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May 17, 2021

Russo on Energy LLC's Comments on FERC Notice of Inquiry PL18-1-000

Federal Energy Regulatory Commission
Secretary of the Commission
888 First Street NE
Washington, DC 20426

RE: Certification of New Interstate Natural Gas Facilities

Dear Commissioners:

Russo on Energy LLC (RoE) is an energy and environmental consulting firm. RoE's mission is to conduct independent research on energy and environmental matters and to provide training in natural gas, LNG, hydropower and NEPA matters. RoE is providing the following comments on a large number of issues to assist the Commission in updating its 1999 Pipeline Policy. These comments are solely RoE's and do not represent the views of any other organization. Thank you for the opportunity to comment.

Best regards,

Thomas N. Russo, President

A1. Should the Commission consider changes in how it determines whether there is a public need for a proposed project?

Unless the Commission has the expertise and 20/20 insight into the oil and gas markets it should not significantly change how it determines whether there is a public need for a proposed project. The Commission is not a planning agency and does not have the resources or expertise to become one. However, the Commission can seek input from state public utility commissions and energy agencies

who may have a better idea of what purposes the project is intended to serve whether for residential and commercial heating and cooking, power generation, hydrogen production and for export.

A2. In determining whether there is a public need for a proposed project, what benefits should the Commission consider? For example, should the Commission examine whether the proposed project meets market demand, enhances resilience or reliability, promotes competition among natural gas companies, or enhances the functioning of gas markets?

The Commission should consider all of the above, and especially resilience and reliability that a proposed project will provide. The recent ransomware attacks on the Colonial Pipeline illustrate the need for the Commission to examine how a proposed project can enhance energy security as well as reliability and resilience. The attacks on the Colonial Pipeline could have been just as easily directed at interstate natural gas pipelines with cascading adverse economic, environmental, and health effects on electric power generation, LNG exports and petrochemical industry. If a cyber-attack occurred during the winter on natural gas pipelines, the impacts may be far greater and for a longer duration than experienced in Texas in February 2021 when the Electric Reliability Council of Texas was forced to reduce power to certain parts of the grid to stabilize it.

A3. Currently, the Commission considers precedent agreements, whereby entities intending to be shippers on the contemplated pipeline commit contractually to such shipments, to be strong evidence that there is a public need for a proposed project. If the Commission were to look beyond precedent agreements, what types of additional or alternative evidence should the Commission examine to determine project need? What would such evidence provide that cannot be determined with precedent agreements alone? How should the Commission assess such evidence? Is there any heightened litigation risk or other risk that could result from any broadening of the scope of evidence the Commission considers during a certificate proceeding? If so, how should the Commission safeguard against or otherwise address such risks?

If the Commission gives consideration beyond precedent agreements to examine 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 ratepayers at affordable prices. Also the Department of Energy would be able to provide information on the demand for LNG. The Commission 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.

The Commission should not get into the energy forecasting business as some commenters wish. The Energy Information Administration is in the energy forecasting business. Despite their excellent efforts, the forecasts are often conservative. In fact, had the Commission 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 greenhouse emissions and particulates. Also, the natural gas pipeline industry is changing and may evolve into a system that is transporting gases that have a lower percentage of methane and overall carbon footprint. (see A8)

Finally, if the Commission denies a proposed project based on need and gas pipeline constraints do arise in the future, the Commission will find itself being roundly criticized by Congress and state commissions for exceeding its authority and creating economic harm for ratepayers. While I am not an attorney, the litigation risks to the Commission for abandoning precedent agreements will be high, especially in light of the benefits that the existing 1999 Pipeline Policy has provided.

If the Commission 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 and file the information. The latter may free up underused capacity and inform the Commission regarding the need for the project.

A4. Should the Commission consider distinguishing between precedent agreements with affiliates and non-affiliates in considering the need for a proposed project? If so, how?

Precedent agreements with affiliates may have an affect on need. As discussed in my answer to Question A1, the Commission should seek input from State Public Utility Commissions and energy agencies on the matter of need and how the project may affect natural gas and electricity ratepayers.

A5. Should the Commission consider whether there are specific provisions or characteristics of the precedent agreements that the Commission should more closely review in considering the need for a proposed project? For example, should the term of the precedent agreement have any bearing on the Commission's consideration of need or should the Commission consider whether the contracts are subject to state review?

The Commission should take a harder look at whether the certain precedent agreements are subject to state review and consult with state public utility commissions and energy agencies to ascertain the likelihood of approval.

A6. In its determinations regarding project need, should the Commission consider the intended or expected end use of the natural gas? Would consideration of end uses better inform the Commission's determination regarding whether there is a need for the project? What are the challenges to determining the ultimate end use of the new capacity a shipper is contracting for? How could such challenges be overcome.

The consideration of end uses may better inform the Commission's determination of need in cases and especially where the gas is exported to Mexico or overseas after being supercooled into LNG. In both cases, energy security should play into the Commission's determination of need. Energy security can be viewed through the lens of the 4 A's: Availability, Accessibility, Affordability and Acceptability (environmental and social issues),[1] which applies to our allies and the US economy.

Exports to Mexico and LNG exports to US allies are beneficial with respect to all of the 4 A's. 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 which are used in power generation and for heating and cooking purposes. The ability to switch to natural gas also is positive with respect to acceptability especially for dispatchable combined cycle gas power plants and for meeting load during the even 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

[1] See https://www.sciencedirect.com/science/article/pii/S0301421514004960#:~:text=The%20four%20As%20of%20energy,of%20contemporary%20energy%20security%20studies

US and our allies' energy security. US security is also enhanced if a proposed project is certificated with appropriate safeguards to protect the environmental and communities during construction and operation and benefits all of the 4 As.

