October 2022

Collaborating for Gas Utility Decarbonization

A note from the conveners

National Grid and RMI set out in early 2021 to convene leading gas utilities and non-profit organizations for a new kind of conversation. The organizations who participated in this process are all committed to decarbonization—and frequently disagree with one another about what that entails. This collaboration has been an experiment: could we find common ground in a different kind of space? Achieving our decarbonization goals is among the biggest and most critical challenges we collectively face, and this group contains a wide range of perspectives, approaches, and priorities on how best to tackle it.

We wanted to break the mold and come together in a new way, outside of the traditional legal and regulatory venues and their accompanying dynamics. Dialogue can be challenging and uncomfortable, and, in different ways, each organization was taking a risk by sitting down together, sometimes even as we publicly oppose each other. To our knowledge, this convening represents the first conversation of its kind between our sectors and required trust, openness, and curiosity.

The below report reflects the work of this roundtable group, at a specific moment in time, and it addresses only a portion of the complex, nuanced challenges we face moving forward. We look forward to feedback on the ideas in this report, and continuing to build new connections and spaces for collaboration to meet our shared climate goals.

– RMI and National Grid

Introduction

Natural gas provides more than one third of primary energy consumption in the US, serving over 77 million customers directly.[1] However, policymakers, regulators, stakeholders, and scientists, including the International Panel on Climate Change (IPCC), have come to recognize the significant greenhouse gas (GHG) emissions from the use of natural gas. Decarbonizing the end uses served by natural gas requires decarbonizing the supply and delivery of the gas, as well as end use alternatives like electrification.

In this context, RMI and National Grid jointly convened a series of facilitated collaborative workshops with stakeholders from the non-profit and utility sectors across several regions, to explore what it may take to decarbonize the gas distribution system in the US and the customer end uses it serves today, with a focus on the nation's residential and commercial buildings. Other major uses for natural gas, most notably power generation and industrial processes, were beyond the scope of this effort.

Each of the participating members contributed to the development of this document; this document does not necessarily reflect the policy positions or perspectives of any individual participating organization.

The participating organizations included:

- Environmental Defense Fund
- Exelon
- National Grid
- Pacific Gas & Electric Company
- Regulatory Assistance Project
- RMI
- Southern Company Gas
- Xcel Energy

Roundtable advisors included:

- Sue Coakley, Sue Coakley & Associates; retired founder of Northeast Energy Efficiency Partnerships
- Dr. Julio Friedmann and Dr. Melissa Lott, Columbia SIPA Center on Global Energy Policy
- Marnese Jackson

The roundtable was supported by Elizabeth Pinnington, an independent facilitator.

[1] https://www.eia.gov/dnav/ng/ng_cons_num_dcu_nus_a.htm

As the first convening of its kind at a national scale, participants produced a set of guiding principles and strategies to inform decarbonization of the gas utility and corresponding end uses. Developing these strategies further will require the participation of a broader set of stakeholders than were represented in this convening process; this report is meant as a first step to inform further discussion and action for policymakers and regulators, primarily at the state level. Participants were able to coalesce around the concepts presented in the guiding principles, while acknowledging there are multiple strategies to achieving gas utility decarbonization.

All participating gas and electric utilities have published their commitments to deeply decarbonizing their businesses by 2050. The latest versions of these commitments from each of the participating utilities are available in the side bar on this page. While there are widely divergent perspectives regarding long-term strategies, participants agreed through this convening process on the need to act now to increase the pace of innovation and develop multiple pathways to reduce emissions.

Despite uncertainties about particular technologies, fuels, and customer adoption, roundtable participants share the belief that urgent action is necessary by all parties, but especially from policymakers and regulators, to enable near-term emissions reductions and guide utility investment and decision-making toward economy-wide decarbonization by 2050.

The Gas Utility Decarbonization Roundtable met virtually three times (December 2021, January 2022, and February 2022) and convened for an in-person summit over a 2-day period in April 2022. With the support of a professional facilitator, the roundtable participants developed shared goals and outcomes for the dialogue process, and then developed the principles, strategies and "ways forward" described in this report. Work co-created by the group was synthesized into this report, and all participants were given an opportunity to contribute to and review this report.

