Environment

Thomas N. Russo

All Eyes on FERC: Energy vs. Environment

The Federal Energy Regulatory Commission's (FERC) reconsideration of its 1999 Policy Statement on New Interstate Natural Gas Facilities[1] (Pipeline Policy) may be a window into how the Biden Administration plans to handle energy infrastructure projects and environmental issues in the future. FERC's ultimate actions will serve as an example to other federal agencies that are required to review proposed projects and actions pursuant to the National Environmental Policy Act (NEPA) of 1969. One of the more significant questions is whether FERC should be analyzing greenhouse gas (GHG) emissions and give greater weight to a project's effect on environmental justice (EJ) communities. These questions are complicated by the Council on Environmental Quality's (CEQ) new NEPA regulations which were finalized in September 2020, which in general don't require the aforementioned analyses. Also, the US District Court is reviewing petitions in Wild Virginia v. CEQ[2] at the time of this writing, which could further complicate revisions to the Pipeline Policy.

FERC's job is becoming more complicated as events have shifted the conversation to one of resilience and security. These challenges include the impacts of climate change on the resilience of the electric grid that occurred during California's August 2020 heat wave, and the polar vortex in Texas in February 2021. FERC is also grappling with a ransomware attack in early May 2021 which disabled the Colonial Pipeline, the largest pipeline operator in the US and the provider of approximately 50 percent of the East Coast's fuel. The attack immediately led 17 states to declare a state of emergency. Natural gas pipelines could have just as easily been the target of the attacks with far more consequences.

This column elaborates on some of the overriding issues that this author believes are important for FERC to consider as it revises its Pipeline Policy. These

[1] Statement of Policy, *Certification of New Interstate Natural Gas Pipeline Facilities*, Docket No. PL99-3-000; 88 FERC 61,227 (1999, September 15). Order Clarifying Statement of Policy, Docket No. PL99-3-001, 90 FERC 61,128 (2000, February 9). Order Further Clarifying Statement of Policy, Docket No. PL99-3-002, 92 FERC 61,094 (2000, July 28). (hereafter "Policy Statement").

Thomas N. Russo has over 30 years of experience in energy regulation, infrastructure, markets, environmental impact assessment, and energy security. Prior to starting Russo on Energy LLC, he worked for over 30 years as a manager and senior energy industry analyst at the Federal Energy Regulatory Commission. He also is an adjunct professor in the Elliott School of International Affairs at The George Washington University in Washington, DC, where he teaches courses in global energy and international energy and environmental regulations.

[2] Wild Virginia v. Council on Environmental Quality, Docket number(s): 3:20-cv-00045, Court/Admin Entity: W.D. Va. Retrieved from https://bit.ly/3db6s3G

DOI 10.1002/gas

recommendations are based on comments this author submitted as part of Docket No. PL18-1-000 to assist FERC.[3]

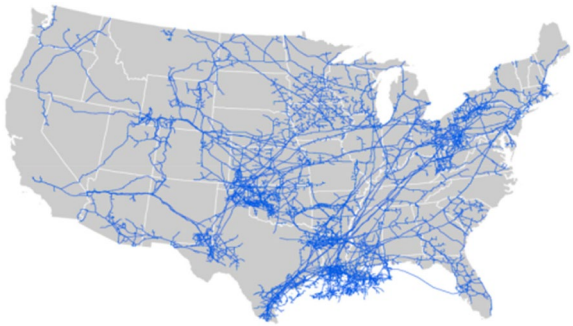
BACKGROUND ON PIPELINE POLICY STATEMENT AND KEY ISSUES

Today's natural gas pipeline system transcends over 305,000 miles and is one of the most extensive infrastructure systems in the world. Approximately 301,910 miles[4] are interstate pipelines under FERC's jurisdiction with the remaining regulated by the states (**Figure 1**). Prior to industry deregulation by FERC in 1992, interstate pipeline companies served as brokers in the sale and purchase of natural gas. In other words, the sale or purchase of natural gas was bundled with its transportation. FERC required natural gas pipeline companies to unbundle their services, thereby eliminating pipelines role as a broker. Today, natural gas pipelines only transport gas which means that gas suppliers and purchasers compete directly with each other in the wholesale gas market. When buyers and sellers complete transactions, they must make separate arrangements to transport the gas.

