

Decision 17-12-004 December 14, 2017

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to
Implement Dairy Biomethane Pilot
Projects to Demonstrate Interconnection to
the Common Carrier Pipeline System in
Compliance with Senate Bill 1383.

Rulemaking 17-06-015

**DECISION ESTABLISHING IMPLEMENTATION AND SELECTION
FRAMEWORK TO IMPLEMENT THE DAIRY BIOMETHANE PILOTS
REQUIRED BY SENATE BILL 1383**

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**DECISION ESTABLISHING IMPLEMENTATION AND SELECTION
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Summary

This decision establishes the necessary framework to direct gas corporations to implement not less than five dairy biomethane pilot projects to demonstrate interconnection to the common carrier pipeline system and allow for rate recovery of reasonable infrastructure costs pursuant to Senate Bill 1383. This decision defines project components that are eligible for funding, how the solicitation will be developed and deployed, the cost recovery approach, how the interagency Selection Committee will choose winning projects, data that must be provided by the dairy biomethane projects, and how we will ensure these pilots contribute to the safe operation of the natural gas system.

This proceeding is closed.

1. Background

On June 15, 2017, the California Public Utilities Commission (CPUC) issued Rulemaking (R.) 17-06-015 (Rulemaking), to develop a framework which will direct gas corporations to implement not less than five dairy biomethane pilot projects to demonstrate interconnection to the common carrier pipeline system and allow for rate recovery of reasonable infrastructure costs pursuant to Senate Bill (SB) 1383. The proposed implementation framework covers four general categories: pilot selection (selection criteria); definition of infrastructure; cost recovery framework (how will reasonableness of the infrastructure be assessed, and cost cap/cost limitations); and data gathering (to support evaluation of the pilots).

Interested persons were allowed to comment on the proposed framework consistent with the schedule and procedure described in the Rulemaking and invited to comment on the scope, the schedule, and other procedural matters.

Opening comments were filed on August 7, 2017 by Agricultural Energy Consumers Association (AECA), Bioenergy Association of California (BAC), Bloom Energy Corporation, California Bioenergy LLC, Dairy Cares, Maas Energy Works, Pacific Gas and Electric Company (PG&E), San Diego Gas & Electric Company/ Southern California Gas Company (Sempra), Southwest Gas Corporation (Southwest), Coalition of California Utility Employees (CUE), The Utility Reform Network (TURN), and Center on Race, Poverty and the Environment/Community Alliance for Agroecology (CRPE/CAFA). Reply comments were filed on September 5, 2017 by AECA, BAC, Coalition for Renewable Natural Gas, Dairy Cares, PG&E, Sempra, Southwest, CUE, and CRPE/CAFA.

On September 21, 2017, the assigned Commissioner and Administrative Law Judge (ALJ) issued their Scoping Memo and Ruling setting forth the scope and schedule for the proceeding.

2. Jurisdiction

CPUC jurisdiction over natural gas corporations, public health, and public safety is provided by, but not limited to, Health and Safety (H&S) Code §§ 25420, 25421, 39730.7, 39730.8; Public Utilities (Pub. Util.) Code §§ 216, 222, 228, 399.11 through 399.31, 451, 761 784, 950 through 969; and General Orders (GO) 58-B and 112-F.

In particular, public utilities have a responsibility to furnish and maintain service and facilities as necessary to promote public health and safety:

Every public utility shall furnish and maintain such adequate, efficient, just, and reasonable service, instrumentalities, equipment, and facilities...as are necessary to promote the safety, health, comfort, and convenience of its patrons, employees, and the public. (Pub. Util. Code § 451.)

The CPUC also has broad responsibility and authority to protect public health and safety:

The commission may supervise and regulate every public utility in the State and may do all things, whether specifically designated in this part or in addition thereto, which are necessary and convenient in the exercise of such power and jurisdiction. (Pub. Util. Code § 701.)

Most relevant for this Rulemaking, H&S § 39730.7(d)(2) requires the CPUC, in consultation with the California Air Resources Board (ARB) and California Department of Food and Agriculture (CDFA), to direct gas corporations to implement not less than five dairy biomethane pilot projects to demonstrate interconnection to the common carrier pipeline system. Gas corporations may recover the reasonable costs of pipeline infrastructure developed pursuant to the pilots. We decline to expand the scope of this proceeding to other forms of biogas pilots as suggested by BAC.

3. Collaborative Process with Other State Agencies

The CPUC and its staff have successfully worked in a collaborative relationship with other state agencies and their staffs in several proceedings. This has promoted good communication among agencies sharing responsibilities for several matters. As provided by statute, we have consulted with ARB, CDFA, and the California Energy Commission (CEC) as we have worked to develop the framework for implementing dairy biomethane pilots.

4. Issues Before the Commission

The following issues are within the scope of this proceeding:

1. Should the CPUC adopt the definition of Pipeline Infrastructure set forth in Appendix A of the Rulemaking? If not, how should it be modified?
2. Should the CPUC adopt the implementation plan set forth in Appendix A of the Rulemaking? If not, how should it be modified?
3. Should the CPUC adopt the cost recovery framework set forth in Appendix A of the Rulemaking? If not, how should it be modified?
4. Should the CPUC adopt the pilot selection criteria framework set forth in Appendix B of the Rulemaking? If not, how should it be modified?
5. Should the CPUC adopt the data gathering parameters set forth in Attachment B to Appendix B of the Rulemaking? If not, how should it be modified? and
6. Does the proposed implementation framework support the safe provision of natural gas services? If not, how should it be modified?

We discuss each of these issues below focusing on the changes that we are making to the initially proposed framework set forth in the rulemaking.

In addition, we note that the rulemaking anticipated that we would either establish a second phase in this proceeding or open a future rulemaking at the time the CEC 2017 IEPR renewable gas recommendations are available. The CEC issued its draft 2017 Integrated Energy Policy Report (IEPR) on October 16, 2017¹ and expects to adopt the Final 2017 IEPR in February 2018. In light of the expected timing of CEC adoption of final recommendations, we will pursue a

¹ http://docketpublic.energy.ca.gov/PublicDocuments/17-IEPR-01/TN221520_20171016T153945_Draft_2017_Integrated_Energy_Policy_Report.pdf

future rulemaking to consider, in consultation with the CEC and ARB, policies to support the development and use of renewable gas that reduce short-lived climate pollutants in California, as directed by H&S § 39730.8(d).

5. Pipeline Infrastructure

The rulemaking defined the term Pipeline Infrastructure as biogas collection lines (also known as gathering lines), interconnection facilities at the point of receipt, and the interconnection pipeline extension to the existing pipeline network and required utility ownership of all components defined as Pipeline Infrastructure. Based on comments on this topic, we clarify that biogas collection lines are part of the definition of utility Pipeline Infrastructure for purposes of cost recovery and funding, but not for ownership purposes. This approach avoids custody transfers of the biomethane commodity between the utility and the project developers before injection into the utility pipeline. Requiring utility ownership of collection lines could create operational and legal difficulties between the project developer of the digesters and conditioning facilities and a utility owner of the gathering lines, if any maintenance issues arise. Requiring utilities to own and operate biogas gathering lines is also inconsistent with the CPUC's directive in Decision (D.) 89-12-016, which required PG&E to divest its gathering lines used for California natural gas production.

Historically the costs of gathering, gas conversion to pipeline quality specifications, transportation from a gas production site to a conversion facility, transportation from the conversion facility to the pipeline, and pipeline interconnection costs have been borne by California natural gas producers as part of the commodity cost of gas since the late 1980s, as "gathering costs" that the CPUC has ruled should be assigned to gas producers. (See D.89-12-016.) The CPUC barred utilities from spending ratepayer funds to produce natural gas in a

series of rulings terminating the Gas Exploration and Development Adjustment programs. These SoCalGas and PG&E programs were established during the 1970s energy supply crises, including settlements between the utilities and ORA winding down activities under this account. (See e.g., D.85-11-062, D.86-02-032, D.86-08-081, D.88-04-025, D.88-11-054.)

For the purposes of the Dairy Pilots, and consistent with the language of SB 1383, we are allowing cost recovery of the biogas collection lines owned by dairy biomethane producers, and allowing utilities to own and operate pipelines that carry biomethane from biogas conditioning and upgrading facilities to existing utility transmission systems and the interconnection facilities, without changing the requirements of D.89-12-016 for non-renewable natural gas producers. For purposes of the Dairy Pilots, the biomethane producers should own and operate the digesters and the biogas collection lines and treatment equipment to remove hydrogen sulfide and water from the raw biogas.² Although we do not allow utilities to own these facilities, the costs associated with the biogas collection lines and treatment equipment will be recovered from the transmission rates of utility ratepayers through a reimbursement to the dairy biomethane producer. Natural gas utilities will own and operate all facilities downstream of the biogas conditioning and upgrading facilities, including pipeline laterals from such facilities, to the point of receipt and any pipeline extensions. The respective owners are responsible for maintaining the safety of the pipeline facilities in accordance with the Pipeline

² We note that SoCalGas offers a tariff that allows a customer to enter into an agreement for SoCalGas to provide biogas conditioning services. <https://www.socalgas.com/for-your-business/power-generation/biogas-conditioning-upgrading> Biomethane producers may choose to utilize this tariff or own the conditioning facilities themselves.

and Hazardous Materials Safety Administration (PHMSA) guidelines, 49 Code of Federal Regulations (CFR) Part 192, and within Safety Enforcement Division's purview, CPUC GO 112-F.³

In Reply Comments, PG&E advocated for the inclusion of "'pipeline equivalent' facilities, such as trucking biomethane, to transport biomethane to a utility's pipeline system." (PG&E Reply Comments at 2.) We do not agree that trucking should necessarily be considered as "pipeline equivalent" or "pipeline infrastructure," and due to the potential drawbacks associated with trucking rather than transporting biomethane via gathering pipelines, including impacts on local communities, these trucking related costs will not be considered part of the Pipeline Infrastructure costs that can be recovered from ratepayers for purposes of the pilots.