A7. Should the Commission consider requiring additional or alternative evidence of need for different end uses? What would be the effect on pipeline companies, consumers, gas prices, and competition? Examples of end uses could include: LDC contracts to serve domestic use; contracts with marketers to move gas from a production area to a liquid trading point; contracts for transporting gas to an export facility; projects for reliability and/or resilience; and contracts for electric generating resources.

No, not necessarily. More information does not necessarily mean better decisions. While the Commission may ask for this information it must consider the quality of the information it requests, i.e. "nice to have" as opposed to "critical' to informed decision making. The information obtained may result in a bloated record that overshadows more significant issues. The Commission must also be weary of requests for information that are designed to prolong the decision making process and convolute the record with extraneous data. However, the Commission may have good cause to seek information if it was conducting a GHG analysis downstream of the proposed pipeline.

The Commission is breaking new ground on a variety of issues related to climate change. The Commission's information requests on interstate natural gas pipelines might also be copied by other federal agencies that deal with interstate electric transmission lines, submarine cables and wind and solar projects. One also has to question if the Commission one day was ever given authority to permit interstate electric transmission line projects, whether it would it be reasonable to ask an applicant for information on the fuels or technologies generating power or their end uses? Probably not, since doing so would not support the higher goal of allowing more renewables to be integrated into the electric grid and enhancing reliability and resilience. Information and end uses just are not necessarily relevant in the above case or with interstate natural gas pipelines unless one's objectives are to challenge the commodity being transported or the method of producing it.

A8. How should the Commission take into account that end uses for gas may not be permanent and may change over time?

This is an important issue to consider because the nature of the gas grid is changing. In fact the Commission in the future could conceivably find itself reviewing and setting transportation rates for new and existing interstate pipelines that transport gas that has a lower carbon footprint and a lower percentage of methane.[2]

The Commission's revised Policy Statement could send a clear message to the natural gas industry and play a key role in encouraging decarbonization of the gas grid. In a sense this is already happening. For example, comments of Chairman Glick encouraging companies to reduce carbon emissions did register with Northern Natural Gas. The company gave the Commission information on how it would mitigate intended methane emissions from its South Sioux City to Sioux Falls A-line Replacement Section 7 Project (CP20-487). The company's use of hot taps and line stops would avoid releasing 10.2 MMcf of gas, or 5,783 mt of CO_2e were considered in it March 22, 2021 order approving the project. Now the Commission should formally articulate its preference for a decarbonized gas grid in a revised Pipeline Policy Statement.

The Commission should monitor a number of initiatives that will decarbonize the gas grid and enable pipelines to transport a mix of decarbonized gases including H_2 in the future. Responsibly Sourced Natural Gas (RSG) is a nascent industry that involves reducing intended and unintended methane emission and impacts on land, water, and communities from the natural gas supply chain.[3] The attached research on RSG describes its key features are continuous monitoring, taking action to reduce the aforementioned impacts and independent third-party certification that measures performance.

There have been a number of recent developments in the RSG space that the Commission should factor into its decision making.

[2] The Natural Gas Act defines natural gas as "either natural gas unmixed, or any mixture of natural and artificial gas." See https://www.law.cornell.edu/uscode/text/15/717a

[3] See https://www.russoonenergy.com/sites/default/files/Russo_Feb2021CE.pdf

- Southwest Energy is selling TrustWell™ RSG to New Jersey Natural Gas[4]

- VGS, a Vermont gas utility announced that it will be purchasing the Equitable Origin EO100TM certified RSG from Seven Generations Energy, in Alberta, Canada

- EQT, North America's largest gas producer, will work with Equitable Origin and MiQ to certify gas produced from more than 200 of its Marcellus well pads in Pennsylvania[5]

- Chesapeake Energy will produce RSG using Project Canary's continuous on-site emissions monitoring technology and TrustWell in northeast Pennsylvania and northwest Louisiana[6]

- Cheniere Energy Inc. plans to offer emissions certificates on its cargoes starting next year. Other developers including Sempra Energy and Tellurian Inc. have recently said they are looking into certification as well.[7]

Market participants are involved in the following activities that are designed to decarbonize the gas grid[8]:

a) **Renewable Natural Gas (RNG)** involves capturing methane from landfills, livestock wastes and then treating and processing them to RNG, which is often injected back into the interstate natural gas system.

b) **Blending H_2 with Natural Gas**- much of the research has been done in Europe. Currently several LDCs in the European Union and the United Kingdom are already blending H_2 in their systems. Snam, Italy's largest natural gas pipeline, is experimenting with a 10% mixture and said

[4] See https://marcellusdrilling.com/2018/09/southwestern-sells-1st-certified-responsible-gas-to-nj-resources/

[5] See https://www.prnewswire.com/news-releases/eqt-announces-commitment-to-seek-natural-gas-certification-under-equitable-origin-and-miq-standards-301269328.html

[6] See https://prn.to/3ojpHwr

[7] https://www.naturalgasintel.com/miq-carbon-limits-to-develop-first-independent-lng-certification-standard/

[8] The gas grid includes natural gas transmission and distribution pipelines.

that its pipeline is 70% of its grid is "hydrogen ready".[9] In California, San Diego Gas & Electric and SoCal Gas are doing two pilot projects as part of the California Public Utilities Commission work to decarbonize the state's gas grid.[10] European policy makers and the US Department of Energy also envision repurposing the natural gas grid to transport H_2 over time since many end uses are expensive to electrify (Figure 1).[11] Combustion turbine manufacturers like GE Corp., Siemens and Mitsubishi are all shifting to combustion turbines that can burn a blended H_2 methane mixture.[12]

