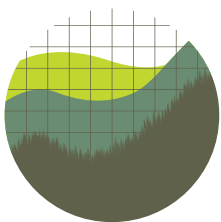




# Reforming Pipeline Review

*Taking a Closer Look at the Need for  
New Natural Gas Infrastructure*



Institute for  
Policy Integrity

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# I. Introduction

The Federal Energy Regulatory Commission (FERC) is responsible for approving the construction of new natural gas infrastructure, like interstate pipelines, under the Natural Gas Act (NGA). Because any new natural gas infrastructure built will continue to exist far beyond 2030 or even 2050, FERC's decisions today will be key in shaping the transition to a low carbon future.

In recognition of the central role it will play in the transition, the Commission recently reopened a Notice of Inquiry regarding its certification process for natural gas infrastructure—that is, its process for approving or rejecting proposals for new pipelines. This docket is a crucial opportunity for FERC to overhaul how it assesses whether natural gas projects are needed, and to craft a transparent and comprehensive process for determining whether a new pipeline is in the public interest. The docket also offers the Commission a chance to design a review process that will facilitate the development of the most efficient and cost-effective natural gas infrastructure, yielding an energy system that is both reliable and sustainable.

This report explores the Commission's authority under the NGA to consider a broad range of factors in evaluating applications for new natural gas infrastructure and assessing whether a proposed project is needed, beyond the precedent agreements (private contracts between pipeline developers and natural gas shippers) it currently relies upon. The Commission has broad discretion in deciding which factors to consider. Further, there is sufficient legal and economic justification to fundamentally reformulate how FERC evaluates the need for natural gas infrastructure. This report therefore recommends that a new Policy Statement direct the Commission to undertake a broader review that:

- (1) Incorporates a regional approach to decisionmaking that considers need on a regional basis—drawing on its decision to identify and consider regional solutions in the transmission context—to ensure more efficient and cost-effective natural gas infrastructure is developed, to avoid overbuilding, and to prevent unjust and unreasonable natural gas transportation services rates;
- (2) Integrates consideration of regional electric transmission planning to better coordinate infrastructure decisions on both sides of the energy system;
- (3) Accounts for climate-related transition risk, including the combination of a shift to a decarbonized resource mix and building electrification, and potential costs of stranded assets, at the time of certification as part of assessing whether a pipeline is needed; and
- (4) Considers climate impacts of new infrastructure, and monetizes climate damages, in determining whether a project is in the public interest.

Each of these recommendations is discussed in more detail below.

## II. FERC's Review of Natural Gas Infrastructure Under the Natural Gas Act

The NGA was enacted with the primary goal of “encourag[ing] the orderly development of plentiful supplies of . . . natural gas at reasonable prices.”<sup>1</sup> As part of that statutory scheme, FERC was granted authority to oversee the construction and operation of natural gas transportation infrastructure.<sup>2</sup> Under Section 7 of the NGA, the Commission is responsible for ensuring that interstate pipelines and related facilities are or will be required by the public convenience and necessity.<sup>3</sup> The Commission considers applications from developers and issues a certificate of public convenience and necessity for those projects that it determines are in the public interest.

The statute does not lay out the factors FERC should consider in evaluating certificates. In order to provide guidance on how it would evaluate project applications against the public convenience and necessity standard, in 1999, FERC issued its Certificate Policy Statement.<sup>4</sup> Under the Policy Statement, the Commission ostensibly “balance[es] the evidence of public benefits to be achieved against the residual adverse effect” of a proposal.<sup>5</sup> This balancing is generally a qualitative rather than quantitative assessment of whether “the public benefits to be achieved from the project can be found to outweigh the adverse effects.”<sup>6</sup>

While the Supreme Court has held that FERC must, under Section 7, “evaluate all factors bearing on the public interest” when making a determination of public convenience and necessity,<sup>7</sup> the Policy Statement emphasizes “economic” considerations.<sup>8</sup> Specifically, it requires the Commission to consider public economic benefits, including “meeting unserved demand, such as eliminating bottlenecks, providing access to new supplies, lowering costs to consumers, providing new interconnects that improve the interstate grid, providing competitive alternatives, or increasing electric reliability.”<sup>9</sup> It also provides three categories of adverse economic impacts FERC must consider: the “adverse effects the project might have on [1] the existing customers of the pipeline proposing the project, [2] existing pipelines in the market and their captive customers, or [3] landowners and communities affected by the route of the new pipeline.”<sup>10</sup> The Policy Statement also requires consideration of the proposed project’s environmental consequences, but these are assessed separately from its economic test.<sup>11</sup>

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<sup>1</sup> NAACP v. Fed. Power Comm’n, 425 U.S. 662, 670 (1976).

<sup>2</sup> 15 U.S.C. § 717f(a).

<sup>3</sup> *Id.* § 717f(e). For an in-depth discussion of the history of the Natural Gas Act and Section 7, see Romany Webb, *Climate Change, FERC, and Natural Gas Pipelines: The Legal Basis for Considering Greenhouse Gas Emissions Under Section 7 of the Natural Gas Act*, 28 N.Y.U. ENV’T L.J. 179, 188–98 (2020).

<sup>4</sup> Statement of Policy, *Certification of New Interstate Pipeline Facilities*, 88 FERC ¶ 61,227, at 7 (1999) [hereinafter 1999 Policy Statement].

<sup>5</sup> *Id.* at 19.

<sup>6</sup> *Id.*

<sup>7</sup> *Atl. Refin. Co. v. Pub. Serv. Comm’n of N.Y.*, 360 U.S. 378, 391 (1959). The policy statement also requires the Commission to examine “all relevant factors reflecting on the need for the project.” 1999 Policy Statement, *supra* note 4, at 23.

<sup>8</sup> 1999 Policy Statement, *supra* note 4, at 19 (“This is essentially an economic test.”).

<sup>9</sup> *Id.* at 25.

<sup>10</sup> *Id.* at 18.

<sup>11</sup> *Id.* at 27 (“The balancing of interests and benefits that will *precede* the environmental analysis will largely focus on economic interests . . .”) (emphasis added). The Commission also is required to consider environmental impacts under National Environmental Policy Act (NEPA). This report discusses how information gained under NEPA should be incorporated into the Commission’s assessment under the NGA, but does not focus on the Commission’s obligations under the statute. For more information on the Commission’s NEPA requirements, see JAYNI HEIN ET AL., INST. FOR POL’Y INTEGRITY, PIPELINE APPROVALS AND GREENHOUSE GAS EMISSIONS 33–34 (2019); Comments of



Although the Policy Statement could be read to set out a framework under which the Commission balances a broad range of factors, the Commission has in practice given only the barest of consideration to factors beyond precedent agreements—long-term capacity contracts between the pipeline and shippers or end users—in evaluating need and determining whether a project is required by the public convenience and necessity. Instead, the Commission relies heavily, if not exclusively, on evidence provided by private actors that a project is needed—that is the precedent agreements. It does not “second guess the business decisions” of pipeline developers and shippers,<sup>12</sup> but rather treats these agreements as “substantial—even sufficient—evidence of ‘need’ for that project.”<sup>13</sup> FERC views these binding contracts as “the best evidence that additional gas will be needed in the markets that [a] project intends to serve.”<sup>14</sup> The Commission has also concluded that such long-term contracts for firm capacity by private actors are better evidence of need than studies and long-term demand projections, which are inherently uncertain given the potential influence of “economic growth, the cost of natural gas, environmental regulations, and legislative and regulatory decision by the federal government and individual states.”<sup>15</sup> FERC also disclaims any authority to look at a broader regional market and evidence of market demand in assessing whether an individual project is needed. In rejecting arguments that it should broaden its review, FERC cursorily refers to its Policy Statement, past practice, and federal court opinions, justifying its decision to continue relying so heavily on precedent agreements.<sup>16</sup>

FERC has also declined to take on any role that would require it to engage in “planning the development of natural gas capacity.”<sup>17</sup> The Natural Gas Act prohibits the Commission from “compel[ling] the enlargement of transportation facilities for such purposes, or to compel such natural-gas company to establish physical connection or sell natural gas when to do so would impair its ability to render adequate service to its customers.”<sup>18</sup> This provision has been used to justify the Commission’s refusal to go beyond its ad hoc project-by-project approval process, and as a rationale for why FERC may not “direct the development of the gas industry’s infrastructure either on a broad regional basis or in the design of specific projects.”<sup>19</sup> Thus, FERC has emphasized that its role is simply to approve or reject projects as submitted, and to look narrowly at the individual project.<sup>20</sup>

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the Inst. for Pol’y Integrity at N.Y.U. School of Law, *Certification of New Interstate Natural Gas Facilities*, Docket No. PL18-1 (May 26, 2021); Joint Comments of Env’t Def. Fund et al., *Certification of New Interstate Natural Gas Facilities*, Docket No. PL18-1 (May 27, 2021) [hereinafter Joint 2021 NOI Comments].