6. Implementation Plan

The rulemaking proposed a fairly simple implementation plan. In comments, parties made clear that additional details should be added to the implementation plan so that additional role and timing clarity is established for how the solicitation will be conducted. Some parties raised concerns that utilities issuing the solicitation could present a potential conflict of interest and recommended a third-party administrator funded by ratepayers administer the solicitation. Conceptually, having a third-party administer the solicitation is appealing. Functionally, this would substantially delay the issuance of the solicitation, and therefore we do not adopt this recommendation. In our modifications, we attempt to clarify roles and responsibilities and make clear that

³ Owners may contract with third parties to provide these services.

it is the Selection Committee that approves the final solicitation and makes the selection of Dairy Pilots to move forward to contract with utilities.

7. Cost Recovery Framework

As stated in Appendix A, we direct that utilities use a memorandum account to track utility-owned Pipeline Infrastructure costs.⁴ With the modification to remove utility ownership of biogas collection lines as an option, and instead handle the cost of collection lines as a reimbursement from the utility to the Project Developer, we now allow the utilities to record these costs as an operational expense in a balancing account, consistent with the recommendations of PG&E.⁵ Costs above the bid amount for the collection lines will be subject to reasonableness review.

The original cost recovery framework allowed the cost estimates submitted through the solicitation process to become the authorized revenue requirement. To ensure costs for chosen pilot projects are reasonable, we adopt TURN's recommendation that cost estimates should include at least two references to actual historical or current competitive cost data for biogas collection lines, conditioning equipment to remove hydrogen sulfide and water from the raw biogas, pipeline lateral, point of receipt, and pipeline extension pipeline. Historical data could be used to benchmark proposed project cost. The CPUC has the discretion to modify the cost estimation submitted by the applicants and

⁴ A memorandum account tracks costs for future recovery after review of reasonableness or prudent administration. A memorandum account is frequently used for utility incurred costs for which little information about the expected costs are known.

⁵ A balancing account is recoverable on an annual basis without further review for reasonableness or prudent administration. Balancing accounts are frequently used for pass through costs.

determine the final cost of the chosen pilots, which will become the authorized revenue requirement. Any expenditure above the authorized amount is subject to a reasonableness review in the appropriate transmission rate case.

The original cost recovery framework proposed a 50/50 cost sharing framework between utility shareholders and ratepayers when costs are less than forecast. Based on comments by TURN, CalBio, and CAFA/CRPE, we agree that the 50/50 split would create an incentive for utilities to provide estimated costs that are higher than expected costs in order to create shareholder return. Therefore, we have eliminated the cost sharing framework and all savings below the authorized level are credited to ratepayers.

In previous decisions, the CPUC has provided authority for electric and natural gas utilities to buy and sell allowances and offsets related to the Cap-and-Trade Program, and authority for the electric and natural gas utilities to sell Low Carbon Fuel Standard (LCFS) credits. However, since the utilities do not have any type of deficit or compliance obligation related to the LCFS Program, they have not had a need to procure LCFS credits. This decision authorizes natural gas utilities to procure LCFS credits in a very limited circumstance: a natural gas utility may purchase LCFS credits from Dairy Pilots as part of a purchase agreement with these facilities.

This decision clarifies the treatment of environmental credits that are purchased by gas corporations as part of a Dairy Pilot, requiring that those credits be sold on a specific schedule and the revenues credited against ratepayer obligations for the Dairy Pilots. This change is made based on further consultation with our agency partners in order to provide dairy biomethane producers with the option of selling environmental credits associated with the production of biomethane to gas corporations providing infrastructure for the

use of biomethane as a vehicle fuel for their own use and for third parties, and to assure that gas corporations do not profit from the purchase of such environmental credits from projects receiving ratepayer reimbursement of pipeline interconnection costs.

8. Selection Criteria

Stakeholder input has been incorporated into each category of the selection criteria: business model; financial plan; GHG reduction; project readiness; environmental benefits; and disadvantaged communities. The CEC's solicitation document was used as the main framework for each category of the selection criteria because its language was broad enough to be applicable to all the factors mentioned by the stakeholders. The proposed selection criteria framework also incorporates language specific to the core values of our partner agencies (e.g., CDFA's text on dairy operation and ARB's text on environmental benefits).

Our goal is to select projects that are financially sustainable in the long-term to ensure these investments provide the expected environmental benefits to ratepayers and the State of California. A balance needs to be reached on how to make the dairy biomethane industry a viable business (business model, financial plan) while addressing environmental concerns (GHG and environmental benefits) under a tight timeline (project readiness). The direction from SB 1383 is to achieve a 40 percent reduction of methane from the level in 2013, by 2030. The main impediment to achieving this goal is that dairy biomethane projects historically do not generate enough revenue through sales of the commodity to attract the upfront investment needed for the highly capital-intensive infrastructure necessary to build the project and support ongoing operating expenses.

Given that the ultimate goal here is to reduce methane emissions, we have modified the proposed scoring criteria to place a higher weight on the environmental side of the scoring rubric (40 points), followed by the business side (35 points) because a financially sustainable business model is critical for costs that are included in utility transportation rates. In comments, a majority of stakeholders suggested adding a cost-effectiveness criteria to the scoring rubric, either by inclusion in the GHG Reduction criteria or as a separate criteria.⁶ We agree that this will ensure parity of competition between large and small project applicants. Appendix B now reflects additional requirements related to cost-effectiveness and use of ARB's GHG Emissions Reduction Calculation Tool. Utilizing ARB's calculator offers the added benefit of being able to consistently track project reductions and evaluate projects against each other effectively. We have also increased the weight placed on this factor, given the primacy of GHG reductions as the intent of SB 1383. Appendix B now confirms that any offsite emission reductions to offset the project's criteria pollutant or toxic air contaminant emissions must occur in the same air basin as the Dairy Pilot location and clarifies that mitigation requirements are in accordance with California Environmental Quality Act (CEQA) requirements.

Buy-in from disadvantaged communities and obtaining permits (project readiness) are important factors that represent how quickly a project can move forward to help meet the 2030 target of 40 percent methane reduction, and receive a combined 25 points. Ten points are assigned to the applicant's effort to ensure that disadvantaged communities are not disproportionately affected by

⁶ See, generally, the Opening Comments of TURN, AECA, and Dairy Cares.

the proposed project and that they have performed outreach to affected communities. As recommended by CRPE/CAFA, we clarify that the more thoroughly an applicant explains, discusses, quantifies, and mitigates impacts in disadvantaged communities and demonstrates outreach and engagement efforts with those communities, the higher the score within the disadvantaged communities scoring criteria. Fifteen points are allocated for project readiness to ensure that the project is fully operational to help achieve SB 1383 emission reduction targets.

The business side includes the business model and the financial plan. Fifteen points are allocated for the financial plan to help limit the risk of non-performance or project failure, resulting in stranded ratepayer costs.

When appropriate, we include clarifications to the eligibility requirements after additional consultation with our agency partners, and to ensure conformity to eligibility requirements in partner agency solicitations. An example is our clarification that at least 80 percent or more of the feedstock's dry weight must be manure from dairy livestock. This clarification ensures consistency with the CDFA grant applications which allow 20 percent of the eligible dairy's feedstock to come from other organic waste.

The selection criteria have also been modified from those proposed in the rulemaking to provide the Selection Committee the discretion to choose Pilot Projects that are not the highest scoring in order to ensure that Dairy Pilots are selected in a variety of geographic locations and are developed by at least two or more developers, in order to achieve project diversity.

Appendix B describes the selection criteria in detail.

9. Data Gathering Parameters

Only a limited number of parties addressed data gathering parameters. In general, commenters support the data gathering parameters proposed in Attachment B to Appendix B of the Rulemaking, but a number of parties propose additional data be gathered, reported on, or evaluated. For example, Sempra suggests capturing more information on the financial performance of the projects. BAC recommends additional data be gathered related to environmental credits, financial performance, and environmental performance. CRPE/CAFA recommends the CPUC amend the emissions monitoring provision to specifically require projects to allow monitoring of methane, nitrous oxide, criteria pollutants, and toxic air contaminants from anaerobic digestion, handling of post-digestion manure, and any other air emissions from a project; manure application monitoring; and evaluation of nutrients (nitrogen, phosphorus, etc.) applied to crop fields, including nitrate migration below the root zone. AECA and Dairy Cares recommend that the CPUC focus its attention on collecting data on the costs and issues related to interconnection, since that is relevant to the determination of the reasonableness of the utilities' costs and ensures that ratepayers only pay for reasonably-incurred costs.

CRPE/CAFA believes that evaluation of methane reduction performance, including post-digestion methane emissions, are critical for assessing the merit of anaerobic digesters as a methane control strategy. They state that while the data gathering parameters require project developers to allow state agencies to undertake reasonable research projects, such monitoring and research by state agencies is not currently required or funded. CRPE/CAFA recommends that the CPUC commit to partner with ARB and the State Water Board to secure necessary funding and to monitor the pilot projects for air and water impacts.

BAC recommends that the pilots be evaluated for how to grow the renewable gas sector in general and should result in recommendations on how to expand it to other dairy projects and biogas sectors. Sempra suggests that the CPUC establish a stakeholder venue to examine the collected data. BAC and CUE support this recommendation, AECA and Dairy Cares oppose it.

We have reviewed the parties' thoughtful comments on data gathering and make limited changes to those that were proposed in the rulemaking to specifically reflect the air quality emissions that must be monitored. In general, most of the parties' comments were more directed to what the proper evaluation questions are rather than what additional data reporting should be required. We note that Resolution G-3527 adopted the CEC's Natural Gas Research and Development Program Proposed Program Plan and Funding Request for Fiscal Year 2017-2018. The natural gas research and development program was established pursuant to D.04-08-010 which directs the CEC to annually compile, prioritize, and present a list of proposed program plans and funding requests to the CPUC for approval. Ordering Paragraph 5 of Resolution G-3527 orders the CEC to identify and consider opportunities to support dairy and livestock biomethane research in future budget proposals. In light of the annual funding plan for natural gas research, this decision does not specify what evaluations will occur, but rather ensures that sufficient data is available to perform any needed research that the partner agencies might pursue.