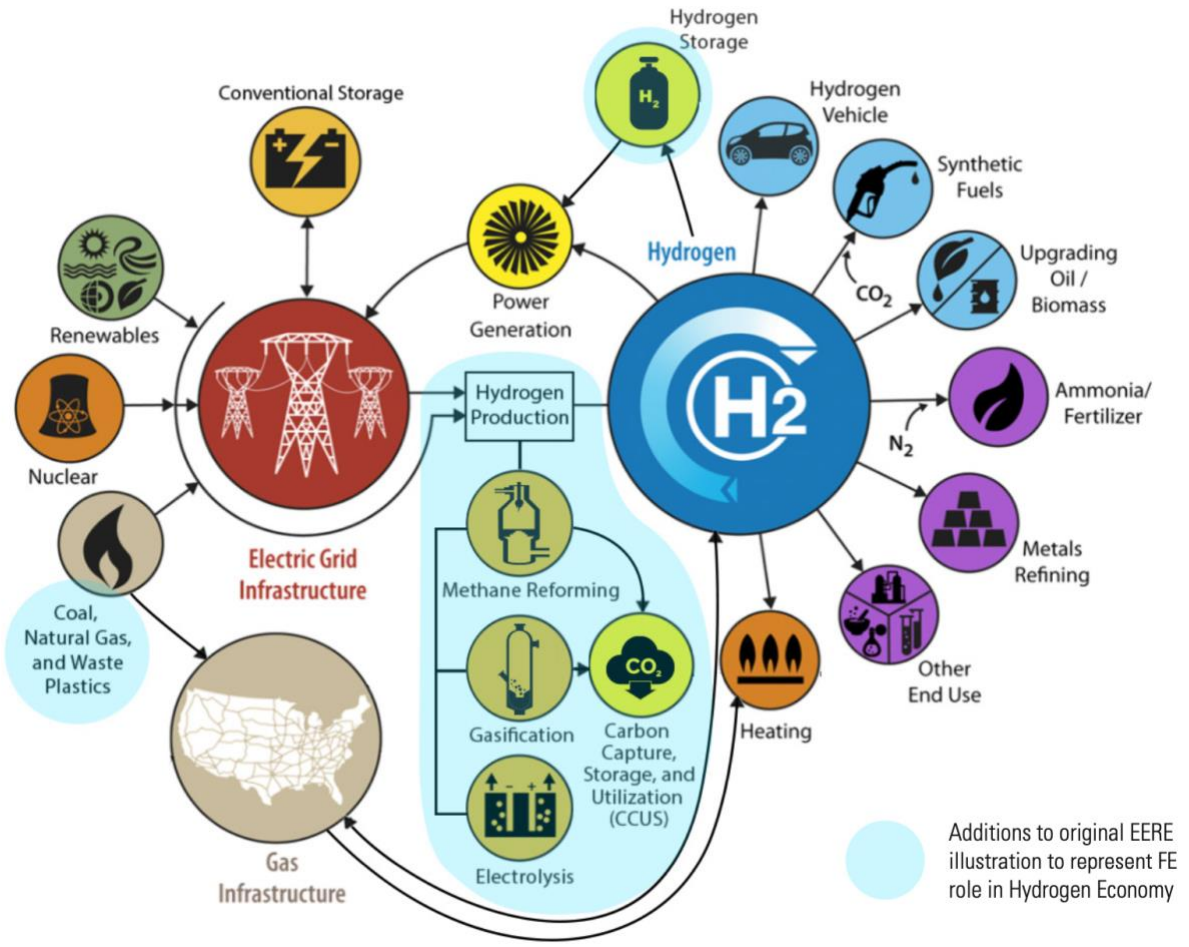
[9] See https://www.reuters.com/article/tap-hydrogen-study/tap-pipeline-explores-feasibility-of-blending-hydrogen-idUKKBN28J2EH

[10] See https://www.prnewswire.com/news-releases/socalgas-and-sdge-announce-groundbreaking-hydrogen-blending-demonstration-program-to-help-reduce-carbon-emissions-301178982.html

[11] See https://www.energy.gov/fe/downloads/hydrogen-strategy-enabling-low-carbon-economy

[12] See https://www.russoonenergy.com/sites/default/files/Russo_Gross_December_2020.pdf

Figure 1. Integration of Fossil Energy into the Hydrogen Economy



d) **Power to Gas**- involves using electricity from hydropower, wind and solar power plants and producing H_2 via electrolysis of water. Most of the projects proposed are European, but a number of firms like NextEra's Florida Power & Light are investing $60 million in an electrolyser to produce green H_2 and then blend it with natural gas to operate a large gas-combined cycle power plant.[13]

A9. Should the Commission assess need differently if multiple pipeline applications to provide service in the same geographic area are pending before the Commission? For

[13] See https://www.greentechmedia.com/articles/read/nextera-energy-to-build-its-first-green-hydrogen-plant-in-florida

example, should the Commission consider a regional approach to a needs determination if there are multiple pipeline applications pending for the same geographic area? Should the Commission change the way it considers the impact of a new project on competing existing pipeline systems or their captive shippers? If so, what would that analysis look like in practice?

The Commission should proceed with caution. The Commission should not embrace the view that several proposed 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. As discussed in A2, such 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.

A10. Should the Commission consider adjusting its assessment of need to examine (1) if existing infrastructure can accommodate a proposed project (beyond the system alternatives analysis examined in the Commission's environmental review); [7] (2) if demand in a new project's markets will materialize; or (3) if reliance on other energy sources to meet future demand for electricity generation would impact gas projects designed to supply gas-fired generators? If so, how?