<sup>12</sup> Brief for Respondent Fed. Energy Regul. Comm’n at 10, *Env’t Def. Fund v. Fed. Energy Regul. Comm’n*, 2 F.4th 953 (D.C. Cir. 2021) (citing *Spire STL Pipeline LLC*, 164 FERC ¶ 61,085, P 83 (2018)).

<sup>13</sup> *Id.* at 12.

<sup>14</sup> *Atlantic Coast Pipeline, LLC*, 161 FERC ¶ 61,042, P 55 (2017).

<sup>15</sup> *Adelphia Gateway, LLC*, 169 FERC ¶ 61,220, P 37 (2019).

<sup>16</sup> See, e.g., *Atlantic Coast Pipeline, LLC*, 161 FERC ¶ 61,042, P 56 (2017) (explaining the Policy Statement does not require it to look beyond precedent agreements and that it believes such contracts are the best evidence of need); *Mountain Valley Pipeline, LLC*, 161 FERC ¶ 61,043, P 42 (2017) (same); *Adelphia Gateway, LLC*, 169 FERC ¶ 61,220, P 37 (2019) (same); *Tenn. Gas Pipeline*, 158 FERC ¶ 61,110 (2017) (relying on Commission Policy to avoid a regional review of impacts); *Fla. Se. Connection, LLC*, 162 FERC ¶ 61,233, P 18 (2018) (relying on past practice to avoid a broader review). Courts have routinely deferred to the Commission on this issue. See, e.g., *Minisink Residents for Env’t Preservation & Safety v. Fed. Energy Regul. Comm’n*, 762 F.3d 97, 111 & n.10 (D.C. Cir. 2014); *Meyersville Citizens for a Rural Cmty., Inc. v. Fed. Energy Regul. Comm’n*, 783 F.3d 1301, 1310–15 (D.C. Cir. 2015).

<sup>17</sup> *Fla. Se. Connection, LLC*, 162 FERC ¶ 61,233, P 18 (2018) (“The Commission has not historically engaged in planning the development of natural gas capacity.”).

<sup>18</sup> 15 U.S.C. § 717f(a).

<sup>19</sup> *Tex. E. Transmission LP*, 146 FERC ¶ 61,086, P 46 (2014).

<sup>20</sup> See, e.g., *id.*

### III. The Law Allows for a Broader Review and a Different Role

While the Commission has routinely rejected calls for it to look beyond precedent agreements, nothing in the law prevents a more holistic approach to need. The NGA itself does not dictate how FERC should assess whether a project meets the public convenience and necessity standard. The statute certainly does not require the Commission to rely on firm capacity contracts as a proxy for need. Instead, the Commission has broad discretion to formulate its own methodology for assessing whether a project is needed.

The Commission has previously recognized its authority to consider more than just precedent agreements. In the past, the Commission sometimes engaged in proceedings in which it would evaluate and determine how much capacity would be needed in a given area, an undertaking it no longer shoulders.<sup>21</sup> And, while under the pre-1999 Policy Statement, the Commission could only approve projects with a certain level of contractual commitment,<sup>22</sup> the 1999 Policy Statement recognized that such contracts might not be the best or only evidence of need.<sup>23</sup> Even though the Commission currently might be applying the Policy Statement by continuing to heavily rely on precedent agreements, it has clearly articulated that it has the authority to look more broadly. The Policy Statement explained that FERC would assess “all relevant factors reflecting on the need for the project.”<sup>24</sup>

Relevant factors must have a nexus to the Commission’s mandate under the NGA.<sup>25</sup> The broader regional market in which pipelines operate, including studies on regional supply and demand, and an assessment of other issues, like the existence of regional transmission plans, transition risk and opportunity for new infrastructure, and climate change fit that standard; these factors bear on the Commission’s ability to ensure the orderly supply of natural gas resources, while minimizing adverse economic and environmental impacts.<sup>26</sup> FERC’s current approach can identify only the private benefits of a project and overlooks social costs and benefits generated by a project’s negative and positive externalities. By looking more broadly, however, the Commission can glean the project’s public benefits (and costs). This more comprehensive evaluation of need can, in turn, create the right regulatory and market incentives to develop more efficient and cost-effective projects that are truly needed.<sup>27</sup>

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<sup>21</sup> As discussed in comments from the Interstate Natural Gas Association of America (INGAA), FERC once conducted “Ashbacker” proceedings, in which FERC conducted hearings regarding the level of capacity needed in a region, and then chose between competing projects in granting applications. Comments of Interstate Nat. Gas Ass’n of Am. at 46–48, *Certification of New Interstate Natural Gas Facilities*, Docket No. PL18-1 (July 25, 2018) (citing *Boundary Gas Inc.*, 18 FERC ¶ 61,298 (1982), as one example). However, INGAA acknowledges that this is not necessarily the same as what is sought through a regional approach. Described below, *infra* Section IV.A., a regional approach does not demand lengthy hearings or direct choices between projects, but simply involves the Commission looking at a broader range of evidence and other market indicators beyond precedent agreements. As Public Interest Organizations made clear, FERC has significant experience with technically complicated proceedings. See Comments of Public Interest Organizations at 6–7, *Certification of New Interstate Natural Gas Facilities*, Docket No. PL18-1-000 (Oct. 26, 2018).

<sup>22</sup> 1999 Policy Statement, *supra* note 4, at 14–17.

<sup>23</sup> The Commission, while still allowing precedent agreements as evidence, explained that long-term firm contracts may not be sufficient for “establishing the public need for the project.” *Id.* at 17. The Commission further elaborated on several issues with reliance on these contracts, including that such reliance “does not test for all the public benefits that can be achieved by a proposed project”; “does not indicate need . . . because the industry has been moving to a practice of relying on short-term contracts, and pipeline capacity is often managed by an entity that is not the actual purchaser of the gas”; and “makes it difficult to articulate to landowners and community interests why their land must be used.” *Id.* at 16–17.

<sup>24</sup> *Id.* at 23.

<sup>25</sup> See Webb, *supra* note 3, at 196–98 (discussing court-interpreted constraints on FERC’s public interest review).

<sup>26</sup> See *id.* at 198 & n.93.

<sup>27</sup> The Commission need not do so in a way that makes it a centralized planning agency that compels specific facilities be built. Cf. Comments

## IV. Recommendations for Reform

The Commission can and should reform how it assesses the need for a project by considering the broader regional market and other indicators beyond precedent agreements. A holistic assessment of need requires introducing regional considerations and looking broadly at the market for natural gas and new infrastructure. It also requires (1) accounting for interactions with electric transmission, (2) looking at how the energy transition will affect markets and create potential for stranded assets, and (3) considering the climate impacts of new infrastructure. Expanding review in these ways will facilitate the development of more efficient and cost-effective projects, ensure just and reasonable rates, and support a reliable and sustainable energy system.

### A. Incorporate Broader Regional Considerations

Taking a more comprehensive approach to assessing need requires embracing a regional approach.<sup>28</sup> That is, rather than looking narrowly at whether a project is needed by a set of private actors, the Commission should look at how the project would benefit the region more generally. Such an approach could continue to include consideration of precedent agreements—such contracts can be relevant to determining need.<sup>29</sup> But projects do not occur in a vacuum; they are part of a broader regional market that should not be ignored. Therefore, when determining need, FERC should also consider current and future shifts in supply and demand within the relevant region; whether existing infrastructure could support that demand; whether non-gas or non-pipeline solutions may be more cost-effective means of meeting the demand; whether there are congestion constraints that could be alleviated with new capacity; whether there are regulatory changes that will alter demand; and any other aspects of the regional market that may be relevant. Accounting for these broader considerations will not require the Commission to engage in infrastructure planning. It will merely ensure that the Commission approves new infrastructure only when it is truly needed, and avoids inefficient overbuild of infrastructure assets.