Participating Utilities' Decarbonization Commitments

Exelon
2021 Sustainability Report

National Grid
Clean Energy Vision

Pacific Gas and Electric Company
Climate Strategy Report

Southern Company Gas
Net Zero Transition

Xcel Energy
Net Zero Vision for Natural Gas

How to Read this Report

This report is meant to guide policymakers, the gas utility industry, and major stakeholders toward a number of critical actions needed to decarbonize the gas distribution system and its end-uses in the US. State regulators and utility commissions, policymakers in state legislatures and agencies, utilities, and non-profits should use this report as a starting point as they work to decarbonize the gas system in their jurisdictions. Federal regulators and policymakers may also find some aspects of the report helpful.

The guiding principles are common themes that were discussed across the various topic areas. The following sections represent six strategies discussed at the in-person summit and generated in prior meetings, which include recommendations and considerations for regulators and policymakers to advance these ideas.

The participants recognize that there are diverse perspectives inherent to the topic at hand; these differences are reflected throughout this document. While participants found key areas of consensus among a variety of high-level concepts, participants had divergent perspectives on an array of issues. This report seeks to reflect the initial areas of consensus this group was able to reach during the convening process outlined above, and does not necessarily reflect the specific policy positions or perspectives of any individual participating organization.

Guiding Principles

Recognizing the magnitude of the challenge before regulators and policymakers, participants synthesized the following initial set of ten guiding principles to support decision-making throughout the decarbonization transition.

Climate urgency and action: The urgency of climate change requires bold action in the near term. Perpetuating the status quo will not meet state and regional climate goals, and urgent action is needed even in the face of uncertainty and competing visions. Policymakers, regulators, and utilities should act now to pursue decarbonization solutions.

Expanded regulatory framework: In order for utilities to design programs and take actions necessary to address climate change and support equity, the regulatory framework should expand to account for these emerging issues to enable the evolution of business models and new investments.

Affordability: Energy and heat must be affordable to all customers—with special attention given to low- to moderate-income communities—whether or not those customers are early adopters of new technologies or participants in new programs. Stakeholders should strive to minimize the cost impacts of decarbonization efforts on all customers. Policymakers, regulators, and utilities should consider both the near-term and long-term costs of various decarbonization pathways and technologies, including total cost impacts for all customers and communities.

Equitable access: All customers, regardless of race, socioeconomic status, or homeownership, must have access to affordable clean energy that meets their needs.

Safety, reliability, and resilience: As utilities work to reduce emissions, the fundamental regulatory principles of safety, reliability, and resilience remain crucial. Regardless of which pathway or set of technologies are chosen in each state or region, it is essential that customers have access to a safe, reliable, and resilient energy system, both during the transition and after full decarbonization.

Inclusive processes: Decarbonization planning processes must be transparent and accessible, designed to ensure meaningful and broad participation across diverse stakeholders. This may include new kinds of outreach and education from both utilities and agencies. Customer and community input is crucial in considering different pathways for decarbonization.

Comprehensive system planning: In order to meet the energy and climate goals of the future, comprehensive, coordinated, and flexible planning is needed across the entire energy system, considering impacts to the electric and gas sectors as well as delivered fuels (e.g. heating oil and propane).

Context-specific solutions: The technology and solution mix will vary across regions and end uses, with some technologies more appropriate to certain contexts. No single solution can address the needs of the entire energy system, and regulatory decisions will accordingly need to reflect the specificity and diversity of solutions across geographies and customers.

Innovation: Meeting the energy and decarbonization needs of the future will require both technical and non-technical innovation, including but not limited to: new technologies, innovative financial mechanisms, and non-traditional regulatory processes.

Diverse funding streams: The full cost of decarbonizing the energy system will require diverse and non-traditional funding streams to support customers and finance the transition, including federal grants, state funding, private partnerships, and other innovative funding streams.

Strategies for Progress

Participants co-developed the following six strategy areas for progress:

- **Improving Gas Infrastructure Planning**
- **Designing Decarbonization Plans for Customer and Community Benefit**
- **Creating New Gas Utility Innovation Programs and Funding**
- **Evolving the Gas Utility Business Model**
- **Achieving a Deeply Efficient and Flexible Buildings Sector**
- **Establishing Low-Carbon Heating and Fuel Standards**

These strategies are presented in order of scope, beginning with state- or system-level strategies and progressing to more specific or programmatic strategies. Each section contains recommendations for decisionmakers to advance these strategies in service of gas utility decarbonization in their state or region.