No. Any adjustments in the Commission's assessment would be speculative at best. Estimating natural gas demand is fraught with risk which the private sector is better equipped to manage. Also relying on other energy sources to meet future demand for electricity generation is risky. For example, while the recent growth of electric battery storage is impressive and costs are declining, there is no guarantee that it will continue and ultimately replace the need for gas pipelines to supply gas-fired generators. Utility-scale electric batteries require minerals (lithium, nickel, cobalt and graphite and rare earth metals that are sourced from various countries not all stable or friendly to the US. In all of the above cases, it is the market and companies who will be making investment decisions and they should be well aware of alternative technologies challenging their business model. Besides, state regulators will have the ultimate say if and when a proposed pipeline project is ever

built through issuing construction permits pursuant to Clean Water Act Section 401, Coastal Zone Management Act and any special use permits when projects are on federal lands. Instead, the Commission should do what's in it jurisdiction, i.e. condition certificates so they provide the energy security benefits and minimize or avoid the impacts to air, water, land and communities near the proposed project. Revisions to the Policy Statement can also send a clear message to market participants on how the Commission will view mitigation measures to decarbonize the gas grid and reduce methane emissions.

A11. In its determination of need, should the Commission consider the economic, energy security and social attributes of domestic production and use of natural gas as detailed in the letter dated February 11, 2021 from the Chairman of the Senate Energy and Natural Resources Committee, Senator Joe Manchin III, to President Biden? [8]

Yes. See answer to A6.

A12. In its general public interest considerations under the NGA or other federal statutes, should the Commission consider the interests of low to middle-income communities in which the production or transportation of natural gas is a significant source of jobs and/or tax revenues that fund public services?

Yes, most definitely. As discussed in my answer to A6, one of the 4 As is acceptability. The creation of jobs and tax revenues that fund public services should be addressed in the socioeconomic section of the NEPA document. Low to middle income communities interests should be equally heard on health, environmental issues as well.

B. The Exercise of Eminent Domain and Landowner Interests

B1. Should the Commission consider adjusting its consideration of the potential exercise of eminent domain in reviewing project applications? If so, how should the Commission adjust its approach?

No, but the Commission should use its new Office of Public Participation (OPP) and Dispute Resolution Service (DRS) capabilities to settle disputes and misunderstandings between affected landowners and the applicant.

B2. Should applicants take additional measures to minimize the use of eminent domain? If so, what should such measures be? How would that affect a project's overall costs? How could such a requirement affect an applicant's ability to adjust a proposed route based on public input received during the Commission's project review?

The best approach to minimize the use of eminent domain is to design a project that avoids or minimizes project impacts and to negotiate easements with landowners. This could be done by siting pipelines in existing utility corridors when available. However, educating landowners about natural gas pipeline construction, compressor station operation noise levels, and the likelihood of fires and explosions is also important along with discussing how they could you their land if an easement is granted. These discussions should include restoration of land after the pipeline is constructed. The Commission's new OPP and DSR could play a role in this at the NEPA pre-filing stage when applicants are more willing to modify project features. OPP staff should be present at all public meetings regarding the project to answer questions about this controversial issue and establish long-term working relationships with landowners and EJ communities.

B3. For proposed projects that will potentially require the exercise of eminent domain, should the Commission consider changing how it balances the potential use of eminent domain against the showing of need for the project? Since the amount of eminent domain used cannot be established with certainty until after a Commission order is issued, is it possible for the Commission to reliably estimate the amount of eminent domain a proposed project may use such that the Commission could use that information during the consideration of an application?

No comment.

B4. Does the Commission's current certificate process adequately take landowner interests into account? Are there steps that applicants and the Commission should implement to better take landowner interests into account and encourage landowner participation in the process? If so, what should the steps be?

It does in many instances, but the current process is not enough and begs the question of what is meant by "taking landowners interests into account." What landowners are seeking is minimal or no impacts to their land which may not always be possible for the Commission to resolve to the satisfaction. In many cases, applicants and the Commission has to acknowledge that their efforts will never meet certain landowners expectations especially if NIMBY (Not In My Backyard) and NUMBY (No Under My Backyard) the goals. The Commission should not construe this as a failed program, but realistically acknowledge that some landowners' desires will not be met.

For the uninitiated the FERC process is difficult to navigate. Landowners need face-to face conversations between a group of dedicated FERC staff who have their interests at heart. Talk alone will not achieve that goal. Landowners want a Commission and applicant that will actively address their concerns via rerouting project features or mitigating the impacts. This can't be accomplished with a one-time impersonal meeting but requires sustainable and ongoing efforts. The staff of the new OPP and later on the DSR could serve in this role and must invest a great deal of time to overcome decades of mistrust among landowners and communities affected by the construction and operation of interstate pipeline.

One thing that the Commission could do would be to designate certain staff as non-decision making, thus allowing them to speak freely without having to worry about violating ex-parte rules. The Commission then needs to design some legally sound procedures to incorporate OPP's and DSRs input into the record.

The Commission should recognize that the NEPA process is not ideal for settling disputes between landowners, communities and the project applicant. The Commission 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. The Commission should also consider issuing a Policy Statement on Settlements for Natural Gas Facilities similar to the one it did for Licensing Hydropower Facilities in Docket PL06-5-000. After the issuance of a draft environmental impact statement on a proposed project or when requested by the stakeholders, the Commission should make DSR staff available to landowners, 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 West Chester County. The DSR was successful in resolving the project issues with the Town of Mount Vernon.

B5. Should the Commission reconsider how it addresses applications where the applicant is unable to access portions of the right-of-way? Should the Commission consider changes in how it considers environmental information gathered after an order authorizing a project is issued?

No comment.

B6. Under the NGA, does the Commission have authority to condition a certificate holder's exercise of eminent domain? Should the Commission defer issuing a section 7 certificate until an applicant has all other authorizations needed to commence construction? If so, can the Commission reconcile such inaction with section 7(e) of the NGA, which provides that the Commission shall issue a certificate to any qualified applicant upon finding that the proposed construction and operation of the project "*is or will be* required by the present or future public convenience and necessity"? [15] Are there circumstances when an applicant may need a certificate of public convenience and necessity prior to receiving certain permits or authorizations, making it difficult for an applicant to obtain all other authorizations needed to commence construction prior to the Commission's issuance of a section 7 certificate?

No comment.