#### a. *The Commission Has Recognized the Benefits of Regional Assessment and Decisionmaking in the Context of Electric Transmission and Should Do the Same in the Natural Gas Transportation Context*

The Commission has already recognized in the electricity transmission context that taking a regional approach to infrastructure decisionmaking can lead to approval of more “efficient and cost-effective” projects.<sup>30</sup> In Orders 890 and

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of the Chamber of Comm. of the U.S. of Am. at 11, *Certification of New Interstate Pipeline Facilitates*, Docket No. PL18-1-000 (May 26, 2021) (“While FERC can’t direct pipelines to construct particular facilities, it can create appropriate market incentives that may promote the proposal and construction of incrementally lesser-emitting facilities.”).

<sup>28</sup> Intervenor has increasingly raised similar arguments that even where precedent agreements exist, the broader regional market suggests a project is not needed. *E.g.*, *Atlantic Coast Pipeline, LLC*, 161 FERC ¶ 61,042 (2017) (arguing project was not justified based on future production or demand and that FERC should evaluate need on a region-wide basis); *Tenn. Gas Pipeline Co., L.L.C.*, 163 FERC ¶ 61,190 (2018) (arguing there is “ample infrastructure in place to accommodate even anticipated increases in shale gas production” and that the project will result in overbuild).

<sup>29</sup> However, Commenters and intervenors have also more specifically criticized the Commission’s practice of heavily (or exclusively) relying on *affiliate* agreements, particularly where a utility holding company sells capacity in a new pipeline to its affiliated regulated utility. *See, e.g.*, Initial Opening Brief of Petitioner Env’t Def. Fund, *Env’t Def. Fund v. Fed. Energy Regul. Comm’n*, 2 F.4th 953 (D.C. Cir. 2021) (challenging FERC’s reliance on a precedent agreement between a utility with captive end-use customers and an affiliate, and the Commission’s refusal to “look behind” the agreement to determine whether it represented legitimate need).

<sup>30</sup> *Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities*, Order No. 1000, 136 FERC ¶ 61,051, P 6 (2011) [hereinafter Order No. 1000].



1000, FERC recognized the broad benefits of regional coordination and planning for electric transmission infrastructure decisionmaking.<sup>31</sup> In Order 1000, FERC concluded reform was necessary to remedy the lack of a regional transmission planning process and to ensure that rates for FERC-jurisdictional services were “just and reasonable in light of changing conditions in the industry.”<sup>32</sup> The Commission found that addressing issues like the “narrow focus of current planning requirements” was necessary to ensure just and reasonable rates because the current process “fail[ed] to promote the more efficient and cost-effective development of new transmission facilities.”<sup>33</sup> The reforms were “intended to correct deficiencies in the transmission planning and cost allocation processes so that the transmission grid [could] better support wholesale power markets” and thus ensure just and reasonable rates.<sup>34</sup> The Commission therefore required transmission planners to take “affirmative steps to identify potential solutions at the regional level that could better meet the needs of the region.”<sup>35</sup> As a result, decisionmakers now undertake congestion risk assessments, demand projections, and other economic studies to determine which projects are necessary to build a reliable grid.<sup>36</sup>

The Commission’s regional approach to transmission stands in stark contrast to the ad hoc, project-by-project approach the Commission currently uses for decisionmaking in the natural gas infrastructure context. In the natural gas context, FERC relies solely on the evidence of need provided by private parties; it does not conduct market assessments or other analysis equivalent to the reliability and economic studies done in the transmission context to understand the broader market. Yet, the underlying reasoning from Orders 890 and 1000 is also applicable to natural gas infrastructure. Just as regional assessment can provide efficiency benefits for transmission infrastructure, a regional approach to natural gas infrastructure could likewise ensure that more efficient and cost-effective projects are built, and that existing capacity is utilized efficiently. The natural gas industry is changing, just as the electricity industry is. The Commission’s current requirements for new natural gas infrastructure are not promoting the orderly development of natural gas supply or the efficient and cost-effective development of gas transportation infrastructure. And FERC can remedy these deficiencies in part through a regional approach to the need assessment.<sup>37</sup>

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<sup>31</sup> *Preventing Undue Discrimination and Preference in Transmission Service*, Order No. 890, 118 FERC ¶ 61,119, P 524 (2007) (emphasizing that regional transmission planning would “increase efficiency through the coordination of transmission upgrades that have region-wide benefits, as opposed to pursuing transmission expansion on a piecemeal basis”); see also Order No. 1000, *supra* note 30, at P 4 (finding regional planning would aid transmission providers in producing a plan “that can meet transmission needs more efficiently and cost-effectively”).

<sup>32</sup> Order No. 1000, *supra* note 30, at P 1; see also *id.* at P 78. FERC’s conclusion that regional planning was necessary as a remedy under Section 206 was upheld by the D.C. Circuit in *South Carolina Public Service Authority v. Federal Energy Regulatory Commission*, 762 F.3d 41 (D.C. Cir. 2014).

The electric transmission system is a useful counterexample because the two infrastructure systems have many technical similarities, but also because the Federal Power Act (FPA) and the Natural Gas Act were explicitly written to mirror each other, with nearly identical provisions and granting similar authority to the Commission, and have been interpreted in the same way by the Courts. Provisions of the FPA and NGA are routinely compared and actions by the Commission under one Act are routinely applied as precedent for actions under the other.

<sup>33</sup> Order No. 1000, *supra* note 30, at P 52.

<sup>34</sup> *Id.* at P 99.

<sup>35</sup> *Id.* at P 40.

<sup>36</sup> See, e.g., N.Y. INDEP. SYS. OPERATOR, 2019 CARIS REPORT: CONGESTION ASSESSMENT AND RESOURCE INTEGRATION STUDY (2020), <https://perma.cc/3KME-93UM>.

<sup>37</sup> While some commenters in response to the Notice of Inquiry suggested that the electric sector is sufficiently different to “render the [electric sector] approach inapplicable.” See Supplemental Comments of the Am. Gas Ass’n at 27, *Certification of New Interstate Pipeline Facilities*, Docket No. PL18-1-000 (May 26, 2021). Yet the vague differences cursorily mentioned do not undermine the conclusions of the transmission orders that a regional approach facilitates consideration of more efficient and cost-effective infrastructure solutions. The natural gas industry does need to be “shoehorn[ed]” into the electric model, *id.*, but the Commission can take its conclusions in the electric context regarding just and reasonable practices and apply them in reforming its natural gas policy and methodology for evaluating whether to approve a project.

## b. *Regional Assessment Serves the NGA's Statutory Purposes*

The Commission's duty to further the public interest must be understood in light of the purposes for which the NGA was enacted.<sup>38</sup> Two primary purposes are protecting consumers against excessive prices and (relatedly) "promot[ing] the orderly production" of natural gas supplies.<sup>39</sup> These overarching goals are reflected in Section 7's requirement that FERC certify only projects that are in the public interest. But the Commission cannot ensure such *orderly* development if it continues to assess need on a project-by-project basis and does not more broadly consider need with a regional perspective. Orderly development should be understood to focus development where natural gas capacity is insufficient to meet current or future demand over the life of the pipeline, and to reject projects where there is no true need. It should also protect customers from shouldering the cost of pipelines that provide little or no benefit in return.<sup>40</sup> The Commission should give serious consideration to the concern that, in at least some regions,<sup>41</sup> its ad hoc certification process and reliance on precedent agreements is encouraging *disorderly* (that is, inefficient) development in the natural gas sector that will unjustly raise consumer costs.

