

**UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION**

IN THE MATTERS OF)	
)	DOCKET NOS.
Sabine Pass Liquefaction Expansion,)	
LLC)	CP13-552
Sabine Pass Liquefaction, LLC)	
Sabine Pass LNG, L.P.)	
)	
Cheniere Creole Trail Pipeline, L.P.)	CP13-553

Request for Rehearing

Pursuant to Section 19(a) of the Natural Gas Act, 15 U.S.C. § 717r(a), and Rule 713 of the Rules of Practice of the Federal Energy Regulatory Commission (“Commission”), 18 C.F.R. § 385.713, the Sierra Club hereby requests rehearing of FERC’s “Order Granting Authorizations under Section 3 of The Natural Gas Act and Issuing Certificate” (“Order”), issued April 6, 2015, 151 FERC ¶ 61,012, in the above-captioned matter. The Order grants Sabine Pass Liquefaction Expansion, LLC, Sabine Pass Liquefaction, LLC, and Sabine Pass LNG, L.P. and Cheniere Creole Trail Pipeline, L.P. (collectively, “Applicants”) authority to site, construct, and operate natural gas liquefaction equipment, liquefied natural gas (“LNG”) export facilities, and related pipeline infrastructure. Specifically, this project

concerns construction and operation of fifth and sixth liquefaction trains to expand the previously-approved four train liquefaction and export project at the Sabine Pass site, and pipeline expansion to deliver gas to this facility. Sierra Club asks that the Order and the Environmental Assessment for this project be withdrawn and that further environmental analysis be undertaken.

All communications regarding this motion should be addressed to and served upon Nathan Matthews, Staff Attorney, and Natalie Spiegel, Legal Assistant, at Sierra Club, 85 2nd St., Second Floor, San Francisco, California 94105.

I. Procedural History

The above-captioned dockets, CP13-552 and CP13-553, concern a proposal to construct new facilities to export natural gas, including liquefaction facilities, at the site of an existing LNG import facility on the Sabine River in Cameron Parish, Louisiana, across the river from Port Arthur, Texas. Sierra Club filed a protest of this application on October 31, 2013, together with a motion to intervene. Sierra Club then submitted comments on the Environmental Assessment for these projects on January 9 and 12, 2015.

On April 6, 2015, FERC issued the Order approving the project. Order Granting Authorizations under Section 3 of The Natural Gas Act and Issuing Certificate under CP13-552, CP13-553, 151 FERC ¶ 61,012 (Apr. 6, 2015) (“Order”). This Order granted Sierra Club’s motion to intervene, ¶ 21, but rejected the arguments Sierra Club raised in Sierra Club’s protest and comments, *see generally*, ¶¶ 57-123.

For the reasons set forth below, Sierra Club now seeks rehearing on and rescission of FERC’s decision to grant the certificates and ask that the Order and the Environmental Assessment for these Projects be withdrawn and that further environmental analysis be undertaken.

II. Concise Statement of the Alleged Errors in the Order

1. *FERC erred in concluding that indirect effects relating to supply and consumption of natural gas, including “upstream” effects such as increased gas production and domestic gas-to-coal switching and “downstream” effects of use of LNG in receiving countries, were outside the scope of the pertinent Natural Gas Act and NEPA analyses.* 40 C.F.R. §§ 1508.7, 1508.8(b), *Mid States Coal. for Progress v. Surface Transp. Bd.*, 345 F.3d 520, 545-51 (8th Cir. 2003), *Scientists' Inst. for Pub. Info., Inc. v. Atomic Energy Comm'n*, 481 F.2d 1079 (D.C. Cir. 1973).

2. *FERC erred in failing to adequately consider the impacts of greenhouse gas emissions that will reasonably result from the Project, by concluding that information regarding the physical consequences of greenhouse gas emissions was unavailable while failing to employ generally accepted alternative methods of discussing these impacts, such as the social cost of carbon and evaluating consistency with emission reduction targets.* 40 C.F.R. § 1502.22(b), *Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1198 (9th Cir. 2008), *Columbia Basin Land Prot. Ass'n v. Schlesinger*, 643 F.2d 585, 594 (9th Cir. 1981).

3. *FERC erred by failing to consider the cumulative impacts of this project together with other approved and pending LNG export projects.* 40 C.F.R. § 1508.7, *Kleppe v. Sierra Club*, 427 U.S. 390, 410 (1976).

4. *FERC erred in concluding that the Project would not have a significant impact on the quality of the human environment and that an EIS is not warranted.* 42 U.S.C. § 4332(C), *Ocean Advocates v. U.S. Army Corps of Engineers*, 402 F.3d 846, 864 (9th Cir. 2005).