Improving Gas Infrastructure Planning

Gas infrastructure planning for both ongoing investments in the existing system and for new investments should evolve. Regulators will need to address and adapt to uncertainty through a flexible, transparent, and accessible planning process. Utilities and regulators should conduct gas infrastructure planning as part of comprehensive, equitable integrated energy system planning at the state or regional level. This section recommends frameworks and priorities to guide decisionmakers in building and implementing improved gas infrastructure planning to meet the needs of a decarbonized economy.

Ways Forward

Policymakers should develop an inclusive, comprehensive, and iterative long-term planning process at the state level. This process should cover a horizon that is adequate for long-term infrastructure planning while engaging with communities to identify specific priorities and needs, particularly for those communities with high energy burdens. When weighing gas system investments and their alternatives, decisionmakers should aim to balance the goals of GHG emissions reductions, cost containment, and safe and reliable thermal energy service. The resulting state-level plans should then guide the development of utility-specific plans.

Regulators and utilities should pursue regulatory reform to align utility planning and regulation with decarbonization goals. The resulting regulatory framework should include a process for cost recovery of expenditures in line with state policy goals and clear evaluation criteria for alternatives to traditional infrastructure. Performance-based regulation may be considered to support gas decarbonization. Other regulatory reforms that may be relevant to evaluate include: modified depreciation timelines for gas infrastructure, potential changes to gas utilities' obligation to serve, gas rate re-design, different accounting treatments for non-capital investments, and securitization. Regulators and utilities should also consider the regulatory reforms necessary to enable geographic targeting of specific decarbonization and infrastructure solutions, while considering environmental justice and equity.

Policymakers should leverage public, private, and ratepayer funding to aggressively pursue all available customer energy solutions. These solutions, including energy efficiency and demand-side management, can help to optimize reductions in gas and electric infrastructure needs. These efforts will help to achieve least-cost emissions reductions while maintaining safety and reliability. Decisionmakers should thus incorporate efficiency programs and policies into infrastructure planning and leverage efficiency and demand-side investments alongside gas or electric infrastructure investments. Reducing the need to build or maintain extensive infrastructure on both the gas and electric systems will put downward pressure on rates, providing system-wide benefits to customers. Specific recommendations around energy efficiency are provided in greater depth in "*Achieving a Deeply Efficient and Demand Flexible Buildings Sector*" below.

Designing Decarbonization Plans for Customer and Community Benefit

Decarbonization planning processes must be inclusive, provide information about and access to clean energy options, and consider affordability. While this report's guiding principles are broadly framed, implementing these principles in practice will vary depending on community needs and customer profiles. As utilities and regulators develop decarbonization plans, it will be necessary to employ different strategies for various customers, as benefits and costs for residential and non-residential customers may not be the same.

Ways Forward

New customer programs, education, and financing should be created that enable equitable access and align with climate and air quality goals. Regulators and utilities may consider expanding programs, education, and financing sources to support decarbonization of customers' homes and businesses. Customers should have effective and current information about future decarbonized energy pathways and technologies, including electrification, hybrid electrification, and low-carbon fuels, such as Renewable Natural Gas (RNG) and clean hydrogen. All customers should have equitable access to decarbonized energy, and decarbonization plans should consider the impacts of various policies on those that may not be able to afford higher cost energy or end-use equipment.

In the near term, pilot projects of various decarbonization technologies should be considered by utilities across all regions to demonstrate and improve understanding of community and affordability impacts. The goal of these pilots should be to evaluate the effectiveness of new technologies and provide valuable data on technical feasibility, operational impacts, affordability and customer experience.

Development of a planning framework should include a stakeholder process that ensures robust participation from organizations and individuals representing disadvantaged communities. Long term, iterative planning processes should include ongoing engagement with customers and other stakeholders and provide opportunities to adapt planning and programs to changing conditions and technology advances. The stakeholder process, like the decarbonization planning process itself, should be ongoing and iterative. Considerations for the framework may include: GHG reductions, policy objectives, near term, mid-term, and long-term actions, and implementation timeframes with accompanying milestones.