FERC's Pipeline Policy Statement has been very successful. It allowed the agency to approve over 400 pipeline applications, adding more than 180 billion cubic feet per day (Bcf/d) of pipeline capacity, while denying only two applications[5] (**Figure 2**). Many opponents of the existing policy believe that the 180 Bcf/d of additional capacity constitutes overbuilding and unnecessary impacts to the environment, landowners and EJ communities. These opponents raise serious questions regarding the need for these pipelines considering that the average consumption of natural gas in the US during January 2017 was 93.1 Bcf/d, and the all-time peak-day consumption was 137 Bcf/d during the 2014 Polar Vortex.

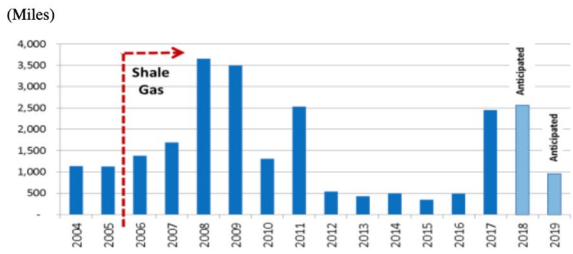
The natural gas pipeline industry does not see an issue with overbuilding pipeline projects. This is largely because natural gas pipelines are not proposed unless a sufficient number of shippers (sellers and purchasers of gas) sign long-term firm transportation contracts to use the pipeline. The contracts are expensive and are a form of "take or pay" contracts and are called precedent agreements. A shipper

Figure 1. Map of US Interstate Natural Gas Pipelines



Source: Congressional Research Service, using data from the U.S. Energy Information Administration (2018, April), and Esri Data and Maps 2017.

Figure 2. Miles of Interstate Pipeline added since issuance of the Pipeline Policy



Source: Energy Information Administration (EIA), "U.S. Natural Gas Pipeline Projects," online spreadsheet, February 9, 2018. https://www.eia.gov/naturalgas/data.cfm#pipelines.

[3] Russo, T. N. (2021). Comments on FERC's Certification of New Interstate Natural Gas Facilities, Docket No. PL18-1-000. Retrieved from https://bit.ly/35MXeqa

[4] Pipeline & Hazardous Materials Safety Administration, Annual Report Mileage for Natural Gas Transmission & Gathering Systems (2021, May 3) Retrieved from https://bit.ly/3gPhtKe

[5] Tierney, S. (2019, November). FERC's Certification of New Interstate Natural Gas Facilities: Revising the 1999 Policy Statement for 21st Century Conditions, White Paper. Retrieved from https://bit.ly/2SnfPGc

  / DOI 10.1002/gas

who signs a precedent agreement will pay the pipeline a demand fee even if it does not use the pipeline to transport natural gas. FERC has largely relied on precedent agreements to determine need for a project instead looking at other factors.

The late FERC Chairman Kevin J. McIntyre appointed by President Trump announced on December 17, 2017, that industry changes did warrant a reassessment of how the agency was reviewing new natural gas facility proposals in its Pipeline Policy Statement.[6] FERC solicited comments on April 19, 2018, and the docket remained open, but took no further action until 2021.

The controversy associated with the Pipeline Policy increased during the Trump Administration as FERC began to change the way it reviewed pipeline proposals and analyzed environmental impacts. Specifically, during individual pipeline proceedings FERC stopped analyzing the upstream and downstream GHG emissions of a project. Since then, FERC has been increasingly sued by various groups for not complying with NEPA and criticized for not considering project effects on landowners and on EJ communities. These issues have become more critical as numerous new pipeline and compressor station projects were proposed to transport gas from the Marcellus/Utica shale plays in Appalachia to the northeast and to markets in the southeast, Mexico and global liquefied natural gas (LNG) markets. These issues continue to this very day.

After President Biden was sworn in as President, he named Richard Glick as FERC Chairman and nominated two new members who currently serve, Alison Clements and Mack C. Christie. On February 18, 2021, FERC issued a renewed request for information since CEQ had revised its NEPA regulations in September 2020. FERC also requested comments on the use of eminent domain and how it deals with EJ communities affected by projects. Final comments were due to FERC on May 26, 2021.

KEY ISSUES FERC SHOULD CONSIDER IN REVISING THE PIPELINE POLICY

FERC does not have the luxury to focus only on NEPA and issues dealing with GHG emissions, landowner and EJ community issues. While important issues, interstate natural gas facilities are critical infrastructure. As mentioned above, FERC's decisions on new interstate natural gas facilities will have to equally consider energy security and resilience of the natural gas and the electric grid. The latter may be of paramount importance and outweigh final decisions that can adversely affect the environment, climate change, landowner and EJ communities.

