application of improperly treated digestate and/or improper application timing or rates of digestate to agricultural land may lead to increased nitrogen oxide emissions, soil contamination, and/or nutrient leaching, thus negating or reducing benefits of the project overall.

Project developers must not only follow the protocol to register GHG reductions with the Reserve, they must also comply with all local, state, and national air and water quality regulations. Projects must be designed and implemented to mitigate potential releases of pollutants such as those described, and project managers must acquire the appropriate local permits prior to installation to prevent violation of the law.

The Reserve agrees that GHG emission reduction projects should not undermine air and water quality efforts and will work with stakeholders to establish initiatives to meet both climate-related and localized environmental objectives.

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Appendix B Emission Factor Tables

Table B.1. Manure Management System Components

System	Definition
Pasture/Range/ Paddock	The manure from pasture and range grazing animals is allowed to lie as deposited, and is not managed.
Daily spread	Manure is routinely removed from a confinement facility and is applied to cropland or pasture within 24 hours of excretion.
Solid storage	The storage of manure, typically for a period of several months, in unconfined piles or stacks. Manure is able to be stacked due to the presence of a sufficient amount of bedding material or loss of moisture by evaporation.
Dry lot	A paved or unpaved open confinement area without any significant vegetative cover where accumulating manure may be removed periodically.
Liquid/Slurry	Manure is stored as excreted or with some minimal addition of water in either tanks or earthen ponds outside the animal housing, usually for periods less than one year. Per IPCC Guidelines, if manure contains less than 20% dry matter it can be considered liquid.
Uncovered anaerobic lagoon	A type of liquid storage system designed and operated to combine waste stabilization and storage. Lagoon supernatant is usually used to remove manure from the associated confinement facilities to the lagoon. Anaerobic lagoons are designed with varying lengths of storage (up to a year or greater), depending on the climate region, the volatile solids loading rate, and other operational factors. The water from the lagoon may be recycled as flush water or used to irrigate and fertilize fields.
Pit storage below animal confinements	Collection and storage of manure usually with little or no added water typically below a slatted floor in an enclosed animal confinement facility, usually for periods less than one year.
Anaerobic digester	Animal excreta with or without straw are collected and anaerobically digested in a large containment vessel or covered lagoon. Digesters are designed and operated for waste stabilization by the microbial reduction of complex organic compounds to CO2 and CH4, which is captured and flared or used as a fuel.
Burned for fuel	The dung and urine are excreted on fields. The sun dried dung cakes are burned for fuel.
Cattle and Swine deep bedding	As manure accumulates, bedding is continually added to absorb moisture over a production cycle and possibly for as long as 6 to 12 months. This manure management system also is known as a bedded pack manure management system and may be combined with a dry lot or pasture.
Composting – In-vessel*	Composting, typically in an enclosed channel, with forced aeration and continuous mixing.
Composting – Static pile*	Composting in piles with forced aeration but no mixing.
Composting – Intensive windrow*	Composting in windrows with regular (at least daily) turning for mixing and aeration.
Composting – Passive windrow*	Composting in windrows with infrequent turning for mixing and aeration.
Aerobic treatment	The biological oxidation of manure collected as a liquid with either forced or natural aeration. Natural aeration is limited to aerobic and facultative ponds and wetland systems and is due primarily to photosynthesis. Hence, these systems typically become anoxic during periods without sunlight.

*Composting is the biological oxidation of a solid waste including manure usually with bedding or another organic carbon source typically at thermophilic temperatures produced by microbial heat production.
Source: 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Chapter 10: Emissions from Livestock and Manure Management, Table 10.18: Definitions of Manure Management Systems, p. 10.49.

Table B.2. Livestock Categories and Typical Animal Mass

Livestock Category (L)	Livestock Typical Animal Mass (TAM) in kg	
	2006 - 2008	2009 - 2010
Dairy cows (on feed)	604[b]	680[c]
Non-milking dairy cows (on feed)	684[a]	684[a]
Heifers (on feed)	476[b]	407[c]
Bulls (grazing)	750[b]	750[c]
Calves (grazing)	118[b]	118[c]
Heifers (grazing)	420[b]	351[c]
Cows (grazing)	533[b]	582.5[c]
Nursery swine	12.5[a]	12.5[a]
Grow/finish swine	70[a]	70[a]
Breeding swine	198[b]	198[c]

Sources for TAM:
[a.] American Society of Agricultural Engineers (ASAE) Standards 2005, ASAE D384.2.
[b.] Environmental Protection Agency (EPA), Inventory of US GHG Emissions and Sinks 1990-2006 (2007), Annex 3, Table A-161, pg. A-195.
[c.] Environmental Protection Agency (EPA), Inventory of US GHG Emissions and Sinks 1990-2010 (2012), Annex 3, Table A-191, pg. A-246.

Table B.3. Volatile Solids and Maximum Methane Potential by Livestock Category

Livestock category (L)	VS_L (kg/day/1000 kg mass)	$B_{0,L}$[b] (m^3 CH_4/kg VS added)
Dairy cows	See Appendix B, Tables 5a-e	0.24
Non-milking dairy cows	5.56	0.24
Heifers	See Appendix B, Tables 5a-e	0.17
Bulls (grazing)	6.04[b]	0.17
Calves (grazing)	6.41[b]	0.17
Heifers (grazing)	See Appendix B, Tables 5a-e	0.17
Cows (grazing)	See Appendix B, Tables 5a-e	0.17
Nursery swine	8.89[b]	0.48
Grow/finish swine	5.36[b]	0.48
Breeding swine	2.71[b]	0.35

[a.] American Society of Agricultural Engineers (ASAE) Standards 2005, ASAE D384.2, VS_L(kg/day per animal) from table 1.b (p.2) converted to (kg/day/1000 kg mass) using average Live Weight (kg)values from table 5c (p.7).
[b.] Environmental Protection Agency (EPA) – Climate Leaders Draft Manure Offset Protocol, October 2006, Table IIa: Animal Waste Characteristics (VS, B_0, and N_{ex} rates), p. 18.

Table B.4. Biogas Collection Efficiency by Digester Type

Digester Type	Cover Type	Biogas Collection Efficiency (BCE) as a Decimal
Covered Anaerobic Lagoon	Bank-to-Bank, impermeable	0.95
	Partial area (modular), impermeable	(0.95) x (% area covered)
Complete mix, plug flow, or fixed film digester	Enclosed vessel	0.98
Two stages of differing types	With flow metered for each stage	$\frac{(BCE1) \times (Gasflow1) + (BCE2) \times (Gasflow2)}{Total\ biogas\ flow}$
	No separate flow metering	$(BCE1) \times 0.7 + (BCE2) \times 0.3$

Adapted from: U.S. EPA Climate Leaders, Offset Project Methodology for Managing Manure and Biogas Recovery Systems, 2008. Table IIf (original table has been expanded upon).

Table B.5a. 2010 Volatile Solid Default Values for Dairy Cows, Heifers, Heifers-Grazing and Cows-Grazing by State (kg/day/1000 kg mass)

State	VS Dairy Cow	VS Heifer	VS Heifer-Grazing	VS Cows-Grazing
Alabama	8.99	8.43	8.53	7.82
Alaska	7.98	8.43	9.98	8.89
Arizona	11.47	8.43	9.77	8.89
Arkansas	8.30	8.43	8.48	7.82
California	11.27	8.43	9.48	8.89
Colorado	11.54	8.43	9.27	8.89
Connecticut	10.22	8.43	8.62	7.87
Delaware	9.53	8.43	8.53	7.87
Florida	10.26	8.43	8.63	7.82
Georgia	10.03	8.43	8.49	7.82
Hawaii	8.43	8.43	9.77	8.89
Idaho	11.24	8.43	9.41	8.89
Illinois	10.19	8.43	7.78	7.47
Indiana	10.54	8.43	7.91	7.47
Iowa	10.67	8.43	7.64	7.47
Kansas	10.74	8.43	7.61	7.47
Kentucky	9.11	8.43	8.40	7.82
Louisiana	7.98	8.43	8.63	7.82
Maine	9.94	8.43	8.51	7.87
Maryland	10.00	8.43	8.51	7.87
Massachusetts	9.67	8.43	8.53	7.87
Michigan	11.42	8.43	7.83	7.47
Minnesota	10.25	8.43	7.83	7.47
Mississippi	8.59	8.43	8.53	7.82
Missouri	8.81	8.43	7.97	7.47
Montana	10.63	8.43	8.42	7.82
Nebraska	10.38	8.43	9.25	8.89
Nevada	11.08	8.43	8.01	7.47
New Hampshire	10.40	8.43	9.62	8.89
New Jersey	9.69	8.43	8.45	7.87
New Mexico	11.81	8.43	8.43	7.87
New York	10.69	8.43	9.50	8.89
North Carolina	10.54	8.43	8.61	7.87
North Dakota	9.92	8.43	8.31	7.82
Ohio	10.27	8.43	7.95	7.47
Oklahoma	9.59	8.43	7.90	7.47
Oregon	10.54	8.43	8.33	7.82
Pennsylvania	10.39	8.43	9.56	8.89
Rhode Island	9.76	8.43	8.66	7.87
South Carolina	10.02	8.43	8.61	7.87
South Dakota	10.59	8.43	8.19	7.82
Tennessee	9.56	8.43	8.12	7.47
Texas	10.87	8.43	8.21	7.82
Utah	10.86	8.43	8.42	7.82
Vermont	10.00	8.43	9.56	8.89
Virginia	10.09	8.43	8.52	7.87
Washington	11.50	8.43	8.25	7.82
West Virginia	9.15	8.43	9.73	8.89
Wisconsin	10.63	8.43	7.96	7.47
Wyoming	10.46	8.43	9.62	8.89

Source: Environmental Protection Agency (EPA). U.S. Inventory of GHG Sources and Sinks 1990-2010 (2012), Annex 3, Table A-192, page A-237.

Table B.5b. 2009 Volatile Solid Default Values for Dairy Cows, Heifers, Heifers-Grazing and Cows-Grazing by State (kg/day/1000 kg mass)

State	VS Dairy Cow	VS Heifer	VS Heifer-Grazing	VS Cows-Grazing
Alabama	9.13	8.42	8.61	7.90
Alaska	7.43	8.42	11.51	10.15
Arizona	11.35	8.42	11.23	10.15
Arkansas	8.24	8.42	8.53	7.87
California	10.97	8.42	8.13	7.70
Colorado	11.37	8.42	7.42	7.27
Connecticut	10.05	8.42	8.53	7.77
Delaware	9.54	8.42	8.29	7.77
Florida	10.08	8.42	8.71	7.90
Georgia	10.24	8.42	8.61	7.90
Hawaii	8.70	8.42	11.32	10.15
Idaho	11.07	8.42	10.86	10.15
Illinois	10.10	8.42	8.10	7.77
Indiana	10.48	8.42	8.20	7.77
Iowa	10.55	8.42	7.98	7.77
Kansas	10.77	8.42	7.38	7.27
Kentucky	8.91	8.42	8.52	7.90
Louisiana	8.01	8.42	8.68	7.87
Maine	9.86	8.42	8.43	7.77
Maryland	9.92	8.42	8.32	7.77
Massachusetts	9.71	8.42	8.43	7.77
Michigan	11.18	8.42	8.15	7.77
Minnesota	10.21	8.42	8.17	7.77
Mississippi	8.82	8.42	8.60	7.90
Missouri	8.83	8.42	8.33	7.77
Montana	10.42	8.42	7.83	7.27
Nebraska	10.36	8.42	7.42	7.27
Nevada	10.99	8.42	11.14	10.15
New Hampshire	10.30	8.42	8.37	7.77
New Jersey	9.81	8.42	8.34	7.77
New Mexico	11.74	8.42	11.06	10.15
New York	10.46	8.42	8.20	7.77
North Carolina	10.55	8.42	8.60	7.90
North Dakota	9.46	8.42	7.68	7.27
Ohio	10.06	8.42	8.28	7.77
Oklahoma	9.55	8.42	8.32	7.87
Oregon	10.36	8.42	11.03	10.15
Pennsylvania	10.25	8.42	8.20	7.77
Rhode Island	9.78	8.42	8.55	7.77
South Carolina	10.29	8.42	8.64	7.90
South Dakota	10.48	8.42	7.57	7.27
Tennessee	9.53	8.42	8.58	7.90
Texas	10.73	8.42	8.26	7.87
Utah	10.74	8.42	11.11	10.15
Vermont	9.93	8.42	8.23	7.77
Virginia	10.08	8.42	8.56	7.90
Washington	11.39	8.42	10.93	10.15
West Virginia	8.85	8.42	8.35	7.77
Wisconsin	10.46	8.42	8.33	7.77
Wyoming	10.08	8.42	7.72	7.27

Source: Environmental Protection Agency (EPA). U.S. Inventory of GHG Sources and Sinks 1990-2009 (2011), Annex 3, Table A-186, page A-225.

Table B.5c. 2008 Volatile Solid Default Values for Dairy Cows, Heifers, Heifers-Grazing and Cows-Grazing by State (kg/day/1000 kg mass)

State	VS Dairy Cow	VS Heifer	VS Heifer-Grazing	VS Cows-Grazing
Alabama	8.40	8.35	7.81	7.02
Alaska	7.30	8.35	10.05	9.02
Arizona	10.37	8.35	10.34	9.02
Arkansas	7.59	8.35	7.86	7.00
California	10.02	8.35	7.95	6.85
Colorado	10.25	8.35	7.69	6.46
Connecticut	9.22	8.35	7.67	6.90
Delaware	8.63	8.35	7.72	6.90
Florida	8.90	8.35	7.75	7.02
Georgia	9.07	8.35	7.85	7.02
Hawaii	7.00	8.35	10.26	9.02
Idaho	10.11	8.35	10.82	9.02
Illinois	9.07	8.35	8.07	6.91
Indiana	9.38	8.35	7.98	6.91
Iowa	9.46	8.35	8.27	6.91
Kansas	9.63	8.35	7.75	6.46
Kentucky	7.89	8.35	7.91	7.02
Louisiana	7.39	8.35	7.73	7.00
Maine	8.99	8.35	7.76	6.90
Maryland	9.02	8.35	7.76	6.90
Massachusetts	8.63	8.35	7.74	6.90
Michigan	10.05	8.35	7.99	6.91
Minnesota	9.17	8.35	8.04	6.91
Mississippi	8.19	8.35	7.82	7.02
Missouri	8.02	8.35	7.85	6.91
Montana	9.03	8.35	7.17	6.46
Nebraska	9.09	8.35	7.71	6.46
Nevada	9.65	8.35	10.49	9.02
New Hampshire	9.44	8.35	7.74	6.90
New Jersey	8.51	8.35	7.89	6.90
New Mexico	10.34	8.35	10.56	9.02
New York	9.42	8.35	8.02	6.90
North Carolina	9.38	8.35	7.83	7.02
North Dakota	8.40	8.35	7.43	6.46
Ohio	9.01	8.35	7.93	6.91
Oklahoma	8.58	8.35	8.08	7.00
Oregon	9.40	8.35	10.54	9.02
Pennsylvania	9.26	8.35	8.00	6.90
Rhode Island	8.94	8.35	7.60	6.90
South Carolina	9.05	8.35	7.81	7.02
South Dakota	9.45	8.35	7.50	6.46
Tennessee	8.60	8.35	7.86	7.02
Texas	9.51	8.35	8.21	7.00
Utah	9.70	8.35	10.51	9.02
Vermont	9.03	8.35	7.89	6.90
Virginia	9.02	8.35	7.87	7.02
Washington	10.36	8.35	10.77	9.02
West Virginia	8.13	8.35	7.74	6.90
Wisconsin	9.34	8.35	7.87	6.91
Wyoming	9.29	8.35	7.30	6.46

Source: Environmental Protection Agency (EPA). U.S. Inventory of GHG Sources and Sinks 1990-2008 (2010), Annex 3, Table A-181, page A-213.

For VS values for reporting years prior to 2008, please refer to the Livestock Project Protocol V3.0, Appendix B.

Table B.6. IPCC 2006 Methane Conversion Factors by Manure Management System Component/Methane Source 'S' [39]

MCF Values by Temperature for Manure Management Systems																				
	Average annual temperature (°C)																			
	Cool					Temperate											Warm			
System[a]	<10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	>28	Source and comments
Pasture/Range/Paddock	0.010					0.015											0.020			Judgment of IPCC Expert Group in combination with Hashimoto and Steed (1994).
Daily spread	0.001					0.005											0.010			Hashimoto and Steed (1993).
Solid storage	0.02					0.04											0.05			Judgment of IPCC Expert Group in combination with Amon et al. (2001), which shows emissions of approximately 2% in winter and 4% in summer. Warm climate is based on judgment of IPCC Expert Group and Amon et al. (1998).
Dry lot	0.010					0.015											0.020			Judgment of IPCC Expert Group in combination with Hashimoto and Steed (1994).
Liquid/slurry w/natural crust cover[40]	0.10	0.11	0.13	0.14	0.15	0.17	0.18	0.20	0.22	0.24	0.26	0.29	0.31	0.34	0.37	0.41	0.44	0.48	0.50	Judgment of IPCC Expert Group in combination with Mangino et al. (2001) and Sommer (2000). The estimated reduction due to the crust cover (40%) is an annual average value based on a limited data set and can be highly variable dependent on temperature, rainfall, and composition.
Liquid/slurry uncovered	0.17	0.19	0.20	0.22	0.25	0.27	0.29	0.32	0.35	0.39	0.42	0.46	0.50	0.55	0.60	0.65	0.71	0.78	0.80	Judgment of IPCC Expert Group in combination with Mangino et al. (2001).
Uncovered anaerobic lagoon	0.66	0.68	0.70	0.71	0.73	0.74	0.75	0.76	0.77	0.77	0.78	0.78	0.78	0.79	0.79	0.79	0.79	0.80	0.80	Judgment of IPCC Expert Group in combination with Mangino et al. (2001). Uncovered lagoon MCFs vary based on several factors, including temperature, retention time, and loss of volatile solids from the system (through removal of lagoon effluent and/or solids).
Pit storage below animal confinements (<1 month)	0.03					0.03											0.03			Judgment of IPCC Expert Group in combination with Moller et al. (2004) and Zeeman (1994). Note that the ambient temperature, not the stable temperature is to be used for determining the climatic conditions.
Pit storage below animal confinements (>1 month)	0.17	0.19	0.20	0.22	0.25	0.27	0.29	0.32	0.35	0.39	0.42	0.46	0.50	0.55	0.60	0.65	0.71	0.78	0.80	Judgment of IPCC Expert Group in combination with Mangino et al. (2001). Note that the ambient temperature, not the stable temperature is to be used for determining the climatic conditions.

[39] Adapted from 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Chapter 10: Emissions from Livestock and Manure Management, Table 10.17. MCF values shall be chosen based on the average temperature at the site for an entire calendar year, even if the reporting period does not exactly cover a calendar year.

[40] A "natural crust cover" is a naturally-forming layer that covers the majority of the liquid surface at a thickness sufficient to support communities of oxidizing bacteria, and which persists throughout the year. Evidence of such a cover (including the area covered, thickness, and persistence) must be provided by the project developer during verification in order to justify the use of this MCF value.

Anaerobic digester	0 - 1					0 - 1											0 - 1			Should be subdivided in different categories, considering amount of recovery of the biogas, flaring of the biogas and storage after digestion. Calculation with Formula 1.
Burned for fuel	0.10					0.10											0.10			Judgment of IPCC Expert Group in combination with Safley et al. (1992).
Cattle and swine deep bedding (<1 month)	0.03					0.03											0.30			Judgment of IPCC Expert Group in combination with Moller et al. (2004). Expect emissions to be similar, and possibly greater, than pit storage, depending on organic content and moisture content.
Cattle and swine deep bedding (>1 month)	0.17	0.19	0.20	0.22	0.25	0.27	0.29	0.32	0.35	0.39	0.42	0.46	0.50	0.55	0.60	0.65	0.71	0.78	0.90	Judgment of IPCC Expert Group in combination with Mangino et al. (2001).
Composting - in-vessel or aerated static pile[b]	0.005					0.005											0.005			Judgment of IPCC Expert Group and Amon et al. (1998). MCFs are less than half of solid storage. Not temperature dependant.
Composting - passive or intensive windrow[b]	0.005					0.010											0.015			Judgment of IPCC Expert Group and Amon et al. (1998). MCFs are slightly less than solid storage. Less temperature dependant.
Aerobic treatment	0.00					0.00											0.00			MCFs are near zero. Aerobic treatment can result in the accumulation of sludge which may be treated in other systems. Sludge requires removal and has large VS values. It is important to identify the next management process for the sludge and estimate the emissions from that management process if significant.

[a] Definitions for manure management systems are provided in Table B.1.
[b] Composting is the biological oxidation of a solid waste, including manure, usually with bedding or another organic carbon source, typically at thermophilic temperatures produced by microbial heat production.

Table B.7. Biogas Destruction Efficiency Default Values by Destruction Device

If available, the official source tested methane destruction efficiency shall be used in place of the default methane destruction efficiency. Otherwise, project developers have the option to use either the default methane destruction efficiencies provided, or the site specific methane destruction efficiencies, for each of the combustion devices used in the project case performed on an annual basis. Site-specific values must be provided by an independent air emissions testing body that is accredited by a state or local regulatory agency, or the Stack Testing Accreditation Council. Where a state/region does not have an appropriate accreditation system or accredited service providers, the project developer may look to another state/region to find suitably qualified service providers.

Biogas Destruction Device	Biogas Destruction Efficiency (BDE)*
Open Flare	0.96[2]
Enclosed Flare	0.995[2]
Lean-burn Internal Combustion Engine	0.936[2]
Rich-burn Internal Combustion Engine	0.995[2]
Boiler	0.98[2]
Microturbine or large gas turbine	0.995[2]
Upgrade and use of gas as CNG/LNG fuel	0.95[2]
Upgrade and injection into natural gas transmission and distribution pipeline	0.98[3]
Direct pipeline to an end-user	Per corresponding destruction device

Source:
[1] Seebold, J.G., et al., Reaction Efficiency of Industrial Flares, 2003
[2] The default destruction efficiencies for this source are based on a preliminary set of actual source test data provided by the Bay Area Air Quality Management District. The default destruction efficiency values are the lesser of the twenty fifth percentile of the data provided or 0.995. These default destruction efficiencies may be updated as more source test data are made available to the Reserve.
[3] The Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories gives a standard value for the fraction of carbon oxidized for gas destroyed of 99.5% (Reference Manual, Table 1.6, page 1.29). It also gives a value for emissions from processing, transmission and distribution of gas which would be a very conservative estimate for losses in the pipeline and for leakage at the end user (Reference Manual, Table 1.58, page 1.121). These emissions are given as 118,000kgCH4/PJ on the basis of gas consumption, which is 0.6%. Leakage in the residential and commercial sectors is stated to be 0 to 87,000kgCH4/PJ, which equates to 0.4%, and in industrial plants and power station the losses are 0 to 175,000kg/CH4/PJ, which is 0.8%. These leakage estimates are compounded and multiplied. The methane destruction efficiency for landfill gas injected into the natural gas transmission and distribution system can now be calculated as the product of these three efficiency factors, giving a total efficiency of (99.5% * 99.4% * 99.6%) 98.5% for residential and commercial sector users, and (99.5% * 99.4% * 99.2%) 98.1% for industrial plants and power stations.[41]

[41] GE AES Greenhouse Gas Services, Landfill Gas Methodology, Version 1.0 (July 2007).

Table B.8. CO_2 Emission Factors for Fossil Fuel Use

Fuel Type	Heat Content	Carbon Content (Per Unit Energy)	Fraction Oxidized	CO_2 Emission Factor (Per Unit Energy)	CO_2 Emission Factor (Per Unit Mass or Volume)
Coal and Coke	**MMBTU / Short ton**	**kg C / MMBTU**		**kg CO_2 / MMBTU**	**kg CO_2 / Short ton**
Anthracite Coal	25.09	28.26	1.00	103.62	2,599.83
Bituminous Coal	24.93	25.49	1.00	93.46	2,330.04
Sub-bituminous Coal	17.25	26.48	1.00	97.09	1,674.86
Lignite	14.21	26.30	1.00	96.43	1,370.32
Unspecified (Residential/ Commercial)	22.05	26.00	1.00	95.33	2,102.29
Unspecified (Industrial Coking)	26.27	25.56	1.00	93.72	2,462.12
Unspecified (Other Industrial)	22.05	25.63	1.00	93.98	2,072.19
Unspecified (Electric Utility)	19.95	25.76	1.00	94.45	1,884.53
Coke	24.80	31.00	1.00	113.67	2,818.93
Natural Gas (By Heat Content)	**BTU / Standard ft^3**	**kg C / MMBTU**		**kg CO_2 / MMBTU**	**kg CO_2 / Standard ft^3**
975 to 1,000 Btu / Standard ft^3	975 – 1,000	14.73	1.00	54.01	Varies
1,000 to 1,025 Btu / Standard ft^3	1,000 – 1,025	14.43	1.00	52.91	Varies
1,025 to 1,050 Btu / Standard ft^3	1,025 – 1,050	14.47	1.00	53.06	Varies
1,050 to 1,075 Btu / Standard ft^3	1,050 – 1,075	14.58	1.00	53.46	Varies
1,075 to 1,100 Btu / Standard ft^3	1,075 – 1,100	14.65	1.00	53.72	Varies
Greater than 1,100 Btu / Standard ft^3	> 1,100	14.92	1.00	54.71	Varies
Weighted U.S. Average	1,029	14.47	1.00	53.06	0.0546
Petroleum Products	**MMBTU / Barrel**	**kg C / MMBTU**		**kg CO_2 / MMBTU**	**kg CO_2 / gallon**
Asphalt & Road Oil	6.636	20.62	1.00	75.61	11.95
Aviation Gasoline	5.048	18.87	1.00	69.19	8.32
Distillate Fuel Oil (#1, 2, and 4) (diesel)	5.825	19.95	1.00	73.15	10.15
Jet Fuel	5.670	19.33	1.00	70.88	9.57
Kerosene	5.670	19.72	1.00	72.31	9.76
LPG (average for fuel use)	3.849	17.23	1.00	63.16	5.79
Propane	3.824	17.20	1.00	63.07	5.74
Ethane	2.916	16.25	1.00	59.58	4.14
Isobutene	4.162	17.75	1.00	65.08	6.45
n-Butane	4.328	17.72	1.00	64.97	6.70
Lubricants	6.065	20.24	1.00	74.21	10.72
Motor Gasoline	5.218	19.33	1.00	70.88	8.81
Residual Fuel Oil (#5 and 6)	6.287	21.49	1.00	78.80	11.80
Crude Oil	5.800	20.33	1.00	74.54	10.29
Naphtha (<401°F)	5.248	18.14	1.00	66.51	8.31
Natural Gasoline	4.620	18.24	1.00	66.88	7.36
Other Oil (>401°F)	5.825	19.95	1.00	73.15	10.15
Pentanes Plus	4.620	18.24	1.00	66.88	7.36
Petrochemical Feedstocks	5.428	19.37	1.00	71.02	9.18
Petroleum Coke	6.024	27.85	1.00	102.12	14.65
Still Gas	6.000	17.51	1.00	64.20	9.17
Special Naphtha	5.248	19.86	1.00	72.82	9.10
Unfinished Oils	5.825	20.33	1.00	74.54	10.34
Waxes	5.537	19.81	1.00	72.64	9.58

Source: EPA Climate Leaders, Stationary Combustion Guidance (2007), Table B-2 except:
Default CO_2 emission factors (per unit energy) are calculated as: Carbon Content × Fraction Oxidized × 44/12.
Default CO_2 emission factors (per unit mass or volume) are calculated as: Heat Content x Carbon Content × Fraction Oxidized × 44/12× Conversion Factor (if applicable). Heat content factors are based on higher heating values (HHV).

Table B.9. Volatile Solids Removed Through Solids Separation[42]

Type of Solids Separation	Volatile Solids Removed (fraction)
Gravity	0.45
Mechanical:	
Stationary screen	0.17
Vibrating screen	0.15
Screw press	0.25
Centrifuge	0.50
Roller drum	0.25
Belt press/screen	0.50

Table B.10. Baseline Assumptions for Greenfield Projects[43]

Baseline Assumption	Dairy Cattle Operations		Swine Operations
	>200 Mature Dairy Cows	<200 Mature Dairy Cows	
Anaerobic manure storage system	Flush system into an anaerobic lagoon with >30 day retention time	Flush system into an anaerobic lagoon with >30 day retention time	Flush system into an anaerobic lagoon with >30 day retention time
Non-anaerobic manure storage system(s)	Solids storage	Solids Storage	Solids Storage
MS_L	90% lagoon 10% solids storage	50% lagoon 50% solids storage	95% lagoon 5% solids storage
Lagoon cleaning schedule	Annually, in September	Annually, in September	Annually, in September

[42] U.S.EPA National Pollutant Discharge Elimination System (NPDES) Development Document, Chapter 5, "Industry Subcategorization for Effluent Limitations Guidelines and Standards". Adapted from Moser et al. (1999).
[43] The simplified assumptions contained within this table are based on the waste management system data compiled by the U.S. Environmental Protection Agency for the development of Table A-194 in Annex 3 of the U.S. Inventory of GHG Sources and Sinks 1990-2010 (2012).

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Appendix C Summary of Performance Standard Development

The analysis to establish a performance standard for the U.S. Livestock Project Protocol was undertaken by Science Applications International Corporation (SAIC) and independent consultant Kathryn Bickel Goldman. It took place at the end of 2006. The analysis culminated in a paper that provided a performance standard recommendation to support the Reserve's protocol development process, which the Reserve has incorporated into the protocol's eligibility rules (see Section 33). This analysis was re-visited during the development of Version 4.0 of the protocol and, although there was no recommended change to the performance standard, this appendix has been updated to reflect more recent data and analysis.

The purpose of a performance standard is to establish a threshold that is significantly better than average GHG production for a specified service, which, if met or exceeded by a project developer, satisfies the criterion of "additionality." This protocol focuses on the following direct emission reduction activity: avoiding methane emissions from the anaerobic storage and treatment of livestock manure. Therefore, in this case the methane emissions correspond to GHG production, and manure treatment/storage correspond to the specified service.

The analysis to establish the performance standard evaluated U.S.- and California-specific data on dairy and swine manure management systems. Ultimately, it recommended a practice-based/technology-specific GHG emissions performance standard – i.e. the installation of a manure digester (or Biogas Control System (BCS), more generally). The paper was composed of the following sections:

- The livestock industry in the U.S. and California
- Livestock manure management practices
- GHG emissions from livestock manure management
- Data on livestock manure management practices in the U.S. and California
- Current and anticipated regulations in California impacting manure management practices
- Recommendation for a performance threshold for livestock operations
- Considerations for baseline determinations

The initial analysis from that paper can be found in earlier versions of the U.S. Livestock Project Protocol Performance Standard Appendix.[44] In this updated Performance Standard Appendix, The additional, California-specific analysis showed adoption rates similar to the rest of the country, and thus has been removed from this document to reflect the Reserve's decision to apply the same performance standard to all operations across the United States. Beef facility and animal information has also been removed as beef operations are not currently eligible under the Protocol.