The Commission's consistent refusal to consider data and analysis regarding, for example, future demand projections; comparisons with existing capacity; or production estimates hinders a holistic analysis of whether new infrastructure is needed and in the public interest. Failing to consider these important aspects can lead to duplicative or unnecessary projects in regions where future projections suggest that, due to changes in natural gas flows and demand or state policies, assets will (potentially quickly) become stranded.<sup>42</sup> Approving such projects would lead to unnecessary costs and would place the risk on customers for any stranded assets.<sup>43</sup>

However, the regional perspective would allow the Commission to better integrate this information on market conditions and supply and demand trends into its assessment of need. Using this paradigm, FERC can account for potential changes in natural gas flows,<sup>44</sup> including those due to changes in state and federal climate and energy policies, preventing projects that might be left underutilized or stranded. Regional consideration can also help ensure that where existing infrastructure or non-pipeline solutions can be efficient and cost-effective alternatives, new infrastructure is not

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<sup>38</sup> *NAACP v. Fed. Power Comm'n*, 425 U.S. 662, 669–70 (1976).

<sup>39</sup> *Id.* at 670 n.5 (citing consumer protection language in support of the purpose of orderly development); *Fed. Power Comm'n v. Hope Nat. Gas Co.*, 320 U.S. 591 (1944).

<sup>40</sup> See, e.g., Comments of Public Interest Organizations at 35–40, 41, *Certification of New Interstate Natural Gas Facilities*, Docket No. PL18-1-000 (July 25, 2018).

<sup>41</sup> See, e.g., Allison Good, *Texas Pipeline Overbuild Loom as Companies Rush to Add Permian Infrastructure*, S&P GLOBAL (Mar. 11, 2019), <https://perma.cc/2WXM-3CQK> (discussing overbuild concerns in Texas); *Enterprise Abandons Texas Pipeline Projects as Oil Prices Remain Weak*, REUTERS (Sept. 9, 2020), <https://perma.cc/9NRA-CRCL> (same); Gillian Neimark, *Advocates: Ratepayers Will Be on the Hook for Unnecessary Pipelines*, ENERGY NEWS NETWORK (Nov. 14, 2016), <https://perma.cc/JA6E-CH86> (discussing overbuild concerns in the southeast and mid-Atlantic).

<sup>42</sup> *Accord* Transcript of Technical Video Conference at 45–46, *Greenhouse Gas Mitigation: Natural Gas Act Sections 3 and 7 Authorizations*, Docket No. PL21-3 (Nov. 19, 2021) [hereinafter *Mitigation Technical Conference Transcript*] (Statement of Susan Tierney, Ph.D., Sr. Advisor, Analysis Grp.) ("So I question whether it would be orderly in the public interest review to not take into account the fact that there could be stranded costs associated with new pipelines that are authorized by the Commission in the context of say delivers [sic] into a state where that state has a statutory requirement to reduce its greenhouse gas emissions over time. So it would not be orderly to authorize.").

<sup>43</sup> See *National Fuel Gas Supply Corp.*, 158 FERC ¶ 61,145 (2017) (Bay, Comm'r, separate statement) ("Pipelines are capital intensive and long-lived assets. It is inefficient to build pipelines that may not be needed over the long term and that become stranded assets. Overbuilding may subject ratepayers to increased costs of shipping gas on legacy systems.").

<sup>44</sup> See generally Felipe Feijoo et al., *The Future of Natural Gas Infrastructure Development in the United States*, 228 APPLIED ENERGY (2018), <https://perma.cc/CS3U-ZJMQ>; see also *Nat'l Fuel Gas Supply Corp.*, 158 FERC ¶ 61,145 (2017) (Bay, Comm'r, separate statement) ("Adding to the uncertainty, there is fluidity in where gas is being produced in the United States. . . . Major new production areas are being discovered that may impact gas flows on existing and proposed pipelines.").

approved.<sup>45</sup> A regional approach could demonstrate that existing pipeline capacity is currently underutilized or that utilization rates will drop significantly under a low-demand future scenario, and so it would be more efficient to find ways to better use existing infrastructure.<sup>46</sup> Such an approach might also suggest that investment alternatives beside additional pipeline capacity, including non-gas generation or transmission alternatives, might yield similar benefits at lower costs.<sup>47</sup>

Without assessing need from a regional perspective, FERC might not be able to accurately determine whether the project would contribute to regional overbuild or underutilization. As with transmission, a regional approach could allow FERC to identify and consider whether there are alternative solutions that have regionwide benefits and necessitate rejection of a proposal, and thus to fulfill its duty to promote orderly development of resources, consistent with the goals of the NGA.<sup>48</sup>

### ***c. Regional Assessment Protects Ratepayers from Unjust and Unreasonable Costs***

The NGA obligates the Commission to ensure that practices affecting rates are just and reasonable, and not unduly discriminatory or preferential.<sup>49</sup> Today, the regulatory structure for natural gas capacity increases with the level of capital investment in natural gas facilities and equipment.<sup>50</sup> This type of regulation incentivizes pipeline companies to increase their capital investment by building new infrastructure so that they have a larger source of revenue and potential profits, rather than utilizing existing pipelines and facilities in the region, to meet demand.<sup>51</sup> This incentive structure may serve to inefficiently increase capital investment, and thereby inefficiently, and unjustly and unreasonable, increase rates paid by customers.

FERC's current approach to assessing need, which fails to take a regional approach and instead relies on private contracts, exacerbates this problem. Project developers make investment decisions based on private interests and not with an eye toward how a project can meet regional need in the most efficient and cost-effective manner. In combination with the regulatory structure described above, this need assessment incentivizes overbuilding capital-intensive new infrastruc-

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<sup>45</sup> See, e.g., Comments of Env't Def. Fund at 14–21, *Certification of New Interstate Pipeline Facilitates*, Docket No. PL18-1-000 (July 25, 2018) [hereinafter EDF 2018 NOI Comments] (arguing that while the Northeast faces congestion, solving seasonal constraints with a pipeline solution, as compared to other alternatives, would result in significant ratepayer costs, and that additional point-to-point throughput capacity may not be the best solution to the problems in the New England market); cf. JONATHAN PERESS & NATALIE KARAS, ENV'T DEF. FUND, *ALIGNING NATURAL GAS AND ELECTRICITY MARKETS TO REDUCE COSTS, ENHANCE MARKET EFFICIENCY AND RELIABILITY* 6 (2017) [hereinafter EDF ALIGNING MARKETS REPORT] (“Long-term contracts for pipeline capacity which is unneeded from a market rationale standpoint is a prescription for uneconomic fossil fuel lock in and stranded costs being imposed on energy consumers paying for excess capacity.”).

<sup>46</sup> Feijoo et al., *supra* note 44, at 154 (concluding that some regions may see pipeline capacity utilization drop to 7% by 2050).

<sup>47</sup> Andrew Kleit et al., *Weather or Not? Welfare Impacts of Natural Gas Pipeline Expansion in the Northeastern U.S.*, 10 ENERGY SYS. 593, 613 (2019) (citing BENT ET AL., *JOINT EXPANSION PLANNING FOR NATURAL GAS AND ELECTRIC TRANSMISSION WITH ENDOGENOUS MARKET FEEDBACKS* (2018), <https://perma.cc/F6G7-RUQ7>).

<sup>48</sup> *Id.* (“[O]ur work supports a more comprehensive approach for natural gas transmission system planning that considers pipeline expansions with other technology alternatives, similar to what the Federal Energy Regulatory Commission has required for electric power transmission under Order 1000.”).

<sup>49</sup> 15 U.S.C. § 717d(a).

<sup>50</sup> For a detailed overview of how FERC-jurisdictional natural gas transportation services are compensated, see KRISTINA MOHLIN, ENV'T DEF. FUND, *THE U.S. GAS PIPELINE TRANSPORTATION MARKET: AN INTRODUCTION GUIDE WITH RESEARCH QUESTIONS FOR THE ENERGY TRANSITION* (2021).

