

**June 17, 2015**

Michael Tollstrup  
Chief, Project Assessment Branch  
California Air Resources Board  
1001 "I" Street  
Sacramento, CA 95814

**Re: Pacific Gas and Electric Company's Comments on the Air Resources Board Short-Lived Climate Pollutant Reduction Strategy, Concept Paper**

Dear Mr. Tollstrup:

Pacific Gas and Electric Company (PG&E) appreciates the opportunity to provide comments on the Air Resources Board's May 17 Workshop on its Short-Lived Climate Pollutant (SLCP) Reduction Strategy, Concept Paper.<sup>1</sup>

## **I. INTRODUCTION**

PG&E strongly supports California's clean energy goals. The Governor recently issued an Executive Order establishing a 2030 greenhouse gas (GHG) reduction goal of 40 percent below 1990 levels. PG&E applauds the Governor's leadership in setting this new goal and with the right structures in place PG&E believes this bold goal will be attainable. PG&E has made significant contributions to the state's progress in reducing GHG emissions, including procuring renewable generation, investing in both electric and natural gas energy efficiency, and improving PG&E's gas pipeline infrastructure. Moreover, PG&E currently procures approximately 77 percent of all bioenergy that is under contract with investor owned utilities (IOUs) in California for the purposes of electric generation, which represented approximately 4.6 percent of PG&E's total power mix in 2014.

With the development of the SLCP Strategy, as required by the passage of Senate Bill (SB) 605 (Lara), Chapter 523, Statutes of 2014, ARB is placing a much-needed emphasis on reducing these powerful GHG pollutants. Overall, PG&E believes that the best path to achieving the state's long-range environmental goals—including SLCP-focused reductions—is through an integrated and flexible policy framework that optimizes sustainable and cost-effective GHG reductions across all programs and sectors. By addressing SLCP goals in a way that manages costs and

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<sup>1</sup> Air Resources Board. 2015. Short-Lived Climate Pollutant Reduction Strategy, Concept Paper. Website: [http://www.arb.ca.gov/cc/shortlived/concept\\_paper.pdf](http://www.arb.ca.gov/cc/shortlived/concept_paper.pdf)

spurs innovation, the state can ensure that California's economic recovery continues and can, at the same time, create a model program for others to follow.

PG&E provides the following comments in response to the framework that the ARB discussed at May 17 Workshop and looks forward to working with ARB to develop the final SLCP Strategy.

## II. POLLUTANT SPECIFIC TARGETS

As described above, PG&E believes that the best path to achieving the State's long-range GHG reduction goals is through an integrated and flexible approach that optimizes sustainable and cost-effective GHG reductions. GHG targets are essential in this context, as they provide the end goal a portfolio of GHG reduction actions drives towards. By focusing on SLCPs, ARB is rightly introducing a temporal dimension into its evaluation of GHG emissions and placing a greater emphasis on these pollutants in California. However, this approach also creates new challenges that ARB must address.

Overall, PG&E believes that the ARB's SLCP reduction targets should be feasible, transparent, and based on sound analytics. PG&E understands that the SLCP Concept Paper was intended by ARB to frame the discussion and provide stakeholders with an opportunity to provide early feedback on ARB's overall approach. Thus, PG&E will wait for the full methodology behind the targets before providing detailed comments. PG&E provides its initial thoughts below.

- **Targets Should Allow for Comparisons Across Pollutants:** The SLCP targets should allow for comparisons across pollutants, sources, and mitigation measures. In past planning documents and regulations, the ARB has used carbon dioxide equivalent (CO<sub>2e</sub>) as a measure to compare GHG emissions based on their global warming potential. This approach had the distinct advantage of allowing clear comparisons across potential emissions sources and mitigation measures. Additionally, this consistency simplifies cost-benefit calculations, allowing for measures to be compared across a portfolio on a dollar per ton basis.

ARB can better allow for cross comparisons by expressing reductions using the CO<sub>2e</sub>, adjusted to account for the impacts of SLCPs. Additionally, each of ARB's pollutant specific targets uses a different starting year and baseline (e.g., the targets for black carbon are based on 2012 levels and the targets for fluorinated gases are based on forecasted emissions). This makes comparison difficult. In the draft SLCP Strategy, ARB should show reductions from each pollutant using a common baseline, starting year, and target years.

- **Individual Pollutant Reductions Should Be Based on Technical Potential and Cost-Effectiveness:** ARB has indicated that the target process will be driven by what scientific studies suggest as necessary to keep global warming to less than 2 degrees Celsius (°C). PG&E agrees with that approach. However, the individual pollutant targets should be based on the potential for reductions and cost-effectiveness of reduction measures. Overall, ARB should prioritize lower cost actions and ensure that there is not a wide

divergence in cost between measures. PG&E recommends that the draft SLCP Strategy include information about target and measure cost-effectiveness.