[44] Climate Action Reserve U.S. Livestock Project Protocol V1.0-3.0, Appendix C, http://www.climateactionreserve.org/how/protocols/us-livestock/

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C.1 Analysis of Common Practice

C.1.1 U.S. Data on Manure Management Practices

For the initial performance standard analysis, data from the Draft EPA Climate Leaders Offset Protocol for Managing Manure with Biogas Recovery Systems (2006) were used to assess national-level manure management practices. That protocol relied on data describing farm distribution and manure management systems from the Manure Management portion of the Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990 – 2004 and used data on the number of farms by farm size and geographic location from the 2002 Census of Agriculture.[45]

Information compiled for the EPA's U.S. GHG Inventory also provided a breakdown of the assumed predominant manure management systems in use for dairy and swine operations. Table C.1 and Table C.3 show data compiled for the systems in place in 2006. Table C.2 and Table C.4 show the Reserve's approximate recreation of the same analysis using the most recently published numbers.[46]

Table C.1. Dairy and Swine Operations in the U.S. by Manure Management System (2006)

Animal	Number of Operations by Manure Management System						
	P/R/P	Anaerobic Digester	Lagoon	Liquid/ Slurry	Solid Storage	Deep Pit	Total
Dairy	72,487	62	4,453	4,345	9,494	1,147	91,989
Swine	53,230	18	6,571	6,303	1,129	11,643	78,894

Source: U.S. EPA Climate Leaders Offset Protocol for Managing Manure with Biogas Recovery Systems (2008), Table I.A.

Table C.2. Dairy and Swine Operations in the U.S. by Manure Management System (2012)

Animal	Number of Operations by Manure Management System						
	P/R/P	Anaerobic Digester	Lagoon	Liquid/ Slurry	Solid Storage	Deep Pit	Total
Dairy	56,075	185*	3,332	3,261	6,263	775	69,890
Swine	55,110	30	5,740	4,641	892	9,029	75,442

Source: U.S. EPA GHG Inventory (2012), U.S. EPA AgSTAR Database (2012), U.S. Dept. of Agriculture, 2007 Census of Agriculture

* There are three systems in operation that digest both swine and dairy manure. For the purpose of this analysis they are considered as dairy.

[45] EPA GHG Inventory Reports in subsequent years (including 2010) still rely on the results of the 2002 Census for this data.

[46] The equivalent analysis based on the 2007 census is unavailable in the same format from the EPA Climate Leaders program. The Reserve performed a similar analysis using data for manure management from the Inventory of U.S. Greenhouse Gas Emissions and Sinks (2012), data on the prevalence of anaerobic digesters from the U.S. EPA's AgSTAR database (Sept. 2012), and data on the number of farms by farms size and geographic location from the 2007 Census of Agriculture, the results of which are Table C.2 and Table C.4. This analysis may not have been performed in precisely the same way as the EPA Climate Leaders Program analysis; however it serves the purpose of evaluating the current state of the dairy and swine manure management practices. The following classification assumptions were made: 1. digester projects associated with farms of size are classified by based on other information in the AgSTAR database, if available, or assumed to be in the medium size class; 2. farms employing anaerobic digesters are subtracted from the USDA counts based on "Baseline System" or other information in the AgSTAR database, if available. Where the "Baseline System" is categorized as "Storage Tank or Pond or Pit," the farm is assumed to belong in the "Liquid/Slurry" category for Dairy and the "Deep Pit" category for Swine.

The distribution of livestock across different sized operations can be an important criterion when developing a livestock manure management performance standard. There is a general relationship between manure management practices and operation size, where larger operations (in terms of livestock numbers) tend to use manure management systems that treat and store waste in liquid form (i.e. flush or scrape/slurry systems), particularly in dairy and swine operations.[47]

Table C.3. Dairy and Swine Operations by Size and Manure Management System (2006)

Animal	Number of Operations by Farm Size and Manure Management System							
	Farm Size	P/R/P	Anaerobic Digester	Lagoon	Liquid/ Slurry	Solid Storage	Deep Pit	Total
Dairy	≥500 head	320	48	1,614	675	245	-	2,902
	200-499	3,213	9	617	652	54	-	4,546
	1-199	6,8954	5	2,223	3,017	9,195	1,147	84,541
Swine	≥2000 head	-	14	2,581	1,084	297	2,774	6,749
	200-2000	-	3	3,990	5,219	832	8,869	18,913
	1-199	53,230	1	-	-	-	-	53,231

Source: U.S. 2002 Census of Agriculture.

Table C.4. Dairy and Swine Operations by Size and Manure Management System (2012)

Animal	Number of Operations by Farm Size and Manure Management System							
	Farm Size	P/R/P	Anaerobic Digester	Lagoon	Liquid/ Slurry	Solid Storage	Deep Pit	Total
Dairy	≥500 head	312	154	1,824	710	284	-	3,284
	200-499	3205	25	502	531	44	-	4,307
	1-199	52559	6	1,006	2,020	5,934	775	62,299
Swine	≥2000 head	-	26	3,182	1,295	358	3,345	8,206
	200-2000	-	3	2,557	3,347	534	5,685	12,125
	1-199	55,110	1	-	-	-	-	55,111

Source: U.S. EPA GHG Inventory (2012), U.S. EPA AgSTAR Database (2012), U.S. Dept. of Agriculture, 2007 Census of Agriculture.

According to the Interim Draft Winter 2006 AgSTAR Digest used for the initial analysis, of 91,988 dairy and 78,894 swine farm operations in the United States, a total of 80 anaerobic digesters were in operation: 62 (0.07%) for dairy manure and 18 (0.02%) for swine manure.

Data were also disaggregated in the Climate Leaders protocol to determine whether digester installation was a common practice in any animal production operation size range. As was shown in Table C.3, even at large animal production operations, very few digester systems were in place. At dairy farms with ≥500 head, only 1.7% of manure management systems included digesters, and of swine farms with >2000 head, only 0.2% had digesters.

[47] U.S. Inventory of Greenhouse Gas Emissions and Sinks: 1990-2004 (and earlier editions), US Environmental Protection Agency, Report # 430-R-06-002, April 2006.

The most current information from the AgSTAR database (September 2012) shows that the number of anaerobic digesters in operation or under construction has nearly tripled at dairy farms and increased by more than 50% at swine farms. In terms of prevalence as a manure management practice across farms however, the practice remains the exception, rather than the rule. Currently there are 185 digesters at dairy farms (0.14%), and 30 at swine farms (0.03%). The number of digesters at the largest farms increased the most significantly, with 154 digesters at dairy farms with ≥500 head (4.69%), and 26 at swine operations with ≥2000 head (0.32%). Of the 185 dairy farms with anaerobic digesters in operation, 84 have participated in GHG offset programs; eight of the 30 swine farms with anaerobic digester have participated in GHG offset programs. Table C.5 shows the distribution and percentages of digesters in operation or under construction by size farm, compared to farms with other manure management practices; Table C.6 shows the same distribution, but does not include the digesters at farms participating in GHG offset programs.

The "natural" market penetration of anaerobic digesters on livestock facilities can be considered as the percentage of farms that choose this management option without the incentive provided by GHG offset programs. Table C.6 shows that the natural market penetration of anaerobic digesters on dairy and swine facilities in the U.S. remains very low. The highest rate of adoption is among dairy farms with ≥500 head, at 2.31%. However, this number conservatively includes anaerobic digestion facilities that are currently under construction. As many if not all of these facilities may actually be installed in response to GHG offset programs (which is often not known until they are operational and become publicly listed in one of these programs), even this small rate of adoption is likely to be overestimated by this analysis. If the anaerobic digesters that are under construction are all assumed to be GHG offset projects, then the natural market penetration of anaerobic digesters on dairy facilities of ≥ 500 head drops to 1.71%.

Table C.5. Dairy and Swine Operations by Size and Manure Management System (2012)

Animal	Number of Operations by Farm Size and Manure Management System							
	Farm Size	P/R/P	Anaerobic Digester	Lagoon	Liquid/ Slurry	Solid Storage	Deep Pit	Total
Dairy	≥500 head	312 9.49%	154 4.69%	1,824 55.53%	710 21.63%	284 8.66%	- -	3,284
	200-499	3,205 74.41%	25 0.58%	502 11.66%	531 12.32%	44 1.03%	- -	4,307
	1-199	52,559 84.37%	6 0.01%	1,006 1.61%	2,020 3.24%	5,934 9.52%	775 1.24%	62,299
	Total	56,075 80.23%	185 0.26%	3,332 4.77%	3,261 4.67%	6,263 8.96%	775 1.11%	69,890
Swine	≥2000 head	- -	26 0.32%	3,182 38.78%	1,295 15.78%	358 4.37%	3,345 40.76%	8,206
	200-1999	- -	3 0.02%	2,557 21.09%	3,347 27.60%	534 4.40%	5,685 46.88%	12,125
	1-199	55,110 99.998%	1 0.002%	- -	- -	- -	- -	55,111
	Total	55,110 73.05%	30 0.04%	5,740 7.61%	4,641 6.15%	892 1.18%	9,029 11.97%	75,442

Source: U.S. EPA GHG Inventory (2012), U.S. EPA AgSTAR Database (2012), U.S. Dept. of Agriculture, 2007 Census of Agriculture.

Table C.6. Dairy and Swine Operations by Size and Manure Management System (2012)
Not including those participating in a GHG offset program.

Animal	Number of Operations by Farm Size and Manure Management System							
	Farm Size	**P/R/P**	**Anaerobic Digester**	**Lagoon**	**Liquid/ Slurry**	**Solid Storage**	**Deep Pit**	**Total**
Dairy	≥500 head	312 *9.73%*	74 *2.31%*	1,824 *56.91%*	710 *22.17%*	284 *8.88%*	- -	3,204
	200-499	3,205 *74.47%*	21 *0.49%*	502 *11.67%*	531 *12.33%*	44 *1.03%*	- -	4,303
	1-199	52,559 *84.37%*	6 *0.01%*	1,006 *1.61%*	2,020 *3.24%*	5,934 *9.52%*	775 *1.24%*	62,299
	Total	56,075 *80.33%*	101 *0.14%*	3,332 *4.77%*	3,261 *4.67%*	6,263 *8.97%*	775 *1.11%*	69,806
Swine	≥2000 head	- -	19 *0.23%*	3,182 *38.81%*	1,295 *15.79%*	358 *4.37%*	3,345 *40.80%*	8,199
	200-1999	- -	2 *0.02%*	2,557 *21.09%*	3,347 *27.60%*	534 *4.40%*	5,685 *46.89%*	12,124
	1-199	55,110 *99.998%*	1 *0.002%*	- -	- -	- -	- -	55,111
	Total	55,110 *73.06%*	22 *0.03%*	5,740 *7.61%*	4,641 *6.15%*	892 *1.18%*	9,029 *11.97%*	75,434

Source: U.S. EPA GHG Inventory (2012), U.S. EPA AgSTAR Database (2012), U.S. Dept. of Agriculture, 2007 Census of Agriculture, open GHG offset program registries.

Finally, as anaerobic digesters are most likely to be installed on livestock facilities that already utilize liquid-based manure management systems, it is useful to examine the market penetration among only these facilities. Table C.7 shows that, among the total facilities utilizing liquid manure management systems, the natural market penetration of anaerobic digesters is 1.35% for dairy farms and 0.11% for swine farms.[48] The highest rate, seen among dairy farms of ≥500 head, is 2.84%. This continues to be an extremely low rate of adoption for anaerobic digestion technology.

[48] There is seemingly 100% market penetration on swine farms with <200 animals, due to the fact that there was only one farm in the dataset utilizing liquid manure management, and it also had an anaerobic digester. A greater trend of adoption of anaerobic digestion cannot be drawn from this single farm.

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Table C.7. Dairy and Swine Operations Utilizing Liquid Manure Management, by Size and Manure Management System (2012)

Not including those participating in a GHG offset program.

Animal	Number of Operations by Farm Size Using Anaerobic Manure Management (Excluding GHG Offsets)			
	Farm Size	Anaerobic Digester	Liquid Manure Management	Total
Dairy	≥500 head	74 *2.84%*	2,534 *97.16%*	2,608
	200-499	21 *1.99%*	1,033 *98.01%*	1,054
	1-199	6 *0.16%*	3,800 *99.84%*	3,806
	Total	101 *1.35%*	7,367 *98.65%*	7,468
Swine	≥2000 head	19 *0.24%*	7,822 *99.76%*	7,841
	200-1999	2 *0.02%*	11,589 *99.98%*	11,591
	1-199	1 *100.00%*	- -	1
	Total	22 *0.11%*	19,410 *99.89%*	19,432

C.1.2 U.S. and State Manure Management Regulations

As a part of the Reserve's protocol management, regulatory developments are tracked through, among other outreach and research activities, reporting on regulatory requirements by project developers and verification bodies in the verification process. Of the farms with an anaerobic digester that have participated in GHG offset projects documented in EPA's AgSTAR program, 65 have listed their projects under the Reserve's U.S. Livestock Project Protocol. Twenty-seven projects have been registered with the Reserve, i.e., successfully undergone the verification process. This includes projects in four of the five top dairy producing states, namely, California, Wisconsin, Texas and Idaho. In states where registered Reserve projects are located, no state or federal regulations have been found that would require the use of a BCS.

C.2 Performance Standard Recommendation

The original SAIC report recommended that a performance standard apply to the control of methane emissions from dairy and swine livestock operations in the U.S. and California. In particular, the performance standard should be a technology-specific threshold that dairy or swine operators would meet. The recommended threshold would be the installation of a BCS (e.g. an anaerobic digester).

The report found that even under favorable conditions digesters were found on less than 1% of the dairies in California, which was found to be representative of the U.S. market; and that if a dairy operator chose to install a digester then the farmer would be managing waste in the 99th percentile. This constitutes above and beyond common practice. The report also found that the main barrier inhibiting the installation and use of digesters was cost. Cost studies performed by EPA's AgSTAR program and the California Electricity Commission indicated that significant subsidies and/or incentives were needed to encourage additional digester installations.

The Reserve adopted this performance standard recommendation based on the data available at the time of the SAIC report. While the number of anaerobic digesters has increased significantly, the market penetration of BCS technology remains quite low, especially among those farms which are not receiving revenues from GHG offset markets. Today a dairy operator who chooses to install a digester would be managing waste in the 98th percentile—a modest increase since the original analysis, but hardly a significant shift in common practice. Furthermore, cost continues to inhibit wider adoption of BCS technologies according to a recent EPA report on the status of anaerobic digester adoption.[49] In light of these facts, the Reserve will not alter the current performance standard, but will continue to monitor market developments in the future.

C.3 Renewable Energy Credits and Other Revenue Opportunities for Biogas-to-Energy Projects

Along with carbon credits, there are opportunities for farms installing digesters to earn additional revenues from a variety of sources that support renewable energy generation. These include loans and grants for developing biogas-to-energy projects and the sale of Renewable Energy Certificates (RECs) for use in a renewable portfolio standard (RPS) or a renewable portfolio goal (RPG)[50].

When considering additionality and the ability to generate RECs and CRTs from a livestock project, it is important to remember that the REC and CRT are created by two different but related activities. The REC is awarded for generating renewable electricity from the biogas collected by the BCS, whereas the CRT is awarded for the climate benefit created by the conversion of CH_4 in the biogas into CO_2 through combustion of the biogas. Under this protocol, projects are not required to generate electricity with collected biogas or send it to a natural gas pipeline. Rather, they are only required to destroy the biogas. So while a project may generate renewable electricity with its biogas, renewable energy generation is not an activity required or credited under this protocol.

As there are a number of active RPS, RPG and voluntary REC programs nationwide, the availability of revenue from the sales of RECs is inherently represented in the data analyzed to set the performance standard. Since this analysis shows that the installation of a digester is not common practice at dairy and swine farms, the Reserve does not limit a project's ability to generate or sell RECs. Due to the numerous barriers to implementation of an anaerobic digester project, their success typically relies on a complex array of factors, including multiple incentive program. Renewable energy incentives alone have not significantly increased the natural market penetration of these projects.

When considering additionality and the availability of public dollars to support the development of biogas-to-energy projects, the Reserve has identified numerous state and local programs to support such projects through grants, loans and payments. Although the Reserve's performance standard tests do not require individual project assessments of financial viability or returns, they are designed to reflect these factors in determining which projects are additional. Even with the funds available, the installation of anaerobic digesters according to this protocol is still very rare. Thus, even if a project does receive a grant or loan to support the generation of renewable

[49] U.S. Anaerobic Digester Status Report, October 2010, http://www.epa.gov/agstar/documents/digester_status_report2010.pdf

[50] Whereas compliance with an RPS is mandatory, RPGs set voluntary compliance targets.

energy from a biogas project, the performance standard and rules set forth in this protocol should ensure the additionality of the CRTs generated.

Beyond grants and loans for biogas-to-energy projects, there are two nationwide payment programs administered by USDA Natural Resource Conservation Service (NRCS) that support the installation of anaerobic digesters. Authorized by the 2008 Farm Bill, the Environmental Quality Incentives Program (EQIP), and the Chesapeake Bay Watershed Initiative (CBWI) are programs that provide payments to support the installation of a BCS and are implemented at the state- and county-level. NRCS expressly allows the sale of environmental credits from enrolled lands,[51] but does not provide any additional guidance on ensuring the environmental benefit of any mitigation payment stacked with an NRCS payment.

All NRCS programs share a common set of conservation practice standards that contain information on why and where the practice is to be applied, and set forth the minimum quality criteria that must be met during the application of that practice in order for it to achieve its intended purpose(s).

NRCS Conservation Practice Standard 366 – *Anaerobic Digester* (CPS 366) provides assistance to farmers for the treatment of manure and other byproducts of animal agricultural operations for one or more of the following reasons: to capture biogas for energy production, to manage odors, to reduce the net effect of greenhouse gas emissions, or to reduce pathogens.[52]

Data obtained from NRCS show that less than 0.3% of farms eligible for funding under CPS 366 (i.e., farms with anaerobic operations) have received NRCS funds to install a BCS.[53] In practice, only 9% of the farms that installed BCS since 2004 have received NRCS funds. Because the installation of anaerobic digesters is expensive, uncommon and generally not already funded by NRCS programs, the use of NRCS payments to help finance project activity is allowed under this protocol.

[51] EQIP, 7 CFR §1466.36; CSP, 7 CFR §1470.37.
[52] Natural Resources Conservation Service. (September 2009). Conservation Practice Standard, Anaerobic Digester, Code 366. State-specific conservation practice standards can be downloaded from http://efotg.sc.egov.usda.gov//efotg_locator.aspx.
[53] Based on 2004-2011 data obtained from NRCS Resource Economics, Analysis and Policy Division through personal communication.

Appendix D Data Substitution

This appendix provides guidance on calculating emission reductions when data integrity has been compromised either due to missing data points or a failed calibration. No data substitution is permissible for the operational status of destruction devices. Rather, the methodologies presented below are to be used only for the methane concentration and flow metering parameters. If operational data are missing for a destruction device, then the device shall be assumed to have been inoperable, and will be assigned a destruction efficiency of zero for that period.

D.1 Missing Data

The Reserve expects that projects will have continuous, uninterrupted data for the entire verification period. However, the Reserve recognizes that unexpected events or occurrences may result in brief data gaps.

The following data substitution methodology may be used only for flow and methane concentration data gaps that are discrete, limited, non-chronic, and due to unforeseen circumstances. Data substitution can only be applied to methane concentration *or* flow readings, but not both simultaneously. If data are missing for both parameters, no reductions can be credited.

Further, substitution may only occur when the following is true:

1. For methane concentration substitution, flow rates during the data gap must be consistent with normal operation.
2. For flow substitution, methane concentration rates during the data gap must be consistent with normal operations.

If corroborating parameters fail to demonstrate any of these requirements, no substitution may be employed. If the requirements above can be met, the following substitution methodology maybe applied:

Duration of Missing Data	Substitution Methodology
Less than six hours	Use the average of the four hours immediately before and following the outage
Six to 24 hours	Use the 90% lower or upper confidence limit of the 24 hours prior to and after the outage, whichever results in greater conservativeness
One to seven days	Use the 95% lower or upper confidence limit of the 72 hours prior to and after the outage, whichever results in greater conservativeness
Greater than one week	No data may be substituted and no credits may be generated

Note: It is conservative to use the upper confidence limit when calculating emissions from the BCS (Equation 5.6); however it is conservative to use the lower confidence limit when calculating the total amount of methane that is destroyed in the BCS Equation 5.10.

For periods when it is not possible to use data substitution to fill data gaps, no emission reductions may be claimed. The methane flow volume for these days shall be zero, and the number of reporting days for that month shall be reduced to exclude the days of missing data. This guidance is not to be used for venting events.

Appendix E Development of the B_0 Sampling and Analysis Methodology

With the release of Livestock Protocol Version 4.0, the Reserve has adopted a novel methodology for the sampling and analysis of livestock manure to determine maximum methane potential. In all previous versions of the protocol, the value of this term was defined by the default options provided in Table B.3, which were themselves sourced from the EPA Climate Leaders Draft Manure Offset Protocol. Other than a change in the value of the default for Dairy Cows with Version 2.1 from a "low roughage" value to a "high roughage" value, these default values have not changed since the first version of the protocol was adopted. Reserve staff have received feedback from stakeholders that in many cases, the default value for a particular animal category, especially Dairy Cows, is excessively conservative. Based on this feedback, the Reserve initiated a process to explore the options for updating the default values for maximum methane potential (B_0). After review of existing methodologies and literature related to manure methane potential, the Reserve determined that there is currently not a clear basis for establishing different default values. However, direct sampling and analysis were identified as an option that could be immediately provided as an alternative to the existing default values.

In 2009 the Reserve adopted the Organic Waste Digestion project protocol (updated to Version 2.0 in 2011). This protocol introduced a procedure for the determination of site-specific B_0 value for organic wastewater streams (OWD V2.0, Section 6.1.3.2). These requirements formed the basis for the development of a sampling and analysis procedure for livestock projects.

In early September, 2012, the Reserve solicited stakeholder interest for participation in the development process for this new methodology. A diverse group of 36 stakeholders representing carbon project developers, academia, government, livestock industry, GHG verification bodies, and others, responded to this request. These stakeholders then received a memorandum detailing the proposed methodology and were invited to a webinar on September 19, 2012 to provide feedback and engage in discussion. 22 individuals participated in the webinar discussion, providing a great deal of feedback and suggestions for improvement.

In addition to the public stakeholder consultation, Reserve staff worked directly with experts in industry and academia to further refine the methodology. The goal was to identify a sampling and testing regime that could consistently provide accurate estimates of the B_0 value of different manure streams, and that would be reasonably practical for implementation. The major considerations and decisions are addressed below.

Sampling Schedule

The sampling procedure requires that six samples be taken at regular intervals throughout the day. These individual samples are then combined into one composite sample to represent that event. The sampling procedure in the OWD protocol calls for 10 samples spaced out over at least one week. In consultation with expert stakeholders, it was determined that livestock manure will be less variable over such short timescales, and that the collection of multiple samples in a single day would be sufficient to control for sample variability and error. A more onerous sampling requirement would introduce additional resourcing requirements and costs disproportionate to any reduction in uncertainty/error.

The procedure also requires that the sampling event take place between the months of August through November (inclusive). The Reserve has limited the applicability of this procedure to dairy facilities, and expects that it will mainly be used for the determination of a site-specific B_0

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for dairy cows. Thus, the timing of the sampling procedure is designed to avoid overestimating the B_0 value for this particular livestock category. Academic experts advised the Reserve that the methane generating potential of dairy cow manure tends to be positively correlated with milk production.[54] To ensure that the average B_0 value for the year is not overestimated, it is appropriate to avoid sampling the manure during periods of above-average milk production. Reserve staff used data from the National Agricultural Statistics Service[55] to examine monthly milk production trends. For the years 1998-2011, the milk production for each month (in lb/head) was compared to the average monthly milk production for that year. This process highlighted the months with above or below-average milk production, while controlling for the overall trend of increasing milk production year-over-year. Figure E.1 shows the results of this analysis and the consistent pattern of milk production during this 14 year period.

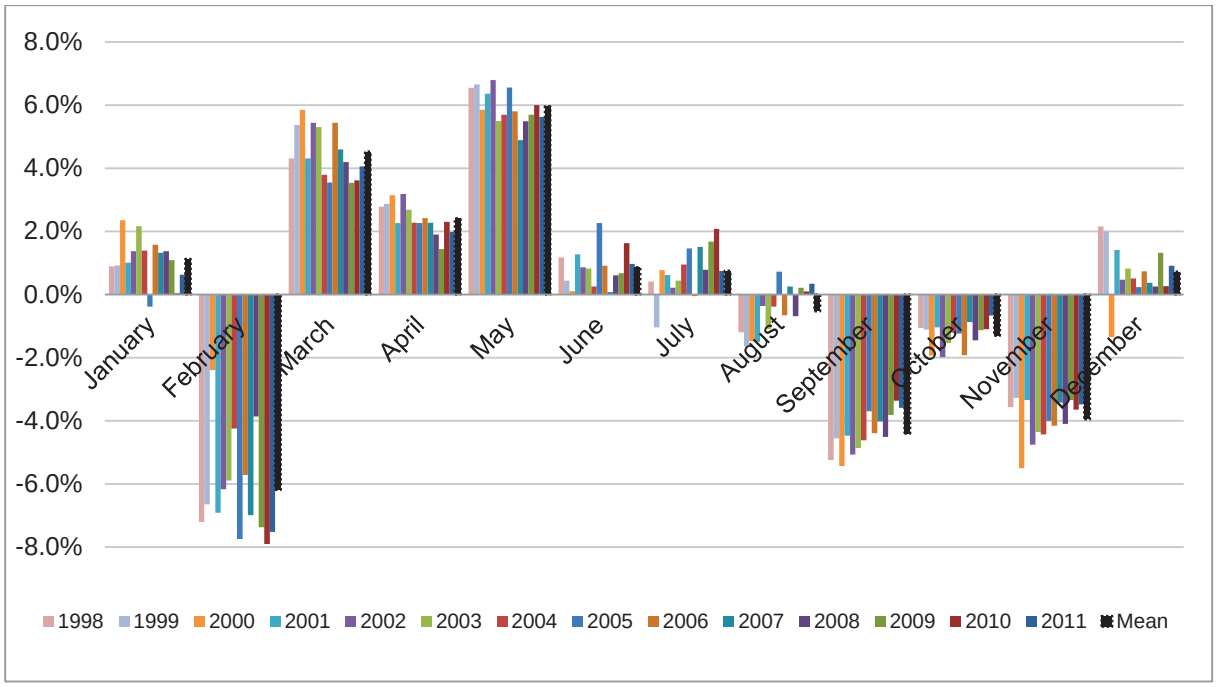


Figure E.1. Monthly Milk Production Trends as a Percent Change Over Annual Average Monthly Milk Production (1998-2011)

Based on this analysis the Reserve has limited the sampling period to August through November. These months consistently exhibit average- to below-average milk production, which should result in a conservative estimate of the annual average B_0 value.

Sample Source

The procedure instructs the user to obtain a manure sample that represents only a single animal category, prior to mixing with other residues (except for flush water in the case of flush systems). While certain stakeholders indicated through public comment that they would prefer to sample the entire waste stream as it enters the digester, there are two main reasons why this requirement was not amended:

[54] In the future, it may be possible to develop a default methane potential that is based directly on monthly milk production, though additional research is needed.
[55] Accessed from the USDA website at http://quickstats.nass.usda.gov/.

1. The waste stream entering the digester may contain ineligible materials which, while permitted to be processed by the project BCS, should not be represented in the quantification of baseline emissions.
2. The baseline quantification model is run on a monthly basis, using the actual animal population figures for that month. The relative populations of different animal categories may change during the year, resulting in an overall B_0 value for the manure from that facility that is variable through time. To use a composite B_0 value, representative of multiple animal categories, would create quantification inaccuracies if relative populations change from one month to the next (see Table E.1).

Table E.1. Effects of Relative Population Size on Composite B_0 Value

Animal Category	B_0 Value	Population in Month 1	Population in Month 2	Population in Month 3
Dairy Cows	0.24	2,000	800	3,000
Heifers	0.17	500	2,000	200
Calves	0.17	500	1,200	0
	Composite B_0 Value	***0.22***	***0.18***	***0.24***

There is an additional step for dairies that utilize a flush system for manure management, as the flush water is typically composed of some type of wastewater, which could have a significant methane potential. For these systems it is necessary to also sample the flush water inlet point prior to mixing with the manure, so that the methane potential of the flush water can then be subtracted from the methane potential of the sample.

Laboratory Analysis

The Reserve undertook research to determine whether standard procedures/processes existed for the professional analysis of B_0 potential. This research revealed that while there is currently no standard laboratory certification scheme within the US pertaining to this type of analysis, there are commonly-accepted methods for undertaking the relevant biochemical methane potential (BMP) analysis itself. The requirements to document a laboratory's experience and standard operating procedures were introduced to ensure rigor and consistency among testing bodies.

The Reserve consulted with commercial and university testing laboratories regarding the requirements for the biochemical methane potential (BMP) assay. The resulting requirements closely resemble the standard procedures of existing laboratories. It is necessary for the protocol to prescribe at least basic parameters for the BMP assay in order to ensure consistency among projects that hire different laboratories. The inclusion of a control assay was suggested by multiple laboratories as an important quality check on the viability of the seed inoculum that is used for the BMP assay.