<sup>51</sup> This is a well-established problem of cost-of-service regulation, known as the “Averch-Johnson effect.” See Harvey Averch & Leland L. Johnson, *Behavior of the Firm Under Regulatory Constraint*, 52 AM. ECON. REV. 1052 (1962). Because a project developer's profits are directly proportional to incurred capital investment, the project developer has a direct incentive to incur excessive capital costs. When deciding among alternative investments, therefore, the developer has a bias towards capital-based solutions.

ture, even where regional demand projections or other evidence suggest existing capacity would be sufficient and better serve the public interest.<sup>52</sup>

The Commission's policy encourages development of new infrastructure regardless of need, rather than potentially more efficient and cost-effective use of existing, underutilized infrastructure. Thus, by potentially causing overbuild in a region, the failure to consider regional need inefficiently increases consumer costs. Inefficient and uneconomic increases in capital investment, and hence consumer costs, from the failure to take a regional perspective may render the rate charged unjust and unreasonable. In line with the Commission's determinations in its transmission orders,<sup>53</sup> FERC should remedy this failure to take a regional perspective in order to protect ratepayers from unjust and unreasonable rates.<sup>54</sup>

#### *d. A Regional Approach Yields Climate Benefits*

While the primary purpose of the NGA is to ensure orderly development at just and reasonable rates, the Supreme Court has recognized other "subsidiary purposes," including the Commission's authority to consider environmental questions.<sup>55</sup> The D.C. Circuit has likewise recognized that FERC's "section 7 duty to consider the public interest is broader than promoting a plentiful supply of cheap gas, as important as that policy may be."<sup>56</sup> The Commission has even previously considered environmental benefits, like cleaner air, in pipeline certifications.<sup>57</sup> In addition to ensuring the orderly development of natural gas supplies and the approval of more efficient and cost-effective infrastructure in a way that protects customers from unreasonable rates, a regional approach would yield climate benefits.

A regional paradigm does not require rejecting all new natural gas infrastructure; there may be regions that have insufficient capacity to meet demand and thus require new infrastructure.<sup>58</sup> Rather, it demands that FERC account for the public costs and benefits of pipelines so that only infrastructure that is truly needed to meet energy needs and to maintain reliability. A regional approach would require the Commission to take stock of existing infrastructure and ensure that capacity is not being underutilized or wasted before authorizing new hardware that could lock-in fossil-fuel use for decades.<sup>59</sup> The Commission must assess pipelines in manner that looks at the market as a whole, at a regional level, to best

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<sup>52</sup> Notably, Environmental Defense Fund has explained that the misalignment between natural gas market design and how natural gas-fired power plants (the largest customers) purchase fuel creates insufficient economic signals for investment in infrastructure. EDF ALIGNING MARKETS REPORT, *supra* note 45, at 5 ("Because the market design expressly values and prices ratable inflexible pipeline capacity rather than just-in-time fuel delivery in the fluctuating volumes used by power plants, the market does not provide an economic signal that efficiently channels investment for new infrastructure to provide varying no-ratable flows. Put another way, without a market that prices and values sub-day variable fuel supply as used by electric generators, there is not an economic signal indicating where and how much new delivery capacity is needed, and more importantly, the parameters for economically rational investment in new pipelines and/or alternatives to pipelines.") (emphasis added). This suggests that reliance on private contracts to establish need may be inadequate.

<sup>53</sup> Order No. 1000, *supra* note 30, at P 52 ("We conclude that the narrow focus of current planning requirements and shortcomings of current cost allocation practices create an environment that fails to promote the more efficient and cost-effective development of new transmission facilities, and that addressing these issues is necessary to ensure just and reasonable rates."); *see also* S.C. Pub. Serv. Auth. v. Fed. Energy Regul. Comm'n, 762 F.3d 41, 56 (D.C. Cir. 2014) (explaining that in Order No. 1000, the Commission concluded that failing to participate in a regional process was having a "direct and discernable affect [sic] on rates" and thus was a practice that needed to be remedied).

<sup>54</sup> Order No. 1000, *supra* note 30, at P 52.

<sup>55</sup> NAACP v. Fed. Power Comm'n, 425 U.S. 662, 670 & n.6 (1976).

<sup>56</sup> Fla. Gas Transmission Co. v. Fed. Energy Regul. Comm'n, 604 F.3d 636, 650 (D.C. Cir. 2010).

<sup>57</sup> *See* Fed. Power Comm'n v. Transcon. Gas Pipe Line Corp., 365 U.S. 1, 30–31 (1961).

<sup>58</sup> Feijoo et al., *supra* note 44, at 154.

<sup>59</sup> New natural gas infrastructure, while having the potential to offset more carbon-intensive sources in the near term, has the ability to lock-in carbon emissions in the longer term, ultimately leading to increased emissions. *See, e.g.,* Sam Kalen & Shi-Ling Hsu, *Natural Gas Infrastructure: Locking in Emissions*, 34 NAT. RES. & ENV'T 3 (2020) ("But once built, the existence of a pipeline will distort power plant fuel choices as long as the pipeline is operational, creating a fossil fuel bias for decades. Once a pipeline is in place, the marginal costs of using natural gas



understand whether a project would serve the public interest. By certifying only those pipelines that are truly needed, it can produce climate benefits.

## B. Integrate Electricity Transmission Planning Considerations

The Commission should also integrate electric transmission planning considerations into its natural gas certification process. Today, FERC addresses these two sides of the energy system completely separately. However, natural gas and electric systems are interdependent. And, as the energy system evolves with changing generation mix and electrification (and the increased reliance on natural-gas-fired generators for power production), the interdependence between the electric and natural gas industries will continue to grow.<sup>60</sup> Thus, integrating decisionmaking to build a more coordinated energy infrastructure system is necessary to ensure a cost-effective and efficient energy system. Expansion co-planning could lower both investment and operation costs of coordinated electricity and natural gas networks,<sup>61</sup> and could play an important role in reducing carbon emissions<sup>62</sup> and enhancing resilience.<sup>63</sup>

While FERC might not fully co-optimize the gas and electric transmission networks,<sup>64</sup> even if this would provide the least-cost approach to meeting energy demand, it can still take steps to better integrate the two systems. One step would be, as part of a regional approach, to ensure fulsome consideration of current and future transmission infrastructure in assessing whether a project is needed. This assessment can be done without FERC becoming a central planner that mandates which facilities should be built and where. Rather, the Commission should consider whether transmission

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are relatively small, given its abundance, which could lock in pipeline use well beyond the payback period. And once a pipeline is constructed at great expense, an economic commitment counsels using the pipeline and quite possibly shielding it from interference with continued operation. This natural gas lock-in is problematic because the greater the expansion of natural gas pipelines, the greater and longer the lock-in.”); Gregory C. Unruh, *Understanding Carbon Lock-In*, 28 ENERGY POL’Y 817 (2000) (cited by Andrew R. Waxman et al., *Emissions in the Stream: Estimating the Greenhouse Gas Impacts of an Oil and Gas Boom*, ENV’T RSCH. LETTERS, Jan. 2020, at 1, 2 (“Because of the path dependency of industrial development and high adjustment costs of fuel switching, further transition toward oil and gas may mean larger future use of fossil fuels relative to renewables.”)).

<sup>60</sup> See, e.g., Russell Bent et al., *Joint Electricity and Natural Gas Transmission Planning with Endogenous Market Feedbacks*, 33 IEEE TRANSACTIONS POWER SYS. 6397, 6397(2018); Antonio J. Conejo et al., *Operations and Long Term Expansion Planning of Natural Gas and Power Systems: A Market Perspective*, 108 PROC. IEEE 1541, 1541–42 (2020); Santiago Lemos-Cano & James McCalley, *Co-Optimized Analysis and Design of Electric and Natural Gas Infrastructures*, ENERGIES, May 2019.

<sup>61</sup> See, e.g., Shahab Karamdel & Mohsen Parsa Moghaddam, *Robust Expansion Co-Planning of Electricity and Natural Gas Infrastructure for Multi Energy-Hub Systems with High Penetration of Renewable Energy Sources*, 13 IET RENEW POWER GENERATION 2287, 2288 (2019) (citing Jing Qiu et al. *A Linear Programming Approach to Expansion Co-Planning in Gas and Electricity Markets*, 31 IEEE TRANSACTIONS POWER SYS. 3594 (2016), and then citing Xiaping Zhang et al., *Reliability-Based Optimal Planning of Electricity and Natural Gas Interconnections for Multiple Energy Hubs*, 8 IEEE TRANSACTIONS SMART GRID 1658 (2017)).