- **Targets Should Allow for Comparisons Across Economic Sectors:** Additionally, ARB should consider the relative emissions intensity of different economic sectors, along with the overall scale. In some cases, ARB can promote greater emissions reductions by focusing on sectors with higher emissions intensities. This approach would facilitate performance evaluation and encourage the use of best practices within each economic sectors, thus encouraging entities with higher emissions intensities to improve their emission reduction performance and limiting the burden on already high performing sectors.
- **ARB Should Quantify and Consider Trade-offs among Measures:** As ARB develops potential measures to address each SLCP, measures designed to reduce one pollutant may work at cross-purposes with another. For example, low-global warming potential (GWP) refrigerants present possible energy-efficiency and performance tradeoffs. In addition, the cost-effectiveness and overall GHG-reduction potential from refrigerants should be examined by sector (e.g., industrial, commercial, residential), given that each sector is currently dominated by a different group of refrigerants.
- **ARB Should Consider and Promote Voluntary Measures:** ARB should also include and assess potential voluntary measures. For example, ARB could examine the GHG reduction potential of the potential classes of offset projects (e.g., biochar) mentioned in the concept paper. Since offsets are a cost-effective mechanism to achieve GHG reduction, more support needs to be provided for the accelerated development of offset protocols and generation of offsets supply.

### III. BIOENERGY

PG&E is committed to working with renewable energy developers, including bioenergy, to pursue the effective use of renewable energy in California. PG&E recognizes bioenergy as a component of the State's renewable energy portfolio, and looks forward to working closely with state agencies and other stakeholders. The Concept Paper calls for significantly cutting methane emissions by changing the way organic waste from landfills, dairies, and waste water treatment plants are used, among other measures. In most cases, this would shift organic waste from disposal to feedstock for other end-uses, including bioenergy projects.

PG&E agrees that organic waste, along with emissions from infrastructure and equipment (See Section VI), comprise the majority of methane emissions. While the sources of methane emissions are largely related to organic waste, the potential solutions are diverse and at differing stages of maturity. PG&E sees the SLCP Strategy as a crucial forum for providing a technical overview of these varying technologies (e.g., landfill gasification, dairy digesters, etc.); and to capture the unique challenges, opportunities and end-uses (e.g., transportation, injection, etc.). In developing the SLCP Strategy, the challenge for ARB will be incorporating the short-range climate benefits of SLCP reductions into a framework that prioritizes overall emissions reductions in a least-cost, technically neutral manner.

Finally, at this time PG&E does not support additional procurement mandates for bioenergy and believes that the benefits, from a procurement standpoint, have been incorporated into PG&E's Least-Cost Best-Fit review, as required by the California Public Utility Commission (CPUC). The methodology is thoroughly vetted and reviewed. Attributes, such as energy firmness, integration, and transmission costs are considered in the evaluation process. Additionally, while crucial for the SLCP discussion, societal benefits, such as reduction of forest fires, investment in disadvantaged communities, and creating California jobs, should be part of a larger discussion focusing on the ways governments and others can collaboratively achieve these societal goals. In addition, PG&E offers the following comments and recommendations.

- **ARB Should Incorporate and Evaluate Existing Policies:** The bioenergy industry has been in existence for many years, with a number of policies and incentives to support its development in California. For example, the Low Carbon Fuel Standard (LCFS) promotes the use of low carbon intensity transportation fuels, including biogas. The Bioenergy Feed-in Tariff (SB 1122) requires electricity procurement from small-scale biogas facilities providing the opportunity to capture methane emissions from biological sources. Lastly, AB 1900 requires the CPUC to adopt a standard for biomethane and to promote its production in-state and its distribution.
- **PG&E Supports State and Federal Incentives for Bioenergy Projects:** PG&E supports allocating federal and state funds, such as the state's cap-and-trade allowance revenues, for reducing the cost of bioenergy. Moreover, the use of allowance revenue for this purpose should be of a limited duration and focused on helping projects overcome development hurdles and other temporary challenges. Providing a perpetual revenue stream reduces the incentive to innovate and drive down project costs, and can lead to the continued development of projects that are uneconomic without subsidies.
- **SLCP Strategy Should Reflect the Real Challenges of Biomethane Injection:** The SLCP Concept Paper rightly focuses on the interconnection process as essential for biomethane project development. However, it wrongly frames the challenge as simply a matter of getting better "utility engagement" to reduce a "long and costly process." In reality, successful biomethane injection faces a number of fundamental engineering and planning challenges, which will require the partnership of utilities, project developers and the state to overcome, as described below. All of these factors need to be considered in the evaluation of interconnection opportunities.
  - **Location:** Unlike the development of commercial or residential properties, the proximity of biomethane facilities (e.g., existing waste water treatment plants, landfills) to gas lines is typically not optimal for project interconnection. Biomethane facilities are often located considerable distances away from gas pipelines causing substantial costs for material and construction (such as pipe and trenching costs).