C. The Commission's Consideration of Environmental Impacts

16. As explained in the 2018 NOI, the Commission performs an environmental review under NEPA and considers a proposed project's environmental impacts when determining whether a project is required by the public convenience and necessity. There continues to be stakeholder

interest regarding the alternatives that the Commission evaluates in its environmental review and how the Commission addresses climate change, including the impact of greenhouse gas (GHG) emissions. In addition, is it appropriate for the Commission to review how it implements NEPA, including its consideration of categorical exclusions?

The Commission should await the Court's decision in Wild Virginia v. Council on Environmental Quality and begin work with the natural gas industry, stakeholders and the states to fashion new rules for implementing NEPA. During the interim, the Commission should not delay processing proposed projects, but prepare environmental reviews consistent with the spirit of its recent actions to address GHG emission in docket CP20-487 and other projects.

C1. NEPA and its implementing regulations require an agency to consider reasonable alternatives to the proposed action. Currently the Commission considers the no-action alternative, system alternatives, design alternatives, and route alternatives. Should the Commission consider broadening its environmental analysis to consider alternatives beyond those that are currently included? If so, how does the Commission reconcile broadening its environmental analysis to consider alternatives beyond those currently included with *Citizens Against Burlington, Inc.* v. *Busey*? [16] The U.S. Court of Appeals for the District of Columbia Circuit clarified that,

[i]n commanding agencies to discuss "alternatives to the proposed action," . . . NEPA plainly refers to alternatives to the "major *Federal* actions significantly affecting the quality of the human environment," and not to alternatives to the applicant's proposal. NEPA § 102(2)(C), 42 U.S.C. 4332(2)(C) (emphasis added). An agency cannot redefine the goals of the proposal that arouses the call for action; it must evaluate alternative ways of achieving *its* goals, shaped by the application at issue and by the function that the agency plays in the decisional process. Congress did expect agencies to consider an applicant's wants when the agency formulates the goals of its own proposed action. Congress did not expect agencies to determine for the applicant what the goals of the applicant's proposal should be.[17] What specific types of additional alternatives should the Commission consider and how would such additional alternatives be consistent with the D.C. Circuit's guidance in *Citizens Against Burlington, Inc.* v. *Busey*? [18] How would the Commission obtain reliable information to perform an analysis of these alternatives?

No comment.

C2. Are there any environmental impacts that the Commission does not currently consider in its cumulative impact analysis that could be captured with a broader regional evaluation? If so, how broadly should regions be defined (*e.g.*, which states or geographic boundaries best define different regions), and which environmental resources considered in NEPA would be affected on a larger, regional scale? Does the text of NGA section 7 permit the Commission to do this? If this is contemplated by the NGA, would one applicant's section 7 application prejudice another applicant's section 7 application?

No comment.

C3. In conducting an analysis of a project, how could the Commission consider upstream impacts (*e.g.*, from the drilling of natural gas wells) and downstream end-use impacts? Should applicants be required to provide information on the origin and end use of the gas? How would the Commission determine end-use impacts if the gas is sent to a pooling point or a mid-stream shipper? If the end use is electric generation or an LDC, how would the Commission determine the GHG emissions of existing and anticipated gas usage attributed to a project? How would additional information related to upstream or downstream impacts of a proposed project inform the Commission's decision on an application? Should shippers who have subscribed capacity on a project (or potentially, the shippers' customers) be encouraged to provide the type of information contemplated above? If so, how might this be done? How could such a policy be squared with CEQ's final rule? [19]

The Commission should weigh whether or not the information collected will ultimately benefit its decision making on a proposed natural gas pipeline project and is needed to meet its obligations under NEPA and the NGA. Before requesting such information, the Commission should consider the quality of the information that is available, especially is if it is regional data. Also information collected on a regional basis is very difficult to integrate with project specific impacts. Often, the collection of such data impose a great burden in terms of costs and time, but in the end do very little

to inform the Commission's decision about the project. A side effect is that NEPA environmental impact statements and the record become bloated and the record in which to base decisions is difficult to interpret. To the extent that applicants and commercial end users downstream have the information, they can provide the information to the Commission. However, as transportation companies, pipelines should not be responsible for knowing detailed information on the sources and or uses of the natural gas they are transporting unless they are affiliates of a producer. See my answer to Question A7.

The states will also weigh in on these issues as part of the Commission's NEPA process or by exercising their authority under section 401 of the Clean Water Act and the Coastal Zone Management Act. One way that the Commission could obtain this type of information would be to invite the state energy commissions and public utility commissions to be cooperating agencies during the preparation of the NEPA document just as it does with the Pipeline and Hazardous Materials Safety Administration and other federal agencies.

C4. In conducting an analysis of the impact of a project's GHG emissions, how could the Commission determine the significance of these emissions' contribution to climate change? Should significance criteria be based on a specific fraction of existing carbon budgets in international agreements; state or regional targets; a specific fraction of natural carbon sinks; or other metrics? If so, how and why would that basis be appropriate? Alternatively, should the Commission focus its analysis on GHG emission impacts on global climate metrics (*e.g.*, CO_2 levels, ocean acidification, sea level rise) or regional impacts (*e.g.*, snowpack, storm events, local temperature changes)? If so, how and why would that basis be appropriate? What would be an appropriate GHG climate model for use on a project-level basis? Is there any level of GHG emissions that would constitute a *de minimis* impact? If so, how much and why would such number be appropriate? How would such analysis meaningfully inform the Commission's decision making?

This is the most important question being asked. The answer is related to how much information is required to meet the Commission's NEPA obligations and make a "knowing" decision about whether or not a proposed project should be approved and mitigated. I have been an energy and NEPA

practitioner for over 30 years and still find determining the significance of cumulative and site-specific projects effects very problematic and challenging. Since climate change and GHG emissions are a global issue this is nearly impossible to do one project at a time. Even with perfect information about project impacts how does one apply those and determine that a threshold has been reached with respect to carbon emissions? If the Commission broadens the scope of the areas analyzed as suggested by some commenters, the ability to determine the project's contribution is even more problematic. There is no bright line that the Commission can rely on nor anyone else for that matter. The Commission must use a common sense approach in assessing these projects.