III. Statement of the Issues

A. The Order and NEPA Review Unlawfully Refused to Consider Indirect Effects Relating to Gas Production and Use

FERC violated NEPA and the Natural Gas Act by failing to consider indirect effects of the project caused by impacts to gas markets. These effects include increases in domestic gas production, domestic gas users shifting from gas to coal, and increased foreign use of natural gas.

NEPA requires a hard look at the indirect effects of proposed actions. Indirect effects are those effects “caused by the action and [that] are later in time or farther removed in distance [than direct effects], but [that] are still reasonably foreseeable.” 40 C.F.R. § 1508.8(b). Indirect effects include “growth inducing effects,” *id.*, and effects outside the scope of the agency’s regulatory authority. *See Mich. Gambling Opposition v. Kempthorne*, 525 F.3d 23, 29-30 (D.C. Cir. 2008); *TOMAC v. Norton*, 240 F. Supp. 2d 45, 50-52 (D.D.C. 2003) *aff’d sub nom. TOMAC - Taxpayers of Mich. Against Casinos v. Norton*, 433 F.3d 852, 851-52 (D.C. Cir. 2006).

Basic economic principles teach that connecting the United States’ isolated natural gas market with overseas gas demand will have several effects. “Upstream” of the terminal in the gas supply chain, the terminal will significantly increase demand for U.S. gas, which will drive up prices in the domestic market. Higher domestic prices will, in turn, cause both an increase in domestic gas production and a shift by some domestic gas users to other fuels. The fact that price increases will impact the demand side of the market is “self-evident.” *Airlines for America v. Transp. Security Admin.*, ___ F.3d ___, ___, Docket 14-1143, Slip. Op. 3-4 (D.C. Cir. Mar. 10, 2015) (quoting *Sierra Club v. EPA*, 292 F. 3d 895, 900 (D.C. Cir. 2002)). Here, in describing the purpose and need of the Projects, the Applicants themselves argue that the Projects “would provide a market solution to allow the further deliberate development of these sources of domestic natural gas and would result in the following benefits” including “creation of . . . 46,00 to 186,000 permanent jobs . .

. in the exploration and production sector” and “[r]ais[ing] domestic natural gas productive capacity.”¹

Conversely, “downstream” of the terminal, exporting LNG will increase the supply of LNG available on international markets and lead to increases in global gas use. Nations that import LNG from the U.S. will likely increase their overall energy use, and at least some of this increase will likely come at the expense of renewables and investments in efficiency and conservation.

Courts considering other energy infrastructure projects have held that the potential for this type of market impact is facially apparent, and that these types of effects must be considered in the NEPA analysis. *Mid States Coal. for Progress v. Surface Transp. Bd.*, 345 F.3d 520, 548-49 (8th Cir. 2003), *see also N. Plains Resource Council v. Surface Transp. Bd.*, 668 F.3d 1067, 1081-82 (9th Cir. 2011). The Council on Environmental Quality recently reiterated that NEPA requires consideration of effects “upstream” and “downstream” of proposed projects, such the effects of consuming coal produced by development of a coal mine.² The Environmental Protection Agency agrees these effects are “indirect effects” within the meaning of the NEPA regulations, and requested that these effects be considered here.³

Here, despite the self-evident nature of these impacts, FERC unlawfully concludes that any effects related to impacts on gas production or use are not indirect effects of the Projects that must be evaluated under NEPA. FERC’s stated bases for excluding these effects are contrary to the available factual record and FERC’s legal obligations.

¹ Resource Report 1 at 3-4 (Sept. 2013).

² Council on Environmental Quality, Revised Draft Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in NEPA Reviews, 79 Fed. Reg. 77802, 77826 (Dec. 24, 2014).

³ EPA comment at 5 (Jan. 12, 2015), Accession No. 20150112-5292.

1. The Project Will Cause Additional Gas Production

FERC first contends that “The potential environmental effects associated with shale gas development are [not] sufficiently causally related to the Liquefaction and Creole Trail Expansion Projects.” Order ¶ 90. FERC asserts that “Shale production is not an essential predicate for these projects,” because they will receive gas from pipelines that “span multiple states with shale as well as conventional gas formations.” *Id.*

These assertions regarding causality fundamentally fail to respond to Sierra Club’s arguments and FERC’s NEPA obligations. FERC is required to consider the effects of all gas production that would be caused by the project. Gas production caused by the project is likely to overlap with, but is not the same as, the gas production that actually supplies the project. Some of the gas supplied to the project will likely consist of gas that would have otherwise been delivered to other consumers, and some of the production that will be caused by the project will go to substitute those consumers’ needs, rather than to supply the project directly.