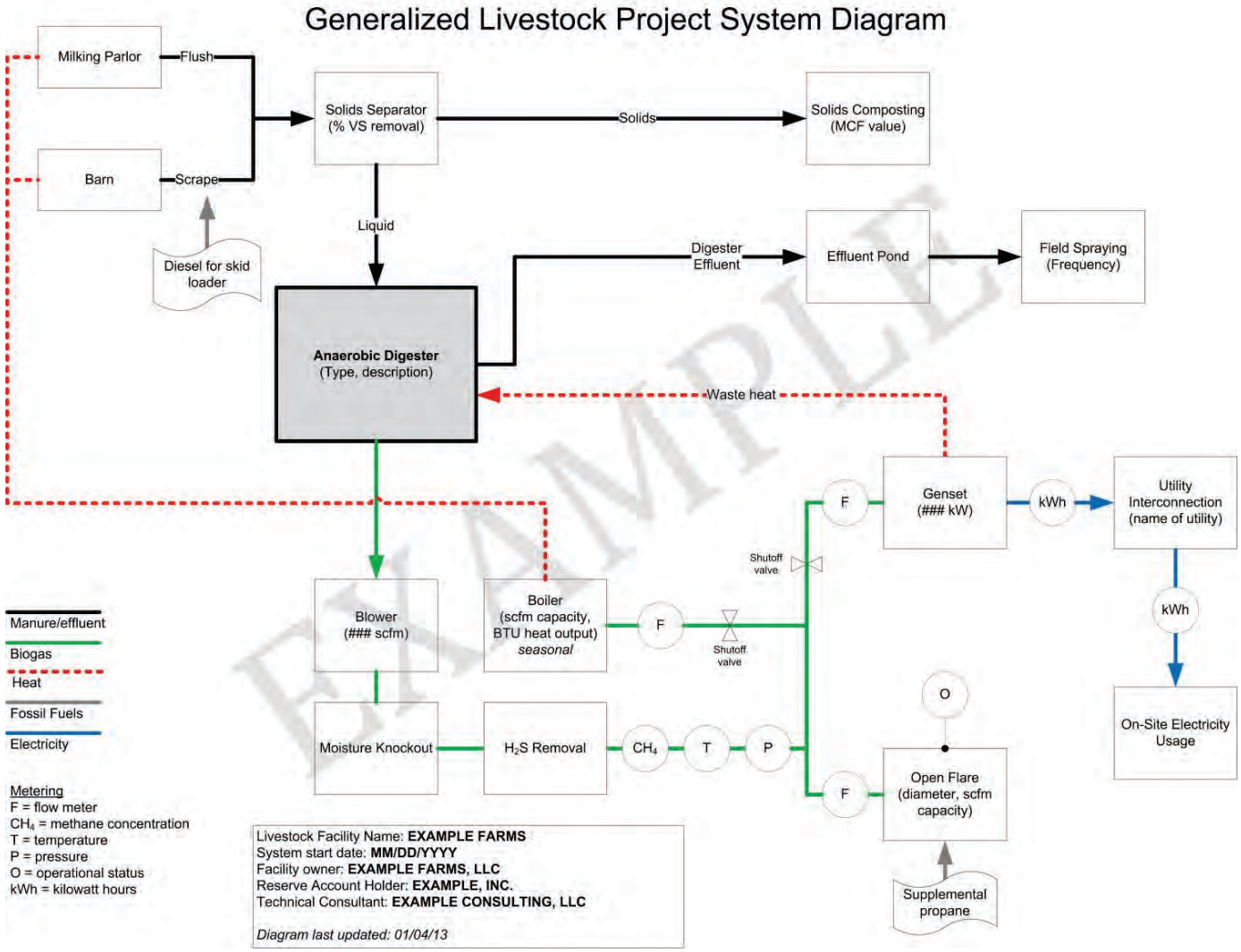
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Stakeholder Participation

The Reserve would like to thank the following stakeholders, in addition to others not listed here, for their participation in the research and development of this methodology.

David Belcher	Camco
Michael Carim	First Environment, Inc.
Dr. Craig Frear	Washington State University
Noel Gurwick	Smithsonian Environmental Research Center
Karen Haugen-Kozyra	The Prasino Group
Cortney Itle	Eastern Research Group, Inc.
Dr. Xiaomei Li	XY Green Carbon
Dr. John H. Martin, Jr.	Hall Associates
Carl Morris	Joseph Gallo Farms
Dr. Scott Subler	Environmental Credit Corp.
Peter Weisberg	The Climate Trust

Appendix F Sample Livestock Project Diagram



EXAMPLE

Oregon Public Utility Commission

e-FILING REPORT COVER SHEET

COMPANY NAME:

DOES REPORT CONTAIN CONFIDENTIAL INFORMATION? ■ No ☐ Yes If yes, submit a redacted public version (or a cover letter) by email. Submit the confidential information as directed in OAR 860-001-0070 or the terms of an applicable protective order.

Select report type: ☐ RE (Electric) ■ RG (Gas) ☐ RW (Water) ☐ RT (Telecommunications)
☐ RO (Other, for example, industry safety information)

Did you previously file a similar report? ☐ No ■ Yes, report docket number: RG 2

Report is required by: ☐ OAR
☐ Statute
☐ Order
Note: A one-time submission required by an order is a compliance filing and not a report (file compliance in the applicable docket)
☑ Other Portfolio Options Committee requested report
(For example, federal regulations, or requested by Staff)

Is this report associated with a specific docket/case? ☐ No ■ Yes, docket number: RG 2

List Key Words for this report. We use these to improve search results.

Smart Energy, reconciliation, POC, Portfolio Options Committee

Send the completed Cover Sheet and the Report in an email addressed to PUC.FilingCenter@puc.oregon.gov

Send confidential information, voluminous reports, or energy utility Results of Operations Reports to PUC Filing Center, PO Box 1088, Salem, OR 97308-1088 or by delivery service to 201 High Street SE Suite 100, Salem, OR 97301.

NW Natural®

250 SW Taylor Street
Portland, OR 97204

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March 29, 2023

VIA ELECTRONIC FILING

Public Utility Commission of Oregon
Attention: Filing Center
201 High Street SE, Suite 100
Post Office Box 1088
Salem, Oregon 97308-1088

Re: RG 2 - NW Natural's 2022 Smart Energy™ Reconciliation Report

Northwest Natural Gas Company, dba NW Natural ("NW Natural" or "Company"), files herewith its 2022 Smart Energy™ Reconciliation Report for the program year January 1, 2022 through December 31, 2022. The Reconciliation Report has been provided in response to a request from the Portfolio Options Committee, which oversaw and advised the Company's offset program when it was active. The Company will continue to provide the Reconciliation Report in the interest of transparency and support of the Smart Energy™ program.

Please address any correspondence on this matter to me with copies to the following:

eFiling
Rates & Regulatory Affairs
NW Natural
250 SW Taylor Street
Portland, Oregon 97204
Telephone: (503) 610-7330
eFiling@nwnatural.com

Sincerely,

NW Natural

/s/ Rebecca Trujillo

Rebecca Trujillo
Regulatory Consultant
(503) 610-7326

Enclosure

Smart Energy Product Reporting

Demand Reconciliation

For the period of January 1, 2022 – December 31, 2022

Table 1: Participating Customer Billings & Resulting Greenhouse Gas Offsets

Calendar Year	Smart Energy Funds Billed	Therms to be offset	Obligation metric tons
2022	$4,851,915.37[1]	46,270,411.69	245,557.56

11.7 pounds per therm based on the recognized standard of U.S. Energy Information Administration
188.43 therms per metric ton

Table 2: Participating Customer Billings & Resulting Greenhouse Gas Offsets and Renewable Natural Gas (RTC[2])

Calendar Year	Smart Energy Funds Billed	Therms to be mitigated	Obligation Offsets mt	Obligation RTCs
2022	$15,313.67[3]	100,443.85	511.74	401.78

Total emissions mitigated: 246,090.62 metric tons CO_2e

[1] Collections, net of uncollectable allowance
[2] Transacted with Renewable Thermal Certificates
[3] Collections, net of uncollectable allowance

Smart Energy Product Reporting

Supply Reconciliation

For the period of January 1, 2022 – December 31, 2022

Table 3: Offset Obligations & Retirements

Calendar	Offset Activity	Metric Tons
Year	Obligations	358,810
2022	Retirements	552,027

Table 4: Renewable Natural Gas Obligations & Retirements

Calendar	RNG Activity	RTC[1]
Year	Obligations	401.78
2022	Retirements	402

[1] Renewable Thermal Certificate

Transaction Confirmation

Date: 01-31-2023

M-RETS Organization: NW Natural

Retiring 402 active RTCs

Account	ID	Project	Fuel Type	Vintage	Location	Quantity	CP Name	CP Tool	CP Carbon Intensity	Serial Number
Smart Energy	66D5CE9B-0AC9	Wasatch Resource Recovery, LLC	Renewable Natural Gas	2020-12-01	UT	402				T3831-Utah-12-2020-1329FEF6-3571-3972

Retirement reason:

Voluntary - Beneficial Ownership

Retirement reason details:

Retired for: N/A

Period: 2022

Quarter: Q4

Notes: On behalf of NW Natural Smart Energy Customers

to this retirement account

Smart Energy Retirement

M-RETS hereby declares this transaction confirmation shall serve as proof that the above transaction was completed on the date listed.

Smart Energy Offset Project Obligations

Totals By Project

Project	Authorized		Retired		Balance	
	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons
Bettencourt Dairy - B6	131,914	145,408.80	131,914	145,408.80	0	0.00
City of Astoria - Bear Creek	100,000	110,230.00	100,000	110,230.00	0	0.00
Castelanelli Brothers Dairy - Castelanelli	11,295	12,450.48	11,295	12,450.48	0	0.00
Element Markets - Davis LFG	403,920	445,241.02	416,147	458,718.84	12,227	13,477.82
ClimeCo LLC - Everett Composting	42,085	46,390.29	42,763	47,137.65	678	747.36
Great Bear Carbon Credit Corporation - Great Bear Haida Gwaii	137,500	151,566.25	137,500	151,566.25	0	0.00
Great Bear Carbon Credit Corporation - Great Bear North & Central-Mid Coast	137,500	151,566.25	137,500	151,566.25	0	0.00
Revolution Energy Solutions - Lochmead Farms	17,199	18,958.46	17,199	18,958.46	0	0.00
Farm Power - Lynden	20,000	22,046.00	20,000	22,046.00	0	0.00
Farm Power - Misty Meadow	119,134	131,321.41	101,346	111,713.70	(17,788)	(19,607.71)
J.R. Simplot - Moses Lake	126,476	139,414.50	128,320	141,447.14	1,844	2,032.64
J.R. Simplot - Moses Lake 2	155,037	170,897.29	125,037	137,828.29	(30,000)	(33,069.00)
Revolution Energy Solutions - Oak Lea	11,507	12,684.16	11,507	12,684.17	0	0.01
Farm Power - Rexville	71,246	78,534.43	71,246	78,534.47	0	0.04
Farm Power - Rexville 2	9,095	10,025.41	9,095	10,025.42	0	0.01
Roseburg LFG Energy - Roseburg LFG	27,405	30,208.53	27,405	30,208.53	0	0.00
Shaan-Seet, Incorporated - Shaan Seet IFM	80,000	88,184.00	80,000	88,184.00	0	0.00
Farm Power - Tillamook	94,803	104,501.35	75,872	83,633.71	(18,931)	(20,867.64)
TMF Biofuels - TMF Biofuels	15,000	16,534.50	15,000	16,534.50	0	0.00
Mass Energy Works - Van Warmerdam	30,740	33,884.70	30,740	33,884.70	0	0.00
Intrepid Technology Resources - Whitesides Dairy	17,067	18,812.95	17,067	18,812.95	0	0.00
Port Blakely - Winston Creek IFM	150,000	165,345.00	150,000	165,345.00	0	0.00
Total:	**1,908,923**	**2,104,205.78**	**1,856,953**	**2,046,919.29**	**(51,970)**	**(57,286.49)**

RG 2 - NWN 2022 Smart Energy Reconciliation Report

Smart Energy Offset Vintage Obligations

Totals By Project and Authorization

Begin Date: 1/1/2022 End Date: 12/31/2022

Element Markets - Davis LFG, Site Location: Layton UT — Project Type: LFG

AU-EM-DLG-1.3 9/15/2022 Vintage	Authorized		Retired		Balance	
	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons
2021	16,000	17,636.80	18,030	19,874.47	2,030	2,237.67
Total Auth:	**16,000**	**17,636.80**	**18,030**	**19,874.47**	**2,030**	**2,237.67**

AU-EM-DLG-1.4 12/9/2022 Vintage	Authorized		Retired		Balance	
	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons
2021	2,595	2,860.47	2,595	2,860.47	0	0.00
Total Auth:	**2,595**	**2,860.47**	**2,595**	**2,860.47**	**0**	**0.00**

Project Total:	**18,595**	**20,497.27**	**20,625**	**22,734.94**	**2,030**	**2,237.67**

ClimeCo LLC - Everett Composting, Site Location: Everett WA — Project Type: OWC

AU-CG-EC-1.1 9/28/2022 Vintage	Authorized		Retired		Balance	
	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons
2020	20,145	22,205.83	20,145	22,205.83	0	0.00
2021	21,940	24,184.46	22,618	24,931.82	678	747.36
Total Auth:	**42,085**	**46,390.29**	**42,763**	**47,137.65**	**678**	**747.36**

Project Total:	**42,085**	**46,390.29**	**42,763**	**47,137.65**	**678**	**747.36**

Great Bear Carbon Credit Corporation - Great Bear Haida Gwaii, Site Location: B — Project Type: IFM

AU-GB-HG-1.1 7/28/2022 Vintage	Authorized		Retired		Balance	
	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons
2017	137,500	151,566.25	137,500	151,566.25	0	0.00
Total Auth:	**137,500**	**151,566.25**	**137,500**	**151,566.25**	**0**	**0.00**

Project Total:	**137,500**	**151,566.25**	**137,500**	**151,566.25**	**0**	**0.00**

Smart Energy Offset Vintage Obligations

Totals By Project and Authorization

Begin Date: 1/1/2022 End Date: 12/31/2022

Great Bear Carbon Credit Corporation - Great Bear North & Central-Mid Coast, S — Project Type: IFM

AU-GB-NCC-1.1 7/28/2022 Vintage	Authorized		Retired		Balance	
	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons
2017	137,500	151,566.25	137,500	151,566.25	0	0.00
Total Auth:	**137,500**	**151,566.25**	**137,500**	**151,566.25**	**0**	**0.00**
Project Total:	**137,500**	**151,566.25**	**137,500**	**151,566.25**	**0**	**0.00**

J.R. Simplot - Moses Lake 2, Site Location: Moses Lake WA — Project Type: OWD

AU-JRS-ML-2.4.3 4/29/2022 Vintage	Authorized		Retired		Balance	
	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons
2021	13,000	14,329.90	13,000	14,329.90	0	0.00
Total Auth:	**13,000**	**14,329.90**	**13,000**	**14,329.90**	**0**	**0.00**
Project Total:	**13,000**	**14,329.90**	**13,000**	**14,329.90**	**0**	**0.00**

Farm Power - Rexville 2, Site Location: Mt. Vernon WA — Project Type: Dairy

AU-FP-RX-2.1 2/15/2022 Vintage	Authorized		Retired		Balance	
	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons
2019	3,041	3,352.09	3,041	3,352.09	0	0.00
2020	6,054	6,673.32	6,054	6,673.32	0	0.00
Total Auth:	**9,095**	**10,025.41**	**9,095**	**10,025.42**	**0**	**0.01**
Project Total:	**9,095**	**10,025.41**	**9,095**	**10,025.42**	**0**	**0.01**

Smart Energy Offset Vintage Obligations

Totals By Project and Authorization

Begin Date: 1/1/2022 End Date: 12/31/2022

Roseburg LFG Energy - Roseburg LFG, Site Location: Roseburg OR — **Project Type: LFG**

DA-RE-RLG-1.1T 12/9/2022 Vintage	Authorized		Retired		Balance	
	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons
2021	(2,595)	(2,860.47)	0	0.00	2,595	2,860.47
Total Auth:	**(2,595)**	**(2,860.47)**	**0**	**0.00**	**2,595**	**2,860.47**
Project Total:	**(2,595)**	**(2,860.47)**	**0**	**0.00**	**2,595**	**2,860.47**

Farm Power - Tillamook, Site Location: Tillamook OR — **Project Type: Dairy**

AU-FP-TK-1.2.3 10/21/2022 Vintage	Authorized		Retired		Balance	
	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons
2019	3,630	4,001.35	3,630	4,001.35	0	0.00
Total Auth:	**3,630**	**4,001.35**	**3,630**	**4,001.35**	**0**	**0.00**
Project Total:	**3,630**	**4,001.35**	**3,630**	**4,001.35**	**0**	**0.00**

Grand Total:	**358,810**	**395,516.25**	**364,113**	**401,361.76**	**5,303**	**5,845.51**

Smart Energy Offset Projects

Retirement Detail (1/1/2022 - 12/31/2022)

Element Markets - Davis LFG | **Site Location: Layton** | **Project Type: LFG**

Estimated Total Project Volume	
Metric Tonnes	Short Tons
400,000	**440,920.00**

Standard: Climate Action Reserve | Registry: Climate Action Reserve | Duration: 10 years

Protocol: 5.0 | Crediting Period: Second | Greenhouse Gas: Methane

Project Authorizations	Authorized		Retired		Balance	
	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons
Buyer: Smart Energy	**403,920**	**445,241.02**	**416,147**	**458,718.84**	**12,227**	**13,477.82**

Project Retirements

Vintage	Reporting Start Date	Reporting End Date	Verifier	Verification Start Date	Verification End Date	Metric Tonnes	Short Tons	Retirement Effective Date
2021	1/1/2021	12/31/2021	SCS Global Services	5/31/2022	7/18/2022	116,000	127,866.80	9/23/2022
	Serial Number: CAR-1-US-473-4-963-UT-2021-7125-1 to 116000							
	Registry Listing URL: https://thereserve2.apx.com/mymodule/reg/TabProjectEmissions.asp?r=111&ad=Prpt&act=update&type=PRO&aProj=pub&tablename=cr&id1=473							
2021	1/1/2021	12/31/2021	SCS Global Services	5/31/2022	7/18/2022	2,030	2,237.67	12/16/2022
	Serial Number: CAR-1-US-473-4-963-UT-2021-7125-118596 to 120625							
	Registry Listing URL:							
2021	1/1/2021	12/31/2021	SCS Global Services	5/31/2022	7/18/2022	2,595	2,860.47	12/16/2022
	Serial Number: CAR-1-US-473-4-963-UT-2021-7125-116001 to 118595							
	Registry Listing URL:							

RG 2 - NWN 2022 Smart Energy Reconciliation Report

ClimeCo LLC - Everett Composting	Site Location: Everett	Project Type: OWC

Estimated Total Project Volume	
Metric Tonnes	Short Tons
200,000	**220,460.00**

Standard: Climate Action Reserve
Registry: Climate Action Reserve
Duration: 10 years
Protocol: 1.1
Crediting Period: Second
Greenhouse Gas: Methane

Project Authorizations	Authorized		Retired		Balance	
	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons
Buyer: Smart Energy	**42,085**	**46,390.29**	**42,763**	**47,137.65**	**678**	**747.36**

Project Retirements

Vintage	Reporting Start Date	Reporting End Date	Verifier	Verification Start Date	Verification End Date	Metric Tonnes	Short Tons	Retirement Effective Date
2020	1/1/2020	12/31/2020	Ruby Canyon Engineering	11/16/2021	7/6/2022	20,145	22,205.83	9/27/2022
	Serial Number: CAR-1-US-825-34-386-WA-2020-7045-1 to 20145							
	Registry Listing URL: https://thereserve2.apx.com/mymodule/reg/TabProjectEmissions.asp?r=111&ad=Prpt&act=update&type=PRO&aProj=pub&tablename=cr&id1=825							
2021	1/1/2021	12/31/2021	Ruby Canyon Engineering	7/27/2022	10/19/2022	22,618	24,931.82	12/13/2022
	Serial Number: CAR-1-US-825-34-386-WA-2021-7314-1 to 22618							
	Registry Listing URL:							

Great Bear Carbon Credit Corporation - Great Bear Haida Gwaii

Site Location: BC | **Project Type: IFM**

Estimated Total Project Volume	
Metric Tonnes	Short Tons
137,500	**151,566.25**

Standard: BC Carbon Offset Program | Registry: BC Carbon Registry | Duration: 10 years

Protocol: Protocol for the Creation of Forest Carbon Offsets in British Columbia (BC | Crediting Period: Initial | Greenhouse Gas: CO2

Project Authorizations	Authorized		Retired		Balance	
	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons
Buyer: Smart Energy	**137,500**	**151,566.25**	**137,500**	**151,566.25**	**0**	**0.00**

Project Retirements

Vintage	Reporting Start Date	Reporting End Date	Verifier	Verification Start Date	Verification End Date	Metric Tonnes	Short Tons	Retirement Effective Date
2017	1/1/2016	12/31/2017	KPMG Performance Registrar Inc.	2/20/2019	7/30/2019	137,500	151,566.25	8/9/2022

Serial Number: BCO-BCO-CA-104000000011559-01012017-31122017-8323431-8460930-MER-0-P

Registry Listing URL: https://carbonregistry.gov.bc.ca/br-reg/public/bc/index.jsp?entity=retirement&sort=account_name&dir=ASC&start=0&entity_domain=BC&acronym=&standardId=&categoryId=&unitClass=

RG 2 - NWN 2022 Smart Energy Reconciliation Report

Great Bear Carbon Credit Corporation - Great Bear North & Central

Site Location: BC | **Project Type: IFM**

Estimated Total Project Volume	
Metric Tonnes	Short Tons
137,500	**151,566.25**

Standard: BC Carbon Offset Program | Registry: BC Carbon Registry | Duration: 25 years

Protocol: Protocol for the Creation of Forest Carbon Offsets in British Columbia (BC | Crediting Period: Initial | Greenhouse Gas: CO2

Project Authorizations	Authorized		Retired		Balance	
	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons
Buyer: Smart Energy	**137,500**	**151,566.25**	**137,500**	**151,566.25**	**0**	**0.00**

Project Retirements

Vintage	Reporting Start Date	Reporting End Date	Verifier	Verification Start Date	Verification End Date	Metric Tonnes	Short Tons	Retirement Effective Date
2017	1/1/2017	12/31/2019	KPMG Performance Registrar Inc.	1/22/2021	12/6/2021	137,500	151,566.25	8/9/2022

Serial Number: BCO-BCO-CA-104000000012798-01012017-31122017-11999070-12136569-MER-0-P

Registry Listing URL: https://carbonregistry.gov.bc.ca/br-reg/public/bc/index.jsp?entity=retirement&standardId=&unitClass=&sort=retirement_date&dir=DESC&name=great%20bear

Farm Power - Misty Meadow	Site Location: Tillamook	Project Type: Dairy

Estimated Total Project Volume	
Metric Tonnes	Short Tons
93,100	**102,624.13**

Standard: Climate Action Reserve
Registry: Climate Action Reserve
Duration: 10 years
Protocol: U.S. Livestock Project Protocol, Version 3.0
Crediting Period: Initial
Greenhouse Gas: Methane

Project Authorizations	Authorized		Retired		Balance	
	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons
Buyer: Smart Energy	**119,134**	**131,321.41**	**101,346**	**111,713.70**	**(17,788)**	**(19,607.71)**

Project Retirements

Vintage	Reporting Start Date	Reporting End Date	Verifier	Verification Start Date	Verification End Date	Metric Tonnes	Short Tons	Retirement Effective Date
2020	1/1/2020	12/31/2021	Ruby Canyon Engineering	3/24/2021	9/22/2022	12,212	13,461.29	10/25/2022

Serial Number: CAR-1-US-996-5-212-OR-2020-7248-1 to 12212

Registry Listing URL:

RG 2 - NWN 2022 Smart Energy Reconciliation Report

J.R. Simplot - Moses Lake 2	Site Location: Moses Lake	Project Type: OWD

Estimated Total Project Volume	
Metric Tonnes	Short Tons
196,000	**216,050.80**

Standard: Verified Carbon Standard
Protocol:
Registry: Markit
Crediting Period: Second
Duration: 7 years
Greenhouse Gas: Methane

Project Authorizations	Authorized		Retired		Balance	
	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons
Buyer: Smart Energy	**155,037**	**170,897.29**	**125,037**	**137,828.29**	**(30,000)**	**(33,069.00)**

Project Retirements

Vintage	Reporting Start Date	Reporting End Date	Verifier	Verification Start Date	Verification End Date	Metric Tonnes	Short Tons	Retirement Effective Date
2021	1/1/2021	12/31/2021	First Environment, Inc.	11/21/2021	3/25/2022	28,000	30,864.40	5/3/2022

Serial Number: 12799-451530646-451558645-VCS-VCU-260-VER-US-13-448-01012021-31122021-0

Registry Listing URL: https://registry.verra.org/app/search/VCS?programType=ISSUANCE&exactResId=448

RG 2 - NWN 2022 Smart Energy Reconciliation Report

Farm Power - Rexville 2	Site Location: Mt. Vernon	Project Type: Dairy

Estimated Total Project Volume	
Metric Tonnes	Short Tons
100,000	**110,230.00**

Standard: Climate Action Reserve
Registry: Climate Action Reserve
Duration: 10 years
Protocol: Climate Action Reserve Livestock Protocol
Crediting Period: Second
Greenhouse Gas: Methane

Project Authorizations	Authorized		Retired		Balance	
	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons
Buyer: Smart Energy	**9,095**	**10,025.41**	**9,095**	**10,025.42**	**0**	**0.01**

Project Retirements

Vintage	Reporting Start Date	Reporting End Date	Verifier	Verification Start Date	Verification End Date	Metric Tonnes	Short Tons	Retirement Effective Date
2019	8/12/2019	12/31/2019	Ruby Canyon Engineering	3/24/2021	11/24/2021	3,041	3,352.09	2/15/2022
	Serial Number: CAR-1-US-416-5-874-WA-2019-6742-1 to 3041 Registry Listing URL:							
2020	1/1/2020	8/11/2020	Ruby Canyon Engineering	3/24/2021	11/24/2021	6,054	6,673.32	2/15/2022
	Serial Number: CAR-1-US-416-5-874-WA-2020-6741-1 to 6054 Registry Listing URL:							

Roseburg LFG Energy - Roseburg LFG	Site Location: Roseburg	Project Type: LFG

Estimated Total Project Volume	
Metric Tonnes	Short Tons
200,000	**220,460.00**

Standard: Climate Action Reserve | Registry: Climate Action Reserve | Duration: 10 years

Protocol: Landfill Project Protocol version 3.0 | Crediting Period: Initial | Greenhouse Gas: Methane

Project Authorizations	Authorized		Retired		Balance	
	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons
Buyer: Smart Energy	**27,405**	**30,208.53**	**27,405**	**30,208.53**	**0**	**0.00**

Project Retirements

Vintage	Reporting Start Date	Reporting End Date	Verifier	Verification Start Date	Verification End Date	Metric Tonnes	Short Tons	Retirement Effective Date
2021	1/1/2021	12/31/2021	SCS Global Services	8/30/2022	10/19/2022	12,179	13,424.91	12/5/2022

Serial Number: CAR-1-US-886-4-670-OR-2021-7349-1 to 12179

Registry Listing URL:

RG 2 - NWN 2022 Smart Energy Reconciliation Report

Shaan-Seet, Incorporated - Shaan Seet IFM	Site Location: Prince of Wales Island	Project Type: IFM

Estimated Total Project Volume	
Metric Tonnes	Short Tons
654,347	**721,286.70**

Standard: American Carbon Registry
Registry: Amercan Carbon Registry
Duration: 20 years
Protocol: ACR Standard Version 6
Crediting Period: Initial
Greenhouse Gas: CO2

Project Authorizations	Authorized		Retired		Balance	
	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons
Buyer: Smart Energy	**80,000**	**88,184.00**	**80,000**	**88,184.00**	**0**	**0.00**

Project Retirements

Vintage	Reporting Start Date	Reporting End Date	Verifier	Verification Start Date	Verification End Date	Metric Tonnes	Short Tons	Retirement Effective Date
2020	1/10/2020	1/9/2021	S&A Carbon	11/4/2021	1/27/2022	40,000	44,092.00	2/23/2022

Serial Number: ACR-US-534-2020-1447-1 to 40000

Registry Listing URL: https://acr2.apx.com/mymodule/reg/TabDocuments.asp?r=111&ad=Prpt&act=update&type=PRO&aProj=pub&tablename=doc&id1=534

RG 2 - NWN 2022 Smart Energy Reconciliation Report

Farm Power - Tillamook	Site Location: Tillamook	Project Type: Dairy

Estimated Total Project Volume	
Metric Tonnes	Short Tons
88,400	**97,443.32**

Standard: Climate Action Reserve
Registry: Climate Action Reserve
Duration: 10 years
Protocol: U.S. Livestock Project Protocol, Version 3.0
Crediting Period: Initial
Greenhouse Gas: Methane

Project Authorizations	Authorized		Retired		Balance	
	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons
Buyer: Smart Energy	**94,803**	**104,501.35**	**75,872**	**83,633.71**	**(18,931)**	**(20,867.64)**

Project Retirements

Vintage	Reporting Start Date	Reporting End Date	Verifier	Verification Start Date	Verification End Date	Metric Tonnes	Short Tons	Retirement Effective Date
2019	1/1/2019	12/31/2019	First Environment, Inc.	3/24/2020	6/1/2020	3,630	4,001.35	10/26/2022
	Serial Number: CAR-1-US-988-5-212-OR-2019-6085-10084 to 13713							
	Registry Listing URL:							
2020	1/1/2020	12/31/2020	Ruby Canyon Engineering	3/24/2021	9/16/2022	8,523	9,394.90	10/25/2022
	Serial Number: CAR-1-US-988-5-212-OR-2020-7206-1 to 8523							
	Registry Listing URL:							

RG 2 - NWN 2022 Smart Energy Reconciliation Report

Oregon Public Utility Commission

e-FILING REPORT COVER SHEET

COMPANY NAME:

DOES REPORT CONTAIN CONFIDENTIAL INFORMATION? ■ No ☐ Yes If yes, submit a redacted public version (or a cover letter) by email. Submit the confidential information as directed in OAR 860-001-0070 or the terms of an applicable protective order.

Select report type: ☐ RE (Electric) ■ RG (Gas) ☐ RW (Water) ☐ RT (Telecommunications)
☐ RO (Other, for example, industry safety information)

Did you previously file a similar report? ☐ No ■ Yes, report docket number: RG 2

Report is required by: ☐ OAR
☐ Statute
☐ Order
Note: A one-time submission required by an order is a compliance filing and not a report (file compliance in the applicable docket)
☑ Other Portfolio Options Committee requested report
(For example, federal regulations, or requested by Staff)

Is this report associated with a specific docket/case? ☐ No ■ Yes, docket number: RG 2

List Key Words for this report. We use these to improve search results.

Smart Energy, reconciliation, POC, Portfolio Options Committee

Send the completed Cover Sheet and the Report in an email addressed to PUC.FilingCenter@puc.oregon.gov

Send confidential information, voluminous reports, or energy utility Results of Operations Reports to PUC Filing Center, PO Box 1088, Salem, OR 97308-1088 or by delivery service to 201 High Street SE Suite 100, Salem, OR 97301.