▶ **Examples of Gas Decarbonization Planning Processes. In developing gas planning frameworks as part of a comprehensive emissions reduction strategy, decision-makers may look to existing gas planning dockets in states such as California, Colorado, Massachusetts, Minnesota, or New York as a starting point. Models in these and other states are emerging that can be adapted to different jurisdictions.**

- **California PUC docket R. 20-01-007** aims to design and implement a regulatory framework that will guide the state's gas utilities to align spending and planning with state climate goals.
- **Colorado PUC docket 21R-0449G** is creating the framework to implement 2021 Clean Heat legislation, which requires utilities to submit portfolios to reduce emissions from the direct use of natural gas.
- **Massachusetts DPU docket 20-80** is investigating pathways for gas utility decarbonization in light of statewide net-zero emissions targets and the regulatory changes needed to facilitate the gas utility transition.
- **Minnesota PUC docket 21-565** evaluates the role of natural gas in achieving statewide GHG reductions and is complemented by docket 21-566, which aims to establish frameworks for utility innovation plans including lifecycle GHG accounting, and cost benefit/effectiveness analysis.
- **New York PSC docket 20-G-0131** investigated gas utility planning in light of climate goals and regional capacity issues. The Commission's May 2022 order in this proceeding laid out an initial gas planning framework that emphasizes the use of non-infrastructure solutions. Additionally, New York PSC docket 22-M-0149 was recently opened to assess the State's progress toward meeting its directives under the Climate Leadership and Communities Protection Act ("CLCPA") and to provide policy guidance, as appropriate, on next steps needed to support the achievement of the CLCPA mandates.

Creating New Gas Utility Innovation Programs and Funding

Innovation in utility programs and funding is required to meet states' decarbonization and other policy goals equitably and affordably. Gas utility innovation programs can facilitate the rapid development of decarbonized energy sources and end uses, and utilities should be encouraged to expand innovation programs and pilots in service of public policy goals.

In many jurisdictions, gas utilities have limited flexibility to spend regulated program funds on innovative technologies or services. The use of gas ratepayer funds may be restricted to programs that specifically expand the use of natural gas in certain applications, or conversely that utilize natural gas in more efficient ways. Gas utilities may be constrained by statute or regulatory precedent from demonstrating the potential for non-pipeline alternatives, including targeted electrification or networked geothermal. Likewise, regulatory standards applied to commodity procurement may prohibit gas utilities from entering into novel types of contracts for RNG or clean hydrogen. Where gas utility innovation has been historically limited, there is significant opportunity for new initiatives to help answer crucial questions and build a better shared understanding of possible solutions for decarbonizing gas and its end uses.

Ways Forward

Policymakers should create new, dedicated regulated innovation funding to support gas utility decarbonization and decarbonization of end uses. There are opportunities to leverage local, state, and federal sources of funding to maximize the benefits realized through these programs.

Regulators can consider a variety of pilots, including but not limited to voluntary "green gas" tariffs, blending hydrogen with natural gas,[2] targeted electrification, non-pipeline alternatives, and networked geothermal. In additional to scalability and cost, selection criteria for innovative solutions should focus on their benefits for a diverse range of customer types, including customers with higher energy burdens.

Innovation programs and funding should support both technical and non-technical solutions. For example, such efforts should both support the development and deployment of specific technologies, as well as regulatory innovations such as new rate structures. Programs and funding should be flexible across customer types and geographies in order to serve the diverse needs of customers. These programs and funding should also be responsive to customer and community needs, and utilities and regulators should solicit community input to inform program design and implementation. Finally, results of innovation programs and pilots should be as broadly shared as possible in order to accelerate the pace of progress across the industry.

Evolving the Gas Utility Business Model

As the gas utility continues to perform critical and evolving functions in a decarbonizing economy, the gas utility business model should evolve to both meet decarbonization objectives and address emerging needs. The gas utility business model should prioritize equitable access to a safe, reliable, affordable, and clean energy system.

Ways Forward

Gas utility service and business models should be broadened and could include, for example, expanded energy efficiency, non-pipeline alternatives, clean fuels, district heat, and geothermal energy. Current regulatory frameworks limit the ability of gas utilities to evolve their business models. Opening these avenues of business model innovation to the gas utilities can enable utilities to play a significant role in achieving emissions reductions and other policy goals. Policymakers may consider updating the legal definition of the "public interest" and the regulatory framework to align with climate and equity goals to incent and reward new utility business models and investments. In many cases, the definition of the public interest is unclear and may not adequately include climate, health, or equity goals, posing a barrier to utilities seeking to act in support of these policy goals. Regulators may also explore innovative cost recovery mechanisms to recover the costs of both existing investment and the continued operation and management of the gas system.