FERC’s contention that “development of shale gas will likely continue regardless of the projects are approved,” Order ¶ 90, similarly misses the fundamental point that, at the margin, *more* gas is likely to be produced if the projects are approved. Sierra Club is not asking FERC to attribute the impacts of all natural gas production, or all shale gas production, to these Projects. Nor are we asking for FERC to attribute all increases in production, relative to the present day, to the project. Instead, FERC must consider the increase, relative to the no-action baseline, in production that will occur if the Project is approved. Nothing in NEPA, its regulations, or applicable case law limits the requirement to evaluate the effects of the development induced by a project to those situations where the project is responsible for causing all, as opposed to some, of the pertinent development.

NEPA requires FERC to affirmatively investigate the extent to which the project will cause an increase in gas production. As we have repeatedly stated, the applicants, every other federal agency to weigh in on the issue, and numerous private consultants all agree that connecting domestic gas producers with global demand (which cannot occur without Commission approval of LNG export projects) will induce an increase in domestic gas production. The observations include:

- The applicants.⁴
- DOE.⁵
- The Energy Information Administration (“EIA”).⁶
- The Environmental Protection Agency (“EPA”).⁷
- NERA Economic Consulting.⁸
- Deloitte Marketpoint.⁹
- ICF International.¹⁰ (“ICF’s original modeling showed that for each of the three export cases, the majority of the incremental LNG exports (79%-88%) are offset by increased domestic natural gas production.”)
- The Brookings Institution.¹¹ (“much of the gas for export will come from new production, rather than the displacement of consumption in other sectors.”)

⁴ Resource Report 1 at 3-4 (Sept. 2013).

⁵ DOE’s environmental addendum regarding LNG exports states that “DOE believes [that] LNG export volumes would be offset by some combination of increased domestic production of natural gas (principally from unconventional sources), decreased domestic consumption of natural gas, and an adjustment to the U.S. net trade balance in natural gas with Canada and Mexico,” and reiterated DOE’s support for EIA’s forecasts on these issues. DOE, Final Addendum to Environmental Review Documents Concerning Exports of Natural Gas from The U.S., at 1, 5 (August 2014), *available at* http://elibrary.ferc.gov/idmws/file_list.asp?document_id=14288880.

⁶EIA, *Effect of Increased Natural Gas Exports on Domestic Energy Markets* (2012) (“EIA LNG Export Study”), attached as Ex. 2 to Sierra Club Protest.

⁷ EPA comment at 5 (Jan. 12, 2015), Accession No. 20150112-5292.

⁸ NERA Economic Consulting, *Macroeconomic Impacts of LNG Exports from the United States* (2012), attached as Ex. 3 to Sierra Club Protest.

⁹ Deloitte Marketpoint, *Analysis of Economic Impact of LNG Exports from the United States*, attached to Sierra Club’s Filing of DOE’s LNG Environmental Review Materials and Comments of Sierra Club, *et al.*, Thereon.

¹⁰ ICF International, “State-Level Impacts on Energy Markets and the Economy (November 2013), attached as Exhibit 2 to Sierra Club comment on EA.

Many of these observers have provided quantitative estimates of the extent to which gas production is likely to increase in response to exports, and these quantitative estimates are, on a broad level, roughly consistent. Although these estimates concern export scenarios that go beyond the individual project at issue here, available evidence indicates that the tools used to create these estimates could provide individual forecasts as well, insofar as FERC determines that the general forecasts are insufficient. 40 C.F.R. § 1502.22(a) (agencies must seek out additional essential information if the price of obtaining it is not “exorbitant.”). The Order does not acknowledge these predictions and models, much less provide a reasoned basis for disagreeing with them. 40 C.F.R. § 1502.9(b) (agency must discuss “any responsible opposing view.”).

FERC’s observation the project could, in principle, receive gas from non-shale sources does not support FERC’s implicit conclusion that the project will not cause additional gas production. As noted above, the question of causation is distinct from the question of which gas will actually be delivered to the project. FERC’s NEPA obligation is to consider the effects of all gas production caused by the project, not just shale gas production.¹² To do so, FERC must use available tools to take a hard look at the types of production that will be caused by this project. Again, Sierra Club identified tools such as the National Energy Modeling System can answer this question. The Energy Information Administration used this tool to predict that roughly 75% of the increase in production caused by LNG exports would come from shale sources.¹³ FERC must, however, consider the impacts of both shale and non-shale production caused by the project. Moreover, insofar as the division between shale and non-shale production is relevant, NEPA requires FERC to affirmatively

¹¹ Charles Ebinger et. al., “Liquid Markets: Assessing the case for U.S. Exports of Liquefied Natural Gas,” Brookings Institution (May 2012) available at http://www.brookings.edu/~media/research/files/papers/2012/1/natural%20gas%20ebinger/natural_gas_ebinger.pdf and attached as Exhibit 1.