<sup>62</sup> *Id.* (citing Jing Qiu et al., *Low Carbon Oriented Expansion Planning of Integrated Gas and Power Systems*, 30 IEEE TRANSACTIONS POWER SYS. 1035 (2015), and then citing Yasaman Mozafari et al., *Integrated Electricity Generation, CHPs, and Boilers Expansion Planning: Alberta Case Study*, 2015 IEEE POWER & ENERGY SOCIETY GENERAL MEETING).

<sup>63</sup> See Chengcheng Shao et al., *Integrated Planning of Electricity and Natural Gas Transportation Systems for Enhancing the Power Grid Resilience*, 32 IEEE TRANSACTIONS POWER SYS. 4418 (2017).

<sup>64</sup> Using a co-optimizing tool that considers all options, including how transmission or pipeline expansion may be substitutes, can provide more efficient and sustainable expansion solutions, compared to a decoupled approach that looks at transmission planning and pipeline expansion separately. Venkat Krishnan et al., *Co-Optimization of Electricity Transmission and Generation Resources for Planning and Policy Analysis: Review of Concepts and Modeling Approaches*, 7 ENERGY SYS. 297, 314 & fig.3 (2015). Several models have been developed to integrate or coordinate natural gas transportation and electric transmission capacity expansion, including ones that rely on open source tools. MOHLIN, *supra* note 50, at 31–32 (describing various models and platforms that allow planners to “analyze the relevant interactions and interdependencies between the sectors,” including National Energy Modeling System; the simultaneous steady-state natural gas and electric power optimization framework from Los Alamos National Laboratory; a market module being developed to pair with Switch 2.0; a cooperation platform that pairs the PLEXOS model for electricity with the SAIInt simulation model of natural gas flows; and several others).



planning entities have developed a plan and selected new infrastructure projects that will provide the proposed pipeline's consuming region with sufficient new energy generation, such that new gas capacity will be rendered unneeded.

Importantly, whether a new pipeline will be needed may depend on the competition from the diverse resources that new transmission infrastructure will allow to enter the market. New transmission infrastructure might also make electrification more feasible, allowing natural gas for home heating needs to decline. And, more electric transmission may lessen the need for natural gas capacity to maintain reliability.<sup>65</sup> Thus, the Commission should run demand scenarios to account for electricity deliverability considering both current infrastructure and planned network expansions.

Accounting for current and future electric transmission expansion can provide the Commission with a better understanding of true energy and reliability needs of the region of a new infrastructure project. As the two sides of the energy sector continue to become more interdependent, this understanding will be critical to assessing the need for new infrastructure and whether a proposed project will be in the public interest. More holistic consideration of energy transportation will facilitate the Commission's ability to ensure reliable, least-cost energy delivery.

## C. Account for Transition Risk and the Potential for Stranded Assets

The Commission's broader review should take into account how a variety of risk factors that can influence supply and demand, including climate-related risks and opportunities. Climate-related transition risk is a category of potential costs that can be incurred due to actions society takes in response to the physical effects of climate change, such as the adoption of new legal limits on greenhouse gas emissions, the development and adoption of new-climate friendly technologies, or an increase in private demand for sustainable products.<sup>66</sup> The federal government, states, and localities are moving forward with action to combat climate change, which will lead to underutilized or stranded natural gas assets, the costs of which may inevitably be borne by ratepayers. There may also be potential climate-related transition opportunities for entities focused on climate change mitigation or adaptation solutions, including modifications of assets for transportation of other kinds of fuels.<sup>67</sup>

The Commission must begin preparing for the foreseeable transition and review climate-related regulatory and market risk for natural gas infrastructure projects in determining whether a project is in the public interest. The likelihood that a new natural gas infrastructure project will end up a stranded asset, and the magnitude and incidence of the resulting costs should be examined before the project is approved and large-scale capital investment has been made. Considering transition risk facilitates FERC's statutory mandates to ensure orderly supplies of natural gas and to protect consumers.<sup>68</sup>

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<sup>65</sup> See, e.g., JOHANNES PFEIFENBERGER ET AL., THE VALUE OF DIVERSIFYING UNCERTAIN RENEWABLE GENERATION THROUGH THE TRANSMISSION SYSTEM (2020); MICHAEL GOGGIN, GRID STRATEGIES, TRANSMISSION MAKES THE POWER SYSTEM RESILIENT TO EXTREME WEATHER 6 (2021) ("Many recent studies show that interregional transmission lines like those discussed in this paper become increasingly essential as wind and solar penetrations increase in different parts of the country. Just as these lines aggregate diverse sources of electricity supply and demand to balance out localized disruptions during extreme weather, they provide a similar value by canceling out local fluctuations in wind or solar output.").

<sup>66</sup> Madison Condon et al., *Mandating Disclosure of Climate-Related Financial Risk*, 24 N.Y.U. J. LEG. & PUB. POL'Y (forthcoming 2022) (manuscript at 6).

<sup>67</sup> TASK FORCE ON CLIMATE-RELATED FIN. DISCLOSURES, FINAL REPORT: RECOMMENDATIONS OF THE TASK FORCE ON CLIMATE-RELATED FIN. DISCLOSURES 6 (2017), <https://perma.cc/QR9J-3636> ("Efforts to mitigate and adapt to climate change also produce opportunities for organizations, for example, through resource efficiency and cost savings, the adoption of low-emission energy sources, the development of new products and services, access to new markets, and building resilience along the supply chain.").

<sup>68</sup> Such action would also be in line with President Biden's mandate in Executive Order No. 14,008, directing all federal agencies to "drive assessment, disclosure and mitigation of . . . climate-related risks." Exec. Order No. 14,008, § 201, 86 Fed. Reg. 7619, 7622 (Jan. 27, 2021).

This issue is particularly salient given the Commission’s current reliance on precedent agreements in approving natural gas infrastructure. These agreements address only how assets will be paid for during the first twenty years of the asset’s economic useful life.<sup>69</sup> After these initial agreements expire, if demand has not materialized then ratepayers could become responsible for the costs associated with these assets that may not have been needed in the first place. The economic useful life of pipelines is currently assumed to be 35 years; however, many applications propose a longer life, between 40 and 60 years.<sup>70</sup> If demand does not materialize and contracts cannot be renewed for the latter part of a project’s useful life, the developer will be unable to recoup its cost and may need to accelerate repayment from ratepayers. Additionally, some of these precedent agreements may not even remain in effect for the specified 20 years due to state and local regulation requiring contracts to be modified or terminated before their end-date because the purchaser is unable to use the supply due to climate and clean energy mandates.

**a. *The Commission Has Considered Transition Risk in the Electric Transmission Context***

The Commission has previously recognized the benefits of considering how regulatory priorities can affect infrastructure need in the transmission context. In Order 1000, just as it saw the benefits of a regional approach, FERC determined that identifying public policy-driven need and potential solutions to meeting that need is necessary to ensure that rates for FERC-jurisdictional services are just and reasonable.<sup>71</sup> Thus, the Commission concluded that failing to consider public policy drivers was a problem that needed to be remedied to protect against unjust and unreasonable rates and practices.<sup>72</sup>

Order 1000 was a recognition that state law and regulation could drive infrastructure needs and create risks and opportunities for developers. The Commission should view public policies the same way for natural gas infrastructure. Under current practice, FERC does not consider how climate and energy policies will affect natural gas transportation needs, yet they will have a direct and substantial impact on whether and where new pipeline infrastructure can be built, and how long those assets will be useable. Taking public policies into account in assessing need can help developers and the Commission understand how climate policies will drive the need for infrastructure, potentially by reducing demand or altering flows,<sup>73</sup> and ensure that the risk to long-term gas infrastructure that those policies pose is identified and evaluated. Such a policy can then lead to approval of projects that would “facilitate more efficient and cost-effective achievement of these requirements.”<sup>74</sup>

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<sup>69</sup> See Emily Hammond & Jim Rossi, *Stranded Costs and Grid Decarbonization*, 82 BROOK. L. REV. 645 (2017).