Even with a revised Pipeline Policy that embraces the environment, landowner rights and EJ communities, FERC will have to apply its best judgement on a project's need and merits on a case-by-case basis to determine what is in the public interest. Nevertheless, this author believes that a revised Pipeline Policy Statement with key elements could be instrumental in sending the proper signals to the natural gas industry, markets, stakeholders and the courts on how FERC will consider whether a project is in the public interest. **Table 1** lists key elements that should be a part of FERC's Revised Pipeline Policy, based on the author's 30 years of experience as a NEPA and energy infrastructure practitioner, recent independent research, and comments[7] filed with FERC in Docket PL18-1-000.

The following sections discuss aspects of some of the key elements that this author believes should be articulated in FERC's Revised Pipeline Policy.

[6] FERC News Release. (2017, December 21) "FERC to Review its 1999 Pipeline Policy Statement."

[7] See footnote 3.

DOI 10.1002/gas

Table 1. Key Elements Needed in FERC's Revised Pipeline Policy

1. **Precedent Agreements**—FERC should not second guess the markets or abandon precedent agreements entirely as a determination of a project's need. Instead, the Commission should supplement its needs analysis with official comments from state energy agencies and public utility commissions, especially when affiliate companies are involved.

2. **Landowners, EJ Communities and States**—FERC should use its new Office of Public Participation and existing Dispute Resolution Service to facilitate settlements among pipeline applicants, landowners, EJ communities and other stakeholders including state agencies.

3. **Greenhouse Gas Mitigation**—FERC should condition certificates to implement technologically feasible mitigation measures to reduce intended and unintended methane and CO_2 emissions or require the development of such plans during the life of the project.

4. **Increased Oversight and Enforcement**—FERC should increase oversight and enforcement of conditions to mitigate environmental impacts during construction and ensure restoration of land.

5. **EJ Communities Effects**—FERC should require on the ground surveys to identify environmental justice communities and not rely solely on census data.

6. **Energy Security and Resilience**—FERC should use the 4 As of energy security (availability, accessibility, affordability and acceptability) as a framework to determine whether or not a project is in the public interest.

7. **Decarbonization of Natural Gas and Oil Industry**—FERC should also communicate to the natural gas and oil industry how it values decarbonization efforts being implemented—Responsibly Sourced Gas, Renewable Natural Gas and Blending of Hydrogen in natural gas grid.

Source: Modified from Russo on Energy LLC 2021

PRECEDENT AGREEMENTS

If the FERC gives consideration beyond precedent agreements to examine infrastructure need, it should limit the scope to energy commissions and state public utility commissions who, like FERC, are required to provide a reliable source of natural gas to customers at fair and reasonable prices. Also, the Department of Energy (DOE) would be able to provide information on the demand for LNG. FERC should also be weary of "second guessing" natural gas pipeline companies about the need for natural gas pipeline projects to serve their customers. The existing business model of these companies is not based on "if we build it, they will come." Instead it relies on the market and shippers willing to sign precedent agreements to use the pipeline for an extended period.

FERC should not get into the energy forecasting business as some commenters wish. The Energy Information Administration (EIA) is in the energy forecasting business. Despite their efforts, the forecasts are often conservative. In fact, had the FERC relied on such forecasts, the interstate natural gas pipeline system might not have been adequate to usher in the Shale Revolution and the ability of power generators to switch from coal to natural gas, thereby reducing GHG emissions and particulate matter.

Finally, if FERC denies a proposed project based on need and future natural gas pipeline constraints do arise, the Commission will find itself being roundly criticized by Congress and state commissions for exceeding its authority and creating economic harm for ratepayers. Congressional oversight and criticism of

  / DOI 10.1002/gas

the Commission for abandoning precedent agreements will be high, especially considering the benefits that the existing 1999 Pipeline Policy has provided.

If FERC finds there are allegations that the proposed expansion of an existing pipeline is underutilized, then it can simply request the applicant to hold a reverse open season[8] and file the information. The latter may free up underused pipeline capacity and inform the Commission regarding the need for the project.

LANDOWNERS, EJ COMMUNITIES AND STATES

As FERC is aware ongoing disputes and litigation can seriously delay a project. In some cases, FERC approved projects are never constructed because states will not issue the required construction permits required under Section 401 of the Clean Water Act (CWA) and/or the Coastal Zone Management Act (CZMA).