10. Safety Considerations

Only a limited number of parties addressed safe provision of natural gas services. PG&E and Sempra raised concerns about where in the process removal of constituents like water and hydrogen sulfide that can present pipeline integrity and health concerns occurs. PG&E and Sempra recommend that this

treatment occur prior to dairy biogas entering the gathering system. AECA believes that requiring treatment prior to gas entering the gathering system is cost prohibitive and will harm the economies of scale of a centralized conditioning and upgrading facility.

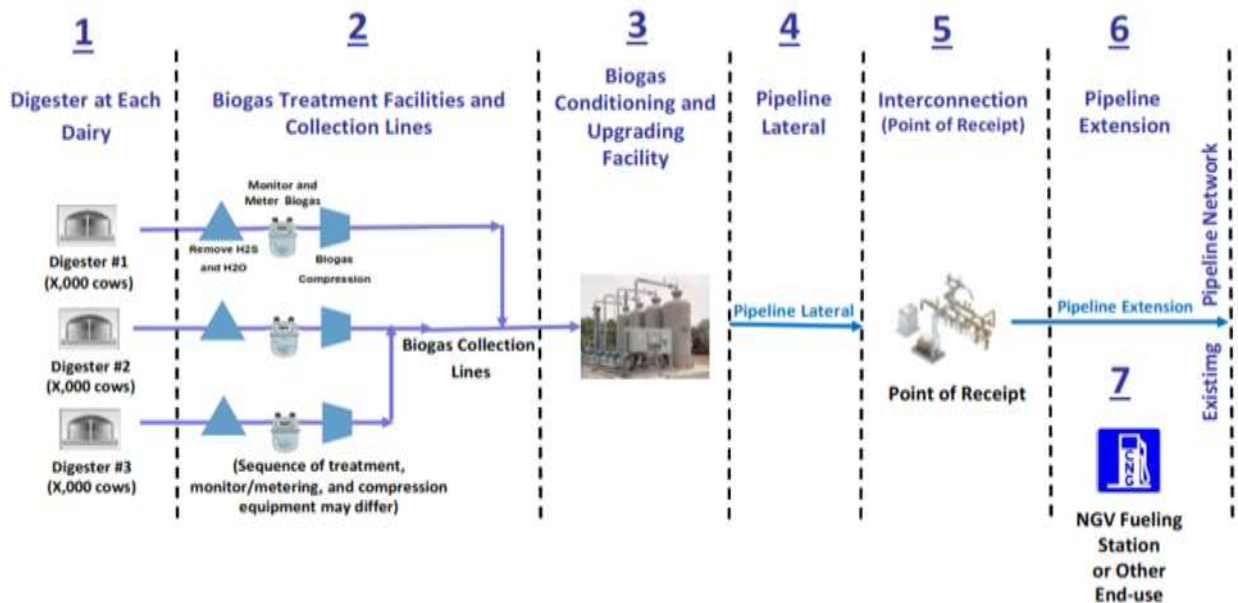


Figure 1: Dairy Biomethane Pilot Primary Components

It is clear that prior to entering the existing distribution and transmission pipeline system, natural gas must meet the hydrogen sulfide and water requirements of the CPUC's GO 58-A. The question before us is whether these two components must be removed to the GO 58-A standard earlier in the collection process than other components. 49 CFR, Part 192 does not explicitly prescribe maximum limits for hydrogen sulfide and water in gas in gathering (collection) lines.

Figure 1 is an exemplary diagram of how we understand a typical Dairy Pilot might operate. Commercial gas gathering lines are regulated under California Code of Regulations (CCR) Title 8 Industrial Safety Regulations, which establishes the requirements for safe operation of the biogas collection

system. The CPUC's Safety and Enforcement Division holds safety oversight responsibilities over the systems once the gas leaves the Conditioning and Upgrading Facilities in Stage 3 under the following General Orders: GO 112-F and GO 58-A Standards for Gas Service in the State of California.

The Proposed Decision required treatment for dehydration and removal of hydrogen sulfide prior to biogas entering the collection system. The premise of that proposal was that although this requirement could result in some incremental cost of the Dairy Pilots, in the interest of safe operation of these ratepayer funded systems, it was prudent to require these safety measures because hydrogen sulfide is a highly poisonous gas, and having too much water in the gathering system speeds pipeline corrosion.

In response to comments it appears that the corrosion concerns may have been overstated since gathering systems are generally expected to be polyethylene pipe which is not subject to corrosion. California Bioenergy LLC makes the point that concerns over transportation of biogas with high hydrogen sulfide content "are over stated, and the risks associated with on-dairy removal of [hydrogen sulfide] are understated. The greatest threat to safety is in the ongoing operation and maintenance of [hydrogen sulfide] removal systems. With a central facility there is one facility for [hydrogen sulfide] removal. By contrast, at a cluster of ten dairies with on-dairy [hydrogen sulfide] removal, there would be ten facilities -- with ten times the risk of an accident."⁷ The critical matter is that gathering line construction takes into account the characteristics of the biogas moving through it for all relevant safety concerns,

⁷ Reply Comments of California Bioenergy LLC at 2-3.

for example, corrosion. For these reasons, Section 3 of Appendix A has been modified to allow a dairy biomethane pilot to include treatment of hydrogen sulfide and dehydration in the biogas collection line costs, but not to mandate this treatment until such time as the gas enters the utility system. We also require that the project description reflects that the digester produced biogas characteristics have been considered in the type of gathering system proposed. This is clearly an area that would benefit from additional interagency and industry attention.

11. Public Outreach

Prior to the Rulemaking being adopted, the CPUC performed outreach to its sister agencies⁸ on the development of the selection criteria for the dairy biomethane pilot project since SB 1383 became law. CPUC Staff solicited input from stakeholders via e-mail on pilot selection criteria, the definition of pipeline infrastructure, cost recovery framework, and project evaluation prior to adoption of the Rulemaking.

The proposed framework attached as Appendix A and B of the Rulemaking reflected our integration of the various perspectives we heard through this early outreach effort. The Rulemaking was served broadly on a number of service lists, including R.15-03-010, our proceeding to identify opportunities to increase access to affordable energy in disadvantaged communities in the San Joaquin Valley, and to participants in the joint agency Dairy and Livestock Working Group established pursuant to SB 1383.

⁸ CARB, CDFA, and CEC.

In addition, the CPUC held two public meetings in Fresno on July 10, 2017. to introduce the proposed implementation framework. The public meetings were recorded as Webex meetings and are available for consideration in a similar manner to comments at a Public Participation Hearing.

12. Comments on Proposed Decision

The proposed decision of Commissioner Rechtschaffen in this matter was mailed to the parties in accordance with Section 311 of the Public Utilities Code and comments were allowed under Rule 14.3 of the Commission's Rules of Practice and Procedure. Comments were filed by PG&E, Sempra, TURN, AECA, Dairy Cares, CCUE, CRPE, and Bloom on November 29, 2017 and reply comments were filed by PG&E, Sempra, AECA, Dairy Cares, CCUE, and California Bioenergy LLC on December 4, 2017. Although minor changes have been made throughout the decision to improve clarity, there is one more substantive change we want to highlight. The final decision removes the requirement that the Proposed Decision had established to require treatment of biogas for water and hydrogen sulfide prior to the biogas entering the gathering system. We are convinced based on the comments that the concerns that had led us to require pre-treatment can be managed through ensuring that the digester produced biogas characteristics have been considered in the type of gathering system proposed. With this change, we are comfortable that treatment for these constituents (water and hydrogen sulfide) can occur at the same time as all other constituents are treated.

13. Assignment of Proceeding

Clifford Rechtschaffen is the assigned Commissioner and Michelle Cooke is the assigned ALJ in this proceeding.

Findings of Fact

1. The CEC issued the 2017 Draft IEPR on October 16, 2017.
2. Historically, the biomethane producer was responsible for the costs of all Pipeline Infrastructure components described in Appendix A.
3. The Selection Committee, made up of CPUC, ARB, and CDFA, controls the terms of the solicitation and selects the Dairy Pilots to move forward to contract with utilities.
4. SB 1383 directs that gas corporations may recover the reasonable costs of pipeline infrastructure developed pursuant to the Dairy Pilots.
5. As part of the selection process, bidders will provide substantial cost information which will allow the Selection Committee to understand the expected Dairy Pilot project cost and establish an authorized bid amount.
6. A Dairy Pilot may acquire environmental credits as part as part of its project under existing ARB program requirements.
7. Utilities do not have any deficit or compliance obligation related to the LCFS Program.
8. The primary goal under SB 1383 is to reduce methane emissions.
9. Parties support modifying the selection criteria to ensure that a higher score will be given to proposed projects providing the greatest greenhouse gas emissions reductions per dollar invested.
10. It is expected that selected Dairy Pilots may cause air emissions during project construction, which must be mitigated as specified under CEQA.
11. Geographic and developer diversity in selected Dairy Pilots is important to understanding how the Dairy Pilots results reflect the biomethane industry as a whole.

Conclusions of Law

1. The scope of this proceeding is limited to dairy biomethane pilots and should not be expanded to other forms of biogas pilots.
2. H&S Code § 39730.7(d)(2) requires the CPUC, in consultation with ARB and CDFA, to direct gas corporations to implement not less than five dairy biomethane pilot projects to demonstrate interconnection to the common carrier pipeline system.
3. GOs 58-A and B and General Order 112-F establish the relevant safety requirements for transportation of natural gas consistent with 49 CFR Part 192.
4. The owners and operators of each Dairy Pilot Pipeline Infrastructure component, as described in Appendix A, are responsible for maintaining the safety of pipeline facilities in accordance existing applicable state and federal regulations and requirements. Utility owned and operated pipeline facilities are regulated in accordance with PHMSA guidelines, 49 CFR Part 192 and GO 112-F. Dairy biomethane producer owned and operated gas gathering lines are regulated under CCR Title 8 Industry Safety Regulations.
5. Ordering Paragraph 5 of Resolution G-3527 orders the CEC to identify and consider opportunities to support dairy and livestock biomethane research in future budget proposals.
6. The CPUC should open a future rulemaking to consider, in consultation with the CEC and ARB, policies to support the development and use of renewable gas that reduce short-lived climate pollutants.
7. Consistent with the intent of SB 1383, utilities should be allowed to own and operate pipelines that carry biomethane from biogas conditioning and upgrading facilities to existing utility transmission systems and interconnections facilities, and recover the reasonable costs of those facilities, for the selected

Dairy Pilots, without changing the requirements of D.89-12-016 for non-renewable natural gas producers.