NW Natural®

250 SW Taylor Street
Portland, OR 97204

503-226-4211
nwnatural.com

March 19, 2024

VIA ELECTRONIC FILING

Public Utility Commission of Oregon
Attention: Filing Center
201 High Street SE, Suite 100
Post Office Box 1088
Salem, Oregon 97308-1088

Re: RG 2 - NW Natural's 2023 Smart Energy™ Reconciliation Report

Northwest Natural Gas Company, dba NW Natural ("NW Natural" or "Company"), files herewith its 2023 Smart Energy™ Reconciliation Report for the program year January 1, 2023 through December 31, 2023. The Reconciliation Report has been provided in response to a request from the Portfolio Options Committee, which oversaw and advised the Company's offset program when it was active. The Company will continue to provide the Reconciliation Report in the interest of transparency and support of the Smart Energy™ program.

Please address any correspondence on this matter to me with copies to the following:

eFiling
Rates & Regulatory Affairs
NW Natural
250 SW Taylor Street
Portland, Oregon 97204
Telephone: (503) 610-7330
eFiling@nwnatural.com

Sincerely,

NW Natural

/s/ Amy Schulties

Amy Schulties
Regulatory Consultant
(503) 610-7546

Enclosure

Smart Energy Product Reporting

Demand Reconciliation

For the period of January 1, 2023 – December 31, 2023

Table 1: Participating Customer Billings & Resulting Greenhouse Gas Offsets

Calendar Year	Smart Energy Funds Billed	Therms to be offset	Obligation metric tons
2023	$5,301,231.70[1]	50,555,328.04	268,297.66

11.7 pounds per therm based on the recognized standard of U.S. Energy Information Administration
188.43 therms per metric ton

Table 2: Participating Customer Billings & Resulting Greenhouse Gas Offsets and Renewable Natural Gas (RTC[2])

Calendar Year	Smart Energy Funds Billed	Therms to be addressed	Obligation Offsets mt	Obligation RTCs
2023	$95,208.06 [3]	624,478.96	3,181.55	2,497.91

Total emissions addressed: 271,611.78 metric tons CO_2e

[1] Collections, net of uncollectable allowance
[2] Transacted with Renewable Thermal Certificates
[3] Collections, net of uncollectable allowance

Smart Energy Product Reporting

Supply Reconciliation

For the period of January 1, 2023 – December 31, 2023

Table 3: Carbon Offset Obligations & Retirements

Calendar	Offset Activity	Metric Tons
Year	Obligations	220,356
2023	Retirements	113,573

Table 4: Renewable Natural Gas Obligations & Retirements

Calendar	RNG Activity	RTC[1]
Year	Obligations	2,497.91
2023	Retirements[2]	2,498

[1] Renewable Thermal Certificate – each represents one dekatherm of Renewable Natural Gas

[2] Retired February 19, 2024

Transaction Confirmation

M-RETS Renewable Thermal

Date: 02-19-2024

M-RETS Organization: NW Natural

Retiring 1846 active RTCs

Account	ID	Project	Fuel Type	Vintage	Location	Quantity	Serial Number
Smart Energy	66D5CE9B-0AC9	Wasatch Resource Recovery, LLC	Renewable Natural Gas	2020-12-01	UT	1846	T3831-Utah-12-2020-1329 FEF6-1725-3570

Transaction Notes:

On behalf of NW Natural Smart Energy Customers

Retirement reason:

Voluntary - Beneficial Ownership

Retirement reason details:

Retired for: N/A

Period: 2023

Quarter: Q4

to this retirement account

Smart Energy Retirement

Eligibilities

None

M-RETS hereby declares this transaction confirmation shall serve as proof that the above transaction was completed on the date listed.

Transaction Confirmation

M-RETS Renewable Thermal

Date: 02-19-2024

M-RETS Organization: NW Natural

Retiring 652 active RTCs

Account	ID	Project	Fuel Type	Vintage	Location	Quantity	Serial Number
Smart Energy	66D5CE9B-0AC9	Wasatch Resource Recovery, LLC	Renewable Natural Gas	2021-01-01	UT	652	T3831-Utah-01-2021-DD45B8E3-3088-3739

Transaction Notes:

On behalf of NW Natural Smart Energy Customers

Retirement reason:

Voluntary - Beneficial Ownership

Retirement reason details:

Retired for: N/A

Period: 2023

Quarter: Q4

to this retirement account

Smart Energy Retirement

Eligibilities

None

M-RETS hereby declares this transaction confirmation shall serve as proof that the above transaction was completed on the date listed.

Smart Energy Offset Project Obligations
Totals By Project

Project	Authorized		Retired		Balance	
	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons
Bettencourt Dairy - B6	131,914	145,408.80	131,914	145,408.80	0	0.00
City of Astoria - Bear Creek	100,000	110,230.00	100,000	110,230.00	0	0.00
Castelanelli Brothers Dairy - Castelanelli	11,295	12,450.48	11,295	12,450.48	0	0.00
Element Markets - Davis LFG	403,920	445,241.02	416,147	458,718.84	12,227	13,477.82
ClimeCo LLC - Everett Composting	61,585	67,885.14	42,763	47,137.65	(18,822)	(20,747.49)
Great Bear Carbon Credit Corporation - Great Bear Haida Gwaii	137,500	151,566.25	137,500	151,566.25	0	0.00
Great Bear Carbon Credit Corporation - Great Bear North & Central-Mid Coast	137,500	151,566.25	137,500	151,566.25	0	0.00
Revolution Energy Solutions - Lochmead Farms	17,199	18,958.46	17,199	18,958.46	0	0.00
Farm Power - Lynden	20,000	22,046.00	20,000	22,046.00	0	0.00
Farm Power - Misty Meadow	136,556	150,525.68	138,768	152,963.97	2,212	2,438.29
Farm Power - Misty Meadow 2	45,000	49,603.50	0	0.00	(45,000)	(49,603.50)
J.R. Simplot - Moses Lake	126,476	139,414.50	128,320	141,447.14	1,844	2,032.64
J.R. Simplot - Moses Lake 2	155,037	170,897.29	125,037	137,828.29	(30,000)	(33,069.00)
Revolution Energy Solutions - Oak Lea	11,507	12,684.16	11,507	12,684.17	0	0.01
Farm Power - Rexville	71,246	78,534.43	71,246	78,534.47	0	0.04
Farm Power - Rexville 2	16,427	18,107.47	16,427	18,107.48	0	0.01
Roseburg LFG Energy - Roseburg LFG	27,405	30,208.53	27,405	30,208.53	0	0.00
Roseburg LFG Energy - Roseburg LFG 2	60,418	66,598.76	9,204	10,145.57	(51,214)	(56,453.19)
Shaan-Seet, Incorporated - Shaan Seet IFM	120,000	132,276.00	120,000	132,276.00	0	0.00
Farm Power - Tillamook	95,487	105,255.32	95,487	105,255.32	0	0.00
Farm Power - Tillamook 2	30,000	33,069.00	0	0.00	(30,000)	(33,069.00)
TMF Biofuels - TMF Biofuels	15,000	16,534.50	15,000	16,534.50	0	0.00
Mass Energy Works - Van Warmerdam	30,740	33,884.70	30,740	33,884.70	0	0.00
Intrepid Technology Resources - Whitesides Dairy	17,067	18,812.95	17,067	18,812.95	0	0.00
Port Blakely - Winston Creek IFM	150,000	165,345.00	150,000	165,345.00	0	0.00
Total:	**2,129,279**	**2,347,104.19**	**1,970,526**	**2,172,110.81**	**(158,753)**	**(174,993.38)**

Smart Energy Offset Projects

Retirement Detail (1/1/2023 - 12/31/2023)

Farm Power - Misty Meadow | **Site Location: Tillamook** | **Project Type:** Dairy

Estimated Total Project Volume	
Metric Tonnes	Short Tons
93,100	**102,624.13**

Standard: Climate Action Reserve | Registry: Climate Action Reserve | Duration: 10 years

Protocol: U.S. Livestock Project Protocol, Version 3.0 | Crediting Period: Initial | Greenhouse Gas: Methane

Project Authorizations	Authorized		Retired		Balance	
	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons
Buyer: Smart Energy	**136,556**	**150,525.68**	**138,768**	**152,963.97**	**2,212**	**2,438.29**

Project Retirements

Vintage	Reporting Start Date	Reporting End Date	Verifier	Verification Start Date	Verification End Date	Metric Tonnes	Short Tons	Retirement Effective Date
2021	1/1/2021	12/31/2021	Ruby Canyon Engineering	11/7/2022	12/22/2022	9,987	11,008.67	2/24/2023
	Serial Number: CAR-1-US-996-5-212-OR-2021-7446-10001 to 19987							
	Registry Listing URL:							
2021	1/1/2021	12/31/2021	Ruby Canyon Engineering	11/7/2022	12/22/2022	10,000	11,023.00	2/24/2023
	Serial Number: CAR-1-US-996-5-212-OR-2021-7446-1 to 10000							
	Registry Listing URL:							
2022	1/1/2022	12/31/2022	Ruby Canyon Engineering	5/19/2023	10/13/2023	17,435	19,218.60	11/15/2023
	Serial Number: CAR-1-US-996-5-212-OR-2022-7869-1 to 17435							
	Registry Listing URL:							

Farm Power - Rexville 2	Site Location: Mt. Vernon	Project Type: Dairy

Estimated Total Project Volume		Standard:	Climate Action Reserve	Registry:	Climate Action Reserve	Duration:	10 years
Metric Tonnes	Short Tons	Protocol:	Climate Action Reserve Livestock Protocol	Crediting Period:	Second	Greenhouse Gas:	Methane
100,000	**110,230.00**						

Project Authorizations	Authorized		Retired		Balance	
	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons
Buyer: Smart Energy	**16,427**	**18,107.47**	**16,427**	**18,107.48**	**0**	**0.01**

Project Retirements

Vintage	Reporting Start Date	Reporting End Date	Verifier	Verification Start Date	Verification End Date	Metric Tonnes	Short Tons	Retirement Effective Date
2020	8/12/2020	8/11/2021	Ruby Canyon Engineering	4/14/2022	8/4/2022	2,209	2,434.98	2/24/2023
	Serial Number: CAR-1-US-416-5-874-WA-2020-7165-1 to 2209							
	Registry Listing URL:							
2021	8/12/2020	8/11/2021	Ruby Canyon Engineering	4/14/2022	8/4/2022	5,123	5,647.08	2/24/2023
	Serial Number: CAR-1-US-416-5-874-WA-2021-7166-1 to 5123							
	Registry Listing URL:							

Roseburg LFG Energy - Roseburg LFG 2	Site Location: Roseburg	Project Type: LFG

Estimated Total Project Volume	
Metric Tonnes	Short Tons
150,000	**165,345.00**

Standard: Climate Action Reserve | Registry: Climate Action Reserve | Duration: 10 years

Protocol: Landfill Protocol version 6.0 | Crediting Period: Second | Greenhouse Gas: Methane

Project Authorizations	Authorized		Retired		Balance	
	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons
Buyer: Smart Energy	**60,418**	**66,598.76**	**9,204**	**10,145.57**	**(51,214)**	**(56,453.19)**

Project Retirements

Vintage	Reporting Start Date	Reporting End Date	Verifier	Verification Start Date	Verification End Date	Metric Tonnes	Short Tons	Retirement Effective Date
2021	12/13/2021	12/31/2022	SCS Global Services	7/25/2023	10/17/2023	418	460.76	12/19/2023
	Serial Number: CAR-1-US-886-4-670-OR-2021-7903-1 to 418							
	Registry Listing URL:							
2022	12/13/2021	12/31/2022	SCS Global Services	7/25/2023	10/17/2023	8,786	9,684.81	12/19/2023
	Serial Number: CAR-1-US-886-4-670-OR-2022-7902-1 to 8786							
	Registry Listing URL:							

Shaan-Seet, Incorporated - Shaan Seet IFM | **Site Location: Prince of Wales Island** | **Project Type:** IFM

Estimated Total Project Volume	
Metric Tonnes	Short Tons
654,347	**721,286.70**

Standard: American Carbon Registry | Registry: Amercan Carbon Registry | Duration: 20 years

Protocol: ACR Standard Version 6 | Crediting Period: Initial | Greenhouse Gas: CO2

Project Authorizations	Authorized		Retired		Balance	
	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons
Buyer: Smart Energy	**120,000**	**132,276.00**	**120,000**	**132,276.00**	**0**	**0.00**

Project Retirements

Vintage	Reporting Start Date	Reporting End Date	Verifier	Verification Start Date	Verification End Date	Metric Tonnes	Short Tons	Retirement Effective Date
2021	1/10/2021	1/9/2022	S&A Carbon	9/28/2022	1/19/2023	40,000	44,092.00	2/24/2023

Serial Number: ACR-US-534-2021-1762-1 to 40000

Registry Listing URL:

Farm Power - Tillamook	Site Location: Tillamook	Project Type: Dairy

Estimated Total Project Volume		Standard:	Climate Action Reserve	Registry:	Climate Action Reserve	Duration:	10 years
Metric Tonnes	Short Tons	Protocol:	U.S. Livestock Project Protocol, Version 3.0	Crediting Period:	Initial	Greenhouse Gas:	Methane
88,400	**97,443.32**						

Project Authorizations	Authorized		Retired		Balance	
	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons
Buyer: Smart Energy	**95,487**	**105,255.32**	**95,487**	**105,255.32**	**0**	**0.00**

Project Retirements

Vintage	Reporting Start Date	Reporting End Date	Verifier	Verification Start Date	Verification End Date	Metric Tonnes	Short Tons	Retirement Effective Date
2021	1/1/2021	12/31/2021	Ruby Canyon Engineering	11/7/2022	12/22/2022	8,800	9,700.24	2/24/2023
	Serial Number: CAR-1-US-988-5-212-OR-2021-7447-1 to 8800							
	Registry Listing URL:							
2022	1/1/2022	12/31/2022	Ruby Canyon Engineering	5/19/2023	8/15/2023	10,815	11,921.37	10/27/2023
	Serial Number: CAR-1-US-988-5-212-OR-2022-7845-1 to 10815							
	Registry Listing URL:							

Smart Energy Offset Vintage Obligations

Totals By Project and Authorization

Begin Date:#Name? End Date:#Name?

ClimeCo LLC - Everett Composting, Site Location: Everett WA — Project Type: OWC

AU-CG-EC-1.2 7/28/2023 Vintage	Authorized		Retired		Balance	
	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons
2022	19,500	21,494.85	0	0.00	(19,500)	(21,494.85)
Total Auth:	**19,500**	**21,494.85**	**0**	**0.00**	**(19,500)**	**(21,494.85)**
Project Total:	**19,500**	**21,494.85**	**0**	**0.00**	**(19,500)**	**(21,494.85)**

Farm Power - Misty Meadow, Site Location: Tillamook OR — Project Type: Dairy

AU-FP-MM-1.2.5 2/21/2023 Vintage	Authorized		Retired		Balance	
	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons
2021	9,987	11,008.67	9,987	11,008.67	0	0.00
Total Auth:	**9,987**	**11,008.67**	**9,987**	**11,008.67**	**0**	**0.00**

AU-FP-MM-1.2.6 11/1/2023 Vintage	Authorized		Retired		Balance	
	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons
2022	7,435	8,195.60	7,435	8,195.60	0	0.00
Total Auth:	**7,435**	**8,195.60**	**7,435**	**8,195.60**	**0**	**0.00**
Project Total:	**17,422**	**19,204.27**	**17,422**	**19,204.27**	**0**	**0.00**

Farm Power - Misty Meadow 2, Site Location: Tillamook OR — Project Type: Dairy

AU-FP-MM-2.3 7/28/2023 Vintage	Authorized		Retired		Balance	
	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons
2023	15,000	16,534.50	0	0.00	(15,000)	(16,534.50)
2024	15,000	16,534.50	0	0.00	(15,000)	(16,534.50)
2025	15,000	16,534.50	0	0.00	(15,000)	(16,534.50)
Total Auth:	**45,000**	**49,603.50**	**0**	**0.00**	**(45,000)**	**(49,603.50)**
Project Total:	**45,000**	**49,603.50**	**0**	**0.00**	**(45,000)**	**(49,603.50)**

Smart Energy Offset Vintage Obligations

Totals By Project and Authorization

Begin Date:#Name? End Date:#Name?

Farm Power - Rexville 2, Site Location: Mt. Vernon WA — **Project Type: Dairy**

AU-FP-RX-2.2 2/21/2023 Vintage	Authorized		Retired		Balance	
	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons
2020	2,209	2,434.98	2,209	2,434.98	0	0.00
2021	5,123	5,647.08	5,123	5,647.08	0	0.00
Total Auth:	**7,332**	**8,082.06**	**7,332**	**8,082.06**	**0**	**0.00**
Project Total:	**7,332**	**8,082.06**	**7,332**	**8,082.06**	**0**	**0.00**

Roseburg LFG Energy - Roseburg LFG 2, Site Location: Roseburg OR — **Project Type: LFG**

AU-RE-RLG-2.2 7/28/2023 Vintage	Authorized		Retired		Balance	
	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons
2022	12,000	13,227.60	8,786	9,684.81	(3,214)	(3,542.79)
2023	12,000	13,227.60	0	0.00	(12,000)	(13,227.60)
2024	12,000	13,227.60	0	0.00	(12,000)	(13,227.60)
2025	12,000	13,227.60	0	0.00	(12,000)	(13,227.60)
2026	12,000	13,227.60	0	0.00	(12,000)	(13,227.60)
Total Auth:	**60,000**	**66,138.00**	**8,786**	**9,684.81**	**(51,214)**	**(56,453.19)**
AU-RE-RLG-2.3 12/13/2023 Vintage	**Authorized**		**Retired**		**Balance**	
	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons
2021	418	460.76	418	460.76	0	0.00
Total Auth:	**418**	**460.76**	**418**	**460.76**	**0**	**0.00**
Project Total:	**60,418**	**66,598.76**	**9,204**	**10,145.57**	**(51,214)**	**(56,453.19)**

Smart Energy Offset Vintage Obligations

Totals By Project and Authorization

Begin Date:#Name? End Date:#Name?

Shaan-Seet, Incorporated - Shaan Seet IFM, Site Location: Prince of Wales Island **Project Type: IFM**

AU-SSC-SS-1.2 2/21/2023 Vintage	Authorized		Retired		Balance	
	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons
2021	40,000	44,092.00	40,000	44,092.00	0	0.00
Total Auth:	**40,000**	**44,092.00**	**40,000**	**44,092.00**	**0**	**0.00**
Project Total:	**40,000**	**44,092.00**	**40,000**	**44,092.00**	**0**	**0.00**

Farm Power - Tillamook, Site Location: Tillamook OR **Project Type: Dairy**

AU-FP-TK-1.2.4 10/3/2023 Vintage	Authorized		Retired		Balance	
	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons
2022	684	753.97	684	753.97	0	0.00
Total Auth:	**684**	**753.97**	**684**	**753.97**	**0**	**0.00**
Project Total:	**684**	**753.97**	**684**	**753.97**	**0**	**0.00**

Farm Power - Tillamook 2, Site Location: Tillamook OR **Project Type: Dairy**

AU-FP-TK-2.3 7/28/2023 Vintage	Authorized		Retired		Balance	
	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons	Metric Tonnes	Short Tons
2023	10,000	11,023.00	0	0.00	(10,000)	(11,023.00)
2024	10,000	11,023.00	0	0.00	(10,000)	(11,023.00)
2025	10,000	11,023.00	0	0.00	(10,000)	(11,023.00)
Total Auth:	**30,000**	**33,069.00**	**0**	**0.00**	**(30,000)**	**(33,069.00)**
Project Total:	**30,000**	**33,069.00**	**0**	**0.00**	**(30,000)**	**(33,069.00)**

Grand Total:	**220,356**	**242,898.41**	**74,642**	**82,277.88**	**(145,714)**	**(160,620.53)**

CERTIFICATE OF SERVICE

I hereby certify that I caused to be served the foregoing **DECLARATION OF KELSEY R. EBERLY IN SUPPORT OF PLAINTIFFS' RESPONSE IN OPPOSITION TO DEFENDANTS' SPECIAL MOTION TO STRIKE FIRST AMENDED COMPLAINT** on the following named person(s) on the date indicated below:

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DATED this 10th day of March, 2025.

By: /s/ Nadia H. Dahab
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Attorneys for Plaintiffs

IN THE CIRCUIT COURT OF THE STATE OF OREGON

FOR THE COUNTY OF MULTNOMAH

NICOLAS BLUMM AND CLAIRE GATES, INDIVIDUALLY AND ON BEHALF OF ALL OTHER SIMILARLY SITUATED, Plaintiffs-Respondents, vs. NORTHWEST NATURAL GAS COMPANY AND NORTHWEST NATURAL HOLDING COMPANY, Defendant-Appellant.	Court No. 24CV48490 Appeal No.: A189258 **Motion**

TRANSCRIPT OF PROCEEDINGS

Volume 1 of 1 (pages 16 - 150)

APPEARANCES:
For the Plaintiff: NADIA DAHAB, Esq.
KELSEY EBERLY, Esq.
For the Defendant: CLIFFORD DAVIDSON, Esq.
KENT MAYO, Esq.
ZACH FADER, Esq.

BE IT REMEMBERED THAT the above-entitled matter came on regularly for hearing before the Honorable Benjamin Souede, Judge of the Circuit Court of the County of Multnomah, State of Oregon, commencing on the 7th day of August 2025.

Proceedings recorded on FTR audio recording; transcript provided by Digital Transcriber.

(Call to order at 1:37 p.m.)

THE COURT: Good afternoon, everybody. You're welcome to have a seat. I thought about a wheelbarrow, but decided against it. We are on the record. This is the matter of Blumm, et al v. Northwest Natural Gas Company, et al. This is case number 24CV48490. This is the time set for a hearing both on Defendant's motion to dismiss pursuant to ORCP 21A, as well as Plaintiff's -- I'm sorry -- Defendant's special motion to strike. I think we have everybody we're expecting to have in person. No one's arguing remotely.

Let me invite counsel who are appearing this afternoon to state their appearances, beginning with counsel for Plaintiffs.

MS. DAHAB: Good afternoon, Your Honor, Nadia Dahar, bar number 125630, on behalf of Plaintiffs.

MS. EBERLY: Good afternoon, Your Honor. Kelsey Eberly, appearing pro hac vice, on behalf of Plaintiffs.

THE COURT: Was that Eberly or Everly?

MS. EBERLY: Eberly, thank you.

THE COURT: Eberly, thank you.

Ms. Dahab, Ms. Eberly, welcome to you both.

THE COURT: And appearing for Defendants?

MR. MAYO: Yeah, good afternoon, Your Honor, Kent Mayo, with Baker Botts, appearing pro hac vice for Defendants.

THE COURT: Mr. Mayo, thank you.

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MR. DAVIDSON: Good afternoon, Your Honor, Cliff Davidson, bar number 125378, on behalf of Defendants.

THE COURT: Mr. Davidson, thank you.

Did you want to state an appearance?

MR. FADER: Yeah, Zach Fader appearing for Northwest Natural.

THE COURT: Thanks very much, Counsel. Not a potted plant.

All right, a couple of things, preliminarily. First, I think I've read everything. Certainly, my -- I guess I don't bill hours anymore, but if I kept track, it would suggest that if I hadn't read everything, there would be a problem. With that said, if you refer to something and somehow I missed it, I'm going to let you know that, but if you are talking, and whether or not I appear to be paying attention, unless I'm telling you that I haven't seen something, I have seen it, I have read it. And I flatter myself -- though, really, flattery to the lawyers -- I think I understand everything everybody is telling me. We'll find out, I guess.

The second thing is, I don't think this is on anyone's radar, and it wasn't on mine until it was, and I just wanted to raise it. Obviously, as required by statute, I live in Multnomah County. I am, therefore, almost by definition, a Northwest Natural Gas customer. I have looked, as best I can tell, I have never participated in the program at issue. If I

have, I don't know it. If I did, I declaim any rights to anything that might ever be coming at the conclusion of this case to people who are Northwest Gas -- Natural Gas Company customers. Does anyone have any problem with any of that?

MS. DAHAB: Plaintiffs do not, Your Honor.

THE COURT: Okay.

MS. DAHAB: Thank you.

MR. MAYO: No, Your Honor.

THE COURT: Okay. Just wanted to address it. There is a -- it's a weird circumstance where I suspect anyone who is not parachuting into this job is going to be in a similar place, so we're not quite at the rule of necessity, but close enough. It makes the most sense in my head, I think, to hear argument from everybody on the motion to dismiss and then to hear, separately, everyone's argument on the special motion to strike, but if folks just want to take one swing at it, that's fine with me, also. I don't know if you guys have talked about it, or if in one party's collective mind, some other plan made sense. I'm not insisting. That was just what made sense in my head.

MR. MAYO: We had not talked about it, Your Honor.

THE COURT: Okay.

MR. MAYO: I think, at the hearing, we talked, perhaps, about the motion to strike going first.

THE COURT: Oh, did we talk about that? Okay.

MS. DAHAB: I think we did at the status conference.
THE COURT: Okay, that's fine.
MR. MAYO: Yeah.
THE COURT: My point was less the ordering of the motions --
MR. MAYO: Okay.
MS. DAHAB: Okay.
THE COURT: -- and more doing them separately.
MR. MAYO: Yeah, I think separately --
THE COURT: Okay.
MS. DAHAB: Yes.
MR. MAYO: Yes, yeah, we agree to that.
THE COURT: Yeah, I'm indifferent as to order. The parties seem to prefer the special motion to strike. That's fine.
MR. MAYO: Okay.
THE COURT: All right, it is Defendant's motion. You're welcome to proceed.
MR. MAYO: Thank you, Your Honor. We do have a slide deck that we're planning to use.
THE COURT: Sure.
MR. MAYO: Would you like a physical copy of that?
THE COURT: That would actually be great.
MR. MAYO: Okay.
THE COURT: Thank you. If only because I can read

ahead.

MR. MAYO: Your Honor, is it okay if I do this seated? I --

THE COURT: I would encourage you to.

MR. MAYO: Okay. Okay. Your Honor, I will be arguing in support, today, of granting Northwest Natural's special motion to strike under Oregon's anti-SLAPP statute 31.150. I'm going to be addressing the topics that are here on the slide. We'll catch up to this one. And as you've read everything, if there's something, at any point, that you want to jump to, please feel free to direct me, but otherwise I'll be moving through in the stepwise order --

THE COURT: Thank you.

MR. MAYO: -- consistent with the way that the statute works. But I'd like to start first -- because the allegations in this case target Northwest Natural's Spartan Energy Program that it makes available to the customers on a voluntary basis, I'd like to start with some background explanation about Northwest Natural and the Smart Energy program to lay some groundwork for the legal questions in the motion.

First, Northwest Natural is a regulated utility overseen by the PUC with respect to the rates it can charge and its provision of natural gas services to customers. Therefore, it has a duty to serve customers, and in turn, is entitled to a

fair rate approved by the Commission. The customer rates and service obligations are incorporated into a company-specific document called a tariff, which is approved by the Commission. Why does this matter here?

The regulated status makes Northwest Natural different from a typical commercial entity selling goods or services, who can make its own unilateral decisions about how to operate and what to charge. In contrast, Northwest Natural does not operate as a true free market participant. Northwest Natural cannot unilaterally change the prices it charges for its natural gas service, and it cannot implement programs like Smart Energy that would result in additional charges to customers without PUC approval.

Second, the Smart Energy program is a voluntary program made available to existing Northwest Natural Gas customers. When customers use natural gas in their home appliances, the burning of that gas creates a certain amount of carbon emissions. The basic premise of the Smart Energy program is a straightforward response to that. Northwest Natural provides its customers with a chance to choose to contribute money to purchase verified carbon offsets that mitigate those carbon emissions.

Northwest Natural first received PUC approval and started implementing the Smart Energy program in 2007. That was, and still is, a voluntary decision by Northwest Natural.

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There is no regulatory requirement. It's modeled after programs that electric utilities are required by rule to implement.

The terms of the Smart Energy program are specifically set out in a specific section of the Northwest Natural Tariff approved by the Commission and identified as schedule 400. That schedule describes -- I'm going to read this because it's important, describes the Smart Energy program as a "Voluntary program that enables all customers to mitigate greenhouse gas emissions associated with their natural gas use by purchasing high quality, project-based emission reductions from offset projects and renewable natural gas projects. It also requires that all offsets purchased on behalf of customers will be verified and retired."

THE COURT: Since we're on the tariff -- and I don't mean to --

MR. MAYO: Sure.

THE COURT: I do mean to interrupt.

MR. MAYO: Please.

THE COURT: So why does why does the tariff matter? The Plaintiffs make the point repeatedly it doesn't matter what the tariff says or doesn't say, what matters is what Northwest Natural said to its customers and then what it did compared to what it said it would do. Why does the tariff matter?

MR. MAYO: Well, the tariff actually sets the

backbone of what this program is all about.

THE COURT: Sure.

MR. MAYO: So when they're talking to their customers about enrolling in the Smart Energy program, and when their customers enroll in a Smart Energy program, they are enrolling in that program that's been approved by the PUC and is set forth in schedule 400. There's no separate obligation that is being signed up for. It is the Smart Energy program. That's all that there is.

THE COURT: Right.

MR. MAYO: And the tariff sets out, then, what the company is supposed to do to fulfill its obligations under the program, and that's they need to go out and verify and retire offsets, and that's, I think, different than what the Plaintiffs are suggesting. The Plaintiffs seem to be suggesting there's a kind of obtuse obligation we have to go out and find emissions anywhere we can, or do whatever we can to get them. That's not what the program says.

THE COURT: So both in terms of the special motion to strike -- and I know we're going to spend significant time on the tariff with respect to the contractual -- the motion to dismiss --

MR. MAYO: Sure.

THE COURT: -- with respect to the -- but the contractual claim for relief -- but Northwest Natural's

fundamental point with respect to the tariff is its obligations to its customers vis-a-vis the Smart Energy program are those which are laid out in the tariff, nothing more, nothing less; is that right?

MR. MAYO: Essentially that's right, because as we just talked about, I mean, they are a regulated utility that doesn't have the opportunity, or ability, to operate independent of the PUC approving what they can do. They can't go out and start a different program and spend money on it without the PUC telling them that that's okay.

THE COURT: Okay. Thank you.

MR. MAYO: Sure. So schedule 400, just one more point. I think it's important. It shows that there's no profit in this for Northwest Natural. It's a nonprofit-generating program, and it's -- Northwest Natural is allowed to only recover their actual program administration costs. The mechanics of this are set up -- and you may know this already, so stop me if I'm going on, but basically, you have this opportunity, as a customer, to sign up for either a fixed rate or an average home option, which gives you an opportunity to pay a set monthly bill based on the amount of gas used by the average home, where there's a variable rate or climate neutral option, where you pay a variable monthly charge based on the amount of gas used by that specific customer in each month.