¹² See *Protest* at 25 (discussing fact that some of the gas production that will be caused by LNG exports will be from non-shale sources).

¹³ EIA Export Study at 6, 10.

investigate this question. FERC's mere observation that it is possible to deliver conventional gas to the project falls far short of the hard look NEPA requires.

Finally, although the Order does not explain the term "essential predicate," Order ¶ 90, it is clear that here, the causal connection between the Project and increased gas production meets the legal standard for indirect effects. 40 C.F.R. § 1508.8(b). Domestic gas production will increase, relative to the no-action baseline, if the project is approved and enters operation. The project applicants point to this additional production in their statement of the project's purpose. *City of Davis v. Coleman*, 521 F.2d 661 (9th Cir. 1975) (Where "growth-inducing effects of [a] project are its *raison d'être*," these effects must be considered in the NEPA analysis.). For these reasons, and the reasons stated above, the project will cause additional gas production.

2. The Effects of Induced Production Are Not So Speculative As To Preclude Meaningful Review

Nor is there any factual or legal support for the Order's conclusion that even if the Project would cause additional gas production, "the scope of the *impacts* from any such induced production is not reasonably foreseeable." Order ¶91 (emphasis in original). FERC contends that it "cannot forecast and analyze the specific impacts which might be associated with any additional production" unless it can "forecast (as opposed to speculate about) the number, location, or timing of the development of the new or existing wells that might produce the gas which will be transported on the project facilities over their lifespans." *Id.* Again, the Order's conclusions are contrary to the applicable legal standard and the record.

First, analysis of the environmental effects of additional gas production does not require FERC to identify which wells will "produce the gas that will be transported on project facilities." *Id.* Gas production can be caused by the Project

even if the particular gas molecules produced by those wells are not delivered to the Project.¹⁴

Second, FERC has not shown that it lacks information sufficient to support reasonable forecasts about the “number, location, and timing of development of new or existing wells.” Order ¶ 91. As Sierra Club explained, available tools allow FERC to estimate, on a regional level, where gas production caused by the project will occur, and what type of production this will be (*e.g.*, shale, coalbed methane, conventional).¹⁵ The Energy Information Administration’s 2012 Export Study divided its prediction of increased gas production across six distinct regions.¹⁶ ICF International has provided a state-by-state prediction of the amount of additional gas production that would likely result from various Gulf Coast export scenarios.¹⁷ Moreover, beyond the macro-level conclusions presented using these models, the models are built upon information regarding the production and costs for different types of gas wells, and they incorporate estimates of new and active well counts.¹⁸ Thus, insofar as the reports Sierra Club cited do not discuss forecasts of changes in well counts, for example, FERC has not addressed whether the models used in developing these reports could provide such forecasts.

Even if available models do not provide information on the number and timing of wells directly, this information can be inferred from the aggregate regional forecasts. The National Energy Technology Laboratory has used data on the lifetime production rates of different types of natural gas wells to identify the

¹⁴ Insofar as the source of the gas actually delivered by the Project is relevant, FERC has not shown that the source of gas is unforeseeable.

¹⁵ Comment on EA at 2-3 (citing the National Energy Modeling System, Deloitte Marketpoint’s World Gas Model, and modeling performed by ICF International).

¹⁶ EIA, Lower 48 Natural Gas Production and Wellhead Prices by Supply Region, available at <http://www.eia.gov/oiaf/aeo/tablebrowser/#release=FE2011&subject=16-FE2011&table=72-FE2011®ion=0-0&cases=rfhexslw-d090911a,rflexrpd-d090911a,rflexslw-d090911a,rhexrpd-d090911a,ref2011fe-d020911a>.

¹⁷ ICF International, U.S. LNG Exports: State-Level Impacts on Energy Markets and the Economy, 14-15 (Nov. 13, 2013) attached as Exhibit 2 to Sierra Club comments on Environmental Assessment.

¹⁸ *See, e.g.*, EIA, *Documentation of the Oil and Gas Supply Module*, 2-5, 2-11 (2011), attached as Exhibit 25 to Sierra Club Protest.

average number and type of wells needed to produce a given volume of natural gas.¹⁹ For example, the National Energy Technology Laboratory notes that individual shale gas wells are estimated to produce between 2.7 and 3.5 billion cubic feet of natural gas.²⁰ Neither the Order here, nor the other orders FERC cites, address the available models' capabilities in detail or explain why top-down estimates of the number and timing of wells would be purely speculative.