8. Consistent with the intent of SB 1383, utilities should reimburse dairy biomethane producer for the reasonable and verified costs of biomethane collection and treatment facilities for the selected Dairy Pilots.

9. The Implementation Plan set forth in Appendix A establishes clear roles and responsibilities for various players during the solicitation process and should be adopted.

10. To ensure only reasonable costs of pipeline infrastructure developed pursuant to the Dairy Pilots are collected from ratepayers, utility-owned pipeline infrastructure costs should be recorded in a memorandum account.

11. To ensure only reasonable and verified costs of pipeline infrastructure developed pursuant to the Dairy Pilots are collected from ratepayers, biomethane producer-owned pipeline infrastructure costs should be recorded in a balancing account and costs above the bid amount should be subject to reasonableness review.

12. The costs booked to the memorandum and balancing accounts, up to the authorized bid amounts, should be reviewed for the utility's prudent administration of the project, but otherwise should be considered per se reasonable.

13. As part of a purchase agreement with a Dairy Pilot, a natural gas utility should be allowed to purchase environmental credits from the Dairy Pilot, but must sell such credits on a specific schedule and credit any revenues achieved to the memorandum account that records utility costs.

14. The adopted selection criteria set forth in Appendix B balance environmental concerns, business viability, and project readiness and support diversity of selected Dairy Projects.

15. Any offsite reduction of air emissions to offset a selected Dairy Pilot's criteria pollutant or toxic air contaminant emissions should occur in the same air basin as the Dairy Pilot.

16. The data gathering parameters in Appendix B, Attachment B, ensure that sufficient data is available to perform any needed research that the CPUC or partner agencies might pursue.

O R D E R

IT IS ORDERED that:

1. Appendices A and B attached to this decision establish the requirements for implementation of Health & Safety Code Section 39730.7(d)(2) which directs gas corporations to implement not less than five dairy biomethane pilot projects to demonstrate interconnection to the common carrier pipeline system.

2. Respondents Pacific Gas and Electric Company, Southern California Gas Company, San Diego Gas & Electric Company, and Southwest Gas Corporation must fully participate in the activities set forth in the Implementation Plan established by Appendix A.

3. Respondents must issue a Draft Solicitation for Dairy Pilots no later than January 18, 2018, utilizing the selection criteria framework set forth in Appendix B and consistent with the timeline established in Appendix A.

4. Respondents must file a Tier 2 Advice Letter to establish a memorandum account to record expenditures for solicitation development within 15 days of the effective date of this decision.

5. Respondents must file a Tier 2 Advice Letter to establish a memorandum account and balancing account to record expenditures for eligible Dairy Biomethane Pilot Project costs as described in Appendix A, Section 4 (Cost Recovery) within 10 days of the notification of awarded Dairy Biomethane Pilot Projects by the Selection Committee.

6. Respondents must file a Tier 2 Advice Letter seeking approval of the contracts with the selected Dairy Biomethane Pilot Projects within 30 days of the notification of award by the Selection Committee.

7. Dairy Biomethane Pilots selected under this program must conform to the data gathering and evaluation requirements set forth in Appendix B, Attachment B.

8. The owners and operators of each Dairy Pilot Pipeline Infrastructure component, as described in Appendix A, are responsible for maintaining the safety of pipeline facilities in accordance with all applicable existing state and federal requirements.

9. Rulemaking 17-06-015 is closed.

This order is effective today.

Dated December 14, 2017, at San Francisco, California.

MICHAEL PICKER

President

CARLA J. PETERMAN

LIANE M. RANDOLPH

MARTHA GUZMAN ACEVES

CLIFFORD RECHTSCHAFFEN

Commissioners

APPENDIX A DAIRY BIOMETHANE PILOT IMPLEMENTATION FRAMEWORK

1. Summary

For purposes of Senate Bill 1383 (California Health and Safety Code Section 39730.7(d)(2)) dairy biomethane pilot projects (Dairy Pilots), the following Pipeline Infrastructure (as detailed in Section 3) is eligible for funding in this Program:

- a. Biogas collection lines and facilities for treatment, monitoring, metering, and compression of biogas before it enters the collection lines;
- b. Pipeline lateral and compression that delivers biomethane from a biogas conditioning facility to the point of receipt;
- c. Pipeline extension that delivers biomethane from point of receipt to the utility's existing gas pipeline system; and
- d. Point of receipt, where the utility receives gas that has been upgraded at a conditioning facility.

Although the equipment in a. shall be owned by the biomethane producers, biomethane producers shall be reimbursed by the utility for the cost of such equipment and the utility may pass the verified and reasonable costs on to utility ratepayers as an eligible Pipeline Infrastructure cost. Under Federal Pipeline Safety Regulations 49 CFR Part 192 and CPUC General Order 112-F, owners are responsible to comply with the safety requirements associated with maintaining and operating biogas collection lines, points of receipt, and pipeline extensions.

Utilities will record costs for the equipment identified in a. above as an operational expense in the balancing account, and equipment identified above in

b. through d. as capital expenses in a memorandum account. This allows flexibility to address unforeseen costs from sources such as the California Environmental Quality Act (CEQA) permitting process. The Final Cost Estimates submitted through the solicitation process for the selected project will establish the authorized level of per se reasonable costs, subject only to the utility's prudent administration of the projects. Expenditures above the authorized amount are subject to reasonableness review. Any savings below the authorized amount will be credited to ratepayers. The utilities may seek recovery of the amounts recorded in the memorandum accounts in their relevant gas transmission rate case.

Utilities may include these Pipeline Infrastructure costs as part of their transportation rates. The costs of digesters and biogas conditioning facilities are not Pipeline Infrastructure that may be funded in this Program. The revenues from the sales of the gas commodity and credits are assigned to the biomethane producers to offset their costs. Revenue generated from credits, such as Low Carbon Fuel Standard and Renewable Fuel Standard credits, can be negotiated between the seller and the buyer of the biomethane gas via contract.

A Selection Committee comprised of the California Public Utilities Commission (CPUC) as the lead agency, in consultation with the California Air Resources Board (ARB) and California Department of Food and Agriculture (CDFA) will determine which biomethane industry proposals are accepted for inclusion in the Dairy Pilots, using the following scoring criteria:

Scoring Criteria	Maximum Points
Dairy Waste-to-Biomethane Business Model • Dairy Operation • Technology Plan • Marketing Plan • Scalability	20
Financial Plan/Soundness	15
Greenhouse Gas Reduction and Cost Effectiveness	25
Environmental Benefits	15
Disadvantaged Communities	10
Project Readiness and Implementation	15

Proposed Dairy Pilots with the five highest scores will be chosen for participation. However, the Selection Committee also has the discretion to choose Dairy Pilots that are not the highest scoring to ensure that Dairy Pilots are selected in a variety of geographic locations and are developed by at least two or more developers in order achieve project diversity. In the event of multiple projects with identical scores as the fifth-highest, the CPUC representative on the Selection Committee has the discretion to authorize more than five projects. The pilot projects selected are required to participate in a dairy biomethane evaluation study and to report specified data to the Selection Committee and the California Energy Commission (CEC).

2. Implementation Plan

1. The CPUC directs the utilities to (a) issue a Draft Solicitation for Dairy Pilots no later than January 18, 2018, utilizing the selection criteria framework set forth in Appendix B, and (b) file a Tier 2 Advice Letter to establish a memorandum account to record expenditures for solicitation development.

2. Southern California Gas Company (SoCalGas) will take the lead to issue a joint utility solicitation.
3. Within 15 days following the issuance of the Draft Solicitation, SoCalGas will hold a bidder Workshop or Webinar to explain the solicitation process, gather inputs to clarify the solicitation process, and to answer questions. Energy Division and ARB staff will participate in the Workshop or Webinar to provide agency perspective.
4. Within 15 days following the Workshop or Webinar, SoCalGas shall make modifications deemed necessary and submit the Revised Solicitation to the Selection Committee at renewablegas@cpuc.ca.gov for review and approval. In the submittal, SoCalGas shall provide short summary of bidders' input on Draft Solicitation and explain the reasons for adopting, modifying, or rejecting bidders' input.
5. Within 20 days following the submission of the Revised Solicitation, the Selection Committee will issue the Final Solicitation to the market.
6. Within 10 days following issuance of the Final Solicitation to market, applicants must submit a request for the utilities to perform a SB 1383 dairy pilot-specific "Pipeline Infrastructure Scoping and Cost Estimation," providing necessary data such as digester locations and characteristics of biomethane (volume, temperature, pressure, constituents, etc.). A request should be made to the utility where the proposed project is located. As part of this Pipeline Infrastructure Scoping and Cost Estimation, the utilities will perform the initial desktop engineering studies necessary to assess common-carrier natural gas pipeline offtake capacity, and provide a preliminary design and cost estimates of utility-owned Pipeline Infrastructure. These costs will primarily be assessed from the engineering office and will not

represent a fully-vetted, firm cost estimate. The results of this engineering study will be shared with each applicant within 45 days of the applicant's request. After receiving the engineering and cost estimate, the applicants shall have 15 days to submit changes to its project description. If any changes are made, the utilities will have another 15 days to provide a final Pipeline Infrastructure and Cost Estimation.