Following approval by the PUC, an additional source

of emission credits was added to the Smart Energy program effective January 1st, 2024. These are emission credits generated by the use of a renewable natural gas we call RNG, which is organic matter captured from sources like landfills that can be processed and then used as a substitute for natural gas, and the credits that are associated with those are called renewable thermal certificates, so RTCs, and those can be used similarly to carbon emission offsets to mitigate emissions.

And Plaintiffs, here, important to note, they had already left the program before those RNG credits even became available for use. But there are multiple ways that customers can enroll in this Smart Energy program. They can either do it by mail -- that's what Plaintiff Gates did -- they can do it by phone, as Plaintiff Blumm did, or they can do it online.

Third, Northwest Natural complies with its obligation to verify and retire offsets by contracting with independent third-party verifiers that follow well-recognized and accepted protocols, so it's important here to understand what Northwest Natural's role is in this. Essentially, what they do, because there is a robust and well-developed market out there for these voluntary carbon emissions, both in the US and worldwide, they went out -- because they don't have their own personal experience in this area, or deep experience -- they went out and they found the experts to do the verification of these emission offsets for them.

So beginning from 2007, they signed up with the Climate Trust, which is a nationally-recognized climate verifier here in Portland, and essentially, Climate Trust goes out and procures the verified emission offsets for Northwest Natural. And the Climate Trust, in turn, facilitates the fact that they're getting verified offsets by going through other experts in the field, known as registries, and they work with those registries to make sure that the projects they're looking at are actually producing verified emissions.

And those verifications are carried out to well-established protocols and systems that are commonly used in the industry. And these registries include, for example, Climate Action Reserve, American Carbon Registry, and we'll talk about this later, but these are the same registries that are being used by approved by and used by regulatory agencies across the Country.

So a listing of the projects that Northwest Natural currently invests in is shown on this slide, and many of the offset projects here, listed, are dairies. And for those projects, Smart Energy contributes funds to help finance technology that captures methane produced at those dairy farms to prevent the methane from entering the atmosphere.

And as Plaintiffs recognized in their first amended complaint, these types of projects are recognized, and even encouraged, by federal and state pollution trading programs,

including the federal EPA Renewable Fuel Standard and similar programs in Oregon, California, and Washington, and there are specific protocols that are used to verify that the emission benefits from these specific projects are actually credible, and this is specifically directed towards these biogas methane projects, and some of the well-known protocols that are developed by this are developed by Climate Action Reserve, and they're the same -- those are the same protocols that are used to verify Northwest Natural's offsets.

So the takeaway from this is it certainly isn't the case that Northwest Natural is an outlier in any way by purchasing these carbon emission offsets on the market and getting them verified by third-party experts, and that's a reasonable way to approach this, because they don't have that expertise themselves. And so they've -- what they've done, at the end of the day, is provide verified and retired emission offsets exactly as the tariff tells them to do.

THE COURT: I don't understand any claim from Plaintiffs to suggest that Northwest Natural hasn't done -- hasn't acted in accordance with the tariff, do you?

MR. MAYO: Actually, you're right. They haven't said that, which we think is, actually, defeats their breach of contract claim.

THE COURT: Right.

MR. MAYO: Yeah.

THE COURT: No, I know we'll get there.

MR. MAYO: Yeah, yeah.

THE COURT: But to the extent you say we've done everything -- we've complied with the tariff.

MR. MAYO: Um-hum.

THE COURT: I don't know whether Plaintiff would agree with that or not, but at the very least, I've not seen Plaintiffs suggest otherwise.

MR. MAYO: Well, that's accurate. In fact, Plaintiffs have not acknowledged the tariff to any great extent. They have not acknowledged all of the programs that are available on our website. They've not acknowledged that we do this third-party verification. They've not acknowledged any of those things in their entire set of arguments, which, again, to us, that's the critical issue here. I mean, we are doing everything we can within a recognized market that the -- both the climate verifiers and regulators like California and EPA think is okay.

THE COURT: Except, well, Plaintiffs say you're doing more than that. You're speaking about the program in a particular way. You're inducing people to sign up for the program by making particular assurances, or guarantees, or promises, or that is to say, the party, in the papers, at least, the parties seem to be -- it's not that I don't think you don't understand each other -- I think you do -- but one

major difference between the parties' positions is that you all, I think, are taking the position of we are obliged to do what the -- this is all about are we in compliance with the tariff or not? And they all are essentially, as you say, moving past the tariff and saying when you engage with consumers, you have other obligations, and you're breaching those other obligations.

And so is it your position, at least as to the special motion to strike, that those other obligations don't exist, or do they not matter in this case, or are they nonactionable, or are they not pleaded correctly? How do we engage those -- the parties? How do the -- how does each party's position, excuse me, engage with the other on that point?

MR. MAYO: Sure. Well, I mean, there's two sets of claims, right? I mean, there's the UTPA claims and there's the breach of contract claims --

THE COURT: Sure.

MR. MAYO: -- and I think, if I'm stating this correctly, the breach of contract claims are actually saying that we promise them that we would give them offsets, and we didn't give them good offsets.

THE COURT: Right.

MR. MAYO: So you know, our compliance with the tariff, which requires verified offsets, means that we have

done that. So in that sense, that is not a question of what we told other people in our minds. That's our contract.

THE COURT: Okay.

MR. MAYO: Now, they've said you can make a contract, that there are 90,000 separate contracts out there because we've had 90,000 people enrolled, so everyone gets their own contract. And I don't know what those terms are, but if they're suggesting that those terms put us to another level of requirement, I think we disagree with that.

THE COURT: Okay.

MR. MAYO: But then on the UTPA side, I think the question is more they're alleging that what we're saying about those offsets is misrepresenting their characteristics, and again, I mean, that's basically a difference of opinion. I mean, this is an issue where they --

THE COURT: Which is why we have juries.

MR. MAYO: Well, except for it's also -- it's a policy dispute, I would say. Maybe that's a better way to say it, a policy dispute, and we're here, in part, because we believe that they're looking at the things that we're saying and trying to keep us from saying them, and that's why we have filed a special motion to strike. I mean, the -- again, the misrepresentation, allegedly, is that we haven't provided credible offsets because we haven't covered additionality and all these other things, but we have. I mean, it's right on our

website. These are exactly the protocols that we follow. The same ones that their expert flags are the protocols that we follow. So there is a disconnect, but we think it's because they're ignoring our actual actions in the context of trying to characterize what we do as misrepresenting things.

THE COURT: Okay.

MR. MAYO: So.

THE COURT: Thank you.

MR. MAYO: Yeah. I want to just go, very quickly, through this because I think -- I do think it's important as to how available this information is about what we're doing, so this is on --

THE COURT: You guys spent a lot of time on that. Why is it important?

MR. MAYO: Well, it's important because if the question is that we're somehow not being forthright or we're misrepresenting how we actually approach doing our emission offsets and doing our verification, it's all right there.

THE COURT: And I get to look at that why?

MR. MAYO: You get to look at that --

THE COURT: In considering these motions?

MR. MAYO: Sure.

THE COURT: Because certainly step two, if we get that far on anti-SLAPP, right?

MR. MAYO: Sure. Well, you get to look at the

website because in their first amended complaint, they cited our website multiple times. They cited some, but not all of the pages that we're citing, but they're, basically, all of the pages are within the same family of the Smart Energy website, and so for purposes of completeness, it's important that that information be included.

THE COURT: Okay.

MR. MAYO: And we have some case sites for that. I mean, there's --

THE COURT: Yeah.

MR. MAYO: That's not an out-there concept.

THE COURT: Right. Go ahead, please.

MR. MAYO: So basically let's go to, I guess, slide 13. So here's the About Us website for Northwest Natural, and you can see there's a Smart Energy program clicker. I'm going to use the wrong lingo here -- my 15-year-old will kill me for this -- whatever, the link, I guess, is for Smart Energy program, and you have five different things you can go in and find out about. You click on those links, and you can find full project descriptions, everything we're doing, and where we're doing it. You click further, you get to see all of our explanations as to how we choose our projects and what criteria we're applying.

Many of these things go directly to the things that they say we haven't done. And then you also can further

explore the different steps that we take, so it's all right there, and that's important because for them to say that we're misrepresenting things would be for them to ignore the availability of this information. When we get to this later, when we talk about their evidence, one of the reasons why we have a problem with their presentation of evidence is because they -- their expert ignores this stuff, and their Plaintiff, lead Plaintiff, the only Plaintiff in the UTPA, was told this on the phone but never followed up, so again, we're not hiding --

THE COURT: And he denies a phone call at all.

MR. MAYO: Well, I don't know. I mean, there's been no response to our -- to that evidence, but.

THE COURT: Certainly, he describes something other than a phone call.

MR. MAYO: He describes something other than a phone call in his actual declaration. That's right. So I mean, this is a summary. I'm not going to read through it for you, but this is the summary of things that came out of this background that are important, and they're important, when we get to the different legal steps in this process, to know that this is a different kind of program. This is not a truly commercial type program, and that's going to be important when we look at the anti-SLAPP motion.

So with that background, I'm going to move into the

specific reasons why we believe the Court should grant the anti-SLAPP motion. In this case, Plaintiffs are trying to impose liability on Northwest Natural for making statements about the effectiveness of its Smart Energy program in addressing the important issue of climate change and how customers can contribute to mitigating emissions.

But as we just talked about, this is really more of a policy dispute under the guise of a lawsuit. Here, the Plaintiffs and their supporters don't like large dairy farms, and they don't like projects that capture methane and produce carbon emission offsets of those dairy farms. They're entitled to voice those policy positions, but those positions here are very much in dispute. Their own complaint acknowledges the host of government regulators that accept and encourage this very type of offset, and they shouldn't be allowed to lever this type of policy dispute into a presumption of some sort of deceptive or unreasonable conduct by Northwest Natural. In fact, the dispute itself regarding these important public issues is exactly the type of circumstance in which the anti-SLAPP statute is intended to apply, and the Court needs to scrutinize this.

THE COURT: Well, they're not they're not suing Northwest Natural for Northwest Natural's view of climate change, or of carbon emissions, or of capturing them, right? There are no claims that say Northwest Natural holds this

political or scientific belief, and now, that's why we're suing them, right? They're suing you for the things you told customers.

MR. MAYO: Right, but the things we told customers were about climate change, about how this mitigation of their emissions works, what the protocols are, and how effective they are. The very things that they're disputing, those are the things that we were talking about with customers.

THE COURT: And the fact that those statements are directed to customers for the purpose of inducing sales does not, in your view, take us away from that first step on an anti-SLAPP (indiscernible)?

MR. MAYO: Well, no, and I mean, we don't agree that they're made for the purpose of inducing sales. I mean, we don't agree that this program falls into the same category as a normal sale of a good or service.

THE COURT: Okay.

MR. MAYO: I mean, we can --

THE COURT: We'll get there.

MR. MAYO: Yeah.

THE COURT: We'll get there.

MR. MAYO: Well, so let me -- and again, this might be, I mean, I think you're well familiar with this, but basically, this statute is a burden-shifting exercise, and you know, we bear the burden in that first step, step one, what we

would call step 1-A, which is whether there's protected conduct under subsection 2, and then step 1-B, did the claims arise out of that conduct? And with the recent update to the statute, there's now this commercial speech exemption in subsection 3. We're referring to that as step 1-C, just for clarity, but it's critical to note that the burden shifts there, and that that's a burden on them because an exemption to a statute, so they need to prove that.

And then if you satisfy that step 1, you get to step 2, and the burden fully shifts to Plaintiffs, and they've got to make their showing. And it's critical to note, and I think it's well-recognized, that given the importance of the speech at issue at each stage, the courts have recognized that the statute has to be liberally construed in favor of the speech that it's trying to protect, and that was the Cider Riot case from 2024. It's also directly in the statute at 31-152(6).

So we believe Northwest Natural can demonstrate here that it's satisfied step 1-A and step 1-B. Plaintiffs have failed on step1-C, and they've also failed on step, and as we already flagged, we think this is in significant part due to the demonstrably incorrect declaration of Mr. Blumm. So let me just grab a quick drink, and I'll move on.

THE COURT: Sure.

MR. MAYO: So with respect to step 1-A, here Northwest Natural has demonstrated that the complaint targets

Northwest Natural statements and conduct that are protected under 152(2)(C). That section specifically protects statements made in a place open to the public, or a public forum, in connection with an issue of public interest. And if Plaintiffs themselves have acknowledged the term "issue of public interest" has been construed very broadly by the courts in Oregon, there are a number of Oregon cases where relatively narrow statements or conduct have been determined to implicate an issue of public interest.

On the slide here, we say a review of a wedding venue, discussions of a golf course, a single shooting, is the Neumann, Mullen (phonetic), and Tokarski (phonetic) cases. We think the statements here, consisting of statements by a natural gas producer addressing ways to mitigate carbon emissions and address climate change and how their customers can participate in that, are of far greater public significance than statements at issue in the cases noted above where this element was satisfied.

We also believe that this satisfies the in-public requirement of subsection 2. Most of the statements at issue here are broadly transmitted to all the natural gas customers, or all Smart Energy customers, and of course, that's been anywhere from 60 to 90,000 over time, and we don't believe that the in-public nature of the overall messaging is compromised because Plaintiffs have cited a few statements that Plaintiffs

say are viewable only after Northwest Natural customers log into their portals.

At first, Plaintiffs had not suggested those particular statements form the sole basis of their claims. In addition, those statements are generally consistent with the same overall messaging regarding carbon reductions and mitigating climate change that are found in those broader statements. And there's also the DeHart v. Tofte case, where it was found that a Facebook group where you had to have access still qualified as being in public use. So that's for subsection 2-C, and we identified a number of statements for those.

We also believe that some of those same statements are also subject to, and protected under, subpart 2-D, and 2-D says conduct in furtherance of the Constitutional right of free speech or freedom of the press in connection with a public issue or an issue of public interest. Again, we think, here, these statements are speaking directly to the issue of what tools have effectiveness at addressing carbon emissions and climate change, and at a minimum, express an opinion on issues of public concern. And when we did the separation in the way that we articulated that in the appendix, we tried to focus on the difference between whether we were speaking more broadly versus with respect to the specific program.

So the U.S. Supreme Court has expressly explained

that discussion on controversial subjects such as climate change falls within the core of protected speech under the First Amendment. That's the Janus case from 2018. And the Oregon Supreme Court has similarly held that, at a minimum, statements of opinion on issues of public concern are made in furtherance of the Constitutional right of free speech, and that's the Neumann case. So many of those statements targeted by Plaintiff's complaint offer opinions about the effectiveness of certain tools at reducing greenhouse gas emissions, and those should be protected.

None of the arguments they make categorizing the speech as protected -- or make against, pardon me, against categorizing that speech is protected under subsection 2(D) have merit here. First, they argue that this speech is somehow commercial in nature, but they offer no support that their -- that any speech that bears any link to commercial activity loses its protection under this particular subsection 2(D.) Neither the text of the statute here, or the case law applying it, mentioned any such requirement, and if Plaintiff's reading were correct, it would be not -- it would be unclear why the legislature had to move forward with the step at 1-C, the new commercial exemption.

In addition, Plaintiff's suggestion that Northwest Natural should have to demonstrate in step 1 that its speech is fully protected under the First Amendment is premature. As the

Mullen Court held, step 1 of the anti-SLAPP analysis is more general, aiming merely to assess what sort of claim this is and whether it is one that arises out of conduct in furtherance of free speech in connection with an issue of public interest. Northwest Natural met that preliminary burden, and any further analysis of that needs to be reserved for step 2.

Even if some speech could be so rooted in commercial activity that it was theoretically ineligible for subsection 2(D), that's not the speech that we're dealing with here. So all of the cases that are cited by Plaintiffs -- they're all California cases -- in this particular argument, focus on speech that did nothing more than promote a commercial project. I keep saying project. I mean product. So L.A. Taxi Co-op, Consumer Justice Center, The Grasshopper House, all of those were basically straight-up advertisements, and they didn't move, or combine, or overlap, with statements that had to do with other issues of public interest, and that's simply not the case here.

The statements that Northwest Natural makes about Smart Energy are not only about the program itself, but also about how that program works, about how that interacts with climate change and how customers can be involved in mitigating their emissions.

THE COURT: Would it not be fair to say that such communications are related to Northwest Natural's sale of those

offsets?

MR. MAYO: I would say that's fair. They're related to, but they're combined with other aspects of speech which are entitled to protection.

THE COURT: But I mean, hasn't the legislature been pretty careful of that, in subsection 3, to say it doesn't have to be a direct advertisement, it doesn't have to be a direct solicitation. If it's related to the sale of the good or service, that's sufficient to bring it within the proscription of subsection 3?

MR. MAYO: Well, there are a couple of issues, Your Honor, with respect -- and I can move -- do you want me to move to --

THE COURT: If we're not there and you're going to get there, I'll let you keep moving in the normal course, but --

MR. MAYO: Yeah. Well, I understand your point. I think there's two arguments. One, we would say that even under that particular description, there's reasons, based on the legislative history, to think that they're talking about commercial activities and purely commercial activities, and that's, in fact, how California has interpreted their very similar statute. But then also, if you look at the specific language, it talks about your primary -- essentially, you're primarily engaged in the sale of goods or services, and here

the primary goods and services for Northwest Natural Gas is their gas service. It's not this program. It's, really, unrelated in many ways.

THE COURT: This program is unrelated to their gas service --

MR. MAYO: Well --

THE COURT: -- that appears on their gas bill and is directed towards offsetting the other thing you're buying on that -- from Northwest Natural on that same bill?

MR. MAYO: Well, it's not -- maybe unrelated is the wrong term, but it doesn't drive sales of natural gas. It doesn't derive a profit. It's not something that is related to the mission of selling natural gas, and so --

THE COURT: It doesn't feel unrelated to that mission, right? I mean, it's regulated by the same regulatory body. It's subject to a tariff, right? This is not Northwest Natural's video streaming platform where it provides entertainment services, right?

MR. MAYO: Fair, but again, this is not a situation where this ties in any way to the purchase of gas. For example, many of these messages that have been put out that are complained about by Plaintiffs, say, for example, use less, offset the rest. I mean, the point is, use less gas, not use more gas. I mean, this is only marketed to current customers, not for customers --

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THE COURT: But maybe you use more than you would if you didn't think you were offsetting, right?

MR. MAYO: I don't think so but I mean, again, I think that we can talk about it more as we get to that --

THE COURT: Okay.

MR. MAYO: -- that particular section, because I want to make sure I don't miss something.

THE COURT: That's fine. I wasn't trying to --

MR. MAYO: But your point is well-taken.

THE COURT: Okay.

MR. MAYO: But I think we definitely believe that they are two different things --

THE COURT: Okay.

MR. MAYO: -- for this purpose.

THE COURT: Okay.

MR. MAYO: So and I guess what I would say is, again, these are because of some of the things that we've explained earlier. This is not related to typical commercial activity, and when their -- the Smart Energy program messaging is not related only to commercial activity, again, given the overlap between Smart Energy and climate issues reflected in the characteristics of the Smart Energy program. And again, this is a slide we had up earlier, but you can see some of the things about this that make it unlike typical commercial activity, not-for-profit, overseen by the PUC, and voluntary

participation, et cetera. So these are the things that make it different, I think, than a traditional commercial transaction.

And consistent with the nature of that program, the statements about Smart Energy really venture beyond purely commercial statements, and they reach issues of societal importance, like the extent to which certain offset projects can mitigate climate change, and that's a direct contrast to those California cases that Plaintiffs identified.

One other point here, Northwest Natural speech does not fall out of subsection 2-D just because Plaintiffs say that the statements are misleading. And Oregon courts have been very, very clear on this point that Plaintiff's arguments about misleading or deceptive speech do not belong in the step 1 analysis. The Tokarski case, the Davoodian case, essentially say we don't deal with those issues -- they're merits issues -- and they go to step 2, so that's not a defense here. So I guess to wrap that up, Northwest Natural has identified -- or has demonstrated in its identified speech and conduct that it qualifies as protected under step 1.

So moving on to step 1-B, this is whether Plaintiff's claims arise out of the protected speech and other activity, the answer is yes, they do. First, the breach of contract claims arise out of Northwest Natural's protected speech. Plaintiffs have not been very clear in identifying the specific communications that they say constituted the offer for the

alleged contracts for Smart Energy, and in the absence of a specific identified statements, it's fair to accept that the full range of the statements here that are protected regarding Smart Energy in the complaint can be considered as part of that alleged contractual offer and that the breach of contract claim, thus, arises from these statements.

Without any support, Plaintiff's claim that the only element of breach -- or that only the element of breach -- excuse me -- only the element of breach of contract, which is one among many elements they have to prove for a breach of contract claim, matters for purposes of the arising out of injury -- or inquiry. However, courts in Oregon and California have explained that a claim arises out of certain statements or conduct when the statements or conduct are offered to supply all elements of the claim, and we've cited -- we cited this in our brief -- you're nodding -- Deep Photonics, Handy, Walker. But putting it simply, without a contract, there's nothing to breach, and so the critical elements of Plaintiff's contract claim necessarily arise out of these protected statements.

The UTPA claims also arise out of protected speech and other activity. Blumm's arising out of argument on the UTPA claims is similarly flawed. Here, they're saying that the UTPA claims are based on allegedly false and misleading statements or omissions, and while they try to characterize these as deceptive practices, the alleged deception is really

rooted in the statements that they've identified in the First Amendment complaint. Those statement omissions are protected by the anti-SLAPP statute, as we've previously discussed.

So we get to the point here, then, where we've satisfied the burden on both steps 1-A and 1-B, and we now move into step 1-C that we were talking about earlier. It is our position that the commercial speech exemption in 150(3) does not apply here. The language is up on the screen. We talked about it a little bit. I'm not going to read it out loud. We'll get back to parsing it in a bit.

But obviously, the first step in evaluating the applicability of the exemption is to determine the scope of the speech that would fall within it, and given its recency, as I'm sure the Court has determined, there is no precedent in Oregon on how this exemption applies. But as explained in our motion and reply, the other jurisdictions that have looked at this, and have similar types of exemptions, have held that those exemptions apply only when the speech is intended to, one, induce the audience to a new commercial transaction, and three, (sic) do nothing more than that, so a purely commercial transaction.

That's the approach California has taken with its exemption. We'd cite to the JAMS case, which says what matters for purposes of the commercial versus noncommercial speech analysis is whether the speech at issue is intended to induce a

commercial transaction. Also, the Demetriades (phonetic) and the Bernardo cases have a similar distinction. We think the Court should adopt a similar approach to the Oregon commercial exemption for at least three reasons.

First, even though the language itself doesn't say commercial anywhere in it, the legislative history, which is found in the Uniform Public Expression Protection Act, what we call you UPEPA -- fun to say -- shows that commercial speech is exactly what's exempted from the act here, and that's important because, again, we mentioned before, it, otherwise, is not very clear exactly how far the scope of this goes, but this is making it clear this is focused on commercial speech, and we think that is consistent with the idea of solely commercial speech.

Second, the text of 31-150 requires that speech be specifically about the sale or lease of the goods or services that the defendant is primarily engaged in the business of selling. It can't be just anything about any goods or services. It needs to be those particular goods. And then, reading an exemption to apply to only to speech purely to induce commercial transactions is also consistent with the legislative mandate that we talked about. The protections of this statute are to be construed liberally. To conform to that construction, the exemption has to be read narrowly, and that's the same way that California looks at this. The Simpson

Strong-Tie case says for purposes of California's exemption, the court had an obligation to construe the exemption narrowly.

In contrast, Plaintiff's reading of the exemption to apply simply when a product or service is mentioned, as opposed to when a speaker tries to induce sales of the good or service, would arguably violate the Oregon Constitution, which generally puts commercial speech and noncommercial speech on equal footing. Plaintiffs claim there's no constitutional burden here, but the Oregon Supreme Court is clear that a government enactment that allows some persons to participate in a certain activity, but prohibits others, engaged in expression, from participating in that same activity, constitutes a prohibited -- constitutes a prohibited burden upon expression. That's the League of Oregon Cities case.

However, by reasonably construing the statute to address only statements purely directed to induce a commercial transaction, that reduces the potential conflict with commercial protections under the Oregon Constitution. Plaintiff's broad reading also would effectively preclude any corporations, big or small, or even individuals, engaged in selling goods or services, from seeking protection under the anti-SLAPP provisions for any statements tied in any way to any goods or services, and that exemption, it's important to note, would not just impact large for-profit corporations, it would also remove that protection from other corporations or

nonprofits whose services are similarly intertwined with public policy issues like Planned Parenthood, Sierra Club, or PETA, and this also flies in the face of the Bernardo case, which extended protection to Planned Parenthood statements that both address policy but also offered commercial services.

So now, looking at how the commercial exemption might actually apply to Smart Energy statements here, in applying the exemption, again, it's important to remember that under Oregon law, the burden is on the party trying to show that the exemption applies, and California courts have similarly said that plaintiffs have the burden of demonstrating the applicability of this type of exemption. Applying the appropriately-narrow reading consistent with the language and the California precedent, Plaintiffs have not met their burden to show that the commercial exemption applies.

Statements about Smart Energy might induce people to join Smart Energy, but that's not a commercial transaction of the same type targeted by the exemption. Again, numerous facts here make clear that Northwest Natural's speech is far removed from typical pure commercial activity. For example, again, we talked about this, but they're prohibited -- Northwest Natural was prohibited under schedule 400 from getting a profit out of it.

THE COURT: I've read a lot, and I've heard a lot from you this morning, about profit. In what way is not making

a profit related, one way or the other, to whether activity is commercial?

MR. MAYO: Well, I think --

THE COURT: I can sell things for a loss, but still, they're sales, and they're commercial sales, right?

MR. MAYO: Well, I think in the nonprofit context is not directed at whether you're making good business decisions or not. I mean, this is more of a context of is this the type of service that is under -- is the concern of this commercial exemption, the concern of the anti-SLAPP statute.

THE COURT: I guess I'm failing to see the link between, at the end of the day, Northwest Natural isn't putting any money into its pocket because of this program, how that intersects with the notion of whether or not that activity is commercial.

MR. MAYO: Well, I think the concern behind the commercial exemption is that in a situation where someone is just making advertisement, or just making commercial-inducing statements, that those are considered to be of less concern in a SLAPP context than other types of statements would be. And as one of many factors that we're citing about why this program is a little different than a typical provider of goods and services, it's because they're not advertising a service for purposes of commercial gain, and therefore, there's a connection between what they're doing and more important

societal purposes like climate change and emission reduction, et cetera, so --

THE COURT: Okay. All of those bounces of the ball make sense to me. None of those, I think, equal this is more or less likely to be commercial, but I take your point.

MR. MAYO: Okay. And I think we've sort of flagged a number of these other issues before, so why don't we click through to the mattress example here. So again, going back to the UPEPA legislative history -- and Plaintiffs have focused on this mattress store hypothetical that exists in that exemption. And this is one where a mattress store gets anti-SLAPP protection for a petition campaign to oppose a new school, but does not get any SLAPP protection when they're advertising its mattresses.

However, again, here, I think what we would say is that given the nature of the Smart Energy program and how it operates, and the types of issues that it addresses and it's offering customers a way to participate in this mitigation which is divorced from selling them more natural gas, that their statements in the context of Smart Energy are more like the mattress store and the petition drive than they are like the mattress store making advertisements for mattresses.

THE COURT: Let's work together to address climate change, that is not Northwest Natural saying we are hosting a tree-planting in rural Oregon, and we invite you all to come

out and plant trees with us, right? That's saying sign up for this program that we offer as part of our gas delivery services plan.

MR. MAYO: Well, yes, but we are seeking to achieve the same goals of mitigation of climate, and we have an audience that we're marketing this to that are customers of our natural gas company, but this is not -- again, we're trying to reduce emissions. We're trying to --

THE COURT: So if the mattress store puts out an advertisement that says buy our mattresses because they're 100 percent biodegradable, made with 100 percent recycled material, do your part, protect the planet, buy our eco green mattresses, that, to you, is the same as the mattress store supporting a school bond?

MR. MAYO: Well, if they're -- if they were talking about issues that related to significant environmental aspects of their mattresses, then that could be something that is different from a true commercial inducement. I mean, you'd have to look at the facts of that specific situation.

THE COURT: Okay.

MR. MAYO: And I think, maybe, the other thing to pull from this example, though, is at the beginning of their overarching response, they sort of suggest we're not supposed to be applying the anti-SLAPP in the context of a commercial enterprise anyway, and I think that's, obviously, not in the

language of the statute. And here we have a mattress company who, under certain circumstances, can take advantage of that, so I think this underscores that.

I think the other thing we wanted to highlight -- and we touched on this earlier -- but basically even if Smart Energy was a typical commercial program, it's not the type of commercial activity that Northwest Natural is primarily engaged in, as required by the statute, and so if you look at the language of the statute -- and maybe we can go back just so it's clear on the screen -- the exemption applies when statements are made about the sale or lease of the goods or services. And what is the -- what is "the" referred to here? It refers back to the beginning of the statutory phrase, goods or services.

THE COURT: Goods, plural, services, plural, right?

MR. MAYO: Actually, the one that has the language of the 150. There it is, yeah.

THE COURT: So one can be engaged in the selling of more than one good, or more than one kind of good, or in the selling of more than one service, or more than one kind of service, right?

MR. MAYO: Well --

THE COURT: Coca-Cola sells lots of different products. Those are all goods even though it's -- right? Coca-Cola does not sell "a" good. It sells goods, right?

MR. MAYO: Fair. Correct. But --

THE COURT: One can be primarily engaged in selling goods and services, but that primary engagement can cover more than one good and more than one service.

MR. MAYO: But the statements have to relate to that primary engagement, so --

THE COURT: Sorry, let me do that again.

MR. MAYO: Yeah.

THE COURT: We agree one has to be -- in order for this subsection to apply, one has to be primarily engaged in selling goods or services, right? And I think we agree one can be engaged -- can be primarily engaged in selling multiple goods and multiple services, right? So I'm in the business of selling sodas, but I sell ten different brands of sodas, but I'm primarily engaged in the business of selling goods, right? So far so good?

MR. MAYO: Yes.

THE COURT: Okay. And those goods represent ten different soda brands. You don't have to agree with that. It's my hypothetical. And so if I am primarily engaged in selling sodas, and a plaintiff's claim against me arises out of a communication relating to my selling of sodas, is it a defense to say, yeah, but judge, they're suing you for your 10th most popular brand. 80 percent of your sales are your number one brand, and these others are smaller brands. And so

you're not primarily engaged in selling your smaller brand. You're primarily engaged in selling your most popular brand, so this subsection doesn't apply. That wouldn't work, I don't think.

MR. MAYO: I don't think that would be the fact pattern that we're talking about here. In other words --

THE COURT: Northwest Natural is primarily engaged in selling gas services, right?

MR. MAYO: That's correct.

THE COURT: Or the gas itself --

MR. MAYO: Yeah.