The Commission has dealt with similar issues in its natural gas program prior to the previous administration and in the 1980s when it was asked to determine the significance of numerous hydropower project proposals. The Commission's staff did assess cumulative effects of multiple hydropower projects in river basins and prepared a number of river basin EISs. However, the same challenges arose. While the efforts broke new ground, there was no secret formula or threshold for determining significance on any given resource be it water quality, anadromous fish or wildlife. Instead, the Commission's staff like many NEPA practitioners and decisionmakers focused on avoiding and reducing impacts through mitigation followed by strong oversight and enforcement. Over time, the Commission and the hydropower industry developed an informal set of best practices to deal with the issues..

In the natural gas program, this same formula can be replicated. The Commission should focus on mitigation the project's impact and send clear signals to the natural gas industry regarding how it views decarbonization and methane reduction measures. Over time, the revised Policy Statement could result in a de minimis threshold for GHGs and impacts to water, land and communities, especially if it is backed by strong oversight and enforcement during the construction and operation of the pipeline. Project that are inconsistent with the revised Policy Statement would either not be approved or have a higher probability of failure to obtain the required construction permits from states and other federal agencies.

C5. As part of the Commission's public interest determination, how would the Commission weigh a proposed project's adverse impacts against favorable impacts to determine whether the

proposed project is required by the public convenience and necessity and still provide regulatory certainty to stakeholders?

I believe that the Commission could use the 4 As- availability, accessibility, affordability and acceptability (discussed in A6) when weighing a project's adverse impacts against benefits in its decision making. This is difficult since a proposed pipeline's benefits may contribute to energy security and other benefits not easily measured, while a project's environmental and social impacts are localized and quantifiable. Again, the only way to reconcile these tradeoffs may be to impose stringent environmental mitigation measures in any certificate of public convenience followed up by very proactive oversight and enforcement during construction and the life of the project.

C6. Does the NGA, NEPA, or other federal statute authorize or mandate the use of Social Cost of Carbon (SCC) analysis by the Commission in its consideration of certificate applications? If so, how does the statute direct or authorize the Commission to use SCC? Does the statute set forth specific metrics or quantitative analyses that the Commission must or may use and/or specific findings of fact the Commission must or may make with regard to SCC analysis of a certificate application? Does the statute set forth specific remedies the Commission must or may implement based on specific SCC findings of fact?

No comment.

C7. If the Commission chooses to use the SCC tool, how could it be used to determine whether a proposed project is required by the public convenience and necessity? [20] How would the Commission determine the appropriate discount rate to use? Should the Commission consider multiple discount rates or one discount rate? Please provide support for each option. How could the Commission use the SCC tool in the weighing of the costs versus benefits of a proposed project? How could the Commission acquire complete information to appropriately quantify all of the monetized costs/negative impacts and monetized benefits of a proposed project? Should the Commission use the tool to determine whether a project has significant effects on climate? If so, how could the Commission connect the SCC estimate with the actual effects of the project? What level of cost would be significant and why?

No comment.

C8. Are there alternatives to the SCC tool that the Commission should consider using? If so, how could the Commission use those tools?

No comment.

C9. How could the Commission determine whether a proposed project's GHG emissions are offset by reduced GHG emissions resulting from the project's operations (*e.g.*, displacing a more carbon-intensive fuel source such as coal or fuel oil)?

I don't believe that it is possible to determine in all cases whether a proposed project's GHG emissions are directly offset by reduced GHG emissions such as displacing a more carbon-intensive fuel source such as coal or fuel oil. However, natural gas exports and LNG exports are routinely reported by the Department of Energy's Office of Fossil Energy and could be used to determine offsets. Most of the US natural gas exports to Mexico are to displace fuel oil used to generate power, while LNG exports to other countries are primarily used for coal-to-gas switching in power plants or displacing oil-fired power generating plants. In Europe, US LNG being imported is used to promote energy security and reduce reliance on Russian pipeline natural gas as well.

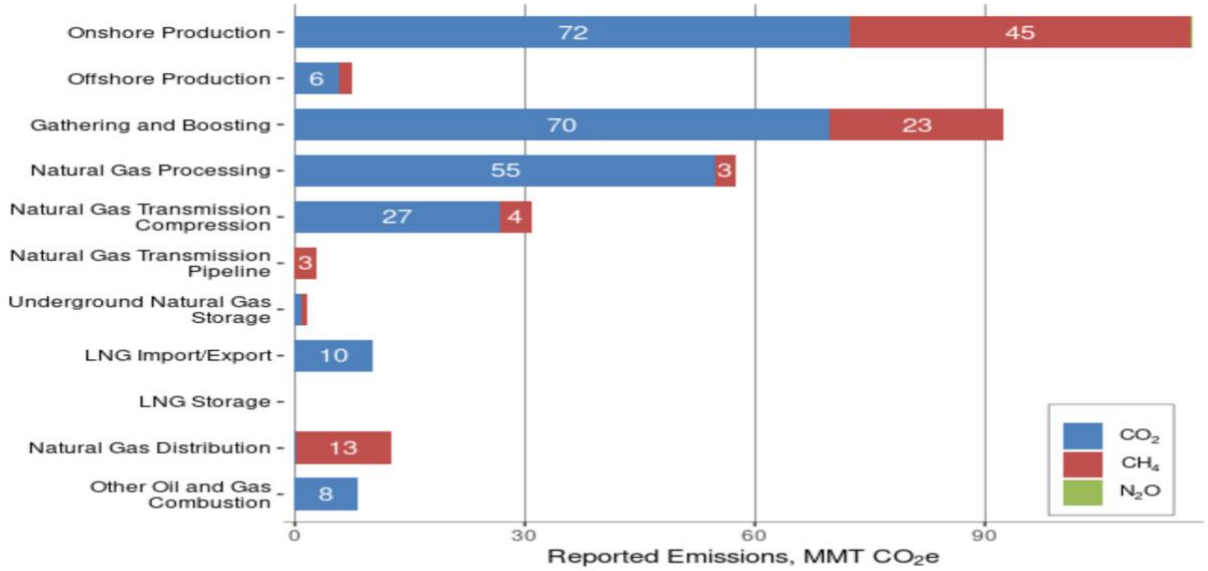
C10. How could the Commission impose GHG emission limits or mitigation to reduce the significance of impacts from a proposed project on climate change? Can the Commission interpret its authority under NGA section 7(e) to permit it to mitigate GHG emissions? [21] If the Commission decides to impose GHG emission limits, how would the Commission determine what limit, if any, is appropriate? Should GHG mitigation be considered only for direct project GHG emissions or should downstream end-use, or upstream emissions also be evaluated? What are the options or methods applicants could propose to mitigate GHG emissions through offsets or other means?