This issue is already beginning to take shape. Last year, Corning Gas filed tariff revisions seeking to accelerate the depreciation life of its infrastructure “because the [Climate Leadership and Community Protection Act] will shorten the effective life of the Company’s existing and future investment in infrastructure.” N.Y. Pub. Serv. Comm’n, Order Establishing Rates and Rate Plan, *Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of Corning Natural Gas Corporation for Gas Service*, Case 20-G-0101, at 27 (May 19, 2021). While the New York Public Service Commission rejected the request, Corning sought more than a \$3 million increase in revenue requirement, seeking to have consumers pay more now to ensure that it could recoup the full cost of its investments before they were stranded. *Id.*

<sup>70</sup> See EDF 2018 NOI Comments, *supra* note 45, at 26 (cataloguing applicant depreciable life assumptions).

<sup>71</sup> Order No. 1000, *supra* note 30, at P 83 (“[A] prudent transmission provider will not only plan to maintain reliability and consider whether transmission upgrades or other investments can reduce overall costs . . . , but also consider how to plan for transmission needs driven by Public Policy Requirements.”).

<sup>72</sup> *Id.* at PP 82, 112.

<sup>73</sup> See *infra* Section IV.C.b.

<sup>74</sup> Order No. 1000, *supra* note 30, at P 83.

## b. *Decarbonization and Electrification Pose Climate-Related Transition Risk for Natural Gas Infrastructure*

Decarbonization and electrification will together diminish demand for natural gas significantly by reducing or eliminating the two major end-uses of natural gas.<sup>75</sup> Decarbonization policies that dictate a low- or no-carbon resource mix, and technological and market changes will reduce natural gas demand from natural-gas-fired power plants—the largest consumers of natural gas—thereby reducing the need for natural gas transportation. Renewables and advanced technologies, which are becoming more cost competitive, will replace large portions of natural gas plants as the resource mix shifts in response to climate policy and technological improvements.<sup>76</sup> States have a variety of requirements for their resource mixes, which seek to increase investment in renewables and advanced technologies and phase out natural-gas-fired power plants.<sup>77</sup> While natural gas infrastructure may continue to be needed to supply power plants in the near term, the energy transition may render new (and existing) assets stranded before the end of their assumed economic life.

Electrification will also reduce demand for heating from residential, commercial, and industrial buildings,<sup>78</sup> reducing the total demand for natural gas, even as it shifts consumption to the power sector.<sup>79</sup> As laws requiring electrification become more common,<sup>80</sup> regulators should consider the risk that demand for new infrastructure will not materialize due to increasing electrification, again rendering transportation assets underutilized or stranded. Continuing the natural gas infrastructure build-out without consideration of electrification, and the associated transition risk, will lead to inefficiently high consumer costs.<sup>81</sup>

Beyond reducing demand, these policy and market-driven trends could also change the locations in which demand is heaviest.<sup>82</sup> This redistribution of gas demand could, in turn, leave gas transportation infrastructure stranded.<sup>83</sup> Accord-

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<sup>75</sup> These uses represent around three quarters of natural gas consumption, making it unlikely that increases in demand in other sectors, like non-heating consumption in the industrial sector or the transportation sector (which is also electrifying) could make up for reductions.

<sup>76</sup> RMI also projects that nearly 85% of natural gas will be replaceable by clean energy projects by 2035. MARK DYSON ET AL., RMI, PROSPECTS FOR GAS PIPELINES IN THE ERA OF CLEAN ENERGY: HOW CLEAN ENERGY PORTFOLIOS ARE REDUCING US POWER SECTOR DEMAND FOR NATURAL GAS AND CREATING STRANDED ASSET RISKS FOR GAS PIPELINES (2019).

<sup>77</sup> See, e.g., Climate Leadership and Community Protection Act, N.Y. Statutes, Chapter 106 of the laws of 2019 (July 18, 2019) (New York law requiring electricity demand be served by 100% zero-emission resources); see also Condon et al., *supra* note 66, at 6–7 (“At the state level, twenty-nine states and the District of Columbia have established target dates by which electric utilities must provide a set proportion of electricity from renewable or clean energy sources. The prevalence and aggressiveness of these targets has increased in recent years, and 15 states now aim to achieve 100% clean or renewable energy by 2050 or earlier.” (internal footnotes omitted)). Researchers at the University of California Berkeley found that a 90% clean grid is possible, dependable and affordable, with natural gas representing only 10% of annual generation, “70% lower than their generation in 2019.” AMOL PHADKE ET AL., U. CAL. BERKELEY, 2035: THE REPORT 4 (2020).

<sup>78</sup> See SHERRI BILLIMORIA ET AL., RMI, THE ECONOMICS OF ELECTRIFYING BUILDINGS (2018) (finding that building electrification will result in a net decline in natural gas, even where all electricity for heat pumps is generated by gas-fired power plants).

<sup>79</sup> Additionally, research has demonstrated that while electrification might shift consumption and emissions from demand sectors to the power sector, there will still be “energy system-wide reductions in both” because electrified end-use technologies are more energy efficient. CAITLIN MURPHY ET AL., NAT’L RENEWABLE ENERGY LAB’Y, ELECTRIFICATION FUTURES STUDY: SCENARIOS OF POWER SYSTEM EVOLUTION AND INFRASTRUCTURE DEVELOPMENT FOR THE UNITED STATES xii (2021), <https://perma.cc/D9R7-LUF9>.

<sup>80</sup> See Talor Gruenwald & Mina Lee, 2020: *Watt a Year for Building Electrification!*, RMI (Dec. 16, 2020), <https://perma.cc/2FDD-2W5N> (cataloguing cities and states with building electrification codes and other action taken at the subnational level on building electrification).

<sup>81</sup> *Accord* Transcript of Technical Webcast Conference at 247, *Electrification and the Grid of the Future*, Docket No. AD21-12 (Apr. 29, 2021) (Statements of Sara Baldwin, Dir. of Electrification Pol’y, Energy Innovation); see also Kalen & Hsu, *supra* note 59, at 3.

<sup>82</sup> See, e.g., Feijoo et al., *supra* note 44, at 149; Clodomiro Unsihuay et al., *Integrated Power Generation and Natural Gas Expansion Planning*, 2007 IEEE PES POWERTECH CONFERENCE (2007) (noting that “the dispatch and expansion of the natural gas power plants affect the natural gas flows in pipelines”).

<sup>83</sup> RMI estimates that \$32 billion of proposed gas pipelines are at risk of becoming stranded assets based on 2030 natural gas demand. MARK DYSON ET AL., RMI, THE ECONOMICS OF CLEAN ENERGY PORTFOLIOS: HOW RENEWABLE AND DISTRIBUTED ENERGY RESOURCES ARE OUTCOMPETING AND CAN STRAND INVESTMENT IN NATURAL GAS-FIRED GENERATION (2018), <https://perma.cc/VR9Y-KK4S>.

ingly, in assessing whether a long-lived gas infrastructure project is required by the public convenience and necessity, the Commission must consider the risk that gas demand will not only decline, but also shift geographically, and that stranded asset costs will be borne by consumers as a result.

**c. *Climate-Related Transition Opportunities: Retrofitting for New Fuels***

The Commission should not only account for climate-related transition *risk*, it should also consider evidence of available opportunities, particularly those that would prevent assets from becoming stranded. A contentious but important opportunity that FERC should evaluate is the ability of a new pipeline to transition to transporting renewable natural gas or hydrogen in the future.<sup>84</sup> This will not be a viable opportunity for all new natural gas infrastructure, and the Commission should require comprehensive, verifiable evidence that a proposed project could be used to transport cleaner fuels in the future. If there is not a viable hydrogen hub or a demand center near the pipeline, transporting these fuels will not be socially beneficial.<sup>85</sup> However, where information is provided that demonstrates that this opportunity should be considered in the assessment, then FERC is obliged to consider it as a relevant factor.

**d. *Climate-Related Transition Risk and Opportunity Should Be Considered at the Time of Certification as Part of the Assessment of Need***

FERC should consider climate-related transition risk and opportunity at the time of approval, in the assessment of need. Developers should be asked to disclose and price this risk during the approval process. FERC should not wait to consider how assets will be paid for until after they become stranded.