Decisionmakers should evaluate and identify solutions in the context of the broader energy system and economy-wide decarbonization. Decisions in one sector of the economy may have significant consequences for the availability of solutions in other parts of the energy system, and policy decisions should account for these interdependencies. Such considerations could include interactions between electric and gas infrastructure requirements under future policy scenarios, as well as alternative uses for low-carbon fuels in different sectors of the economy. Utilities' insight into the engineering and operational characteristics of gas networks can facilitate a valuable understanding of what solutions are possible. Utilities should thus develop a vision for how to decarbonize their business, as well as gas supply and end use.

Achieving a Deeply Efficient and Demand Flexible Buildings Sector

Energy efficient buildings are critical to decarbonizing the gas system and efficiency is one of the most cost-effective ways to drive greenhouse gas emissions reductions. Energy efficiency enables customers to use less energy (regardless of energy source), reducing their overall energy burden, and improving the resilience of their home or business in extreme temperatures. Demand flexibility is essential to this goal, enabling buildings to use energy at times that reduce the cost of delivering energy. In many states, utilities support energy efficiency programs and incentives that drive GHG reduction through customer actions, and reach a broad range of customer types, including customers with higher energy burdens. Roundtable participants felt it was important to acknowledge efficiency as a key strategy in many states' decarbonization plans, as well as an area that warrants expanded policy development and financing strategies.

Ways Forward

Energy efficiency and demand response programs and policies should be expanded so that as many buildings as feasible across industrial, commercial, and residential buildings, will have completed comprehensive energy efficiency retrofit work by 2050. These efforts should include supporting and assisting manufacturing and workforce development so that building retrofit services can source equipment and hire a workforce that is

[2] Participants disagreed about whether hydrogen should be blended with natural gas for heating or prioritized for other applications.

familiar with installing and maintaining innovative decarbonization technologies.

Building energy codes can serve to advance the efficiency of new building stock and are a powerful tool in the energy efficiency toolkit. Policymakers should encourage building energy codes that will enable a decarbonized future.[3] Stakeholders should encourage state and federal appliance standards for energy efficiency and emissions reductions. Such standards allow customers to replace their appliances at end of life with more efficient appliances that also support decarbonization efforts. Policymakers should also encourage stricter home energy rating and building energy performance standards to promote energy efficiency.

Local, state, and federal governments should collaborate with community development organizations to increase the affordability of and access to energy efficiency programs. Households and communities that have higher energy burdens or with lower adoption of energy efficiency measures should be prioritized for energy efficiency retrofits in order to receive the technical and financial assistance necessary to upgrade their homes to be healthier, more efficient, and decarbonized. Expanding public and private financing and revenue sources, including, for example, green banks, Property Assessed Clean Energy (PACE) for commercial buildings, and Metered Energy Efficiency Transaction Structure (MEETS) programs can support customer access to financing to undertake energy efficiency and renewable energy improvements. Many programs that provide substantial societal benefit, such as those that provide equitable access to deep energy efficiency retrofits, may not necessarily pay for themselves under traditional cost-effectiveness frameworks. Thus, these programs will require significant infusions of capital from potentially new sources or require additional structural change and better cross-program coordination. As part of these efforts, utilities should partner with and assist low and moderate-income (LMI) weatherization and community development initiatives.

Establishing Low-Carbon Heating and Fuel Standards

Several states have passed or considered passing low-carbon heating and fuel “standards” in various forms. Such policies aim to reduce the carbon intensity of energy and drive GHG emissions reductions through a portfolio target or targets for specific technologies or fuels.

Clean heat standards, which can allow for multiple types of technologies that reduce emissions, aim to make technologies more affordable by spurring the market and lowering barriers to adoption. These programs can also potentially decrease installation costs of new technologies as the workforce adapts to and learns more about these technologies. Likewise, clean fuels standards that establish voluntary or mandatory levels of clean fuel procurement can provide business certainty that can help to spur and scale the market for clean fuels, which can help utilities reduce the carbon intensity of their delivered gas.

While policymakers will need to determine how to structure low-carbon heating and fuel standards to fit their particular state or regional context, this section aims to provide decisionmakers with guideposts and key considerations.

Ways Forward

Low-carbon heating and fuel standards can allow utilities to invest in innovative decarbonization technologies and may help to provide market and regulatory certainty for those technologies. Regulators may support achievement of decarbonization goals by expanding beyond traditional cost considerations to include new types of resources. These considerations could account for additional attributes of alternative energy sources (such as environmental or health factors), enabling utilities to recognize the value of these attributes in their procurement decisions. Voluntary green tariffs where certain customers elect to receive a higher blend of low carbon fuels can be complementary to low-carbon fuel standards as a way to meet customer-specific greenhouse gas (GHG) reduction targets. Utilities implementing clean heat or clean fuel standards can also align these programs with their broader infrastructure and decarbonization plans.