Third, and most fundamentally, the “generalized predictions” themselves provide an adequate basis for discussing many effects of induced gas production, such as contributions to climate change and regional ozone. Using average production and emission data, Sierra Club provided estimates of emissions of three categories of air pollutants—methane, volatile organic chemicals, and hazardous air pollutants—that would result from production induced by the Project.²¹ National Energy Technology Laboratory reports released in conjunction with DOE's draft addendum provide another way to estimate the pollutants emitted by gas production. NETL reports indicate that production and transmission of natural gas emits 87 metric tons of nitrogen oxides (NO_x) per bcf of gas.²² NETL estimates that the cradle to transmission NO_x emissions for natural gas used in combined cycle power plants are roughly 0.6 kilograms of NO_x per megawatt hour generated, with roughly 0.5 kilograms specifically from production rather than transport.²³ Using NETL's assumption of a combined cycle power plant efficiency of

¹⁹ National Energy Technology Laboratory, *Life Cycle Analysis of Natural Gas Extraction and Power Generation*, 14, A-15 (May 29, 2014), attached to Sierra Club's Filing of DOE's LNG Environmental Review Materials and Comments of Sierra Club, *et al.*, Thereon, and available at http://elibrary.ferc.gov/idmws/file_list.asp?document_id=14288883, and included in this docket at Accession No. 20150109-5021 (30043644).

²⁰ National Energy Technology Laboratory, *Environmental Impacts of Unconventional Natural Gas Development and Production*, 55 (May 29, 2014), attached to Sierra Club's Filing of DOE's LNG Environmental Review Materials and Comments of Sierra Club, *et al.*, Thereon, and available at http://elibrary.ferc.gov/idmws/file_list.asp?document_id=14288883, and included in this docket at Accession No. 20150109-5021 (30043643).

²¹ Sierra Club Protest at 37-38.

²² NETL Gas LCA at 52-54.

²³ *Id.* at Figure 4-19, “Life Cycle NO_x Emissions for Natural Gas Power Using Domestic Natural Gas Mix.”

46% and EIA's estimate of a natural gas heat content of 1025 British thermal units per cubic foot,²⁴ NETL's data entails 87 metric tons of NOx per bcf of production.

This type of estimate of the volume of greenhouse gases emitted by additional gas production is all that is needed to assess the climate impact of gas production caused by the Project. DOE recognized that impacts relating to greenhouse gases and climate change do not occur at the local or regional level.²⁵ Discussion of the climate impact of gas production induced by exports does not depend on the location of that production. The Order's vague assertion that "the information provided in the DOE Addendum and Life Cycle reports is too general to assist us in our consideration of the specific proposal before us" does not demonstrate the climate impacts of the project are unforeseeable. Order ¶ 95. FERC has not identified any specific information that is essential to analysis of the impacts of the projects under review here but that is not provided by the DOE Addendum, related reports, or other documents cited by Sierra Club. The Order's only specific criticism of the DOE materials is the flat assertion that there is some uncertainty in DOE's modeling data. *Id.* The mere presence of uncertainty, however, does not mean that an impact is not reasonably foreseeable.

As with greenhouse gases, ozone-forming pollution can—and generally is—addressed at the regional level.²⁶ EPA has explained that ozone results from emissions of nitrogen oxides and volatile organic chemicals from sources "across a broad geographic area."²⁷ As such, it is reasonable to consider ozone emissions across a wide area in determining impacts on regional ozone levels. *See, e.g., Sierra Club v. E.P.A.*, 774 F.3d 383, 385, 397-99 (7th Cir. 2014) (holding it is reasonable to

²⁴ <http://www.eia.gov/tools/faqs/faq.cfm?id=45&t=8>

²⁵ DOE, Final Addendum to Environmental Review Documents Concerning Exports of Natural Gas from The US, 2 (August 2014), *available at* http://elibrary.ferc.gov/idmws/file_list.asp?document_id=14288880.

²⁶ Sierra Club Comment on DOE Addendum at 16-19.