While Congress did designate the US EPA as the primary regulator of GHG emissions it does not mean that other agencies can't supplement the EPAs program and contribute to the reduction of this

pollutant. The Commission should be able to mitigate GHG emissions during the life of a project by including conditions in any certificate of public convenience and necessity. In fact it did that already in Docket CP20-487 when it approved Northern Natural Gas pipeline based on the company's proposals to mitigate intended methane emissions using hot taps and line stops which avoids releasing 10.2 MMcf of gas, or 5,783 mt of CO_2e. Intended methane emissions on a pipeline may occur for maintenance, pigging, testing and repairs. This is known as a blowdown and occurs when the pipeline is depressurized by opening a valve and allowing the gas to escape through a vertical stack or pipe. New technologies like the ZEVAC or "zero-emission vacuum and compressor" system can achieve 100% containment of the gas (methane). The Commission can also require additional measures such as continuous monitoring and a compliance program to limit methane and other GHG emissions from compressor stations as well.

As shown below in Figure 2, GHG emissions vary across the natural gas supply chain.

Figure 2. Reported Greenhouse Gas Emissions in the Natural Gas Supply Chain.



Source: US 2019 EPA Greenhouse Gas Reporting Program

The GHG emission from natural gas transmission pipelines pale in comparison with upstream activities, 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

methane emission from upstream or downstream areas. However, many proposed natural gas pipelines are supported by producers and LDCs who have a vested interest in the project. There is nothing standing in the way of producers and LDCs to share their efforts to reduce GHG emission with the Commission to work cooperatively with a pipeline applicant to reduce upstream emissions using the criteria outlined for RSG **(See A8).** Any measures taken upstream and downstream of the proposed project would be included in the affected environment section in the Commission's NEPA review. This may incent a larger number of producers and LDCs to take steps to reduce GHG emissions and impacts to water, land and communities just as Southwest Energy, VGS, EQT and Chesapeake Energy have done.

C11. What categorical exclusions established by other agencies should the Commission consider adopting? [22] Why is it appropriate for the Commission to adopt those categorical exclusions? Should the Commission consider establishing new categorical exclusions that modify the existing categorical exclusions of other agencies? Should the Commission consider adding new categorical exclusions for actions where there is no construction or restoration activities and the environment is not involved? Those actions could include, but are not limited to, modifications to certificated capacity that involve no construction or ground disturbance, modifications to export/import volumes at border crossing facilities if there are no changes to the facilities, rate amendments, NGA section 7(f) service area determinations, conversion of NGA section 7 facilities to section 3 authorizations, limited jurisdiction certificates, etc. Are there other actions that could benefit from a categorical exclusion and would be consistent with the Commission's obligations under NEPA?

No comment.

D1. Should certain aspects of the Commission's application review process (*i.e.*, pre-filing, post-filing, and post-order-issuance) be condensed, performed concurrently with other activities, or eliminated, to make the overall process more efficient? If so, what specific changes could the Commission consider implementing?

The Commission should use this opportunity to depart from a business-as-usual approach that sees an increasing number of certificate project undergoing serious delay and not being constructed. The Commission should make an extra effort to resolve disputes surrounding the proposed project and thereby narrow the scope of issues to improve it decision making. As the lead agency for permitting interstate natural gas pipelines, the Commission can do that by calling for a "cooling off" period especially after the issuance of a draft EIS. During this time, the Commission should make available to the applicant and stakeholders its DSR staff to explore whether settlement of specific issues is possible. While some applicants and stakeholders may question the prudence of such an approach, actual resolution of disputes regarding landowner, environmental and environmental justice issues may benefit all stakeholders. Such settlements could assist the applicant and state and other federal agencies in issuing timely construction permits- Section 401 of the Clean Water Act, the Coastal Zone Management Act, Nationwide Permit-12, special use permits from federal land management agencies and Biological Opinions.

D2. Should the Commission consider changes to the pre-filing process? How can the Commission ensure the most effective participation by interested stakeholders during the pre-filing process and how would any such changes affect the implementation and duration of the pre-filing process?

See the answer to D1 above and begin discussions of settlement and dispute resolution during the pre-filing process targeting landowners and environmental justice communities. During the pre-filing process, the applicant may be more amenable to changing the project's configuration and location of compressor stations than after filing the application.

D3. Are there ways for the Commission to work more efficiently and effectively with other agencies, federal and state, that have a role in the certificate review process? If so, how?

The Commission should invite affected states to be cooperating agencies in the preparation of its NEPA EIS with the goal of reducing duplication and in resolving issues and disputes. This would facilitate issuance of construction permits required under Section 401 of the Clean Water Act, and Coastal Zone Management Act. The Commission should seek the Council of Environmental Quality's assistance in the above matter.