FERC should also recognize that the NEPA process is not ideal for settling disputes between landowners, communities and the project applicant. FERC is not powerless in this area and should use its experience in facilitating settlements with parties during or before the NEPA process to reduce delays and conflicts. FERC should also consider issuing a Policy Statement on Settlements for Natural Gas Facilities like the one issued for Licensing Hydropower Facilities in Docket PL06-5-000.[9]

Settlements are commonly used to resolve disputes in hydropower licensing, pipeline rate cases, and electricity matters at the Commission. FERC should make an extra effort to resolve disputes regarding proposed new pipeline or compressor station projects and thereby narrow the scope of issues to improve its decision making. As the lead agency for permitting interstate natural gas facilities, FERC can do that by calling for a "cooling off" period especially after the issuance of a draft environmental impact statement (EIS) or environmental assessment (EA). After the issuance of a draft EIS on a proposed project or when requested by the stakeholders, FERC should make its Dispute Resolution Service (DRS) staff available to landowners, EJ communities and the applicant to discuss the possibility of settlement. The Commission did this in its 2002 certification order for the Millennium Natural Gas Pipeline in New York's Westchester County. The DSR was successful in resolving the project issues with the Town of Mount Vernon.

Such settlements could assist the applicant and state and other federal agencies in issuing timely construction permits, such as Section 401 CWA, the CZMA consistency determination, Nationwide Permit-12, special use permits from federal land management agencies and Biological Opinions.

GREENHOUSE GAS MITIGATION

FERC's Revised Pipeline Policy should stress the importance and value of GHG mitigation measures in the new project applications it will be reviewing. These measures should go well beyond those typically proposed during the construction of projects. For example, formal programs that detect and correct unintended leaks as well as intended leaks that occur during blowdowns when the pipeline begins operations.

There are legal questions regarding whether FERC has the authority to condition project approval with measures to reduce projected GHG emissions when the pipeline begins commercial operation. FERC's Revised Policy Statement may not be in a position to require applicants to do this, but it can certainly show how it would treat measures proposed

[8] Usually incremental demand for additional pipeline transportation can be satisfied by expanding a pipeline's capacity. A reverse open season attempts to do this through a reduction in the current contractual commitments with existing shippers on the system.

[9] Policy Statement on Hydropower Licensing Settlements. (2006, September 21). Retrieved from https://bit.ly/3dxAFu7

DOI 10.1002/gas

by pipeline applicants as it did in Northern Natural Gas's pipeline case on March 22, 2021 in Docket No. CP20-487. Northern Natural Gas provided the Commission information on how it would mitigate intended methane emissions (blowdowns or venting) from its South Sioux City to Sioux Falls A-line Replacement Section 7 Project. A blowdown is the depressurizing of a natural gas pipeline by opening a valve and allowing the gas to escape into the atmosphere.[10] Blowdowns occur when pipeline companies do repair and interconnection work and inspections and cleaning using pipeline pigging.

Northern Natural Gas proposed using hot taps and line stops that would avoid releasing 10.2 million cubic feet of gas, or 5,783 metric tons of CO_2 equivalent into the atmosphere. FERC considered these proposals and it was a factor that enabled their project approval on March 22, 2021. FERC's Revised Pipeline Policy should embrace the above measures and other new technologies such as a ZEVAC (zero-emission vacuum and compressor) that is being used by a number of pipeline operators to achieve 100 percent containment of methane.[11]

INCREASED OVERSIGHT AND ENFORCEMENT

Landowners and EJ communities often complain about a pipeline company's poor performance when it comes to restoration of lands to their original condition after the pipeline is constructed. Similarly, state and federal agencies and environmental groups are concerned about water quality degradation when the pipeline is constructed across streams and rivers. They also often cite poorly implemented mitigation measures by construction crews which result in violations of water quality standards. FERC's Revised Pipeline Policy should underscore and enhance its commitment to provide oversight and enforcement of approved pipelines during the construction of a project to ensure that its conditions are implemented.

To send a stronger message to the natural gas pipeline industry and stakeholders, FERC should consider establishing a Division of Gas Compliance and Administration (DGAC) within the Office of Energy Projects to ensure that construction and related other activities are conducted pursuant to approved permit conditions. This would ensure that lands are restored to the satisfaction of landowners and affected communities and non-compliance issues are addressed promptly. The Commission could draw on its experience from its Division of Hydropower Administration and Compliance which was established in 1988 to oversee the more than 1,660 non-federal hydropower projects under FERC's jurisdiction.