²⁷ EPA, *Finding of Significant Contribution and Rulemaking for Certain States in the Ozone Transport Assessment Group Region for Purposes of Reducing Regional Transport of Ozone*, 62 Fed. Reg. 60,318, 60,326 (Nov. 7, 1997), attached as Exhibit 2.

consider reductions in ozone precursor emissions across a twenty-two state region in assessing ozone levels in Milwaukee–Racine, Chicago, and St. Louis). FERC has not taken a hard look at the impacts of induced gas production on regional ozone levels. As explained above, available tools allow FERC to estimate the amount by which the Project will cause gas production to increase in a given state or region, as well as the volume of ozone-forming volatile organic chemicals or nitrogen oxides that would be emitted by that gas production. FERC has not demonstrated that this information is insufficient to support any meaningful discussion of the project’s impacts, as a result of increased gas production, on regional ozone levels.

3. The Order Unlawfully Refused Consider the Effects of Increased Domestic Coal Use

In addition to causing an increase in domestic gas production, the Project will cause some domestic consumers to limit their gas consumption and switch to other energy sources, such as coal. The Energy Information Administration’s 2012 Export Study predicted that 27 percent of the natural gas demand created by LNG export projects would be met by existing gas users switching to coal, primarily in the electricity generation sector.²⁸ This increase in domestic coal use will increase domestic greenhouse gas emissions, as well as emissions of ozone precursors and other harmful air pollutants.

The Order does not explain FERC’s failure to consider this impact in the NEPA analysis. FERC contends that effects relating to increased coal use are outside the scope of FERC’s Natural Gas Act section 3 public interest inquiry. Order ¶ 27. FERC contends that this impact is “associated with the exportation of the commodity natural gas;” that only DOE has Natural Gas Act authority to consider

²⁸ EIA, *Effect of Increased Natural Gas Exports on Domestic Energy Markets*, at 18 (non-liquefaction-related domestic gas consumption will decrease by 37 percent of the volume of gas exported, and 72 percent of this decrease will be constituted by consumers shifting from gas to coal), attached as Ex. 02 to Sierra Club Protest.

impacts of exports themselves; and that “the issue of whether the export of LNG will . . . affect coal consumption is [therefore] beyond the Commission’s purview.” *Id.* This discussion does not acknowledge that FERC has responsibilities under NEPA as well as the Natural Gas Act. NEPA requires agencies to consider indirect effects, including growth-inducing effects, that the agencies do not directly regulate. *See Mich. Gambling Opposition*, 525 F.3d at 29-30. The Ninth Circuit illustrated this point in holding that the Army Corps of Engineers, in reviewing dredge and fill permit applications, must consider environmental effects beyond those caused by the dredge and fill itself. *Save Our Sonoran v. Flowers*, 408 F.3d 1113, 1118 (9th Cir. 2005). “[W]hile it is the development’s impact on jurisdictional waters that determines the scope of the Corps’ permitting authority, it is the impact of the permit on the environment at large that determines the Corps’ NEPA responsibility.” *Id.* at 1122. Those NEPA responsibilities are particularly important in light of DOE and FERC’s practice of having FERC serve as the lead agency for NEPA review. DOE’s 1981 policy guidance states that FERC will “generally be the lead agency for preparing an EIS” for LNG terminal projects.²⁹ DOE has uniformly followed this policy in its modern review of export proposals. DOE’s decision to have FERC serve as the lead NEPA agency is a clear indication that DOE intended FERC to review the effects of both Commission and DOE action in FERC’s NEPA review.

Even under FERC’s narrow understanding of its Natural Gas Act authority, the Natural Gas Act also requires FERC to consider the effects of induced production. The Order states that FERC’s Natural Gas Act authority is limited to construction, operation, and siting of particular facilities. Order ¶ 27. Terminal siting, however, will affect exports’ impact on gas markets. On the production side, notwithstanding the nation’s interconnected gas pipeline grid, the increases in production are likely to occur in the gas plays closest to the export terminal: in the

²⁹ Dep’t of Energy, Import and Export of Natural Gas; New Administrative Procedures; Proposed Rule, 46 Fed. Reg. 44696 (Sept. 4, 1981).

Rocky Mountains for West Coast terminals, in the Gulf Coast for Texas and Louisiana terminals, and in the Marcellus for East Coast terminals.³⁰ Increases in gas prices will likely be similarly uneven, with greatest increases closest to export sites. If consumers in some regions are better able to switch from gas to renewables, while consumers in other regions are more likely to switch from gas to coal, decisions regarding the location of the project, rather than the mere fact of exports per se, will potentially impact the nature and extent of fuel switching caused by the Project.