7. Proposed Dairy Pilot projects will be submitted electronically to renewablegas@cpuc.ca.gov and to the utilities in their respective service territories within 110 days following the issuing of the Final Solicitation. The Pipeline Infrastructure Scoping and Cost Estimation should include two references to actual historical or current competitive cost data for similar work. The CPUC will evaluate Cost Estimations. The Selection Committee and/or independent auditors will evaluate and verify project benefits. The Selection Committee has the discretion to modify the Cost Estimation and GHG Reduction value used as an input into the Selection Criteria Framework set forth in Appendix B for Financial Plan/Soundness (Section 3.2.c) and GHG Reduction and Cost Effectiveness (Section 3.3.1). Estimated cost documentation provided shall be itemized, such that the CPUC can understand the exact breakdown of labor, Operations and Maintenance, and capital expenditures for each job activity and each installed piece of equipment.
8. The Selection Committee will choose a short list of projects based on the Selection Criteria Framework and submit it to the utilities to review to refine the cost estimates, including researching land acquisition, site development, right-of-way, metering, gas quality, permitting, regulatory, environmental, unusual construction, operating and maintenance costs.

9. Within 30 days of receiving the project shortlist from the Selection Committee, utilities will provide refined cost estimates to the Selection Committee that includes reference to actual historical or current competitive cost data for similar work.
10. Once the refined cost estimates are reviewed, the Selection Committee will submit to the utilities a narrowed-down selection of at least five projects.
11. Within 30 days of the selection of the final projects, utilities will complete a Final Cost Estimation of projected revenue requirement, including a description of all costs of construction, development of complete engineering construction drawings, preparation of all construction and environmental permit applications and right-of-way acquisition requirements. Reference to actual historical or current competitive cost data for similar work should be included.
12. With the Final Cost Estimation, the Selection Committee will review and select at least five pilot projects based on the Selection Criteria Framework set forth in Appendix B. The Selection Committee has the discretion to choose Dairy Pilots that are not the highest scoring to ensure that Dairy Pilots are selected in a variety of geographic locations and are developed by at least two or more developers in order achieve project diversity. If there is no consensus within the Selection Committee, the CPUC will make the final selection.
13. The Selection Committee will inform the utilities of the awarded pilot projects, and within 10 days of award, the utilities will each file a Tier 2 Advice Letter to open a balancing account to record expenditures for biogas collection lines, and a memorandum account to record capital for point of receipts and pipeline extensions.

14. Within 30 days of the date the Selection Committee notifies the utilities of the awarded projects, the utilities will file a Tier 2 Advice Letter seeking approval of the contracts with the Dairy Pilots.
15. The utilities will manage and implement the Pipeline Infrastructure portion of the pilot projects in their respective service territories.
16. The utilities must work with the awarded applicants to establish a construction plan for necessary utility-owned Pipeline Infrastructure. The utilities must pay for and construct the portion of a pilot project that is defined as utility-owned Pipeline Infrastructure.

3. Pipeline Infrastructure

3.1. Component Definitions

There are various components needed to interconnect dairy biomethane projects to utility's pipelines. This diagram illustrates and defines several components of a typical dairy pilot project that is connected to a gas pipeline.

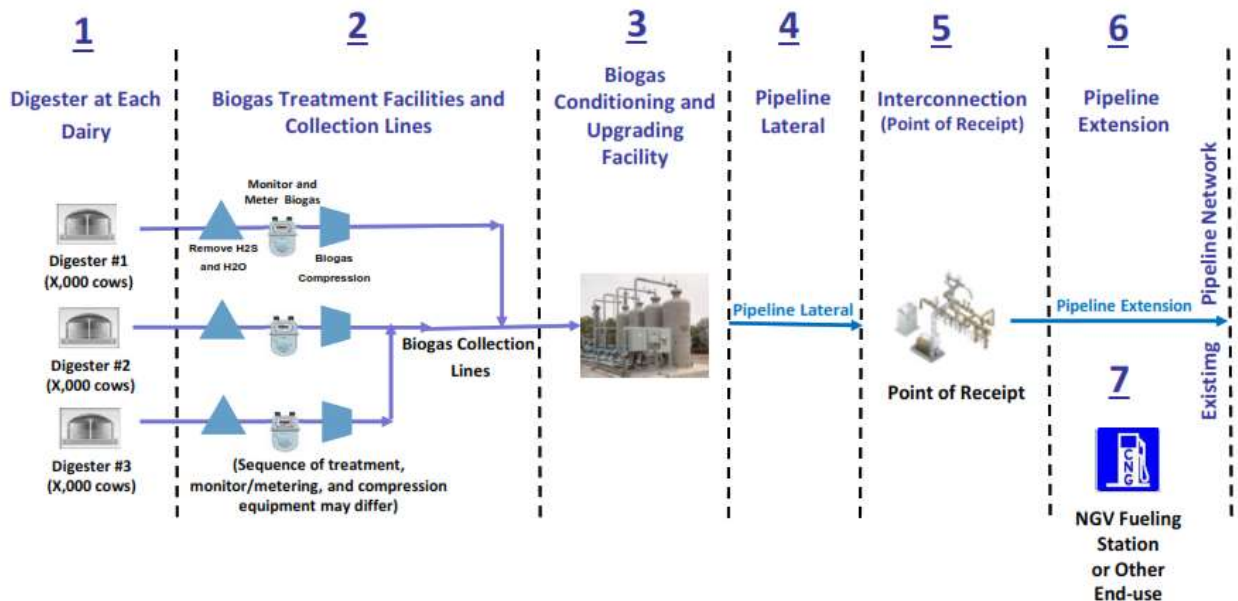


Figure 1: Dairy Biomethane Pilot Primary Components

1. Digesters at each dairy convert manure to biogas. The digester breaks down the manure waste at landfills, lagoons, or enclosed vessels. The unprocessed mixture of methane and carbon dioxide is referred to as biogas.
2. Biogas collection lines (also known as gathering lines) transport dairy biogas from each dairy digester to a central biogas conditioning facility. Dairy biogas may undergo dehydration and removal of hydrogen sulfide prior to being injected into the gathering line. Treatment equipment for dehydration and removal of hydrogen sulfide, compression, and monitoring and measurement equipment may be included as part of the biogas collection lines.
3. The biogas conditioning facility (or biogas upgrading facility) is where biogas is upgraded to “pipeline quality,” meaning water, hydrogen sulfide, carbon dioxide and other trace components are removed. Once conditioned, this gas is referred as “biomethane,” “renewable gas,” or “renewable natural gas.” Biomethane must meet the standards adopted pursuant to subdivisions (c) and (d) of Health and Safety Code Section 25421 for injection into a common carrier pipeline and GO 58-A.⁹
4. The pipeline lateral transports biomethane from the conditioning facility to the point of receipt.
5. The “point of receipt” is the location at which a utility receives and assesses all gas, including biomethane, to ensure it meets pipeline quality

⁹ We note that SoCalGas offers a tariff that allows a customer to enter into an agreement for SoCalGas to provide biogas conditioning services. <https://www.socalgas.com/for-your-business/power-generation/biogas-conditioning-upgrading>

specifications. If gas does not meet pipeline quality specifications, then the utility will not allow it to enter the pipeline system by shutting the valve at the point of receipt.

6. If a pipeline extension is necessary it provides a tie-in from the point of receipt to the existing pipeline network.
7. Natural Gas Fueling Station(s) could be located anywhere on the pipeline network.

3.2. Funding of Pipeline Infrastructure

For purposes of the Dairy Pilots, the costs of digesters and biogas conditioning and upgrading facilities are not eligible for funding.

The following components are eligible for funding:

- a. Biogas collection lines and facilities for treatment of biogas before it enters the collection lines;
- b. Pipeline lateral that delivers biogas from a biogas conditioning facility to the point of receipt;
- c. Pipeline extension that delivers biogas to the utility's existing gas pipeline system;
- d. Point of receipt, where the utility receives gas that has been upgraded at a conditioning facility.

Biomethane producers shall own and operate the biogas collection lines and any treatment equipment to remove hydrogen sulfide and water from the raw biogas prior to it entering the biogas collection lines. The costs associated with the biogas collection lines and treatment equipment will be recovered from the transmission rates of utility ratepayers as a reimbursement to biomethane producers. Natural gas utilities will own and operate all facilities downstream of the biogas conditioning and upgrading facilities, including pipeline lateral from

such facilities to the point of receipt and any pipeline extensions. The respective owners are responsible for maintaining the safety of the pipeline facilities in accordance with Pipeline and Hazardous Materials Safety Administration (PHMSA) guidelines, 49 CFR Part 192, and within the CPUC's Safety Enforcement Division (SED) purview, CPUC General Order 112-F.¹⁰ The safety of digesters, gas treatment, and gas conditioning and upgrading facilities are not overseen by PHMSA or SED.

A pipeline extension is used for transporting gas to the utility transmission system. The point of receipt, where utilities measure and monitor the biomethane gas to ensure it meets pipeline gas quality specifications prior to entering the utility pipeline, serves as the critical infrastructure to ensure safe interconnection to a pipeline system. Equipment such as valves, meters, and protection devices are part of the equipment at the point of receipt.

4. Cost Recovery Framework

The cost of digesters and biogas conditioning and upgrading facilities are not eligible for funding in this program. The cost of biogas collection lines and treatment facilities, pipeline laterals, points of receipt, and pipeline extensions (interconnection) may be recovered from utility ratepayers. Biogas collection lines and treatment facilities (for treating gas prior to entry in collection lines) will be owned by the biomethane producers, not the utility. Biomethane producers shall receive reimbursement from the utility for gathering line costs, and those costs should be recorded as an operational expense in a utility

¹⁰ Owners may contract with third parties for these services.

balancing account up to the bid amount for these components. Costs above the bid amount for the collection lines will be subject to reasonableness review.

The cost of pipeline laterals, the points of receipt, and pipeline extensions should be recorded by the utility in a memorandum account as capital expense. The memorandum account will capture operation and maintenance costs and capital-related project costs (depreciation, return, and taxes) associated with the selected Dairy Pilots. Disposition of the balance recorded in these new regulatory accounts should be reviewed in connection with the relevant utility natural gas transmission rate case. Ultimately, the utilities are allowed to record and include these expenses in their transmission rates.¹¹

If a project includes both delivery of biomethane to an onsite electric generator (e.g., combustion turbine, microturbine or fuel cell) and injection of biomethane into the gas pipeline, using Pipeline Infrastructure funded through this program for both uses, the Pipeline Infrastructure costs that are eligible for funding shall be reduced by the percentage of the biomethane that is delivered to an onsite electric generator, rather than injected into the gas pipeline.