The relative location of a biomethane development and pipeline interconnection is also contingent on: 1) the take-away capacity of the pipeline at the interconnection, and 2) customer load downstream of the interconnection. Depending on the project output and

the local demand profile, projects that wish to inject gas on a steady, year round basis may not be well suited to interconnections with smaller pipelines that experience significant seasonal variability.

- **Gas Quality:** Because of the nature of biomethane relative to conventional natural gas, additional facilities must be installed to ensure the usability of biomethane injected into pipelines. The CPUC, in consultation with the ARB and Office of Environmental Health Hazard Assessment, established rules to ensure biomethane injected into pipelines is appropriate per CPUC Decision 14-01-034. These rules require testing the quality of biomethane to ensure such gas is acceptable for injection, transmission and combustion. This adds to the cost of development and operation of biomethane projects.
- **Gas Transmission Interconnection Activities and Costs in General:** Gas transmission interconnections involve considerable activities and costs. Each interconnection must be considered both individually and in conjunction with overall gas transmission system operations. Activities and costs include estimating, contract development, environmental considerations, land acquisition, permitting, design, engineering, construction, materials and overheads. Ongoing operations and maintenance costs must also be considered. Depending on the complexity of any given project, these activities can take considerable time and expense to ensure a project is done safely and in compliance with all local, state and federal regulations.

#### **IV. MINIMIZE FUGITIVE EMISSIONS**

PG&E is dedicated to providing safe and reliable natural gas service, in a responsible and environmentally sensitive manner, and is supportive of the ARB's goal for reducing GHG from the natural gas system. PG&E has approximately 6,750 miles of transmission pipeline in its system, interconnecting with other pipeline systems at Malin (Oregon), Topock (Arizona), and various locations in the southern San Joaquin Valley, and 42,700 miles of gas distribution pipeline, along with individual service lines, transporting natural gas to customers throughout the service area. Additionally, PG&E operates nine natural gas compressor stations on its transmission system that are used to move gas through its pipelines, three underground storage fields, and extensive billing and metering equipment.

The prevailing paradigm in California has prioritized leaks based on their potential impact to safety, consistent with Title 49 of the Code of Federal Regulations Part 192 and California Public Utilities General Order 112-E. Generally, PG&E prioritizes leaks within four broad categories, consistent with industry standards: Grade 1 leaks, which are considered hazardous and represent an existing or probable hazard to persons or property that requires immediate repair; Grade 2+ leaks, which are non-hazardous at the time of detection but requires a scheduled priority repair within ninety days; Grade 2 leaks, which are non-hazardous at the time of detection but require periodic surveillance with a scheduled repair within fifteen months; and Grade 3 leaks, which are both non-hazardous and can reasonably be expected to remain non-hazardous and require periodic surveillance.

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This focus on safety is and will remain of paramount importance. However, California is rightly focusing on the environmental impact of methane leaks in this SLCP Strategy and a number of other proceedings, including: ARB's ongoing regulation for oil and natural gas compressors and storage, the CPUC's Natural Gas Leak Abatement Order Instituting Rulemaking (OIR), and the California Energy Commission's 2015 Integrated Energy Policy Report (IEPR). PG&E is an active participant in each.

Moreover, PG&E has taken a number of steps to minimize natural gas leaks from its system, reducing the number of Grade 3 leaks by 32 percent in the last three years, and has reduced its end-of-year Grade 2+ and 2 backlog by almost 99% since 2010. For example, in 2014, PG&E deployed advanced Picarro leak detection technology and created the leak survey and repair pilot team called the "Super Crew". On average, Picarro uncovers 1.5 to 2 times the number of leaks, in a fraction of the time, and at about half the cost; the Super Crew is then able to help work flow more efficiently across teams focused on performing leak survey and leak repair. PG&E plans to expand these efforts in 2015 and 2016.

Finally, as ARB examines the potential for additional emission reductions from infrastructure and equipment, PG&E recommends it incorporate the following key principals: 1) integrate environmental considerations in a way that preserves and enhances the focus on safety; 2) given the size and complexity of the natural gas system, ensure that the individual measures (e.g., standards for compressor stations) are optimized to achieve the largest amount of emission reductions, across all types of equipment, and at the lowest cost; 3) recognize that significant increases in work volume will require funding consideration within utility rates; and 4) ensure that policy advances in pace with the rapidly developing scientific literature on the nature and sources of leaks.

## **V. CONCLUSION**

Thank you for the opportunity to submit these comments on the Air Resources Board's May 17 Workshop on its SLCP Reduction Strategy, Concept Paper. Please feel free to contact me if you have any questions or concerns.

Sincerely,

/s/

Matthew Plummer

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