4. FERC’s Reasons for Refusing to Consider Impacts of End-Use of Exported LNG Are Not Supported by The Record

The indirect effects analysis must also include effects “downstream” of the project in the gas supply chain, including the effects of importers’ use of exported LNG. The Order argues that these effects need not be considered because “end use consumption of natural gas will likely occur regardless of whether the project is approved” and because FERC does not have “information regarding the destination of LNG, which in turn would allow us to estimate the emissions that would occur while transporting the gas.” Order ¶¶95, 99. Neither argument provides a basis for the Order and EA’s complete failure to address the impacts of downstream effects.

The Order’s assertion that “end use consumption of natural gas will likely occur regardless of whether the project is approved,” like the Order’s assertion that “development of shale gas will likely continue regardless of whether the projects are approved,” entirely ignores the concept of marginality. Sierra Club does not argue that there is any country that will entirely forgo use natural gas if the U.S. does not export LNG. Instead, FERC must take a hard look at the possibility that importing countries will use *more* natural gas if they are able to import LNG from the U.S. As

³⁰ Appropriately, the Order does not argue that DOE’s limited delegation of authority to FERC is a basis for excluding the effects of induced gas production from NEPA or Natural Gas Act review.

Sierra Club explained in comments on the DOE Addendum and Life Cycle reports, DOE and FERC cannot assume that all LNG exported from the U.S. will be used in place of other sources of natural gas or other fossil fuels.³¹ Indeed, the only evidence in the record that addresses how end-use countries will likely respond to increase availability of natural gas supplies concludes that natural gas will partially displace use of wind, solar, or other renewables, and that these countries may also increase their overall energy consumption beyond the level that would otherwise occur.³² FERC must take a hard look at the consequences of this likely marginal increase in gas and fossil fuel use.

The Order separately asserts that it is impossible to estimate the life cycle greenhouse gas emissions of gas exported by the Project because the final destination of the gas is uncertain. Order ¶ 99. Based on international gas markets and the numerous contracts that other U.S. LNG exporters have adopted, it is reasonable to assume that gas exported by the Project will be delivered to Europe or Asia. The National Energy Technology Laboratory life cycle report identified representative examples of the life cycle impacts of exports to destinations in either continent. Discussing these two possible cases would provide a reasonable illustration of the potential transportation-related impacts of exports from the Projects. Although uncertainty regarding the precise transportation distances involved, the range of potential impacts is sufficiently well known that FERC cannot claim that the entire life cycle analysis would be unreasonably speculative.

³¹ Sierra Club Comment on Life Cycle Studies, 2-4 (July 21, 2014), included in this docket at Accession No. 20150109-5021(30043645). DOE acknowledged, but has not responded to, Sierra Club's observation that LNG exports not solely be used in lieu of other fossil fuels. DOE, Final Addendum, at 145.

³² Sierra Club Protest at 54 and Exhibit 61 thereto (International Energy Agency, Golden Rules for a Golden Age of Gas: World Energy Outlook Special Report on Unconventional Gas, Ch. 2 p.91 (2012)).

B. The Order Unlawfully Failed to Take A Hard Look at the Effects of Greenhouse Gas Emissions

In addition to disclosing the tonnage of greenhouse gases that will be directly emitted by the Projects (as FERC has done) and that the project will indirectly cause to be emitted (which FERC has failed to do), FERC must inform decisionmakers and the public of the consequences of these emissions. 40 C.F.R. §§ 1502.22(b)(4), 1508.8. Sierra Club’s comment on the Environmental Assessment identified two ways to provide this context: use of the estimates of the social cost of greenhouse gases and evaluating the compatibility of these emissions with emission reduction targets.³³ The Order improperly rejects the former, fails to address the latter, and does not provide any alternative method of evaluating the impact of greenhouse gas emissions.

The Order offers four reasons for not using the social cost of carbon. First, the Order contends that there is no “consensus” as to what discount rate to use for evaluating future costs. Order ¶ 101. Although, as EPA observes, there is some disagreement as to the appropriate discount rate, no one suggests that the discount rate is 100%, such that future costs can be ignored entirely. *Ctr. for Biological Diversity v. Nat’l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1198-1203 (9th Cir. 2008) (finding that by not calculating the climate benefits of increased vehicle fuel standards, an agency’s cost benefit analysis was arbitrary because it effectively valued those benefits at zero); *High Country Conservation Advocates v. United States Forest Serv.*, 52 F. Supp. 3d 1174, 1192 (D. Colo. 2014) (stating that no one in the record suggests the cost of GHG emissions is as low as \$0 per unit, “yet by deciding not to quantify the costs at all, the agencies effectively zeroed out cost”). FERC asserts that the choice of discount rate can influence the annual estimate of costs by a factor of four, but FERC does not explain why it presenting the likely range of costs would further the purposes of NEPA. Put differently, the fact that

³³ Sierra Club Comment on EA at 6-7.

disagreement over the discount rate is confined to a narrow range is just as important, if not more so, than the fact that there is some disagreement in the first place. Accordingly, insofar as FERC contends that it is inappropriate to select a single discount rate, FERC should have used the range of discount rates presented in the interagency working group estimate to disclose the range of estimates of the social cost of GHGs that will be emitted over the lifetime of the project.