The cost estimates of the pilot projects will be known through the solicitation process, and those costs will be evaluated by the CPUC. Applicant's cost estimation should include the cost breakdown for each component of the proposed dairy pilot project: digester, biogas collection line(s), biogas conditioning facility, pipeline lateral, point of receipt, and pipeline extension. Within each component, cost should be itemized such that the CPUC can

¹¹ Since dairy biomethane producers bear the costs of digesters and gas conditioning facilities, revenues from the sale of the gas commodity and credits go to the producers to offset their costs. The revenue generated from the credits may be negotiated between the seller and the buyer of the biomethane gas via a contract agreement.

understand the exact breakdown of labor, Operations and Maintenance, and capital expenditures for each job activity and each installed piece of equipment. The cost estimation for biogas collection lines, conditioning equipment to remove hydrogen sulfide and water from the raw biogas, pipeline lateral, point of receipt, and pipeline extension must include at least two references to actual historical or current competitive cost data for similar work. Historical data may be used as a benchmark for the proposed project cost. The CPUC has the discretion to modify the cost estimation submitted by the applicants and determine the Final Cost, which will become the authorized revenue requirement. Because a solicitation process for project selection considers costs, there are some mechanisms in place to ensure costs for chosen pilot projects are reasonable. Some factors that drive cost include (a) location of biomethane plant(s) relative to existing gas lines plus environmental complexities, (b) capacity of existing gas line to receive biomethane amounts, (c) pressure of pipeline at site of potential injection point, (d) sufficient demand from customer downstream of the point of injection to match supply, and (e) timeframe to plan and complete biomethane pipeline injection.

The authorized amount will be reviewed for the utility's prudent administration of the project, but otherwise will be considered per se reasonable. Review of expenditures consistent with the authorized amount is primarily to determine that costs qualify properly as recoverable rather than to question the overall amounts spent. Any expenditure above the authorized amount is subject to a reasonableness review in the appropriate transmission rate case. This allows for some flexibility for unforeseen costs such as CEQA permitting process. Any expenditure below the authorized amount will be credited to ratepayers.

Comparisons to costs in other states are not determinative of reasonableness, but parties can present evidence of such costs in reviews of reasonableness.

4.1. Environmental Credits

ARB allocates environmental credits (Low Carbon Fuel Standard credits and Cap-and-Trade compliance offsets) to biomethane producers in accordance with the rules and procedures of the respective programs. A Dairy Pilot project that obtains environmental credits as a result of the project is not required to sell those credits to the gas corporation associated with the project. If a gas corporation purchases an LCFS credit or a Cap-and-Trade Compliance Offset as part of its purchase agreement with the Dairy Pilot, it must re-sell that credit at least one quarter before the expected reimbursement of the memorandum account. Any surplus revenue realized by a gas corporation from the resale of the environmental credit must be applied against the capital and operational expenses recorded in the memorandum account, thereby reducing the total amount reimbursed to the gas corporation by the ratepayers. Any loss realized by a gas corporation from the resale of an environmental credit cannot be recorded to the memorandum account or otherwise collected from ratepayers.

4.2. Costs Associated with Natural Gas Vehicle Fueling Infrastructure

The Commission ruled in D.14-12-083 that LCFS and Renewable Identification Number credits are granted to renewable gas producers of fuel purchased for use in Natural Gas Vehicles (NGVs). Critical transportation infrastructure plans envision an increased use of renewable gas as NGV fuel. Utilities are not authorized to incur any incremental costs of facilities for natural gas vehicle fueling associated with Dairy Pilots or to recover such costs through the process established for the Dairy Pilots. Utilities may seek to include costs of

any investments in natural gas fueling in a general rate case only to the extent allowed pursuant to other established principles and procedures.

5. Selection Criteria

Applicants will be evaluated on the following selection scoring criteria:

Scoring Criteria	Maximum Points
Dairy Waste-to-Biomethane Business Model • Dairy Operation • Technology Plan • Marketing Plan • Scalability	20
Financial Plan/Soundness	15
GHG Reduction and Cost Effectiveness	25
Environmental Benefits	15
Disadvantaged Communities	10
Project Readiness and Implementation	15

The Selection Committee has the discretion to choose Pilot Projects that are not the highest scoring in order to ensure that Dairy Pilots are selected in a variety of geographic locations and are developed by at least two or more developers, in order achieve project diversity.

The complete Selection Criteria Framework is set forth in Appendix B.

END OF APPENDIX A

APPENDIX B SELECTION CRITERIA AND FRAMEWORK

Applicants must: (1) agree to meet the Eligibility Requirements in order to be considered in the selection process; and (2) submit a proposed pilot project with a discussion of how it meets each of the Selection Criteria.

1. Selection Committee

A Selection Committee comprised of the California Public Utilities Commission (CPUC) as the lead agency, in consultation with the California Air Resources Board (ARB) and California Department of Food and Agriculture (CDFA) will oversee project selection.

Project proposals will be evaluated and verified by the Selection Committee and/or independent auditors. Proposals must include cost estimates provided by utilities in their respective territories. Estimated cost shall be itemized such that the CPUC can understand the exact breakdown of labor, Operations and Maintenance, and capital expenditures for each job activity and each installed piece of equipment. The Selection Committee will evaluate and score the Dairy Pilot proposals based on the Selection Criteria. Applicants with the five highest scores will be awarded. However, the Selection Committee also has the discretion to choose Pilot Projects that are not the highest scoring to ensure that Dairy Pilots are selected in a variety of geographic locations and are developed by at least two or more developers in order achieve project diversity. In the event of multiple projects with identical scores as the fifth-highest ranked projects, the CPUC representative on the Selection Committee has the discretion to authorize more than five projects.

2. Eligibility Requirements (Unscored)

The projects must utilize biomethane from California dairy operations and result in permanent, annual, and quantifiable GHG emission reductions. A dairy operation is defined as an entity that operates a dairy herd, which produces milk, cream, or cheese commercially, and/or whose bulk milk or bulk cream is received or handled by any distributor, manufacturer, or any nonprofit cooperative association of dairy producers.

1. Existing dairy operations and developers who have a written commitment from a dairy operation are eligible for this project. At least 80% or more dry weight must be manure from dairy livestock.
2. A group of dairy operations can submit one application to develop centralized dairy digesters, known as a “cluster” or “hub and spoke” project and describe the phased-approached or the full cluster plan (e.g., construction, operation timeline, number of dairies in total cluster and amount of biomethane that will be generated in each phase of the cluster construction). The phased-approached cluster project must include a signed lease and feedstock agreement, not just a letter of interest or future addition. The appropriate location of the centralized facility can be determined by participating dairy operations.

To be considered in the selection process, applicants are required to meet and agree with the following requirements:

1. Demonstrate CEQA and Permits Compliance (see Attachment A)
2. Quantify expected Greenhouse Gas Emissions Reduction using the ARB GHG Reduction Calculator
3. Biomethane produced by the project must be used in California
4. Report parameters and participate in evaluations (see Attachment B)

These requirements allow for compliant operation of facilities under multi-level permitting regimes while ensuring protection of the environment, including reduced methane and criteria pollutant emissions. These terms are non-negotiable.

2.1. CEQA and Permits

If selected, pilot projects must demonstrate substantial compliance with CEQA and all applicable permits within six months of receiving notification of a successful bid for pilot project status, with the opportunity to request additional time for good cause. More specifically, pilot projects must undergo any required CEQA process to provide information on potential impacts of the project. Continued compliance with all environmental permit requirements is required for the duration of the project's operation. Detail of CEQA Guidance is located in Attachment A.

2.2. Greenhouse Gas Emissions Reduction Calculations

Applicants are required to use the quantification methodology titled "Greenhouse Gas Quantification Methodology for the California Department of Food and Agriculture Dairy Digester Research and Development Program Fiscal Year 2016-17" and associated DDRDP GHG Emission Reduction Calculator Tool (hereafter referred to as ARB GHG Reduction Calculator) developed by ARB. The quantification methodology and tool (draft for public comment) are available on ARB's website at www.arb.ca.gov/cci-quantification.

2.3. Data Reporting Parameters

Pilot project developers must agree to report specific data¹² to the Selection Committee and the CEC, which might use the data for future studies.

Developers must also agree to allow these agencies to monitor and evaluate these data. Pilot projects have an obligation to report the costs incurred, by both the dairy and utility, as long as the pilots are operational or the costs from the pilots are included in utility rates, but not to exceed 15 years. Finally, developers must agree to participate in reasonable research projects undertaken by these State agencies, sometimes in collaboration with the dairy industry, designed to better understand the emissions profiles of the pilot projects, their cost and revenue potential, the relative effectiveness of various design features, as well as reasonable related data reporting parameters. Confidential business information evaluated during reporting, monitoring, and subsequent research is protected from disclosure under existing law. Details of the report parameters and evaluations are located in Attachment B.

3. Selection Criteria (Total 100 points)

Applicants should submit a project narrative that includes a detailed description of the proposed project, its operational goals and objectives. The score will be based on the criterion chart below:

Scoring Criteria	Maximum Points
Dairy Waste-to-Biomethane Business Model • Dairy Operation • Technology Plan • Marketing Plan • Scalability	20

¹² Attachment B details the data subject to reporting, monitoring, and research.

Financial Plan/Soundness	15
GHG Reduction and Cost Effectiveness	25
Environmental Benefits	15
Disadvantaged Communities	10
Project Readiness and Implementation	15

Applicants should address each of the scoring criteria by providing sufficient, unambiguous details for the Selection Committee to evaluate the application against each scoring criterion. Applications must respond directly to each criterion, with the headings as titled below. The page limit for the entire application is 30 pages.

3.1. Dairy Waste-to-Biomethane Business Model

3.1.1. Dairy Operation

- a. Provide the details of the history and background of the dairy operation.
- b. Provide herd size and breed, including average number of lactating cows, dry cows, replacement calves, replacement heifers, and any other livestock at your operation.
- c. Explain in detail how current dairy manure management operations compare to the proposed pilot methane management operations.