ENERGY SECURITY AND RESILIENCE

Energy security and resilience should play into the Commission's determination of project need. FERC could use the energy security framework described by the 4 As: Availability, Accessibility, Affordability and Acceptability (environmental and social issues)[12] in its NEPA review and its decision-making process. Using this framework will enable FERC to balance interests and reduce the risk that the Revised Pipeline Policy Statement focuses solely on the acceptability of an interstate gas facility only or vice versa.

Energy security pertains not only to the US but also to its allies. US natural gas exports to Mexico and LNG exports to US allies are beneficial with respect to all 4 As. For example, the availability and accessibility of natural gas at affordable prices can improve the energy security of our allies and enable them to displace dirtier fuels such as oil and coal, that are used in power generation and for heating and cooking. The ability to switch to natural gas also is positive with respect to acceptability

[10] Carr, H. (2021, April 15). Don't Let Go—Reducing Intentional Releases of Natural Gas Spurred by ESG Objectives and Regulations. Retrieved from https://bit.ly/3xMlXab

[11] Ibid.

[12] Cherp, A., & Jewell, J. (2014, December). The concept of energy security: Beyond the four As, Energy Policy. *75*, 415–421. Retrieved from: https://bit.ly/3vOYWln

  / DOI 10.1002/gas

especially for dispatchable combined-cycle gas power plants and for meeting load during the evening ramp of these countries and in most parts of the electric grid. US natural gas pipelines exports to Mexico and US LNG exports are all increasing and with them so does US and our allies' energy security. US security is also enhanced if a proposed project is approved with appropriate safeguards to protect the environment, landowners and EJ communities during construction and operation. In this manner all of the 4 As can be considered by FERC and benefits can be maximized.

Lawmakers and FERC commissioners now clearly recognize the interconnection and dependencies of the interstate natural gas pipeline system and the electric grid. The need for FERC to consider resiliency in the Revised Policy Statement and in its need analysis and NEPA reviews should be apparent. If anything, the recent attack on the Colonial Pipeline, the blackouts associated with the polar vortex in Texas in February 2021, and the August 2020 heat wave in California should underscore the need to bolster the resilience of the natural gas grid and support the recent Pipeline Cybersecurity Directive[13] issued by the Transportation Security Administration (TSA) on May 28, 2021.

While the TSA currently has jurisdiction over cybersecurity of the natural gas grid, many pipelines prefer FERC Mandatory Standards comparable to what the electric power sector has. Congress may ultimately decide that issue which in this author's opinion would make more sense for the purposes of natural gas and electric security, resilience and coordination as well as security for liquid fuels. In any event, whether or not the latter happens, FERC's Revised Pipeline Policy will have to also consider energy security and resilience in its determination of whether or not a new interstate gas facility is in the public interest.

FERC should proceed with caution especially when asked to analyze new projects regionally. The Commission should not embrace the view that several proposed pipeline projects to serve a region are automatically mutually exclusive. Multiple pipelines proposed in a region could provide the redundancy and resiliency needed in a world where cybersecurity attacks on critical infrastructure are becoming the norm. The gasoline shortages experienced in the Eastern US from the ransomware attack on the Colonial Pipeline—the largest single pipeline serving the east coast—illustrate how vulnerable markets can be to such disruptions. Similar attacks on a single or multiple natural gas pipeline serving a single region can wreak havoc on the electric power sector, LNG and petrochemical industries with consequential loss of life.

DECARBONIZATION OF NATURAL GAS AND OIL INDUSTRY

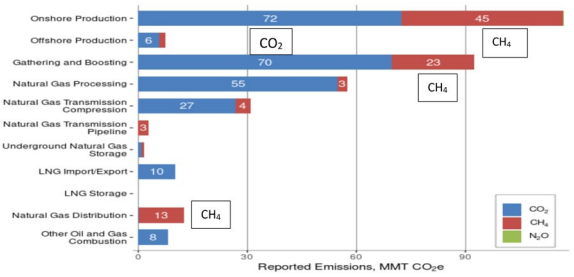
FERC's Revised Pipeline Policy should also send a strong message to the natural gas and oil industry that the Commission views favorably all measures and programs taken by the industry to reduce methane and CO_2 emissions in the supply chain. The Pipeline Policy should speak to the oil industry as well since associated gas from oil well production is transported in the interstate natural gas pipeline system. Aside from that, FERC does regulate the rates charged by interstate natural gas and oil pipelines which will all be affected by state and federal government programs to decarbonize the oil and gas sector.