In determining the scope of low-carbon heating and fuel standards, policymakers may consider whether the standard only addresses natural gas or all heat sources (propane, heating oil, etc.) and which fuels and/or technologies should be eligible within the standard. Considerations for regulators may include: eligibility of specific technologies, products, and fuels; consumer protections to ensure affordability and protect customer costs; interconnection standards or tariffs; periodic review of the program to ensure that it is working as designed; and credit requirements, tracking, and audit procedures.

[3] Participants did not reach consensus around whether building energy codes should be technology-neutral or require specific technologies, such as heat pumps.

► **Examples of Low-Carbon Heating and Fuel Standards. Several states including Oregon, California, Vermont, Minnesota, and Colorado have passed laws or advanced bills that focus on specific fuels (RNG), multiple fuels and alternatives, or are technology neutral and include switching to clean electricity. These examples may be useful to other states considering a low-carbon heating or fuel standard.**

- **California.** The California Public Utilities Commission established short- and medium-term RNG procurement targets. The short term (2025) target is to procure 17.6 billion cubic feet of RNG. Each utility will be responsible for procuring a percentage of the total in accordance with its proportionate share of natural gas deliveries. The medium term (2030) target is to procure 72.8 billion cubic feet of RNG per year, which is 12% of current residential and small business gas use in 2020. Most of the RNG to meet these targets will come from landfills.[4]
- **Colorado.** This standard directs each gas utility to create a clean heat plan, defined as a comprehensive plan that demonstrates projected reductions in methane and carbon dioxide emissions that meet the reductions required at the lowest reasonable cost. The reductions required are 4% below 2015 greenhouse gas (GHG) emission levels by 2025 (no more than 1% of this may be from recovered methane) and 22% below 2015 GHG emission levels by 2030 (no more than 5% may be from recovered methane).[5] Utilities are to file two plans, one that meets the decarbonization target but can exceed a cost cap and one that controls costs in line with the cap but may fall short of the target.
- **Minnesota.** The Natural Gas Innovation Act creates a process by which natural gas utilities may file innovation plans with the PUC, with lifecycle GHG and cost benefit analysis for proposed development of innovative resources, including efficiency, electrification, alternative low-carbon gases, geothermal, and carbon capture, under a cost cap.[6]
- **Oregon.** This standard sets voluntary targets for RNG procurement of 15% by 2030, 20% by 2035 and 30% by 2050 for utilities with more than 200,000 customers.[7]
- **Vermont.** This bill, which was passed by the legislature but vetoed by the governor on May 6, 2022, would have required entities that made the first sale of heating fuel into Vermont to reduce their amount of greenhouse gas emissions every year through a tradeable credit program including multiple clean heat technologies.[8]

Conclusion

The Gas Utility Decarbonization Roundtable was convened to discuss how this group of stakeholders from the non-profit and utility sectors across the U.S. could advance efforts to decarbonize utility gas systems and end uses. Participants were able to identify multiple clear areas of consensus on ways forward in this endeavor despite the diverse perspectives present in this group. By exploring these areas of agreement and identifying principles that can inform policymakers, regulators, and utilities across the country, the participants hope this report can serve as a starting point to help accelerate progress toward deep decarbonization.

As this report lays out, there are many high-impact strategies to plan for a decarbonization transition and help reduce emissions. However, the pace of change needed to achieve decarbonization targets requires the utility industry and its stakeholders to step up current levels of dialogue with each other and engagement with the broader public, on both the issues addressed in this report and many others beyond the scope of this particular process. The participants of the roundtable hope this report provides a small but useful step toward greater cross-sector collaboration, and identifies valuable topics for future engagement with a broader set of stakeholders.

[4] https://www.cpuc.ca.gov/news-and-updates/all-news/cpuc-sets-biomethane-targets-for-utilities
[5] https://leg.colorado.gov/bills/sb21-264
[6] https://www.revisor.mn.gov/bills/text.php?number=SF0421&session=ls92&version=latest&session_number=0&session_year=2021&format=pdf
[7] https://olis.oregonlegislature.gov/liz/2019R1/Downloads/MeasureDocument/SB98/A-Engrossed
[8] https://legislature.vermont.gov/Documents/2022/Docs/BILLS/H-0715/H-0715%20Vetoed%20Bill%20Summary.pdf