3.1.2. Technology Plan

- a. Describe the proposed digester and conditioning technology in sufficient detail to explain how it works and its technical feasibility and or commercialization status.
- b. Describe how the digester produced biogas characteristics have been considered in the type of gathering system proposed and how that

system will promote safe collection of biogas from the digester to conditioning facilities.

- c. Describe how proposed technologies and processes contribute to the facility's / project's ability to compete in the commercial California marketplace. Provide assumptions and sources of relevant data.
- d. Identify and document the role of technology partners, including the legal or contractual relationship and obligations between partners.
- e. If applicable, discuss how the proposed technology is a transformative approach to tackling a critical technology issue or market barrier.

3.1.3. Marketing Plan

- a. Identify credible target markets for biomethane, market drivers, and anticipated market growth.
- b. Identify market barriers to the development of dairy biomethane, including existing or potential competition, and how the project will overcome them.
- c. Describe and document the role of strategic marketing partners, customers, and other partners in ensuring project success, including fuel and co-product off-take agreements.¹³

3.1.4. Scalability

- a. Discuss the replicability of the proposed digester and conditioning technologies and the long-term viability of scaling up capacity.
- b. Describe how feasible it is for the interconnect location to accept biomethane from potential additional digesters.

¹³ Off-take agreements are not required at the time the proposal is submitted, but existing or conditional agreements will result in a higher score.

3.2. Financial Plan/Soundness

1. Demonstrate economic viability of the proposed project by providing the following financial documentation (with assumptions listed) over the duration of the proposed project.
 - a. Balance sheet and cash flow statements for Applicant's firm and any other partners that have a substantial stake in project for the past three (3) years, if available. Documents must be audited and certified by a Certified Public Accountant (CPA). If audited financial statements are not available by submission date, then financial statements certified by a CPA are acceptable.
 - b. Five-year pro forma financial statements for Applicant's firm and any other partners that have a substantial stake in project, including projected balance sheet, income statement, cash flow statement, and debt service schedule for existing and planned long-term debt, if any. List assumptions, including but not limited to, market supply and demand conditions of the industry, market fluctuations, and monthly or quarterly fixed costs and variable costs.
 - c. Applicant's estimated costs should include the following: Pipeline Infrastructure (biogas collection lines, point of receipt, and pipeline extension), equipment (e.g., valves, meters, and protection devices), digester, conditioning facility, design, engineering, and installation costs. Within each component, cost should be broken down by labor, Operation and Maintenance, and each installed piece of equipment. At least two references to actual historical or current competitive cost data for similar work must be included to justify the cost for biogas collection line, conditioning equipment to remove hydrogen sulfide and

water from the raw biogas, pipeline lateral, point of receipt, and pipeline extension. CPUC has the discretion to modify the cost estimation.

An applicant pursuing a phased approach to its project should include anticipated costs of all phases of the project. The phased-approached cluster project must include a signed lease and a feedstock agreement, not just a letter of interest or future addition.

- d. Applicant's sources of funding for the project, such as grants, loans and equity contributions, and types, terms, and conditions of match agreements. Project funding should be described by both financial resources and percentage of total equity. Provide contact information for each match source.
2. Identify the financial risks to the proposed project and describe the methods the Applicant will use to effectively manage and mitigate those risks. At a minimum, Applicant should address risks associated with construction, cost overruns, operation, maintenance, technology, regulations, and economic conditions.
3. Demonstrate the economic viability of the long-term plan following project completion.
 - a. Identify and demonstrate how co-products or other revenue streams contribute to the business plan. Discuss assumptions about expected income from all revenue sources. Discuss how much project viability depends on co-product revenues.
 - b. Discuss estimated values and planned disposition of any potential Low Carbon Fuel Standard credits, Renewable Fuel Standard Program credits (RINs), and/or carbon cap-and-trade credits.

- c. List any pending or filed litigation in which Applicant is a party, and explain the extent of Applicant's liability coverage, if any. **Please list only litigation that pertains to or impacts the project's execution. Explain how the pending or filed litigation affects the applicant's ability to complete and/or operate the project.**

3.3. Greenhouse Gas Reduction

Explain how the proposed project will result in reduction of metric tons of GHG emission annually compared to existing practices for the dairy. Provide the estimated GHG emission reduction resulting from the proposed projects. Download and complete the ARB GHG Emissions Reduction Calculation Tool. Scroll down and select latest version of the CDFA Dairy Digester Research and Development Program. The tool may allow applicant to change the default setting if justification is made with reference to research studies (e.g., electrical conversion efficiency for specific technology). However, this setting is currently being evaluated by ARB and CDFA and may change in future versions.

<https://www.arb.ca.gov/cc/capandtrade/auctionproceeds/quantification.htm>.

3.3.1. Cost-Effectiveness

A higher score will be given to projects providing the greatest greenhouse gas emissions reductions per dollar invested (cost-effectiveness). Provide a description and relevant documentations of the cost effectiveness of the proposed project, measured according to a standard cost-effectiveness metric. A standard cost-effectiveness methodology is dividing the amount of estimated methane emission reductions over 10 years based on the California Air Resources Board's "Dairy Digester GHG Emission Reduction Calculator" by the total cost of the project based on the Pipeline Infrastructure costs which includes utility reimbursement for biogas collection line(s) and the utility's "Pipeline

Infrastructure Scoping and Cost Estimation,” which includes construction, maintenance and operation cost for pipeline lateral, point of receipt, and pipeline extension.

3.3.2. Justification and Reference Requirement

Inputs to the applicant’s GHG emission reduction and the Cost Estimation may be added or modified if the Selection Committee finds it inadequate. Justification must be made if there are changes to the default setting in the GHG emission calculation tools. At least two references are required to support the cost estimation. References should include historical or current competitive cost data for similar work.

3.4. Environmental Benefits

A higher score will be given to projects that minimize criteria pollutant and Toxic Air Contaminant (TAC) emissions and maximize net criteria pollutant reductions.

1. **Mitigate Emissions On-Site.** Explain how the proposed pilot project will incorporate feasible mitigation measures, in accordance with the California Environmental Quality Act, to mitigate to a level that is less than significant, any potential adverse impact on local air quality from project specific criteria pollutants and TAC emissions from all aspects related to the project, including emissions resulting from construction, operation of the project, and resultant increases in vehicle miles travelled to and from the project site. Emissions not associated with the operation of the pilot project (e.g., agriculture pumps, normal farm vehicle operation, etc.) do not require mitigation. Any offsite emission reductions to offset a project’s criteria pollutant and TAC emissions must occur in the same air basin as the project site (this does not apply to paragraph 2 below).

2. **Maximize Reduction Off-Site.** Explain how the proposed pilot project reduces net criteria pollutant emissions.

- a. Provide documents that support vehicle fuel sold to and utilized by freight transport vehicles along the State's major freight and transportation corridors (e.g., Interstate 5, State Route 99) or other locations.
- b. Provide documents that verify any partnership with local delivery fleets (e.g. milk hauling, feed delivery) to convert diesel freight vehicles to natural gas vehicles and supply them with renewable compressed natural gas from a pilot injection project. These conversions will reduce NOx and diesel particulate matter of existing fleets.
- c. Provide documents that verify contracts for the use of pipeline-injected renewable natural gas in electricity generation.

3.5. Disadvantaged Communities

A proposed project that thoroughly explains, discusses, quantifies, and mitigates impacts and demonstrates outreach and engagement efforts will receive higher scores (e.g., a community benefit agreement will receive a higher score compared to community meeting summary).

1. Discuss and quantify the potential impacts (positive or negative) of the proposed pilot project on disadvantaged communities within California (within the top 25 percent of disadvantaged communities as defined by CalEnviroScreen 3.0).¹⁴

¹⁴ <http://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30>

2. Describe in detail specific mitigation measures that will be included in the project, including but not limited to, methods to mitigate impacts such as toxic air contaminants, hazardous air pollutants, criteria pollutants, groundwater and surface water impacts, truck traffic, and odor.
3. Describe how the project proponent(s) engaged the community. Did community-based non-profit organization(s) involved in potentially impacted communities provide assistance in engagement efforts? Did discussion include potential adverse impacts of proposed projects, including a net increase in criteria pollutants, toxic air contaminants, hazardous air pollutants, groundwater and surface water impacts, and truck traffic, and odor?
4. List the public, community organizations¹⁵ and/or government stakeholders involved.
5. Provide details of community meetings, including but not limited to method of notification, attendance, location, date/time, translation services provided, childcare provided, meals provided.
6. Provide support letters from community members and/or leaders demonstrating that outreach was conducted (at least 3).
7. Describe any community benefits agreement with local communities that describes the intentions for developing mutually beneficial outreach and requirements for each group.

¹⁵ A few organizations include Central California Asthma Collaborative, Central California Environmental Justice Network, Central Valley Air Quality Coalition, Community Alliance for Agroecology and the Center on Race Poverty and the Environment, and Leadership Counsel for Justice and Accountability, (CAFA/ CRPE).

3.6. Project Readiness and Implementation

A proposed project that is the furthest along in obtaining the aforementioned rights (e.g. signed documentation, or at least a letter of interest) will receive higher scores. This factor represents how quickly construction can begin.

- i. ***Overall Readiness/Permitting.*** Applications must include information about the permitting required for the project and whether or not the permitting has been completed. If the permitting has not been completed, applications must include a permitting schedule that ensures successful project completion within the timeframes specified in this solicitation.
- ii. ***Site Control.*** Applications must describe the proposed project site and document site and equipment control. Site and equipment control includes, but is not limited to: leases, ownership, or access rights. Proposed point of interconnection to a natural gas pipeline must be identified along with the distance between the proposed project and proposed point of interconnection. Applicants must also demonstrate thorough safety, maintenance, and training procedures will be in place.
- iii. ***California Environmental Quality Act.*** Applications must include information documenting progress towards achieving compliance under the California Environmental Quality Act (CEQA). If CEQA compliance has not been obtained for an application, then the application must include a schedule to complete CEQA activities for the proposed project.
- iv. ***Community Outreach.*** Applications must include information about planned community outreach, including outreach and discussions with

fire marshals and educational efforts to explain the proposed project to the public.