THE COURT: -- however you want to describe it. It's also engaged in -- I'll use the word selling, and we can move past that for now, unless you want to get bogged down in it -- in selling participation in this program. And sure, that's a much less popular thing. It's selling gas services to all of its customers, it's selling this offset program to some of its customers, but is it not, nonetheless, primarily engaged in the business of selling goods or services, and is not -- we'll get to goods -- but is not the offset program the selling of services among the services that it is selling?

So on the one hand, don't we get through primary engagement because it's primarily engaged in selling services, and don't we get through, arising out of communication related to the sale of a service because it is arising out of one of

the services that this entity, which is primarily engaged in selling services, is selling?

MR. MAYO: I would say no.

THE COURT: I expected that. I would love to hear why.

MR. MAYO: Because I think, here, we have different types of things. This is not ten different sodas. We're not talking about four different types of natural gas. We're not talking about things that are within the scope of what their business operation really is. We're talking about an entirely different service, which is unlike what they're primarily engaged in whatsoever and not related to that sale of natural gas. Again, like, it doesn't drive natural gas. No one says it drives natural gas purchases.

THE COURT: So I've got a diversified portfolio in my company. Now, I sell my sodas, but I'm also willing to pick up your dry cleaning and deliver it to your house from the dry cleaner. So I'm selling goods, I'm selling sodas, and I'm selling services. I'm going to bring your dry cleaning to your home, but that's a tiny little portion of my business. 99 percent of my business is directed towards selling sodas, but I do the dry cleaning thing for fun. And I get sued for the dry cleaning component. Do I have a defense that says, guys, I'm hardly at all engaged in dry cleaning, I'm a soda salesman. Does that exempt me from the application of this subsection?

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MR. MAYO: Well, again, I think if you're talking about --

THE COURT: Or I'm sorry, does that prevent me from sheltering under that -- or sorry, does that prevent the Plaintiff from being able to allege this claim is what I'm trying to say, badly?

MR. MAYO: Yeah. And again, I think there the answer, again, would be no, because I think in that circumstance you're still talking about if you're a diversified company --

THE COURT: Sure.

MR. MAYO: -- you have primary engagement in sales of products or services.

THE COURT: So Northwest Natural is -- most of its business is selling gas services. It also sells this other service. What's the difference?

MR. MAYO: Well, first of all, it isn't selling a service. And you foreshadowed we might disagree with that. It is, essentially, acting as a pass-through for customers to --

THE COURT: Fair enough.

MR. MAYO: -- (indiscernible) services (indiscernible).

THE COURT: It's advertising enrollment in that service?

MR. MAYO: Yeah.

THE COURT: Okay.

MR. MAYO: Give them an opportunity to mitigate their emissions, yes.

THE COURT: Okay.

MR. MAYO: But that is not -- again, that is a qualitative difference between selling natural gas --

THE COURT: So the difference, then, is that one is selling and one is not selling?

MR. MAYO: One is selling, one is not selling, one is --

THE COURT: So we get we get past primary engagement, then, and it's just a question of is this a thing that Northwest Natural is selling or not?

MR. MAYO: Well, again, I don't -- I would also say when you're looking at prior engagement, you're talking about the core of a business, and I think, again, you mentioned --

THE COURT: But I think we now agree if I'm selling two different things, the fact that I sell way more of one thing than the other thing doesn't mean I'm not primarily engaged in selling both. I thought we had agreed on that.

MR. MAYO: Well, but I said if you're in the -- in the context where everything is a good or service that --

THE COURT: Fair, yeah, and I --

MR. MAYO: -- commercial (indiscernible), so --

THE COURT: -- understand, right.

MR. MAYO: But here, I mean, we would say that's not the case, so I mean --

THE COURT: Okay.

MR. MAYO: And I think when you think about -- and again, the UPEPA has the same -- they've qualified this language even more, but because they say -- we can go back to it now -- that the exemption carves out communications related to a person's sale or lease of goods and services when that person is primarily engaged in the selling, leasing, or licensing of those goods and services. So I mean, it, again, there's a connection there, and the communication has to be about those things that you're primarily engaged in selling.

THE COURT: And is it your position that one can only be primarily engaged in selling one set of goods or services, even if one sells multiple sets of goods and services?

MR. MAYO: No. I think --

THE COURT: Okay.

MR. MAYO: I don't think that's --

THE COURT: Okay.

MR. MAYO: I don't think you would pick your highest selling --

THE COURT: Right.

MR. MAYO: -- thing, for example.

THE COURT: Right. I want to acknowledge that we are only as far as we are because of me, not you. I am going

to see if we can get you to the end of this PowerPoint in about 15 minutes.

MR. MAYO: Okay. Fair.

THE COURT: I will do my part.

MR. MAYO: So again, I guess, a couple of quick things, because it goes to what we're just talking about. I mean, when you talk about Northwest Natural Gas's gas service being its primary business, again, there's no argument that it actually is used to drive up demand, and many of the statements we talked about actually say use less gas, not more. There's no argument here that Plaintiffs were tricked into buying more natural gas, or that they were tricked into buying natural gas service. They only claim they were tricked into joining Smart Energy, and interestingly, when both Plaintiffs left the program, the Smart Energy program, obviously, they didn't -- or not obviously, but they didn't leave the natural gas service.

So again, I think, here, we would compare this to a situation like Bernardo, which is where an abortion clinic provided some information about how to get appointments, other things like that, that would be considered part of traditional commercial speech, but then also had statements that went beyond that and spoke about the important issue of abortion. So that kind of overlapping speech gets you, I think, out of the commercial speech exception. And so for the reasons we've talked about, we think they haven't met their burden under that

subsection.

So let me get, now, to step 2, which is where we go -- and this, again, we get there because we've met steps 1-A and 1-B. They've brought claims here under two different constructs, the UTPA and the breach of contract claim. Important to note that the UTPA was only brought by Mr. Blumm as the sole main Plaintiff. And the basic premise for both sets of claims, though, are, really, the same, that Northwest Natural, by relying on emission credits generated from methane capture, biodigesters failed to meet its representation or promises regarding the mitigation of natural gas emissions. To meet their burden, they've got to demonstrate there's a probability that they will prevail on the claims by presenting substantial evidence to support a prima facie case.

THE COURT: That, and I mean -- I'm sorry, I know I said it would be quiet. That is just an amazing statute, right, because it talks about probability in the first instance, which we know what a probability is, but then it talks about sufficient evidence to support a prima facie case, which is a radically different thing than a probability, right?

MR. MAYO: Yeah, and I think what I just read is from the Davoodian case, so that's their interpretation of this, "Must present evidence from which a reasonable trier of fact could find that plaintiffs have established the elements of the claim."

THE COURT: Sure. I also think, though, it comes directly from subsection -- so yeah, I mean, it comes directly from the statute as well.

MR. MAYO: Yeah.

THE COURT: I'm just pointing out --

MR. MAYO: Yeah, no --

THE COURT: We're not talking about a preponderance, right?

MR. MAYO: Right.

THE COURT: We're talking about a prima facie case.

MR. MAYO: That's correct.

THE COURT: Okay.

MR. MAYO: That's correct.

THE COURT: Because those words mean --

MR. MAYO: But the way that it's stated, as you said, sounds like a directed verdict, right?

THE COURT: Right. Exactly.

MR. MAYO: It absolutely does.

THE COURT: Okay.

MR. MAYO: But I think it's also not -- there's not nothing to this standard.

THE COURT: Agreed.

MR. MAYO: There has to be a presentation and there has to be an analysis of that evidence.

THE COURT: Agreed.

MR. MAYO: We think when viewed in the context of the facts regarding the Smart Energy program, that they're submitted evidence, including what they presented in the first amended complaint and their declarations, is inaccurate, incomplete, and ultimately, insufficient to meet their burden. And as we've called out, there are serious flaws in some of the evidence presented by Plaintiffs that present any reasonable inference or finding that they will prevail on their claims.

I want to focus, first, on the evidence that Plaintiff Blumm submitted regarding the UTPA claim, and from our perspective, without mincing any words, we think this declaration is simply wrong in multiple respects. Mr. Blumm, who is an attorney, executed this declaration, which Plaintiffs then rely on to suggest his limited knowledge of the Smart Energy program when he signed up and the nature of the claims -- the nature of what he claims to be his contract. Similar assertions are also in the first amended complaint.

But here's the problem. When we compare it to the phone call records, which Northwest Natural located, those show that these representations and declarations are simply incorrect. And I mean, these are going to go up on the screen. I'm going to read a couple of them, and I don't have to go through the whole -- but it's a significant difference. He swears that he enrolled online, but the phone call audio shows he signed up over the phone.

He swore he only knew what was available online before he enrolled, but he was actually given detailed information about the program over the phone. He swears under oath he never knew they were using dairy digesters at the time he signed up. The phone call audio clearly shows he was told that. He said he didn't know it could take two years to get the emissions credits. The phone call tells him that.

He swears under oath he didn't think these were capable of meeting the greenhouse gas emission -- or he didn't know that -- or didn't expect that these would be used to purchase offsets that wouldn't meet these obligations, but on the phone call, he's informed that they would be verified by third-party neutrals to make participating customers carbon neutral, so they told him how they were going to do this.

And then he was given the opportunity, and told specifically, do you want to go to the website and find out more about this, he said, no, I don't. So given these factual errors, there's a serious question about whether this declaration could be relied on for any purpose from our perspective. But at a minimum, it's not evidence from which a reasonable trier of fact can find that they've established the elements of their claim.

So then talking about their expert -- and I asked ahead, so I didn't mess this up -- but it's Emily Grubert (phonetic). We believe she also does not provide adequate

support for the UTPA claims. Essentially, she's saying, in purporting to evaluate whether the GHG emission offsets and projects can and do mitigate GHG emissions, and essentially, they rely on her declaration to call into question whether the dairy digester offsets have the attributes necessary to make them trustworthy, but there are gaps in her declaration that prevent them from relying on it to reasonably demonstrate their claims.

She claims she reviewed the public-facing website of Northwest Natural and also the Climate Action Reserve Protocol, which is the one that's used to verify Northwest Natural's credits, but had she done that review, she would have seen, by simply clicking through, as we showed earlier, a clear explanation of how Northwest Natural meets its obligations to measure and verify carbon emissions reduced by the offset project.

And essentially, what she would have seen, and we talked about this earlier, identifying the same critical elements that Northwest Natural is looking at that she's saying are absent from what our actual emission offsets have, and then we have standards we follow to ensure that we're funding credible projects, we have processes for selecting and verifying projects through the same carbon registries that she's looking at, and then we have links to that same registry, the Climate Action Reserve, right from our website.

So in her declaration, she fails to even acknowledge that any of this is there, even though she said she reviewed the website, and so essentially, you wind up with her omitting any discussion of that information, any discussion of what we're doing, and any discussion of why it's inappropriate, or incomplete, or insufficient, so we don't find that to be credible evidence of what they need to prove.

Grubert also suggests that the type of emission offsets, which she describes as avoidance offsets, are inherently inconsistent with reducing emissions, but she acknowledges in her report, at footnote 4, that these are essentially the only type of emission offsets that are actually out there in the market, and that's true. She bemoans that fact, she's very unhappy about that, but that's the state of our current voluntary carbon market. And she fails to mention what the Plaintiffs acknowledge in their complaint, which is that, this is accepted by California, EPA, Washington, Oregon and their climate programs.

And we don't need to flip through in great detail, but I think, Zach, if you want to -- yeah. I mean, on the CARB, which is the Air Board in California, they're hitting the same things, livestock projects, Climate Action Reserve. So ultimately, what does not come out of her evidence, which we think she needs to have, is any explanation as to how the practices that we're actually doing are not consistent with our

obligations under the tariff or whatever obligations they think we have to verify emission credits. And she certainly doesn't try to explain that we failed to adhere to the practices that we actually say we're doing, and that's pretty important in the context of a deception case. So accordingly, we don't think her testimony can support their claims either. All right, I've got a couple of things left. We have a little bit more time?

THE COURT: Two, three minutes.

MR. MAYO: I'm sorry?

THE COURT: Two, three minutes.

MR. MAYO: Two, three minutes? Okay. So basically, given the shortcomings of the evidence, we think they failed to establish a prima facie case. First, they failed to show that Northwest Natural acted willfully or recklessly or knowingly. Those are the requirements you have to get damages under the UTPA. Essentially, what we did, we talked about earlier, is we went to a third-party expert to verify our offsets and retire them.

And if you were to rule that that somehow creates reckless behavior on our part, that would risk damaging the entire current offset regime, essentially. If you can't rely on those registries, or those carbon verifiers, then everybody's out of luck. And there's no evidence presented that we didn't follow through on what we said we would do, so that's not willful, and that's not reckless.

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In terms of a likelihood of confusion, they've also not met their burden. For example, Blumm was told on a phone call that Northwest Natural would make participating customers carbon-neutral by retiring verified carbon offsets. It wasn't an abstract statement, we're just going to make you carbon-neutral, it was, hey, we're going to do it this way, and that's exactly what we've done.

His UTPA claims require him to show an ascertainable loss. Under the Bohr case, he's got to show that he relied upon the misrepresentation in making his decision to join the program or not, but here, again, there was no -- should have been no confusion for him, and he got the benefit of the bargain. He got what he was offered, methane capture emission offsets from dairy digesters. That's what he was told he was going to get.

And then I think it's worth hitting, real quickly, the statute of limitations argument. So here, essentially, he was told all of this information on his phone call that would have given him information necessary, if he wanted to, to go out and research this and find out if he had any problems with it. He didn't do that. The statute of limitations, which is one year, passed in 2022. He filed his claim two years later. It's a pretty cut and dry case in that context for statute of limitations here.

And there's been a lot of back and forth about sort

of whether he really would have been excited to understand this or not, but once we got the phone evidence and we understood what he was told -- but it clearly showed that he had everything he needed, along with our website and his access to any other information out there, to go do anything he needed to go do to find out what he thought about the dairy digester projects.

And then on breach of contract, I think there's two things -- and we can cover this later more -- but basically one, we don't think they've identified a contract, like we said, and this can't be 90,000 separate contracts. That's crazy. And then second, if they did -- if there is a contract, it's got to bring in schedule 400. It just has to. I mean, there's no other -- they haven't identified what it would be if it didn't have the standards in the tariff, and if it has the standards in the tariff, again, we've met that, so they haven't argued, and they haven't alleged, a breach because they haven't alleged that we haven't done what we said we were going to do in the tariff. All right, Your Honor, I think I'll -- I can stop there, mercifully, for you.

THE COURT: We'll do more soon, I'm confident. Thank you very much. And thank you --

MR. MAYO: Thank you very much.

THE COURT: -- for taking the effort, going through the pains of putting this together. I find it very helpful.

Ms. Dahab? Oh, I take it back.

MS. EBERLY: Hi, Your Honor. I'm going to be presenting on the --

THE COURT: Ms. Eberly.

MS. EBERLY: -- anti-SLAPP motion, and then Ms. Dahab will be presenting on the motion to dismiss. I don't have a PowerPoint. I think we just heard a lot, and I think it felt like we were arguing a summary judgment motion, but of course, we're here at the pleading stage, because Northwest Natural Gas has filed an anti-SLAPP motion along with their motion to dismiss.

And I think in their construction, the anti-SLAPP law is, in effect, a tool to give immunity to Unlawful Trade Practices Act defendants, to give them a mechanism to stay plaintiff's claims for years, because every issue, however minor, can be an issue of public interest, and if every public statement that touches, in some way, on a public issue is a public matter of public interest or matter of public concern, then suddenly the statute becomes a tool to protect a corporation.

THE COURT: I know that's your view. Nobody's asking me to opine on that. They brought a motion pursuant to the statute relating to these particular claims. Let's talk about these claims.

MS. EBERLY: Sure, sure. I think the easiest place

to start, then, is with the commercial speech exemption. I'm happy to go through why these claims do not fall under 31-152(C) or (D).

THE COURT: I mean, do it -- you're welcome to do so. You can start wherever you like.

MS. EBERLY: Okay. Let's start with the commercial speech exemption because I think that's just -- it's simplest. And I'm just going to read the commercial speech exemption once more and say how we understand it, and then we can go from there. It says, "A special motion to strike may not be made against a claim under this section against a person primarily engaged in the business of selling or leasing goods or services if the claim arises out of a communication related to the person's sale or lease of the goods or services."

So I think -- there's two parts of that. First, is the special motion to strike being made against a claim or by a person who is primarily engaged in the business of selling or leasing goods or services. I don't think Northwest Natural Gas disputes that they're primarily in the business of selling goods or services. They're selling natural gas. So this exemption applies if, for those parties, the claim arises out of communication related to the person's sale or lease of the goods or services.

I don't think there is any way to dispute that the claims -- that the communications that are at issue here, which

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are, specifically, Northwest Natural's offer in marketing about its Smart Energy program, and specifically, its promise to customers that that program will offset the greenhouse gas emissions from their natural gas use, the natural gas that Northwest Natural is selling them, I don't see how that could possibly relate to anything except for its sale of natural gas to them. This program is not, as you were saying, sort of a we'll buy carbon offsets for you, unrelated to the natural gas, or we'll plant trees for you, or you should purchase carbon offsets because they're a good thing, it's we will offset your emissions from your natural gas --

THE COURT: Well, that's --

MS. EBERLY: -- through this --

THE COURT: -- part of the program.

MS. EBERLY: -- (indiscernible).

THE COURT: The other program is we will offset an average house, right? Many of these folks are not enrolling for their own I'm going to offset this unit by unit, right? I'm going to take the fixed --

MS. EBERLY: Sure.

THE COURT: -- the fixed average rate, which may or may not perfectly offset me.

MS. EBERLY: Sure, but it's a program that is only available to natural gas customers, and that is specific to offsetting your emissions. That's what the -- that's what the

advertisement is, we'll offset your emissions if you pay us extra every month, whether it's a climate neutral option or the average home option, and average home is not --

THE COURT: Right.

MS. EBERLY: -- meant to say, like, you're paying for someone else's emissions, it's this is how much the average home uses, and so you can pay that amount. And I think -- I'm not actually sure, sort of, what, in their view, the text of the exemption should read, but in our view, just applying the plain text to the claims at issue here, we don't see how there's any serious argument.

THE COURT: Well, I think I understand, and I think it's a serious argument, which is we are not -- we, Northwest -- and certainly, Mr. Mayo can argue for himself again -- but I understood it to be we're in the business of selling natural gas. That's the thing we're primarily engaged in. We also operate this not-for-profit program. That's a thing we do, but it's not the primarily-engaged-in business in which we partake. That's the argument.

MS. EBERLY: Sure. I guess the word primarily, in the first part of the statute, is supposed to distinguish, I mean, again, sort of stepping back and thinking, what is the purpose of this exemption, why do we need this exemption, it's because we don't think -- the legislature didn't think that when commercial actors are sued for communications about their

products and services, that they need the protections of the anti-SLAPP law.

THE COURT: And so primarily engaged is meant to capture people who are in the business of buying --

MS. EBERLY: Exactly.

THE COURT: -- or selling, I should say --

MS. EBERLY: Exactly. It's not --

THE COURT: -- not buying -- as opposed to a garage sale.

MS. EBERLY: Exactly. It's not meant to say, what is your primary business, is it this, is it that.

THE COURT: It is, are you primarily in business?

MS. EBERLY: Yes, exactly. And if that's the way you understand that language, again, whether Northwest Natural is primarily engaged in selling natural gas or it's primarily engaged in selling natural gas and it sells carbon offsets, the claims here arise out of communications related to Smart Energy, which is related to the sale of natural gas. It's specifically related to the sale -- to Northwest Natural Gas's sale of natural gas to those customers.

THE COURT: Northwest Natural sale of its own --

MS. EBERLY: Gas.

THE COURT: -- natural gas to its own gas customers?

MS. EBERLY: Yes, its own -- that program is only available to those customers. It doesn't make the program

available to people other than Northwest Natural Gas customers. And it's specific. Again, maybe, I think, one way of kind of narrowing things here is just to take the allegations in the complaint that are specifically about the representations, because that also kind of focuses the issue of what do the claims actually arise from? The claims do not arise from every statement in the complaint. There's a lot of statements in the complaint that provide context, background --

THE COURT: Plaintiff does not do a great job of identifying which of those statements it believes are actionable, and which are merely mere context, right?

MS. EBERLY: Sure.

THE COURT: They are not labeled as such. The first time anybody suggests that, you know what, you shouldn't pay too much attention to that statement that we've attributed to an executive is because -- is in your response, right? So if one reads the complaint without the understanding that Plaintiff Counsel -- or that Plaintiff Counsel had when drafting the complaint, it is not so easy to distinguish which are the real actionable statements and which is just mere light reading.

MS. EBERLY: Sure. I guess, I mean, we think it's clear from the case law because the case law asks what is the -- what is the conduct that specifically creates liability for the Defendant, what did the Defendant do wrong? And Plaintiff

Blumm is not suing Northwest Natural because of a statement. He's not saying that the statement the executive made in that PUC meeting was misleading. That's not what that --

THE COURT: That's not what he's saying? That complaint reads like that's exactly what he's saying.

MS. EBERLY: No, he's saying I was marketed Smart Energy.

THE COURT: Sure.

MS. EBERLY: I was told that Northwest Natural Gas was going to offset the greenhouse gas emissions associated with my natural gas, I enrolled in the program, I didn't get what I bargained for.

THE COURT: So if I granted the motion with respect to all the other statements, have you -- has Mr. Blumm lost any benefit in his complaint?

MS. EBERLY: No. I think, again, they're sort of putting the cart before the horse. The question is, what does the claim arise from and is that thing protected conduct?

THE COURT: Sure.

MS. EBERLY: And so if we're talking about the claim arises from -- and this is paragraphs 70 to 84 of our complaint, that really goes through the Northwest Natural Gas representations about Smart Energy. If the allegations arise from those statements, then all the other statements just don't fall within the anti-SLAPP law at all because they're not the

thing the claim arises from.

THE COURT: I don't disagree with that notion of the operation --

MS. EBERLY: So there wouldn't be any basis to strike that?

THE COURT: -- of how the law -- no, I agree. I was asking a different question.

MS. EBERLY: Oh, okay, I'm sorry. I misunderstood.

THE COURT: What I'm saying is there are statements that you say are actionable. There are statements that you say are background.

MS. EBERLY: Yes.

THE COURT: The complaint does not purport to distinguish between those, and so I am hard-pressed to fault the Defendants when they move against statements that are in the complaint, as we think this is what they -- they're saying we did wrong when those statements read the exact same way all the other statements that you're saying are the actual gravamen of the wrongful conduct are, so I would be careful in saying that they're latching on to the wrong things when the complaint is not at all clear about what is helpful background reading and what is, this is what they think --

MS. EBERLY: Sure.

THE COURT: -- what we think they did wrong.

MS. EBERLY: Yes. We didn't draft the complaint with

the anti-SLAPP motion in mind. So I mean, I guess, just getting back to the exemption, I think we think that the plain text shows that it applies. I wanted to go through a couple of points that my friend on the other side made to talk through why they should not matter to the plain text of this exemption. First is the idea that it only applies to, sort of, narrowly-drawn commercial speech, which they identify -- they say is solely commercial speech, or typical commercial speech, or purely commercial speech.

As a primary point, I mean, that concept doesn't really exist in the case law as far as I have seen. Instead, courts have recognized that whether speech is commercial is a matter of context, content, and the speaker, and so it's very much the case -- so yes, this is the Nike v. Kasky case, which is the case that gave rise to the California commercial speech exemption.

Whether speech is deemed commercial depends upon the speaker, the content of the message, and the intended audience, so it's certainly the case that the speaker can be a commercial actor, you know, a company, the content can be something that is both about a product and about a larger issue, and then the intended audience is the customer. That's commercial speech, even if the speech has a purpose other than just selling a product. So in the Nike case action, that's a good example. Nike was talking about its business practices and saying we do

our best to eliminate labor misconduct. Of course, that's both about the attributes of its supply chain and also about this broader issue of labor and supply chains.

Similarly, a U.S. Supreme Court case, Bolger v. Youngs Drug Products, this case was, essentially, the court was trying to say, what is commercial speech and what isn't, and it was looking at these mailings that a drug company had sent to pharmacies that were basically informational pamphlets about the risks of venereal disease, and at the bottom, it said, sponsored by Youngs Drugs, the maker of Trojan condoms. And the court said the fact that these mailings contain discussions of important public issues did not mean that they weren't commercial speech, because advertisers shouldn't be able to immunize false and misleading product information from government regulations simply by including reference to public issues.

So the fact that these representations here are about mitigating climate emissions, and emissions -- fighting climate change is an issue of public interest, does not mean the speech is not commercial.

THE COURT: Therefore, what?

MS. EBERLY: Therefore, even if the commercial speech exemption only applied to purely commercial speech, which it doesn't on its plain face, it would still apply to Northwest Natural's speech. I also want to talk, just briefly, about the

UPEPA example. We don't have legislative history for this exemption other than, I would just note, when the legislature adopted this exemption, it was also adopting a broader set of amendments to the anti-SLAPP law to broaden the scope of protections within the anti-SLAPP law, so a plain text reading of the exemption is perfectly consistent with a broad, liberal construction of the statute, because the purpose of the statute is protecting speech and petitioning rights, and preventing commercial actors from misusing the statute when it shouldn't apply is in furtherance of that purpose.

But I did want to talk briefly about some of the California cases because I think California's exemption is definitely narrower than Oregon's, and in all of the California cases, it's absolutely clear that even if we have that exemption, it would apply to this speech. So for example, the -- I think the JAMS case is a great one. Statements about JAMS, and about the neutrals that it employs, sort of can vary, kind of, clearly, have more than one purpose.

The purpose might be to advertise JAMS services, but it's also to communicate with litigants and to engage with them in assisting them with litigation. The fact that they had that secondary purpose was not sufficient to cancel out the basic commercial purpose of those statements, and so the Court, in that case, had no problem applying the exemption -- the narrower exemption to the speech there.

I think that's all the points I had about the commercial speech exemption. I'm happy to answer the Court's questions if the Court has any questions about the application of this -- of 31-152(C) (D). I guess I would just make one point. Whether something is an issue of public interest is not as simple as "isn't an issue that matters to the public." That isn't the beginning and end of the inquiry.

In Neumann v. Liles, and Lowell v. Wright, in Davoodian v. Rivera, the court said that courts have to examine the content, form, and context of the statements to determine whether they involve matters of public concern because merely being of interest to the public is not enough, and so that's why you can understand why, as a customer, someone's opinion that they post online about a business could be on an issue of public interest, whereas a business's factual statements about its own products would not because the Court should construe 31-152(C) and (D) in light of the purposes of the anti-SLAPP law. The purpose is not to protect commercial defendants from false advertising, but to protect ordinary Oregonians from retaliation by more powerful interests who use litigation as a tool to try to silence them and file frivolous lawsuits against them.

So I'm happy to answer any questions the Court has about the application of the statute to the statements at issue here. I'm happy to go through the prima facie case if the

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Court has any questions. I think, pretty much, everything we heard in their presentation we've responded to in our briefing.

THE COURT: One thing that you've not had a chance to respond to is, I have not seen a withdrawal of, or an amendment to, Mr. Blumm's declaration, which leads me, somewhat to my surprise, to believe that Plaintiffs are standing on that declaration. Is that actually what -- if we get -- if I get that far in the step 2 --

MS. EBERLY: Sure.

THE COURT: -- analysis, is that, in fact, what you intend --

MS. EBERLY: Yes.

THE COURT: -- and are urging me to do?

MS. EBERLY: Yes, and I think it's because, again, we need to orient around what is the Court's job at step 2? What is the purpose? The purpose is to weed out meritless lawsuits, and the Supreme Court said, in Young v. Davis, that it's necessarily a low bar. The purpose is, did the plaintiff put up enough evidence?

THE COURT: You're asking me to consider as some of the -- in evaluating whether there's enough evidence, you're asking me to put up evidence that, I mean, no one's made a finding on this, but seems that declaration seemed either something completely strange is happening and two things are exactly true at the same time, which happens sometimes, or Mr.

Blumm's declaration has significant factual problems in it, and you're urging me, nonetheless, if we get to step 2, to treat that declaration as evidence and to -- for me to ground my decision on step 2, in part, on that declaration?

MS. EBERLY: Yes, because that's what the courts have said is the inquiry at step 2, that the inquiry is not do you weigh the Plaintiff's evidence against the Defendants and ask what's --

THE COURT: I agree.

MS. EBERLY: -- more credible.

THE COURT: I agree. If you keep this in, I mean, I think there's some lane that goes into a prima facia, but I understand your point is we're not looking to find a preponderance or that sort of thing. I'm asking, as I'm looking at -- for example, as I am looking at the question, if I get that far, of whether or not Plaintiff has made a prima facie case, one of the things that you believe I should accept as evidence, for example, is that Mr. Blumm signed up for the program online.

MS. EBERLY: That is what the declaration says.

THE COURT: I know, I'm asking whether you are continuing, in this case, in good faith, to urge me to rely on that factual submission in your case.

MS. EBERLY: We --

THE COURT: Because I agree. If you tell me that's

what you're doing, you're entitled to that, but boy, I'm not sure that's what you want me to do here.

MS. EBERLY: So Your Honor, we have not had discovery. We don't know anything about the authentication, whether that phone recording is authentic. We --

THE COURT: Boy. Okay. I mean, you are welcome to that position.

MS. EBERLY: We haven't had any chance to engage in discovery because --

THE COURT: This was filed in May.

MS. EBERLY: Yes, okay, so maybe just shifting to the to the -- let's say the phone recording is what happened. He did not sign up online.

THE COURT: I'm not asking you to concede one way or the other. I'm asking whether you're standing on the declaration in its entirety, that that is evidence you want me to base a decision in this case on, whether that is the thing that you are urging, as a lawyer in this court, the Court to do --

MS. EBERLY: Yes.

THE COURT: -- having had months to investigate the veracity of that declaration.

MS. EBERLY: Yes, I mean, so if the Court thinks that -- if we're on to step 2, and the Court thinks that it would make a difference to whether Plaintiff (indiscernible) due to

prima facie case if we submitted another declaration, I'm happy to --

THE COURT: I have no idea. I am taking no position on that whatsoever. I'm asking -- and I will stop asking because I think I have your answer -- whether or not notwithstanding the evidence that Defendant has put into the record whether that has given you any reason to pause and to consider if maybe you want to have Mr. Blumm consider whether something in his declaration is wrong and if you want to submit some other declaration. You've told me no, you've told me you want me to consider the declaration as it is, so be it. I will do that. And if you're -- if you are comfortable living in that world, I'm certainly happy to consider the evidence that's on file in this case, but I'm a little shocked that that's where we are.

MS. EBERLY: So Plaintiff Blumm remembers signing up online. He doesn't remember the phone call.

THE COURT: Okay. Fair enough.