As shown in **Figure 3,** the GHG emissions consisting of methane and CO_2 from natural gas transmission pipelines and compressor stations are very low compared with upstream emissions, the majority of which are regulated by the states. Applicants for a natural gas pipeline should be responsible for the GHG emissions directly from their projects and not for mitigating emission from upstream or downstream areas. However, many proposed natural gas pipelines are supported by producers and Local Distribution Companies (LDCs) who have a vested interest in the pipeline project.

[13] TSA Security Directive (2021, January). Retrieved from https://bit.ly/3zTqKIL

DOI 10.1002/gas

Figure 3. Reported Greenhouse Gas Emissions in the Natural Gas Supply Chain



Source: US 2019 EPA Greenhouse Gas Reporting Program

Any Revised Pipeline Policy should encourage producers and LDCs to share information on programs they are undertaking to reduce GHG emissions and to decarbonize the natural gas grid. The interest in these programs is accelerating and more natural gas producers and LDCs are embracing Responsibly Sourced Gas,[14] Renewable Natural Gas and blending of hydrogen (H_2) in LDC and pipelines.[15,16,17] The power industry is also anticipating these changes. Combustion turbine manufacturers such as GE Corp., Siemens and Mitsubishi are all shifting to combustion turbines that can burn a blended H_2 methane mixture.[18]

FERC should factor the steps taken upstream and downstream of a proposed pipeline project in the Affected Environment section of its NEPA documents. The Commission should also monitor these developments closely since over time it could be overseeing an interstate natural gas pipeline system that is transporting decarbonized gases. While FERC does not regulate producers or LDCs, it should request new pipeline project applicants to share such information when it is available. Taking such a position in the Revised Pipeline Policy may incent a larger number of producers, pipelines and LDCs to take steps to reduce GHG emissions as is being done by the 45 natural gas companies belonging to the ONE Future Coalition.[19] It will also incent other natural gas companies to reduce impacts to air, water, land and communities just as Southwest Energy,[20] VGS, EQT[21] and Chesapeake Energy[22] have done.

CONCLUSIONS

FERC's review of its existing 1990 Pipeline Policy for new interstate natural gas facilities is much more than a set of narrow issues related to precedent agreements, landowner rights, concerns of EJ communities and the scope of NEPA reviews regarding GHG emission and climate change issues. In fact, every federal agency and energy developer that must comply with NEPA will face many of the same issues as FERC when reviewing new onshore and offshore wind, solar, battery and electric transmission projects. Energy security and resilience are equally important as the natural gas and electric grids transport a greater percentage of decarbonized gases and electricity, respectively, and are affected by extreme weather and cybersecurity attacks. Therefore, federal agency decisionmakers should closely follow FERC's efforts to revise its Pipeline Policy and learn from the process.

[14] Russo, T. N. (2021, February). Responsibly Sourced Gas: Time to Change the Natural Gas Industry's Narrative. *Climate and Energy*.

[15] Jewkes, S. (2020). TAP pipeline explores feasibility of blending hydrogen. Retrieved from https://reut.rs/3x0xGSE

[16] SoCalGas and SDG&E Announce Groundbreaking Hydrogen Blending Demonstration Program to Help Reduce Carbon Emissions. Retrieved from https://prn.to/3wY1lLW

[17] US Dept. of Energy. (2020, July). Hydrogen Strategy- Enabling a Low Carbon Economy. Retrieved from https://bit.ly/3jdJhcN

[18] Russo, T. N., & Gross, J. (2020, December). Carbon Pricing in Wholesale Electricity Markets—Options for Fossil-Fuel Generators. *Climate and Energy*.

[19] ONE Future Coalition is a group of more than 45 natural gas companies working together to reduce methane emissions across the natural gas value chain to 1 percent (or less).

[20] Marcellus Drilling, Southwestern Sells 1st Certified "Responsible Gas" to NJ Resources. (2018, September). https://bit.ly/3qmBvPr

[21] EQT Announces Commitment to Seek Natural Gas Certification under Equitable Origin and MiQ Standards. (2021, April 15). Retrieved from https://prn.to/3xSkoro

[22] Chesapeake Energy and Project Canary Announce Multi-Basin Responsibly Sourced Gas Partnership, April 23, 2021. https://prn.to/3ojpHwr