A growing challenge to the Commission's natural gas pipeline program is the disparity between its pre-filing and post filing activities and those during the construction and operation of the project. The Commission places enormous effort in its Pre-Filing and NEPA process, but needs to increase its efforts to prevent environmental impacts to fish and wildlife during project construction and ensure that land is restores to its prior state to the satisfaction of landowners and affected environmental justice communities. Failure to address these issues during construction of the project erodes confidence in the Commission and its natural gas pipeline program. The Commission should seriously consider establishing a Division of Gas Compliance and Administration (DGAC) within the Office of Energy Projects to ensure that construction activities are conducted pursuant to conditions included in the certificate and also that lands are restored to the satisfaction of landowners and affected communities. DGAC would also work with natural gas pipelines to ensure that GHG reduction mitigation is implemented. The Commission could draw on its experience from its Division of Hydropower Administration & Compliance which was established in 1988.

D4. Are there classes of projects that should appropriately be subject to a more efficient process? What would the more efficient process entail?

No comment.

E. The Commission's Consideration of Effects on Environmental Justice Communities

E1. Should the Commission change how it identifies potentially affected environmental justice communities? Why and if so, how? Specifically, what criteria should the Commission consider?

The following summary is taken from a research paper entitled "Environmental Justice and the Energy Transition: How the Energy Industry can do better." The current practices for identifying EJ communities are ineffective. In fact, according to the NRDC, they are "effectively facilitating environmental injustice," the opposite of their intended effect.[14] In their attempt to properly identify EJ communities, the CEQ recommends using data from the Bureau of the Census (BOC).[15] However, the use of census data to identify EJ communities raises serious issues of scale. By using census data,

[14] "Legal Brief: FERC's Flaws Endanger Communities of Color in Atlantic Coast Pipeline Path," Natural Resources Defense Council, April 15, 2019, https://www.nrdc.org/media/2019/190415

[15] "Environmental Justice: Guidance," CEQ.

environmental reviews pursuant to NEPA can be "rendered… incapable of detecting large [EJ] populations" near a project, "leading to false conclusions about a project's impact on those communities."[16]

The average census tract in the US contains roughly 4,000 people.[17] Depending on the population size and demographics of a tract, a project can be sited seemingly in an area with few EJ concerns, but upon closer examination this is not the case. Essentially, the universal use of census data as a means of facilitating EJ identification prevents energy developers and regulators from seeing the real impacts of energy projects, especially in areas where EJ populations live in concentrated areas or in rural areas. The remedy is to avoid census data and to conduct on-the-ground surveys to identify EJ communities that will be affected by pipeline and compression station construction and operation and potentially the exercise of eminent domain.

E2. Are there concerns regarding environmental justice communities' participation in past Commission proceedings? If so, what are the concerns? Please provide concrete examples.

No Comment.

E3. What measures can the Commission take to ensure effective participation by environmental justice communities in the certificate review process? When evaluating disproportionately high and adverse effects on environmental justice communities, should the Commission change how it considers the location or distribution of a project's impacts? If so, how?

The Commission should give equal consideration to EJ issues just as they do with other important environmental resources. The Commission can elevate consultation with EJ communities by designating energy developers (applicants) as their non-federal representative for purposes of NEPA consultation on EJ matters. This administrative action can result in *intensive* consultation regarding

[16] Ryan Emmanuel, "Flawed Environmental Justice Analyses," *Science*, 357, (2017): 260, https://www.researchgate.net/profile/Juan_Laclette/publication/318577080_Mexico's_basic_science_funding_falls_short/links/59b6b008aca2722453a46720/Mexicos-basic-science-funding-falls-short.pdf
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[17] "Census Tracts," US Census Bureau, accessed May 1, 2020, https://www2.census.gov/geo/pdfs/education/CensusTracts.pdf

EJ issues, and not just "checking the boxes." This action has been a common practice at the Commission with hydropower licensing under 18 CFR § 5.5(e) for consultation required under the Endangered Species Act and National Historic Preservation Act. If the Commission does not agree with the above recommendation than it should assign this role the new OPP. The Commission should also consult with Canadian agencies like Canada's British Columbia Oil and Gas Commission, which has had some recent successes in working with First Nations communities when approving the LNG Canada Export Terminal and the Coastal Gaslink Pipeline.

E4. When evaluating disproportionately high and adverse effects on environmental justice communities, should the Commission change how it considers population-specific factors that can amplify the experienced effect, such as ecological, visual, historical, cultural, economic, social, or health factors? If so, how? Should the Commission change how it considers multiple or cumulative adverse exposures and historical patterns of exposure to pollution or other environmental hazards? If so, how? How can the Commission obtain high-quality information about cumulative impacts (*e.g.*, data on cancer clusters and asthma rates)?

No comment.

E5. Does the NGA, NEPA, or other federal statute set forth specific duties for the Commission to fulfill regarding environmental justice analyses in certificate proceedings under the NGA?

No comment.

E6. Should the Commission establish a method for evaluating mitigation for impacts on environmental justice communities (*e.g.*, development projects in the local area)? If so, how should it mitigate to ensure the least disproportionate impact or eliminate the disproportionate burden on environmental justice communities? Would such mitigation be consistent with NGA section 7(e), which provides that "[t]he Commission shall have the power to attach to the issuance of the certificate and to the exercise of the rights granted thereunder such reasonable terms and conditions as the public convenience and necessity may require"? [30]

No comment.

E7. **Does the NGA, NEPA, or other federal statute set forth specific remedies for the Commission to implement based on factual findings of environmental justice metrics or defined impacts? Do these statutory remedies include rejection of a proposed project otherwise found to be needed to serve the public interest? Which other remedies are authorized by statute?**

No comment.