MS. EBERLY: And I just want to -- we were not trying to hide the ball from the Court, so I just want to make clear why we didn't submit any supplemental declaration. It's because the Supreme Court has said that at this stage, the inquiry is not weighing the parties' evidence against each other and deciding which is more valuable. The Defendant's evidence only matters if it defeats the Plaintiff's claims as a

matter of law. That's the only way that --

THE COURT: If we make it to step 2, you have the -- you have the burden of making an evidentiary-based prima facie case, right?

MS. EBERLY: Yes.

THE COURT: Right.

MS. EBERLY: Yes.

THE COURT: You also have an obligation to submit truthful and accurate information -- evidence to the Court, right?

MS. EBERLY: Yes, Your Honor, of course.

THE COURT: Okay. Nothing about what the Supreme Court says affects either of those two things, right?

MS. EBERLY: Understood. Yes.

THE COURT: Okay. If what you're telling me -- and we really can move on -- is that notwithstanding the fact that everyone in this courtroom is now on notice that there may be significant factual problems with the evidence submitted by Plaintiff, if it's, nonetheless, Plaintiff's desire to have the Court rely on that evidence that Plaintiff is on notion -- on notice may be incorrect, either dishonestly incorrect or in good faith, incorrect, but that you want me to predicate the ruling -- if we get to step 2 -- on evidence that you know may not be accurate, that is a position you can take in this Court, but that decision has potential consequences, and that's fine.

They're not my consequences. They're your consequences. I am just very surprised that we are here and that that is the position you are taking, but that's fine. We can happily move on to other things.

MS. DAHAB: Your Honor, on this issue, if, for the reasons that Ms. Eberle explained, we did not supplement the record with the corrected declaration, like Ms. Eberle said, Mr. --

THE COURT: Is it a supplement -- is it supplementing the record if you are on notice that a thing you have submitted may be wrong? Do you not have an obligation to investigate before urging the Court to continue to rely on the potentially wrong thing?

MS. DAHAB: Well, I don't disagree that we do.

THE COURT: And yet.

MS. DAHAB: I think, to Ms. Eberly's point, we have not had the chance to, one, engage in any discovery and test the authenticity -- to sort of test any of the information that they submitted in response. With the Court's permission, we will reconfer with our client and submit an amended declaration to the extent that we can -- that we can clear up what we think Mr. Blumm remembers about how he signed up for Smart Energy.

I think that we didn't, quite frankly, because the representations, in our view, between what he received on the phone and what he remembers receiving online, or heard at that

time, are very much similar, and so in our view, it doesn't necessarily change what he knew at the time that he enrolled in the program.

THE COURT: You are more than welcome to take that position. I will rely on Mr. Blumm's declaration as a sworn statement in this case, and if I get to step 2, I can rely on that as evidence, as with anything else. If we get that far, if I rely on that evidence, and if this case moves forward with that evidence having been relied on by the Court, down the road, if it turns out he's wrong about things that matter, that is going to have a devastating effect on the progress in this case.

That's not my issue. That's your issue. You're well aware of it. You're more than -- you all are more than competent enough to understand the things I'm talking about. So that's fine. I don't require anything else. I understand Plaintiff's position is that you're standing on that declaration as the evidence that the Court is to rely on in this case. That's fine. Anything else as to step 2

MS. EBERLY: No, I don't think so.

THE COURT: Anything else as to any of the things at issue?

MS. EBERLY: No. Our briefing states our positions.

THE COURT: I agree. And it does so well.

Five minutes or less.

MR. MAYO: So I guess, staying on that topic for one minute. I mean, I guess if you do get to step 2, and if you are considering the Blumm deposition -- or excuse me, declaration, I think there's, in the case law, suggesting what the standard actually is, it says you need to have admissible evidence, or your evidence needs to be admissible, so that might not be entirely akin to weighing our evidence and seeing if it defeats as a matter of law, but I think our evidence defeats the admissibility of his -- of that when you're making that consideration. And then, arguably, from our perspective, again, when you're looking at this, his declaration can, as a matter of law, defeat the statute of limitations -- defeat their claims based on statute of limitations, so we would like the Court to consider --

THE COURT: So his declaration cannot.

MR. MAYO: His declaration cannot, but our evidence can, and therefore it should be weighed appropriately in that context. Two other things. One, just going back to the wording of the commercial exception, I think what I heard Plaintiff saying was, essentially, a definition that went back to if you're in the business of selling things, then you're out of the anti-SLAPP statute.

THE COURT: If you're in the business of selling things.

MR. MAYO: Yeah.

THE COURT: And if what you're getting sued for is something that you said relating to your selling of things.

MR. MAYO: Okay, well, so I mean, just to be clear, if there -- if it's mainly just because you're selling things and again, I think the way that that was being read, as I understood it, that could create a commercial issue under the constitution in Oregon because you're not supposed to have a differentiation between commercial and noncommercial speech. So if it's interpreted that broadly, with any connection to commercial speech being enough to take away that benefit, that could be a constitutional issue.

And then, there was a discussion about the question of what -- is it an issue of public interest? in the Snyder v. Phelps case, which is quoted in Davoodian, that case actually says an issue of public interest is anything that's a subject of interest or newsworthiness. It's not something that has to go beyond that, not something that has more significance that has to be there than that. It's is that particular area something that people are interested in, and again, when we look at golf courses and wedding venues, we can see that that's consistent with that low bar.

THE COURT: Thank you. Anything else anti-SLAPP related?

MS. EBERLY: Can I just add one point?

THE COURT: You may.

MS. EBERLY: I just want to emphasize this. I think Oregon courts haven't had a lot of experience addressing anti-SLAPP motions filed by corporations. They just haven't. California courts have had a lot of experience with that, and several of them have said, in cases very analogous to this one, that even aside from the commercial speech exemptions, when companies are advertising their own goods or services, whether they make a profit on them or not, whether they relate to climate change or not, when they're advertising their services, that is categorically different than speech in the public sphere on issues of public concern.

It doesn't mean that corporations can't participate, and do participate, on issues of public concern. When Northwest Natural Gas talks about climate change, it might be participating, but when it markets Smart Energy to customers, courts have said, essentially, if that was considered an issue of public interest, then every single false advertising case would become an anti-SLAPP case, when it's obvious that that's not the reason that these claims are filed. These claims are filed to vindicate the economic losses of the plaintiffs because of the false advertising of the defendants, so I just want to make that point. And that's all for us.

THE COURT: Thank you. All right, why don't we take five minutes before we take up the Rule 21 motion?

(Recess taken at 3:14 p.m., recommencing at 3:22 p.m.)

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THE COURT: All right, we're back on the record. Let's turn to the motion to dismiss.

MR. MAYO: Just on brand, Your Honor --

THE COURT: Sure.

MR. MAYO: So Your Honor, some of the arguments here, obviously, were addressed also in the anti-SLAPP context. We focused on them -- some of them a little bit more here in the motion to dismiss, and there is a difference in the evidence that's relevant to them. As you're aware, obviously, the evidence they put in for their prima facie case doesn't apply to this motion, but I'm going to try to narrow the arguments some to try to keep us from repeating over and over, but there are some that are not overlapping, so.

So Northwest Natural believes this Court should dismiss all of Plaintiff's claims under ORCP 21 A(1)(H). In their first amended complaint, in their response, Plaintiffs have focused their allegations on a policy-driven disagreement regarding the efficacy of the Smart Energy carbon emission offsets that, by their own acknowledgment, are widely accepted by government regulators and widely used in the broader voluntary carbon markets. But they're so invested in broadly challenging dairy-farm-related offsets that they fail to focus on the specific actions taken by Northwest Natural that fully support the reasonableness of the Smart Energy program and Northwest Natural's actions.

THE COURT: So that's not how I read the complaint or the response. And certainly, Plaintiffs will speak for themselves, but as we go through this, what I understand the complaint and the response to be directed at is not so much -- I mean, I accept that Plaintiffs don't think much of the current offsets, but I don't understand them to be saying we don't like these offsets, therefore, Northwest Natural is doing something wrong. I understand them to be saying Northwest Natural promised its customers in this program X, and it delivered something much less than X, and that was a breach of contract, and that is the basis for a UTPA claim, as opposed to a nonrelativistic, just a purely objective, we think these -- we think these offsets are no good, right? I understand Plaintiffs to be engaged in an exercise of comparing what was promised with what was delivered.

MR. MAYO: I think our view would be that if you look at the cumulative load of the statements that they've put in, there are a lot of criticisms of dairy digester emission offsets and what they may or may not do to the environment, and what they may or may not do in terms of encouraging further emissions, and lots of things that are, again, we would say are, kind of, policy determinations.

What they've avoided, studiously, is to look at what we actually did, and again, that's part of what we're talking about here when we talk about whether they're be willing -- I

mean, willful or reckless. I mean, they literally ignored everything on our website, everything that was told to their clients about what we do, all of our third-party things that actually address the very things that they say are wrong with this emission offset, and so that's why we feel like it's more of a policy issue, I mean, because they're taking the position, hey, these are just not good, and we're not going to look at whether or not you've tried to make them good, or what you've done to do that, we're just saying these can't be good, just from the get-go, we think this kind of emission offset is not okay.

But that's, again, in their own complaint, they're recognizing that plenty of regulatory agencies treat these as okay, and they're used out in the voluntary carbon market, so there's a disconnect there that suggests that it's not, hey, we told you something then we didn't do it. They didn't look to see what we did or didn't do. They just said, you told us something, and then you used these emissions that we don't like, and therefore, it was a misrepresentation.

But what's the huge gap in the entire complaint, which is why we think it's policy driven, is we want to -- looking at what we did, and what we actually did in terms of the verifying and addressing additionality, and all of the things that they're talking about, and if you think about, I mean, this complaint is presented as if these are all kind of,

like, new issues that no one's ever thought of, but in fact, this is exactly what the verifiers do.

They go to the projects, there's monitoring, there's annual monitoring, they take into account whether there's flaring, they look at whether or not other people have bought these emissions already. The law is under the low carbon fuel standards, so you can't double count. This is a very strong thing. So all these things are out there.

THE COURT: So all very good -- and I led you here. I'm understanding this is my --

MR. MAYO: Yeah.

THE COURT: -- doing. Those are all great jury arguments and might suggest a robust and effective factual defense. Why does that render the complaint susceptible to being dismissed?

MR. MAYO: Well, so I mean, the standard in looking at a motion to dismiss, granted, you have to give some credence to their factual allegations, but --

THE COURT: More than credence. I have to accept them.

MR. MAYO: Well, you have to accept them, but you have -- the ultimate thing that they have to prove is not just that they're fact -- it doesn't stem from their facts. It's, actually, that there has to be an ultimate -- the ultimate facts have to be sufficient to state a claim --

THE COURT: Right.

MR. MAYO: -- and you have to look at that, and you have to say that you can find an inference from that that's logically induced from those facts, and that's what's missing here. Like, we can take their facts as true, but you also have to take into account -- and this is what we talked about earlier -- for completeness' sakes, when they cite our web page, and they only cite it for something that they like for their claim, you need to look at what it says that's helpful to our claim as well because that's just completeness around those facts. They can't pick and choose. Even as the master of their complaints, still we get to look at the same things that they brought in and kind of opened the door on, so all of that should be in your frame of reference as you consider whether they've made that inference.

And again, like the overwhelming weight, we think, of what's in their own complaint, and in our own website, would say the only inference you can draw is that we were reasonable. This is what people do. They go hire experts. They go out in the market and they buy these things when they're not experts in it. That's --

THE COURT: And that there is no other inference available?

MR. MAYO: Yes.

THE COURT: Okay.

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MR. MAYO: Essentially, yes.

THE COURT: Okay.

MR. MAYO: I mean, particularly, the idea that that would be considered -- that inference could say that what we did could be willful, or reckless, or with knowledge, I mean, those are core threshold requirements of their UTA claim.

THE COURT: I'm going to pipe down and -- which I'm going to try to live by this time. The thing I would point out, and a place where I do think the parties are missing each other, is that Northwest Natural, in this analysis, is focusing entirely on the what -- here's what we did, and Plaintiff is spending at least as much time on here's what Northwest Natural told its customers, and as I understand the complaint, it is that those are different things, and that, sure, Plaintiffs may have a view of how objectively good or not good the things Northwest Natural did were, but that the real problem is that something was promised that was not delivered as opposed to -- which I think, in Plaintiff's view, means even if, on the merits, everything Northwest Natural did with respect to offsets is what a reasonable person would do with respect to offsets, that doesn't preclude willfulness or recklessness when other things are being promised, when things in excess of that -- those reasonable efforts are promised.

And I would suggest that the Court, in evaluating this motion, has to look at both of those things, not just at

what was done and whether what was --I guess, the way I'll put it is -- and then I really will stop -- the notion that what Northwest Natural did was reasonable, I think, does not end the analysis of whether, when compared to the statements, Northwest Natural might be found to have to have engaged recklessly or willfully. That's the way to put it.

MR. MAYO: Well, but I guess, I mean, again. I think the important thing to remember is that their -- the suggestion that we promise something more than we gave is -- relates to what we actually did.

THE COURT: Absolutely correct.

MR. MAYO: We didn't say --

THE COURT: Absolutely right.

MR. MAYO: So they said, again, they're saying you promised an emission offset that could remove emissions, and -- but you didn't provide that because you didn't address additionality, and this, that, and the other thing, and yet, the evidence on the website, from their own thing, says we address additionality, we address this, this, and this. Like, the inference isn't there that we didn't do whatever they say we promised. I mean --

THE COURT: Right.

MR. MAYO: So that's the hard part of the --

THE COURT: Although this is not a motion for judgment on the pleading.

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MR. MAYO: It's not. It's not.
THE COURT: It's a motion to dismiss.
S4: But I mean, again, they have to -- they have to say something that is supported by the facts that are in --
THE COURT: Okay.
MR. MAYO: -- in (indiscernible).
THE COURT: That they put in?
MR. MAYO: Yeah, exactly. Exactly. And again, that's the thing here, and we're trying -- we're not saying this is our evidence. We're saying this is, essentially, the completing of their evidence.
THE COURT: Okay.
MR. MAYO: So.
THE COURT: This is me piping down a bit.
MR. MAYO: All right, and bear with me a second. I'll try to cut this down a little bit because I think there are some important points, but I don't need to feed some of that setup. Yeah, and again, I mean, so we went through this before. I mean, I think, just to emphasize that, and I've got a bunch of slides, and you'll see them, but essentially, all of the slides that I have that reflect what's happening in California, that reflect what's happening in their own complaint with respect to the regulators, what's happening on the Northwest Natural website, we would consider that for purposes of this analysis, to be, functionally, their evidence.

And so all of that, again, shows that when they say we didn't do what we were supposed to do because we were using this kind of emission offset, other people don't think that, and that's important, and then, I guess, that's the thing. At the end of the day, we would say that the collection of the things that they complain about, like, they have a lot of complaints about renewable natural gas, but they really don't tie those complaints to the renewable natural gas being included in the Smart Energy program.

In fact, the Plaintiff here was never part of the program when that was in there, so he's not a good representative for that. But you know, there's a lot of things that they don't like about RNG as well, but that doesn't actually relate to their claims because it doesn't relate to the damages that he has under the Smart Energy program.

And then, again, they never -- because they don't acknowledge that those protocols exist, they don't make any allegations that we had specific knowledge that what we were doing was not good enough, and that's relevant to their claim. I mean, that's the thing, is to find reckless or knowing behavior, it means we have to have known something and then gone against it and gone out and publicly done that when we thought we knew otherwise. And I mean, our efforts to go to the experts and do this gave us at least, again, the reasonable view, so that it was not possible for us, in that situation, to

then be going out and be deceptive in that context. And you have to consider that evidence, and you wave all this together.

One thing that we hadn't covered before, just on the RMG front, again, I think it's probably not even relevant here because they can't tie it to the program, but if it was, the other thing we can add is that RNG actually was addressed by the legislature in Oregon, and they came out and said, hey, we support RNG, you should do it as part of a good carbon solution, so I mean, that's, again, that's out there. They may say that putting RNG credits in your program is worthless, or not helpful, or doesn't mitigate anything, but I mean, again, that's not the view of the regulators here, and that's important to know.

Let me talk about it, because we didn't talk at all about the two specific provisions. So we would say -- essentially, we would say that because they're not willful, reckless, or knowing, all of the claims go out, but if those stayed in, there's at least two of the claims that we say, for independent reasons, ought to be thrown out. So the first one is that these carbon offsets, and to the extent we're talking about RNG, these renewable thermal certificates are not goods within the meaning of 608.1(F), and that particular provision says -- it prohibits representations that real estate or goods are original or new if the real estate or goods are deteriorated, altered, reconditioned, reclaimed, used, or

second hand. And as the text makes clear, the statute really only applies to two things. It applies to houses, buildings, other physical real estate, and it applies to goods.

THE COURT: This point was a little ambiguous to me as to the Defendant's position on this point. Is the Defendant's position that a good has to be tangible, or is the Defendant's position a good might be intangible but this is not an intangible good?

MR. MAYO: I think for the purposes of interpreting this statute, our position is that it's a tangible object.

THE COURT: Okay.

MR. MAYO: And that's consistent with a, for example, the UTPA excludes securities, right, so.

THE COURT: Right.

MR. MAYO: But there's a number of examples in the Searle (phonetic) case, which Blumm relies on. They talk about what items might be considered goods. It's potatoes, furniture for a home, golf clubs, engagement ring. In the Avenue (phonetic) case, they define a consumer product as including only tangible personal property. And even in the Webster's third definition, that definition, the primary definition, for goods defines it as personal property or something manufactured or produced, so that's all very consistent with this idea that the goods should be considered to be tangible personal property. That's not what the Smart Energy program is doing.

That's providing a service. We take funds voluntarily contributed from customers and use those funds to invest in these carbon emission offsets. That's something different than a tangible good.

THE COURT: It's a service because I give you money, and you go do something.

MR. MAYO: That's right. That's right. So that's our position that that, really, as a matter of law, knocks this claim out for one half. And then for 1-B, this is a provision that prohibits the creation of confusion as to the source, sponsorship, approval or certification of real estate goods or services. So services are included in this one. But this is, really, about a provision that says, you know, don't make misrepresentations about where your goods come from or where your services come from, so don't say they're made in America if they're not made in America. And the First Amendment complaint may allege confusion kind of generally around the program, but they're not ever specifically saying there's confusion as to the source or certification of the Smart Energy program, and that's important.

THE COURT: So let's talk about source for a minute.

MR. MAYO: Yeah.

THE COURT: And I'm looking forward to hearing from Ms. Dahab about this also, but I -- as I understood, at least, Plaintiff's response on this point, it is -- there is confusion

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about the source because the promise is we're going to offset -- that we're going to offset your carbon, but as it turns out, we're going to end up doing this mostly with dairies, and it's going to capture the methane, but not the carbon dioxide, and so the source of the offset is confused is, I think, Plaintiff's point, although I'll let Plaintiffs speak for themselves.

Let's assume that's what they're saying, that the confusion as to source is we sold you this service, and we said we were going to go do a thing, but the thing we said we're going -- we're doing is different from the thing we're actually doing, and that that is, quote unquote, "source confusion." Proceed, please.

MR. MAYO: I mean, I think our position is that in that situation, the source of the offset for this purpose is us, is Northwest Natural. There's no confusion around that for purposes of the interaction with that customer.

THE COURT: You said you would provide the service. You're providing the service.

MR. MAYO: We're providing the service.

THE COURT: Maybe you're not providing the service appropriately. You're doing it all kinds of ways that are tortious, but at the very least, we know it's you who's doing it.

MR. MAYO: That's right, and they have -- they'd also

made an argument kind of around what I would call more of, like, the attributes of the -- of those things. And they talked about this Biden administration guidance around what should be included, and maybe there's confusion about whether we were using that, or whether that was relevant to our particular offsets, but again, that -- there's never an allegation that we communicated that in any way that that was something we were using, or that we ever said the Biden administration approved our offsets, or anything like that. So again, these sort of general confusion-type arguments are not the same as saying there's confusion about the source, the certification, and that's what it requires under 1-B.

THE COURT: Even if we assume confusion generally?

MR. MAYO: Yeah, that's right, that's right. And that's consistent with the Gilberto case, which we cited.

THE COURT: Okay, great.

MR. MAYO: I'm going to go to -- talk about the breach of contract claims, and we did talk about this some, and I want to hit this a little bit harder here because I do think it's relevant in the motion to dismiss context as well. So essentially, Plaintiff's breach of contract claim boils down to the allegation that each Plaintiff and each class member entered into a separate contract with Northwest Natural during the Smart Energy enrollment process to pay money in exchange for offsets of their emissions, and that Northwest Natural

failed to deliver those promised emission offsets.

But they failed to allege facts that can support this claim for two reasons. First, their premise that every time an enrollment process happens, there's a separate bespoke contract that comes out of that for 90,000 different customers, it's just not consistent with the regulatory structure of the tariff and of the program. And then secondly, even if there were 90,000 contracts, each of them ultimately has to be governed by the Smart Energy program otherwise -- and I'll talk about this -- but otherwise, essentially, you're getting rid of the Smart Energy program and turning it into private contracting, so you have to treat those requirements as being imported into whatever contract people were enrolling in Smart Energy.

They knew they were enrolling in Smart Energy. Those requirements need to be part of that contract agreement. And they haven't alleged that we've done anything -- again, and you talked about this at the very beginning of our discussion, they haven't alleged that we've violated the tariff or not done something we said under the tariff, so they haven't -- then they haven't alleged a breach in that context.

THE COURT: So but we do have a name for a thing when somebody -- if I'm trying to induce you into a contract, and I say something fraudulent to get you to sign the contract but then I actually perform fully on the contract, it's just not what I told you, you were signing, right, but we have -- but

fraud in the inducement is a thing.

MR. MAYO: Um-hum.

THE COURT: Is that how -- should that be how the Court reads their breach of contract claim?

MR. MAYO: Well, I mean, I would just say that they, I mean, as simple as they haven't alleged an actual contract, I don't -- I wouldn't even agree that we induced them into a contract scenario.

THE COURT: Okay.

MR. MAYO: That enrollment process is to go into the program. It's not a separate contract.

THE COURT: Well, the enrollment is a contract. I'm going to give Defendants money and they're going do -- perform this service for me. That's a contract.

MR. MAYO: Well, but the contract is I'm joining the Smart Energy program.

THE COURT: Right.

MR. MAYO: The contract is not I'm signing a document and then whatever two sentences are on the document.

THE COURT: If I offered to paint your house, and I tell you that I'm going to use paint that's going to render your house invisible from space, and I get you to sign a contract --

MR. MAYO: I would do that.

THE COURT: -- but all the contract says is I'm going

to paint your house, and I go ahead and paint your house, I perform perfectly under the contract, your house is painted, it just turns out it's still visible from space, is there a claim for breach?

MR. MAYO: Again, I mean, I think --

THE COURT: That sounds like a transfer that's induced by fraud, doesn't it?

MR. MAYO: But I think the difference is that that's not, I mean, that would be a contract, and that would be a fraudulent inducement. What we're saying is you can enroll in the program and then we will, in exchange, do what we are required to do under the program for you.

THE COURT: Right.

MR. MAYO: So we're not promising them something different. I think that's the --

THE COURT: Yeah, but that's the question.

MR. MAYO: -- the big disconnect here is, like, a --

THE COURT: I mean, the -- I think -- forgive me, I didn't mean to --

MR. MAYO: No, no, no.

THE COURT: But I think that's where Plaintiffs are -- and I really am going to let Ms. Dahab speak for herself -- but I think that's where Plaintiffs are staking their claim is not that you didn't -- I have not seen an allegation that the Defendants didn't perform under the tariff. If that exists,

it'll be pointed out to me. What I have seen is you said stuff in addition to what the tariff requires, and all of that was a lie, right? You promised carbon neutrality, that was false, that got me to enroll in the program, and then, yeah, you performed the program just fine, but I didn't enroll in the -- so that you would perform in the program just fine, I enrolled so that you make my house invisible from space.

MR. MAYO: Yeah, well, and again, I would grant you that I believe that is what they were saying. I would say we disagree wholeheartedly with that construct.

THE COURT: Without question, but I think I also understand --

MR. MAYO: Yeah.

THE COURT: -- you're saying that fails to state ultimate facts.

MR. MAYO: It does, because again, like, the -- if you look at both the formation of the contract, which has to be going into the program, not 90,000 bespoke independent contracts depending on what day it was, and if it was Tuesday, and what have you, and then what is a breach of that contract? A breach is if you didn't do what you said you were going to do, and that what you said you were going to do was what's in the program. So again, the program communicates what it means to present carbon neutrality, right?

THE COURT: Well, but I think Plaintiff's point is so

does Northwest Natural, that is to say, if Northwest Natural had reached to its customers and said enroll in this program so that -- and in exchange for your ten bucks a month or whatever, we will comply with all of the obligations under tariff 400 as to offsets, I think Plaintiffs would say that's a different case from join us in fighting climate change, and we will assure you carbon neutrality.

MR. MAYO: Again, I credit you for characterizing their argument correctly. Again, I would disagree with that, though. I think the way that we believe, and it was said in the Blumm phone call, and it's consistent with the way that the wording is on some of these enrollment terms, is that what it means to present carbon neutrality is we will buy emission offsets, verify them, and retire them in an amount consistent with the amount that your home burns. That's what it means.

THE COURT: Which is exactly what the PUC says you need to do.

MR. MAYO: That's right. That's what it means. And we have the Danone case, which I hope you've looked at --

THE COURT: I do.

MR. MAYO: -- because it's a really interesting case from New York from last year where it basically talks about a reasonable consumer principle, and the reasonable consumer principle, you have to say -- people know when you're talking about giving them carbon neutrality, they don't think that you

mean that every thing, I mean, obviously in climate science, there's a lot of strings attached to your activities, and it goes way down the line in all different directions, and all that kind of stuff, but when people are thinking about this, they're thinking, yeah, I'm going to get my emissions, I mean, we say the emissions from your home burning natural gas, that's the emissions you created by your appliances doing that. It's not everything upstream and downstream.

And they said, in that case, it was reasonable to tell them you were going to give them carbon neutrality and then give them information where they could go figure out what that was at an attached website. So they, on their label, they said carbon neutrality by -- it's not the -- it's the Carbon Trust, right? It's, like, very close. It's not the Climate Trust. It's the Carbon Trust. And then go to their website and you'll know how we produce that. And the way we produce that is we have third parties verify that this water is being produced with carbon neutrality, so -- and this is exactly what we have here. That's the same situation. So again, what I can't -- what I can't grant is that there are more promises being made outside and over and above what's in the tariff, so that's why I think the differentiation is.

THE COURT: Okay, that's helpful.

MR. MAYO: Okay. Yeah, again, I mean, so just to hit a couple of, I mean, so if you -- if everybody gets their own

contract, there is no more Smart Energy program. I mean, they've cited a bunch of cases that say it's possible for utilities to go out and make one-off contracts with people, and I'll grant them that -- you can do that -- but those are, like, one-offs with, like, an aluminum manufacturer. One, I know, somebody needs more power than other people do, but that's not the entirety. You're not giving deals to everybody, or you really would undercut the whole program. Here, this is -- the idea is if we gave a deal to everybody that's different from what's in the program, well, no one's left in the program. There's 90,000 different contracts, and that doesn't make any sense. And then --

THE COURT: Certainly, it would read on a class certification question also.

MR. MAYO: Yeah. Well, certainly. And then I think in terms of the breach, again, they haven't been very clear about what the terms are for these bespoke contracts, but we think it has to be schedule 400. They're home style direct cases they cite. In that case, when a company enrolled in an existing program through a separate contract, the court actually enforced the rules and procedures of the underlying program as opposed to treating that engagement as an independent transaction, and that's the same thing that we think that applies here.

And so you know, getting back, I mean, what are the

obligations under schedule 400? They are to verify and retire carbon offsets and comply with the terms and conditions governing billing, payment, and disbursement of funds, so -- and I think we've all decided here, they haven't said we haven't done that. And so if that's the term of the contract, which we argue to this Court, that it is, and they haven't argued that we didn't do that, then they haven't argued a breach. So you have a failure of contract, and you have a failure of breach. So that's our contract position.

THE COURT: Thank you.

MR. MAYO: Two quick things, because these weren't covered previously. So just briefly, if and only if you don't throw these claims out, then we think it's actually appropriate to find primary jurisdiction and to abate these cases -- or to abate whatever claims would be left. Under Oregon law, the application of primary jurisdiction and abatement is recognized as a way to give an agency an opportunity to weigh in where it has special expertise, so the Boise case and many others.

And although Plaintiffs are suggesting here that they're not saying anything against schedule 400, they're not attacking schedule 400, in reality, their claims all go after the schedule 400 requirements. They specifically say, on page 37 of their response, the purported contract obligated Northwest Natural to offset their customers' greenhouse gas emissions in exchange for a fixed and variable fee consistent

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with Northwest Natural Gas' tariff, including schedule 400, they complain about the administrative fees, but those are specifically allowed in schedule 400, they complain about the two-year banking provisions specifically allowed in schedule 400, so really taking on what's in schedule 400, and that's something that the PUC is well-situated to deal with.

And they cited, for example, the Adamson case, but the Adamson case was a situation where the allegation was that Defendant was acting inconsistently with the tariff here. The allegation, essentially, is -- or the absence of allegations suggests we're acting consistently with our tariff, and yet we're still going to get dinged, and in that situation, the PUC should be involved because they're the ones who actually created this application and created -- and have authority over that program, so that's our argument on abatement.

And then, very briefly, we think you've got to dismiss the claims against the Parent. They didn't put anything in, no claims, they can't fix it later, and so if they want to replead, but I mean, they can't -- it's got to go, so.

THE COURT: Thank you.

MR. MAYO: Okay.

THE COURT: Ms. Dahab?

MS. DAHAB: Thank you, Your Honor. I'm going to try to do this sitting down. I'm not very comfortable sitting down, but I would like -- I'm going to start with the breach of

contract claim, and I think, relatedly, primary jurisdiction because I think the role of schedule 400 in this sort of resolves both. And let me be very clear, Plaintiffs do not challenge -- I think, essentially, what Your Honor suspected and articulated earlier -- we do not challenge the terms of schedule 400. We do not challenge Northwest Natural Gas' compliance with schedule 400.

I heard some mention just now about rates, and fees, and two-year banking allowances, and things of that nature. We do not challenge any of those terms in schedule 400. This is not a rates case, and there's nothing that the PUC -- there's no issue in this case over which the PUC has particular expertise. The PUC, in regulating rates and in regulating the delivery of natural gas, does not oversee Northwest Natural Gas' marketing. The marketing materials are not overseen by the PUC. They're not approved by the PUC.

And what we are challenging here are statements made outside the context of schedule 400 in the tariff, about the promised effect of the carbon offsets that Northwest Natural Gas sold to its customers through the Smart Energy program. I want to point the -- I want to look to the particular allegation, the complaint, as to the breach of contract claim, and also, page 54 of the anti-SLAPP slides, which is, essentially, the contract that Ms. Gates signed that is reflected sort of -- that's reflected in the allegations of 143

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to 147.