- v. ***Previous awards.*** If Applicant has received previous grants or awards from CEC, CDFA, and ARB, applicant must describe how the requirements of the agreement(s) have been fulfilled/are being fulfilled. Describe previous grants or awards for the project from any other source.

ATTACHMENT A: CEQA GUIDANCE

- 1. Air Quality Protection.** Projects shall demonstrate protection of air quality such that project specific air quality impacts are mitigated to a level of insignificance. The design and construction of digester vessels (i.e., ponds and tanks), low pressure raw biogas pipeline, biogas upgrading and conditioning equipment, biomethane compression equipment, post-cleanup pipeline and interconnection components under this program shall be demonstrated to be protective of air quality. To meet air quality requirements, the following is required:
 - a. Pilot projects must prepare and deploy methane leak detection or a plan covering the interconnection point, post-upgrading pipeline, compressor stations, biogas upgrading system, low-pressure pipeline, and anaerobic digester. Post-upgrading component methane leak monitoring shall be conducted in accordance with the leak¹⁶ detection and repair¹⁷ requirements of Section 95669 (Leak Detection and Repair) of the ARB Oil and Gas Regulation (California Code of Regulations, Title 17, Division 3, Chapter 1, Subchapter 10

¹⁶ Leak is defined in § 95667 (a)(27) of the ARB Oil and Gas Regulation as “the unintentional release of emissions at a rate greater than or equal to the leak thresholds specified in this subarticle.”

¹⁷ Leak detection and repair is defined in § 95667 (a)(28) of the ARB Oil and Gas Regulation as “the inspection of components to detect leaks of total hydrocarbons and the repair of components with leaks above the standards specified in this subarticle and within the timeframes specified in this subarticle.”

Climate Change, Article 4)¹⁸ and is the responsibility of the gas corporations. The cost of methane leak detection equipment is recoverable in rates.

- b. Projects with existing or planned onsite generation technologies operating on dairy biogas (e.g., reciprocating internal combustion engines, microturbines or fuel cells) must meet Best Available Control Technology (BACT) standards under new source review and shall demonstrate compliance for the life of the project.
 - c. Flaring of raw biogas or biomethane meeting pipeline specifications shall only be allowed in case of emergency.
 - d. Any offsite emission reductions to offset a project's criteria pollutant and toxic air contaminant emissions must occur in the same air basin as the project site.
- 2. Water Quality.** Projects shall demonstrate protection of water. The design and construction of digester vessels (i.e., ponds and tanks) under this program shall be demonstrated to be protective of surface and ground water quality as determined by the appropriate regional water quality control board, including, but not limited to, each of the following:
- a. Double-lined ponds consistent with the Tier 1 specification of the Dairy General Order (R5-2013-0122) of the Central Valley Regional Water Quality Control Board;
 - b. Above-ground tank;
 - c. Below-grade concrete lined tank.

¹⁸ Text of the Oil and Gas Regulation, effective October 1, 2017 is available at: <https://www.arb.ca.gov/regact/2016/oilandgas2016/ogfro.pdf>

ATTACHMENT B: Data Reporting Parameters and Participation in Evaluations

Each selected Dairy Pilot must participate in data reporting and evaluations. Commercially sensitive data may be submitted with a request for limits on disclosure. Data reporting includes:

A. Pilot Project Information and Description, including (but not limited to):

1. Location
2. Detailed dairy cow population (by dairy for clusters, segregated by age, gender, and lactation status)
3. Discussion of business model
4. Demonstrated dairy/site control for third party developer projects
5. Description of current manure handling and all proposed modifications
6. Description of equipment to be installed, including location of any centralized facilities shared between dairies
7. Proximity to pipeline with injection capacity
8. Proximity to transportation corridors
9. Proximity to disadvantaged communities as defined by ARB by CalEnviroScreen 3.0.
10. Description of related on- and off-dairy heavy-duty vehicle fleets (milk hauling, feed delivery) that could potentially be converted to low-NOx natural gas power.
11. Discussion of fuel and transportation off-taker contracts completed or under development.

B. Provide all information listed in the “FAAST Grant Application Questions”¹⁹ section of the CDFA’s 2017 Dairy Digester Research and Development Program solicitation.

C. Costs, including but not limited to:

1. Project Development and Construction, including the cost of design, engineering, installation, and individual component capital costs (e.g. including digesters, gathering lines, biomethane upgrading/conditioning, and pipeline injection point of receipt), including how any project delays impacted costs;
2. Interconnection Studies;
3. Component Operation and Maintenance (including consumables, labor, and energy requirements); and
4. Description (including total amounts) of costs recovered through the utility ratebase.

D. Costs shall also be reported as follows:

1. Energy production cost-effectiveness (annual diesel gallon equivalents (DGEs) produced divided by annualized project expenditures);
2. Methane emissions abatement cost effectiveness (annual emissions avoided divided by annualized project expenditures); and
3. Percent of total project costs recovered from utility ratepayers (defined as Pipeline Infrastructure Costs).

¹⁹ Referenced material currently begins on page 12 of the May 3, 2017 Request for DDRDP Grant Applications <https://www.cdfa.ca.gov/oefi/ddrdp/>.

E. Project developers agree to allow the following to be monitored, evaluated, or otherwise studied:

1. Feasibility
2. Cost-effectiveness
3. Method to track and verify delivery of biomethane to transportation fuel fleets or customers
4. Determinants of technical performance, including the following:
 - i. Emissions (GHG and criteria) and emissions reductions
 - Methane emission reductions must be calculated using either the ARB Livestock Projects Compliance Offset Protocol²⁰ or the FY 16/17 CDFA Dairy Digester Research and Development Program Draft Quantification Methodology.²¹
 - Projects are required to provide GHG calculations in the following formats:
 - Total annual biomethane injection;
 - Total annual GHG emission reduction;
 - GHG reduction per unit of energy-corrected milk (ECM) produced by the dairy operation;

²⁰ Information on the ARB Livestock Projects Compliance Offset Protocol available on the ARB website at:

<https://www.arb.ca.gov/cc/capandtrade/protocols/livestock/livestock.htm>

²¹ The Draft Greenhouse Gas Quantification Methodology for the CDFA DDRDP is available at:

https://www.arb.ca.gov/cc/capandtrade/auctionproceeds/cdfa_draftqm_16-17.pdf

- GHG reduction per dollar CDFA-DDRDP and additional GGRF (if any) grant money invested.
(If applicable)
- ii. Renewable energy potential (amount of biogas and fuel produced)
- iii. Effectiveness of selected technology components
 - Dairy digestion technology, including monitoring and testing of baseline and post-digester emissions, at a minimum methane, nitrous oxide, criteria pollutants, and toxic air contaminants from anaerobic digestion, handling of post- digestion manure, and any other air emissions from a project
 - Biogas upgrading and conditioning, including monitoring biogas quality achieved pre- and post-cleanup by methods including, but not limited to standard leak-detection and remote sensing
 - Pipeline and interconnection point of receipt
- iv. Impact on daily operation of dairy
- v. Lessons learned
 - Key ingredients for success
 - Pitfalls to avoid
 - Potential for cost reductions
 - Transferability to other biomethane submarkets
(e.g., wastewater treatment plants, organic diversion at landfills, food waste)
- vi. Scalability and replication potential

5. Future research²² related to understanding and encouraging dairy pipeline injection projects.
- F. Prior to project initiation,²³ project developers must conduct reasonable outreach to neighboring disadvantaged communities identified by CalEnviroScreen 3.0,²⁴ as specified by the Selection Committee, and CEC as appropriate, concerning project benefits, impacts, and measures that will increase benefits and reduce impacts. Input from the communities must be solicited, recorded, and (when feasible) incorporated into development plans. Agency representatives must be present at all outreach events. Summaries of comments received, and proposed responses to each will be prepared and submitted to the agencies for approval.

(END OF APPENDIX B)

²² This requirement allows for appropriate planning and allocation of funding and resources for integrated interagency research plans and projects which may not be finalized before the release and adoption of the Rulemaking. ARB desires to retain the right to conduct reasonable research on pilot project facilities in the event that research plans and projects are not finalized before pilots are selected.

²³ For the purposes of the pilot project selections, ARB defines “prior to project initiation” for environmental justice outreach purposes as meaning before biomethane commences injection into the natural gas pipeline network.

²⁴ Information on CalEnviroScreen 3.0 is available at:
<https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30>

APPENDIX C

GLOSSARY

TERM	MEANING
A.	Application
AB	Assembly Bill
AECA	Agricultural Energy Consumers Association
ALJ	Administrative Law Judge
ARB	Air Resources Board
BAC	Bioenergy Association of California
BACT	Best Available Control Technology
CalEPA	California Environmental Protection Agency
CalRecycle	Department of Resources Recycling and Recovery
CDFA	California Department of Food and Agriculture
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CPA	Certified Public Accountant
CPUC	California Public Utilities Commission
CRPE/CAFA	Center on Race, Poverty and the Environment/Community Alliance for Agroecology
D.	Decision
DDRDP	Dairy Digester Research and Development Program
DTSC	Department of Toxic Substances Control
GHG	greenhouse gas
GO	General Order
GRC	General Rate Case
H&S	Health and Safety
IEPR	Integrated Energy Policy Report
LCFS	Low Carbon Fuel Standard

TERM	MEANING
NGV	Natural Gas Vehicle
OEHHA	Office of Environmental Health Hazard Assessment
OIR	Order Instituting Rulemaking
PG&E	Pacific Gas and Electric Company
PHMSA	Pipeline and Hazardous Materials Safety Administration
Pub. Util.	Public Utilities
QBSci	Quantitative Biosciences
R.	Rulemaking
RFS	Renewable Fuel Standard
RIN	Renewable Identification Number
RNG Coalition	Coalition for Renewable Natural Gas
RPS	Renewable Portfolio Standard
SED	Safety Enforcement Division
SB	Senate Bill
SDG&E	San Diego Gas & Electric Company
SED	Safety and Enforcement Division
SLCP	Short-Lived Climate Pollutant
SoCalGas	Southern California Gas Company
TAC	Toxic Air Contaminant

(END of APPENDIX C)