Policy and market trends indicate that stranding poses a real risk that can and should be addressed now. Regulators have not always had such warning and opportunity to address stranding risk on the front-end. Traditionally, the energy sector and regulators have been able to consider stranded costs only in connection with economic, technological, or regulatory changes *ex post*, after the projects have been approved and large-scale investments have already been made.<sup>86</sup> This history of *ex-post* consideration and compensation for stranded costs has slowed transitions, has prevented retirements of assets, and has led to “systematic overcompensation for regulatory risk because of loss aversion.”<sup>87</sup> In the past, where assets were rendered stranded by policy or market changes, regulators have eventually allowed investors to recoup those costs through their ratepayers.<sup>88</sup>

Given the clean energy transition trends, the Commission should encourage investors to price transition risk up front, requiring an *ex-ante* consideration of potential stranded costs and how the transition will increase the risk associated with

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<sup>84</sup> For a discussion of issues with and promising applications for hydrogen as a renewable fuel, see SUSAN SAADAT & SARA GERSON, EARTHJUSTICE, RECLAIMING HYDROGEN FOR A RENEWABLE FUTURE: DISTINGUISHING OIL & GAS INDUSTRY SPIN FROM ZERO-EMISSION SOLUTIONS (2021), <https://perma.cc/DQJ9-6NJJN>. Increased use of hydrogen may also raise significant environmental justice concerns. See Naomi Klinge, *Rapid Hydrogen Scaling Sparks Environmental Justice Concerns*, UPSTREAM (Sept. 7, 2021) (noting a variety of concerns from environmental justice groups).

<sup>85</sup> See, e.g., MARC W. MELAINA ET AL., NAT’L RENEWABLE ENERGY LAB’Y, BLENDING HYDROGEN INTO NATURAL GAS PIPELINE NETWORKS: A REVIEW OF KEY ISSUES 30–31 (2013), <https://perma.cc/9EWM-PX7W> (“Relatively low concentrations of hydrogen . . . appear to be feasible with very few modifications to existing pipeline systems or end-use appliances. However, this assessment of feasibility will vary from location to location. Higher concentrations introduce additional challenges and required modifications.”).

<sup>86</sup> Hammond & Rossi, *supra* note 69 (discussing consideration and compensation of stranded costs by state commissions in the context of nuclear facilities, and by FERC in the context of natural gas take-or-pay contracts and electricity restructuring).

<sup>87</sup> *Id.* at 661.

<sup>88</sup> See *id.* at 652 (“Regulators have shown a considerable appetite for compensating investors *post hoc*, routinely approving customer charges designed to guarantee an incumbent energy utility one hundred percent compensation for stranded costs during regulatory, economic, and technological transitions in the energy sector.”).



new natural gas transportation infrastructure. Failing to consider significant risk to a project before approval, particularly where the associated costs will likely fall to ratepayers, is inefficient, will not ensure orderly development of natural gas supplies, and fails to protect customers.

## D. Consider Climate Impacts of New Infrastructure

The Commission should expand the concept of need to include consideration of climate change. Courts have been clear that FERC is required to consider both the direct and indirect effects of proposed infrastructure, including upstream and downstream greenhouse gas emissions.<sup>89</sup> To do so, the Commission should consider climate impacts in the balancing it undertakes as part of the NGA to make an affirmative determination on whether a project is needed and in the public interest.<sup>90</sup> The Commission's role is to assess whether the public benefits outweigh the costs, including climate damages and benefits. Without considering the climate impacts of the project, FERC cannot conduct a proper assessment of need.<sup>91</sup> Climate impacts should be considered in the initial determination of need, on a level playing field with other costs and benefits, and thus accounted for in the assessment of need—the emissions associated with a project go directly to whether the project is required by the public convenience and necessity.

The Commission should use the social cost of greenhouse gases to monetize the climate impacts (direct and indirect) of a pipeline for seamless incorporation of climate harms (or benefits) into its assessment of public need. The current balancing is often described as an economic assessment, and climate change is an economic issue with hugely expensive consequences.<sup>92</sup> Just as the Commission monetizes other socioeconomic impacts such as rates, payroll, and tax revenues in dollar figures,<sup>93</sup> FERC could monetize the climate harms.

Monetization of climate impacts is the best approach for assessing impacts of a proposed project under NEPA and balancing them against benefits under the NGA. It allows climate damages to be easily compared to other benefits; it presents climate impacts in a common metric of money that economic regulators, like FERC, are familiar with and routinely use to measure other impacts. It thereby facilitates rational and transparent assessment of whether the project is in the public interest. Thus, it is the best way for the Commission to expand the concept of need to account for climate damage and integrate information garnered through the NEPA process into the NGA assessment.

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<sup>89</sup> *Sierra Club v. Fed. Energy Regul. Comm'n (Sabal Trail)*, 867 F.3d 1357, 1373 (D.C. Cir. 2017). The D.C. Circuit reaffirmed this holding in *Birckhead v. Fed. Energy Regul. Comm'n*, 925 F.3d 510, 519 (D.C. Cir. 2019). For an extensive discussion of the case law on agency's duty to consider upstream and downstream emissions, see Joint Comments of Env't Def. Fund et al., *Certification of New Interstate Natural Gas Facilities*, Docket No. PL18-1 (July 25, 2018, 2021); Joint 2021 NOI Comments, *supra* note 11.

<sup>90</sup> See *Sabal Trail*, 867 F.3d at 1373; Comments of the Inst. for Pol'y Integrity at N.Y.U. School of Law at 9–14, *Certification of New Interstate Pipeline Facilities*, Docket No. PL18-1-000 (July 25, 2018) (“[T]he court’s decision in *Sabal Trail* makes clear that consideration of downstream environmental consequences of jurisdictional pipeline facilities is part of the Commission’s obligation to consider the public interest under Section 7.”).

<sup>91</sup> *Accord* Mitigation Technical Conference Transcript, *supra* note 42, at 55–56 (Statements of Susan Tierney, Ph.D., Sr. Advisor, Analysis Grp.) (“I have always assumed that if the Commission were to move to reliance on a methodology that monetized the impacts of greenhouse gas emissions like the monetization of you know construction dollars, that that would occur before the determination of whether a project is needed. So, again, you have information about the economic benefits of a project, and you have information about the economic costs, including those costs of climate change. And then, if there are net benefits in the Commission’s point of view, then it would be approved.”).

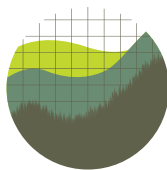
<sup>92</sup> *Accord id.* at 48–49 (Statement of Melissa Hoffer, Principle Deputy Gen. Counsel, Env’t Prot. Agency) (“[C]limate change is really expensive, it’s really expensive. It is an economic issue. . . . [The current] methodology fails to account for the significant economic impacts of climate change.”).

<sup>93</sup> See, e.g., FED. ENERGY REGUL. COMM’N, ATLANTIC COAST PIPELINE AND SUPPLY HEADER PROJECT FINAL ENVIRONMENTAL IMPACT STATEMENT 4-508 to -509 (2017) (estimating spending, income tax, and property tax revenues in dollar figures). FERC could also monetize the benefits, if any, from additional gas supply or consumer cost effects. Avi Zevin, *Regulating the Energy Transition: FERC and Cost-Benefit Analysis*, 45 COLUM. J. ENV’T L. 419, 504–07 (2020) (detailing how FERC could monetize these benefits).



## V. Conclusion

The Commission is facing a watershed moment. It has opened an inquiry into whether and how it should change the way it evaluates applications for natural gas transportation infrastructure. FERC must meet the moment and make fundamental changes to its assessment of need by expanding what it weighs in balancing the public benefits and adverse effects of a proposed project. The NGA does not specify which factors FERC must consider and instead leaves the Commission ample discretion to use its experience and expertise to deem factors relevant to the public interest. Accordingly, the Commission should reform its need assessment and undertake a broader review that incorporates a regional approach; integrates electric transmission planning; accounts for climate-related transition risk and potential costs of stranded assets; and considers climate impacts of new infrastructure. In so doing, FERC can facilitate the development of efficient and cost-effective natural gas infrastructure for a reliable and sustainable future.



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