And the particular statements, or offer, that Northwest Natural Gas made to Ms. Gates, Mr. Blumm are that they would -- well, they would -- they offered her to basically sold her a carbon offset at two different rates, right, there's two different aspects to this program, and as shown on 54, she opted into the climate neutral program. There's a footnote 3 on the climate neutral program, and Northwest Natural Gas tells Ms. Gates that it will add a certain amount per therm to her bill, and it will sell her an offset, the effect of which will be to offset 100 percent of the carbon emissions from her home's natural gas use. That's what the contract says, and that's what it says in paragraph 144 of my (indiscernible).

THE COURT: So what we have in the red box on page 54 of the slides --

MS. DAHAB: Yes.

THE COURT: -- is the contract?

MS. DAHAB: That's, I mean, I don't have -- I don't have all of the documents that Northwest Natural Gas has in terms of what Ms. Gates signed and what they may possess in terms of additional contracts.

THE COURT: But --

MS. DAHAB: This is what we, essentially, lay out in paragraphs 143 through 147 or 8 of our complaint.

THE COURT: Unless the breach is what, the claimed

breach is what?

MS. DAHAB: The claimed breach is that Northwest Natural Gas did not, in fact, sell her carbon offsets that 100 percent offset the carbon emissions from her home's natural gas use.

THE COURT: And that is your claim, even and notwithstanding, if we assume, as you say, that Northwest Natural did exactly what --

MS. DAHAB: Correct.

THE COURT: -- what the tariff says needed to do with respect to offset --

MS. DAHAB: Correct. Yes.

THE COURT: -- because it said something different to Ms. --

MS. DAHAB: Exactly.

THE COURT: It promised more than that to Ms. Gates.

MS. DAHAB: Exactly.

THE COURT: What did we do with the notion that, as a matter of law, Northwest Natural wasn't in a position where it could offer to do more, or less, that it was stuck with what the PUC had promulgated. I suspect -- sorry, I wasn't trying to be cute.

MS. DAHAB: No.

THE COURT: I think the answer is yeah, but they did, though.

MS. DAHAB: They did. Exactly.
THE COURT: Right.
MS. DAHAB: I mean, they chose to do more.
THE COURT: Right.
MS. DAHAB: And so they are -- and they've entered into -- I have difficulty seeing how this is not a contract. There is an offer to provide something, she accepted that offer, and she paid for it.
THE COURT: So if it says -- if footnote 3 had said Northwest Natural -- add whatever amount, dollar amount -- per therm for your monthly bill to offset your carbon emissions consistently with PUC, something, something.
MS. DAHAB: Right. If they would have made it -- if they would have made different statements other than the statement that we have here, and some of the other statements they made in their marketing materials about the zero net effect and the 100 percent offset -- they wouldn't have made those statements -- if they would have acknowledged the very real uncertainty that exists, that I think that they have acknowledged in other contexts, about how effective, or how certain, actual emissions reductions are, we'd have a -- I think we'd be in a different posture --
THE COURT: Okay.
MS. DAHAB: -- and we'd have, perhaps, a different scenario on our hands.

THE COURT: One thing I'm struggling with --

MS. DAHAB: Yes.

THE COURT: -- is I see you pointing to here's Ms. Gates' signature, and here's the promise. It's right there, it's an offer, and it's an acceptance contract right here. One thing that I know Defendants are struggling with, and I think I am struggling with, I think, is, every time, Plaintiffs point to marketing materials. The notion that marketing materials are incorporated into a contract is tricky, to say the least. So do the marketing materials that are brought into the complaint by reference, or by quotation, are those alleged to be terms of the contract that it is claimed was breached?

MS. DAHAB: They are, and let me tell you why. This does not stand alone in the market -- in the materials that that Northwest Natural Gas provides to its customers. Northwest Natural Gas, along with this yes, enroll me and I'll pay this much for 100 percent offset, accompanied with that are fliers and other statements that reflect many of the statements that we've set forth in paragraphs 70 to 85 of our complaint.

THE COURT: And those statements made in fliers and other marketing materials --

MS. DAHAB: Those --

THE COURT: -- that are sent along with, are incorporated as terms of the contract?

MS. DAHAB: To the extent that they come with that,

they are terms of the contract.

THE COURT: Do you have any authority for that notion that marketing materials, advertisements, fliers that accompany contractual language, that those -- that the fliers and marketing materials themselves form material terms of the underlying contract itself?

MS. DAHAB: I don't know that we've cited a specific case that says that in our brief.

THE COURT: Okay.

MS. DAHAB: It --

THE COURT: Certainly, there are claims for deceptive advertising. You've made them.

MS. DAHAB: Absolutely, yeah.

THE COURT: But as a matter of contract, I'm having trouble reaching -- I cannot think of authority that suggests that if I advertise something to you, and then I sign a contract that maybe doesn't say the same thing as the advertisement, that nonetheless, the statements in the ride along advertisement are incorporated as terms into the contract itself. Again, maybe fraud in the inducement, maybe --

MS. DAHAB: Sure.

THE COURT: -- maybe some other things, but as terms of the contract thus capable of being breached, I don't know of any authority that suggests that that is how contract law works in Oregon.

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MS. DAHAB: And I think -- I don't want to suggest that it doesn't matter, but it may not matter because the statement that appears in this contract is the same statement that we've seen in all of those marketing materials.

THE COURT: Understood.

MS. DAHAB: So assuming for the moment that they don't --

THE COURT: Right, I'm not -- I'm not even suggesting that that --

MS. DAHAB: Fair enough, yeah.

THE COURT: -- analysis may be dispositive on the issue, but I was unclear whether Plaintiffs are claiming, yes, all these additional ride-along materials, any statements made in there promising here's how this works, are, actually, incorporated into the contract itself. I understand that is your position. I don't know that that's a legally supported position, but I understand it is the position.

MS. DAHAB: Fair enough. It is not our position that all of the other marketing materials that customers see elsewhere, right, are incorporated into some contract that they signed later on.

THE COURT: Just the things that are provided --

MS. DAHAB: Exactly.

THE COURT: -- with the contract --

MS. DAHAB: Exactly.

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THE COURT: -- material itself? Okay.

MS. DAHAB: All of that marketing material forms, in our view, a likelihood of consumer confusion and constitutes other, sort of, violations, but they do not make --

THE COURT: That's your UTPA claims all day?

MS. DAHAB: Right, yeah.

THE COURT: Right. Okay.

MS. DAHAB: But they do not form the basis of the breach of contract claim. I think for the same reasons that we view the contract here as not implicating schedule 400 in the sense that while the rates might be determined under schedule 400 -- it is not the rates that are the problem here, it's not the rates that we're challenging -- for the same reasons, I think there's nothing for the PUC to resolve in the -- under the primary jurisdiction doctrine.

THE COURT: Because the PUC didn't make any of the statements promising what Northwest Natural would do.

MS. DAHAB: Didn't make the statements, and doesn't regulate, or oversee, or even review those statements as part of its regulatory authority. Unless the Court has additional questions about the breach of contract claim, I will turn to -- I'd like to turn, sort of, to the very first argument, I think, that they make, which is that there's just not enough facts in this extensive complaint to establish reckless, or willful, or knowing violation.

As this Court is familiar, willful under the UTPA is a negligence standard. It's knew or should have known. And knowing or reckless, reckless is a -- there was a substantial risk that you disregarded. And in our view, we have alleged substantial facts relating to the consumer surveys that Northwest Natural Gas has undertaken, their understanding of what consumers view as important in the marketplace, the role that climate change plays in consumer decision-making, all of the information that's out there about the problems with the projects in which the Smart Energy program chose to -- from which they chose to purchase offsets, and then the statements that they make promising zero -- carbon neutrality, zero net effect, 100 percent offset.

We think that certainly is enough to establish willfulness under a negligence standard, and even under the reckless standard. I mean, Northwest Natural Gas sells gas, and gas is a methane, and it's a climate super polluter, and knowing what they know, being in the business of selling methane gas and undertaking to deliver to consumers, or to sell to consumers, this additional offset program, there certainly is a risk that they were -- that they should have been aware of and disregarded it to the extent that they --

THE COURT: A risk of that -- a risk of what?

MS. DAHAB: A risk that what they were selling -- what they were saying to consumers was not true.

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THE COURT: About the offset?

MS. DAHAB: About the effect of the offsets, right, that 100 percent offset. That's not true, and that, we -- I think that these allegations on this complaint, which is what I think we all agree we're looking at here, is certainly enough to say a willful and reckless violation under the UTPA.

THE COURT: Because of -- I'm just trying to repeat back --

MS. DAHAB: Yeah, yeah.

THE COURT: I'm just trying to flip back to make sure I'm understanding. Because of all this -- for all the same reasons that Northwest Natural is now explaining that you can't really do a 100 percent offset --

MS. DAHAB: Yeah.

THE COURT: -- that you have to go to this public marketplace, that you have to -- this is what's out there, this is what we can do, that to the extent Northwest Natural is alleged to have known that --

MS. DAHAB: Um-hum.

THE COURT: -- that for all those same reasons, it is at least inferable that it was reckless or willful in --

MS. DAHAB: Exactly.

THE COURT: -- nonetheless, promising 100 percent carbon neutrality.

MS. DAHAB: Exactly.

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THE COURT: Where is that -- where, in the complaint, would you point to that?

MS. DAHAB: I think you have to look at the complaint as a whole.

THE COURT: Popular response

MS. DAHAB: And I'm happy to walk through the allegations that I think collectively show that.

THE COURT: If you would briefly do that, I would appreciate it.

MS. DAHAB: Yes, yes, I will -- I'm happy to do that. Well, let me just -- I don't want to review the whole complaint, but starting at paragraph 40 of the -- 48 of the complaint -- 46 of the complaint, we start by saying Northwest Natural Gas Company sells gas, which is entirely methane, which is a climate super pollutant. We go on to discuss that it's known for years that customers care about the climate impacts -- care about the climate, in paragraph 48.

THE COURT: And the thing I'm most interested in is the thing that suggests that Northwest Natural knows there's no such thing as pure 100 percent carbon offset, that it should have known that, because what the complaint --

MS. DAHAB: Yeah.

THE COURT: -- spends a lot of time on is saying the things that they were buying aren't 100 percent, right?

MS. DAHAB: Yeah. And here's where, maybe, I'm going

to decline to walk through every allegation --

THE COURT: Yeah, sure.

MS. DAHAB: -- of the complaint, because I think you do have to read the complaint in its entirety --

THE COURT: Okay. Okay.

MS. DAHAB: -- and you have --

THE COURT: I will do so again.

MS. DAHAB: I think you have to look at the -- one, the federal guidelines on carbon offsets and the inherent uncertainty -- and the warned uncertainty that federal -- that the administration tells everyone about how offsets are particularly uncertain, and they need particularized scrutiny because of that, particularly if you're making statements.

THE COURT: Which is alleged in the complaint?

MS. DAHAB: Yes.

THE COURT: Okay.

MS. DAHAB: Yes.

THE COURT: So I should probably --

MS. DAHAB: That's alleged --

THE COURT: -- start there.

MS. DAHAB: That's alleged in the complaint. We go on to talk about the -- how manure digesters and the, sort of, the industrial agriculture source of all of these -- of all these projects have existed for a long time, and have been uncertain for a long time, and then we go on to talk about the

specific projects that are, sort of, part of the Smart Energy program and all of the various violations of those projects, that DEQ finds of those projects, and all the information that's out there about -- that demonstrates that those projects are not delivering the sort of carbon emissions that they -- that Northwest Natural Gas tells consumers that they deliver. As part of that -- and I think -- I don't know that there is a statement that says all of that being true --

THE COURT: Right. And I understand your position --

MS. DAHAB: They were (indiscernible).

THE COURT: -- is it doesn't have to say that.

MS. DAHAB: Exactly.

THE COURT: Yeah.

MS. DAHAB: I think I would point -- to the extent that it does say that, it's at paragraph 124, which makes it -- sort of distills all of those facts into one allegation -- or maybe 124 and 125 -- into a handful of allegations about why it is that these statements were misrepresentations to consumers.

THE COURT: Okay.

MS. DAHAB: Let me touch on the last two issues, which, well, there may be a third issue, but the next issue, I think, is whether the carbon offset is good.

THE COURT: Goods?

MS. DAHAB: Yes. The UTPA is very broad, and case, after case, after case from the Oregon Supreme Court and Oregon

Court of Appeals has told us that the UTPA is construed broadly in favor of consumers.

THE COURT: Sure.

MS. DAHAB: I actually read, sort of, through the exclusion for securities. There's two exclusions in the UTPA. There's the securities and insurance. I would actually read those not to say that means all intangible goods are not included. To me, that means everything else is included.

THE COURT: Boy.

MS. DAHAB: To the extent that it can be characterized as a good or service, right? I mean, obviously it has to fit within the statutory rule.

THE COURT: Isn't this plainly a service? I'm going to give Northwest Natural money, and they're going to go do something with that money in the same way that I give my electrician money, and he does something.

MS. DAHAB: I think a -- I think that, yes, and in the sense that a carbon offset is also a good.

THE COURT: Is my functionaling -- functionaling is not a word. Is my functioning electricity in my home a good?

MS. DAHAB: You know, I was just looking at case law because I think there's actually -- we don't cite this authority in our brief, so I don't want to cite to it here, but I think that there is a split of authority across the country on whether gas and electricity is an intangible good or a

service. I think you can (indiscernible) --

THE COURT: But here we're not talking about gas that's being delivered to my home. We're talking about Northwest Natural going off and investing in these technologies that have a certain result. I don't get anything back other than a really good feeling that I've helped save the planet, and maybe I get a somewhat cleaner planet.

MS. DAHAB: Um-hum.

THE COURT: What's the are the metes and bounds of the good?

MS. DAHAB: I mean, the good is the offset itself, the carbon offset, that they're selling, and I'm doing this as if a thing --

THE COURT: And that's my offset? Like, I've received that offset? I haven't received that offset.

MS. DAHAB: You've purchased the offset in the sense that you've purchased the offset to your -- at least this is what they tell you.

THE COURT: Sure.

MS. DAHAB: The offset to your home's natural -- the carbon emissions created by your home's natural gas use.

THE COURT: If, instead of taking my money and investing in the technologies, they just plant ten trees for every $100 that I give them, and hey, we've -- that's some amount of offset. It's probably not carbon neutral, but it's -

- right? Have I purchased a good?

MS. DAHAB: That might be a service, but that's not what they've done.

THE COURT: Right, so what --

MS. DAHAB: That's not what they've done.

THE COURT: But what's the difference? Right. In either case, I've, quote unquote, "purchased the offset." Why does it matter whether they've built technology that's going to capture methane on a dairy farm or planted trees? In either way, they -- it's the same offset to -- however many trees equals methane-capture at a dairy farm, that many trees, how is them planting that many trees different than what they're -- which is, I think, not a good -- how is that different from what they're doing here, which you're saying is a good?

MS. DAHAB: I guess I view these two a little bit differently in that they're not --

THE COURT: I can tell.

MS. DAHAB: They're --

THE COURT: I'm wondering why.

MS. DAHAB: I mean, it's a -- I think we're asking for a relatively broad reading of it --

THE COURT: Without question.

MS. DAHAB: -- for certain, for sure.

THE COURT: I'm just trying to figure out why, even under a broad construction, why is someone going off and doing

a thing that reduces in their -- that results in less greenhouse gases in the environment, how is that a good that I have purchased?

MS. DAHAB: I guess, here, they're not selling it as we're going to go off and do a thing, we're going to sell you -- you are offsetting your carbon emissions from your natural gas use in your home.

THE COURT: So they gave me a certificate --

MS. DAHAB: We're not going to go -- I don't think they gave you a certificate. I think that was email.

THE COURT: If they gave me a certificate, maybe the certificate is a good.

MS. DAHAB: Could be. Could be. I think that -- I don't think that makes the offset itself not good. I mean, offsets are economically valuable things.

THE COURT: But not to me, right, not as the purchaser of the offset. I haven't gained any economic advantage. I've affected my will upon the world --

MS. DAHAB: Sure, sure.

THE COURT: -- in a way that is satisfying.

MS. DAHAB: Yeah, sure, sure.

THE COURT: I've done a good thing.

MS. DAHAB: You absolutely have. I don't know that that makes it not a good.

THE COURT: I just don't know that it makes it a

good, and I'm trying to figure out --

MS. DAHAB: You're not --

THE COURT: -- what definition of good captures that. A broad one.

MS. DAHAB: A broad one. I think the UCC definition of good, which I should have in the briefs, here, which the Gilberto case relies on, which talks about all things movable --

THE COURT: It's the credit union --

MS. DAHAB: -- and then goes on to say, broadly, goods --

THE COURT: Sure.

MS. DAHAB: -- excluding money --

THE COURT: Is a -- but how is a credit moveable?

MS. DAHAB: I mean, we -- they're trying --

THE COURT: How is an offset -- sorry, not a credit How is an offset --

MS. DAHAB: I mean, in the sense that you can transfer offsets from one person to another, you can sell offsets on a market. That's movable.

THE COURT: But I don't have -- as a participant in this program, I don't have any offsets to sell. I don't have, I mean, I guess, I could offer to have someone -- if you give me ten bucks, I'll pass those ten bucks on to Northwest Natural, but I don't -- I don't have -- there's nothing for me

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to move in the same way that if they planted X number of trees that don't belong to me, there's nothing to move.

MS. DAHAB: Yeah, and I guess -- I suppose that's fair. I'm not sure that the fact that you can't turn around and sell your offset on a market means that a carbon offset is not a good.

THE COURT: Well, but this --

MS. DAHAB: I mean, that's --

THE COURT: This is about a good that I, the protectee of the UTPA, have purchased.

MS. DAHAB: Sure.

THE COURT: Okay.

MS. DAHAB: Sure. Yes.

THE COURT: Okay. If you want --

MS. DAHAB: I want --

THE COURT: -- to spend more time here, you're welcome to.

MS. DAHAB: I don't, actually.

THE COURT: Okay.

MS. DAHAB: I do want to, I mean, I guess I do want to say that Defendants here are asking for a rule that goods under the UTPA are only tangible goods. That is carving out not only carbon offsets, it is carving out software -- it's carving out --

THE COURT: Sure.

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MS. DAHAB: -- a lot of things that --

THE COURT: All I will say is, I do not know that their position requires the Court to make that determination in this case, and I'm certainly not inclined to go further than I need to one way or the other --

MS. DAHAB: Sure, yeah, okay.

THE COURT: -- on determining whether or not this is a good.

MS. DAHAB: Well, let me turn from goods to source and our allegation under 1-B which talks about source and certification. And I want to, if I can clarify, this is another instance where I think the Plaintiffs are -- we are asking for a, sort of, broad reading of the UTPA here, and specifically, the word source. What I will say is that source is not definitionally limited to geographic origin. If it were, the UTPA would not have used the first geographic origin in 1(D).

THE COURT: Um-hum.

MS. DAHAB: So we know, I think, just from context, that source is broader than that. In our view, the source of the -- let me get the UTA (indiscernible). 1(B) says, "Causes likelihood of confusion or of misunderstanding as to the source, sponsorship, certification of real estate goods or services." In our view, the source here pertains to a particular reduction in carbon emissions that is being sold to

consumers through -- by way of the offset.

THE COURT: I promise I'm not trying to be flip. I don't understand that sentence.

MS. DAHAB: Fair enough. I think we've alleged in our complaint sufficient facts setting forth that carbon offsets to be sort of legitimate, or verified, have to have certain attributes of legitimacy.

THE COURT: I agree that you've done that.

MS. DAHAB: One of those is additionality. One of those is uniqueness. One of those is verification. I think certification, in our view, is sort of verification.

THE COURT: Okay.

MS. DAHAB: Source, I think, bears on the additionality and uniqueness attributes of a carbon offset in the sense that every carbon offset is, or should be, to be legitimate, sourced to a specific reduction in carbon emissions, and that reduction not only has to be additional in the sense that it needs to reduce carbon that -- reduce emissions that wouldn't have otherwise have been reduced, and it also can't double count, right? You can't sell the same offset for one -- multiple offsets for one emission.

THE COURT: Right.

MS. DAHAB: That is how we are viewing source. Each carbon offset that Northwest Natural Gas sells is sourced to a particular reduction in emissions, and in our -- and we have

alleged that it is actually not in the sense that Northwest Natural -- there are allegations showing that there is -- that they are, in fact, double-counting or that there is -- they're not additional, in the additionality sense, of those federal -- of those requirements.

THE COURT: So I, as a consumer, as a participant in this program, am subject to being confused about the source of my offset, not because I didn't realize it was going to be a dairy farm, but because I believed my offset was unique --

MS. DAHAB: Exactly.

THE COURT: -- and it turns out my offset is being -- is also being attributed to other participants in the program, and therefore, I am confused about from whence comes my offset?

MS. DAHAB: Exactly. And therefore, the legitimacy of your offset.

THE COURT: Although, this provision isn't really about legitimacy, right. It's about imprimatur. It's about made in the USA, or it's about Michael Jordan being on the front of my cereal box, right?

MS. DAHAB: Is it? I mean, I think it's worded much broader than that. I think that's how Northwest Natural Gas certainly frames it, but I think those -- source and certification are actually much broader words than I think those analogies, or examples, provide.

THE COURT: Okay. And so again, using only source,

putting certification on one side, the allegation is to the extent that there has been alleged double-counting that I may not have been told that my offset comes from this dairy farm between 10 and 10:30 a.m., right, whatever methane is captured in that 30-minute window, but I've been promised there's some exclusive window that is my offset.

MS. DAHAB: If there's a particular reduction in emissions.

THE COURT: Right.

MS. DAHAB: Yeah.

THE COURT: Okay.

MS. DAHAB: Because that's how carbon offsets are supposed to work.

THE COURT: Right. And that it turns out, nope, that offset belongs to someone else --

MS. DAHAB: Um-hum.

THE COURT: -- and therefore, I'm confused --

MS. DAHAB: As to the source --

THE COURT: -- as to the source of that offset.

MS. DAHAB: Exactly.

THE COURT: Okay.

MS. DAHAB: I actually don't know that I have much more to add other -- I guess I will say, lastly, I think that we have, in our response, established that with leave to amend, we can state facts against the holding company here. I'm not

sure that we have on the current complaint.

THE COURT: Right. I mean, you say that you can.

MS. DAHAB: But we -- yeah, and but --

THE COURT: Which is probably good enough.

MS. DAHAB: Right. But we would request leave to amend so that we can incorporate those allegations into the complaint.

THE COURT: Okay. I'm not sure I've even heard an argument that any dismissal there would -- should be with prejudice. If that argument is coming, I'm happy to listen to it --

MS. DAHAB: Okay.

THE COURT: -- but I understand your position is, then, in good faith, you believe you can amend. Can we go back to the contract for a second --

MS. DAHAB: Yeah.

THE COURT: -- and then you get to stop talking, I promise. Defendants have understood the arguments in the complaint, and the arguments in your response, to be, essentially, that a unique contract was created every time somebody signed up for the program, because Defendants understand your position to be, I think, it depends on what that particular Defendant saw leading up to that Defendant's -- or I'm sorry --

MS. DAHAB: Plaintiff.

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THE COURT: -- what that particular Plaintiff saw leading up to that particular Plaintiff's, or enrollee -- let's put plaintiff to one side. Let me try again. Defendant understands Plaintiff's position to be any time anyone enrolled in the program, that created a sort of unique contract between that enrollee and Northwest Natural, because as Defendant understands Plaintiff's arguments, Plaintiff is arguing everything that Plaintiff -- everything that enrollee saw is what we, the Plaintiffs, are arguing were the terms of the contract, anything related to the program that Northwest Natural said that we say that's a term of the contract.

I've heard you sort of disavow that notion, for example, by declaiming that other things that Plaintiff saw, marketing materials and other things that were not, sort of, packaged with the contract, do not form a portion of the contract. I think there's a cascading series of questions here, but they're short. The first is, did every enrollee enter into the same contract with Northwest Natural?

MS. DAHAB: Yes.

THE COURT: Okay, in which case it doesn't matter what the enrollee saw. What matters is that Northwest Natural promised to each enrollee a 100 percent carbon offset.

MS. DAHAB: Exactly.

THE COURT: Okay. Is that the only thing that is being alleged as the breach?

MS. DAHAB: Yes.
THE COURT: Okay.
MS. DAHAB: The nondelivery -- the nonfulfillment of the promise --
THE COURT: Right.
MS. DAHAB: -- to offset, 100 percent, the customers' emissions.
THE COURT: So that whatever the other terms of the contract, the only thing being alleged as breach is you told the enrollee they'd get a 100 percent carbon offset, you did not deliver that, that the contract included that term, that's what you breached?
MS. DAHAB: Correct.
THE COURT: Okay. Thank you. You're welcome to speak more about that if you want to, but you addressed the thing I had in my head.
MS. DAHAB: Let me clarify briefly.
THE COURT: Sure.
MS. DAHAB: Because my counsel -- my colleague points out that the -- there are two separate programs here. Well, they're part of the same Smart Energy program, but there's two separate options for enrollment.
THE COURT: Right.
MS. DAHAB: And so we -- both the, sort of, the general "offset your carbon emissions" that I think applies to

the average household --

THE COURT: Right.

MS. DAHAB: -- and the 100 percent carbon emissions that applies to the climate neutral option, those are the terms --

THE COURT: Okay.

MS. DAHAB: -- so just to be a little more specific, then.

THE COURT: Accounting for the fact that if I, as a customer, enroll in the average, I'm not even trying to get a 100 percent carbon offset because maybe I use less gas than average, or maybe I use more gas than average, and so I'm not looking for a therm-to-therm offset.

MS. DAHAB: Right, but you're -- but you are told --

THE COURT: Right.

MS. DAHAB: -- that you will get --

THE COURT: An offset that is 100 percent --

MS. DAHAB: A zero --

THE COURT: -- of the average --

MS. DAHAB: Right. Exactly.

THE COURT: Right. Okay.

MS. DAHAB: Exactly.

THE COURT: That's the difference.

MS. DAHAB: Yes.

THE COURT: Okay. So every enrollee gets one of

those promises?

MS. DAHAB: Exactly.

THE COURT: As to any enrollee, that's the term for which breach --

MS. DAHAB: And it's the same as to every enrollee.

THE COURT: Right.

MS. DAHAB: Yes.

THE COURT: Okay.

MS. DAHAB: Yes.

THE COURT: Okay. Anything else on that or any other point?

MS. DAHAB: No.

THE COURT: Thank you.

MS. DAHAB: Thank you, Your Honor.

MR. MAYO: Even with that clarification, I still have some questions about what the actual contract is. I mean, we'll pull up the one enrollment we have, but I guess, again, this question about whether advertising materials could somehow be included, and whether or not what somebody's told about the climate-neutral option versus the average home would be the same, though there's still a lot of confusion if you're going, again, with the idea that there's 90,000 bespoke contracts, even if they're functionally the same, and people are signing up by mail, they're signing up online, by phone, I mean, it just doesn't -- it doesn't seem to hold up as a practical

matter, and certainly, we don't have the definition, again, of the specific things that they're saying are actually in the contract.

But maybe, I mean, if we pull up the contract here, I mean, some things that weren't called out in what she just pointed to, the second line -- I guess, the third line, and it might be easier for you to read there, but the Public Utility Commission of Oregon oversees Smart Energy and authorized its rates, so we're telling them you're going to the program that's with the PUC. The next line, the Climate Trust, an unaffiliated nonprofit, verifies and retires quality offsets on behalf of the program. That's what you have to do under the program. That's your job. And then, again, put aside, I mean, we don't think this can be an entire contract. I mean, every time somebody signs a stub of something, it doesn't mean that everything else goes away that they might be subject to.

THE COURT: But it usually means that the things in the stub are in the contract, right? If she signs a contract stub that includes footnote 3, footnote 3 is probably in the contract.

MR. MAYO: Well, and that's fair, and -- but it also includes the text, which is not footnoted, which says --

THE COURT: Sure.

MR. MAYO: -- we're going to verify these offsets, so and that's --

THE COURT: I believe I heard Plaintiff explain, like, yeah, we believe -- we got no beef with how -- which is not a dairy farm joke -- with how the Defendants engaged with the Climate Trust or what the Climate Trust did. We have a complaint about the other, comma, additional, comma, thing that Northwest Natural promised in footnote 3.

MR. MAYO: Yeah, but again, I guess our --

THE COURT: I guess my point is all of those things can exist at the same time, can't they?

MR. MAYO: Well, but our position is they're the same thing. Like, the way that we achieve the 100 percent is by retiring verified offsets that are produced by the Climate Trust under the schedule 400 of the PUC. It's all right there in the contract, in this little bitty summary of the contract. So I mean, I guess, I don't want to miss that point --

THE COURT: Yep.

MR. MAYO: -- because we think that says exactly what we say it does.

THE COURT: Okay.

MR. MAYO: So and again, I mean, it just can't be that every time, like we just said, every time you do a stub like this, you have to attach the 50 pages of a real contract or whatever. I mean, that's not how the world works. We have lots of (indiscernible) times where we do this kind of stuff. And again, I'm not sure that I would say -- and I'm not saying

you were putting -- you were saying that we were saying this, but I mean, I'm not sure we would disagree -- or that we would agree that you can't get 100 percent. It's just a question of what is defined as 100 percent, right, and so we --

THE COURT: And I certainly didn't mean to --

MR. MAYO: Yeah, okay --

THE COURT: -- suggest that.

MR. MAYO: -- so just to be clear on that. So --

THE COURT: And just to pause there for a second.

MR. MAYO: Yeah.

THE COURT: The longer we go into this, the more it looks to me like that is the disagreement between the parties is what does 100 percent mean?

MR. MAYO: Well, I'm not even sure of that, honestly, because I think they're suggesting that we basically have gotten zero for this. I mean, I don't know. I can't reconcile that.

THE COURT: Fair enough.

MR. MAYO: But I think that's what they're saying.

THE COURT: Okay.

MR. MAYO: So two other quick things, or maybe three to bank to. One, when we're talking about the UTPA and the goods definition, I think one thing is just important. I mean, in 1-F, it says goods, in 1-B, it says goods and services, s so even if you're interpreting this broadly, you have to look at

CERTIFICATE OF FILING AND SERVICE

I hereby certify that on October 20, 2026, I directed the original **RESPONDENTS' ANSWERING BRIEF AND SUPPLEMENTAL EXCERPT OF RECORD** to be electronically filed with the Appellate Court Administrator, Appellate Records Section, and electronically served upon Clifford Davidson, Drew Eyman, Kent Mayo, and Brent Cooper, attorneys for Defendant-Appellant, using the court's electronic filing system.

DATED this 20th day of October, 2026.

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