Second, FERC contends that the social cost of carbon “does not measure the actual incremental impacts of a project on the environment.” Order ¶ 101. The difficulty of connecting particular emissions with particular changes in the environment is, of course, the problem the social cost of carbon was developed to address. NEPA regulations provide that when information relevant to NEPA analysis—here, the physical impacts of greenhouse gases emitted by the project—is unavailable, the agency must evaluate the project’s impacts using other “methods generally accepted in the scientific community.” 40 C.F.R. § 1502.22(b)(4). The Order’s observation that the social cost of carbon does not identify the particular physical impacts that will be caused by an individual project’s greenhouse gas emissions provides no basis for concluding that the social cost of carbon does not provide a useful and informative proxy for the magnitude and importance of those physical impacts.

Third, the Order states that “there are no established criteria identifying the monetized values that are to be considered significant for NEPA purposes.” Order ¶ 101. Although the Council on Environmental Quality has not identified a level of greenhouse gas emissions, or monetized impacts of greenhouse gas emissions, that triggers a finding of significance, the Council on Environmental Quality has affirmed that individual agencies must undertake a significance determination.³⁴ Moreover, although the use of the social cost of carbon should inform FERC’s assessment of whether the Project’s impacts are significant, the social cost of carbon

³⁴ CEQ Revised Draft GHG Guidance, 79 Fed. Reg. at 77828/1.

independently serves to meet FERC's obligations to evaluate the context and impact of greenhouse gas emissions, regardless of whether those impacts rise to the level of significance.

The Order concludes its discussion of the social cost of carbon by asserting that while the social cost of carbon "may be appropriate for rulemakings . . . it is not appropriate for estimating a project's impacts or informing our analysis under NEPA." Order ¶ 101. FERC provides no rational basis for this conclusion. As we explain above, the only specific criticisms FERC provides regarding use of the social cost of carbon in NEPA are unfounded or inapposite. More broadly, both the Council on Environmental Quality and EPA, two agencies involved in the development of the social cost of carbon protocol, have stated that it is appropriate to use this tool in project-level NEPA analysis. EPA has explained that the social cost of carbon provides an appropriate tool for assessing impacts in NEPA reviews.³⁵ CEQ's recent draft guidance on discussing greenhouse gas emissions specifically identifies the social cost of carbon as a tool to use to provide context for discussion of greenhouse gas emission impacts.³⁶ Although monetization of environmental harms is not always required under NEPA, in this case, where there is an available tool for estimating the equivalent economic impact of greenhouse gas emissions, and where FERC has not provided any other method for discussing the impact of this harm, the social cost of carbon cannot be ignored. *See, e.g., Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1198 (9th Cir. 2008), *Columbia Basin Land Prot. Ass'n v. Schlesinger*, 643 F.2d 585, 594 (9th Cir. 1981).

As an alternative to the use of the social cost of carbon, Sierra Club explained that FERC should illustrate the impact of the project's greenhouse gas emissions by addressing whether these emissions were, in the Council on Environmental

³⁵ U.S. EPA, *EPA Comment Letter on Keystone XL Project DEIS* at 2, PDF available at [http://yosemite.epa.gov/oeca/webeis.nsf/%28PDFView%29/20130056/\\$file/20130056.PDF?OpenElement](http://yosemite.epa.gov/oeca/webeis.nsf/%28PDFView%29/20130056/$file/20130056.PDF?OpenElement) (last visited May 6, 2015), and attached as Exhibit 3.

³⁶ 79 Fed. Reg. 77802, 77827.

Quality’s words, “consistent with” applicable “goals for GHG emission reductions.”³⁷ FERC violated NEPA by failing to address consistency of the project with emission reduction targets, as well as by failing to respond to Sierra Club’s comment suggesting that such an evaluation was appropriate. *High Country Conservation Advocates*, 52 F. Supp. 3d at 1198 (NEPA regulations require the agency “to respond to ‘any responsible opposing view’” presented in comments) (quoting 40 C.F.R. § 1502.9(b)).

C. FERC Failed to Consider the Cumulative Impacts of All Export LNG Projects

NEPA separately requires consideration of the cumulative effects of federal actions. 40 C.F.R. § 1508.7. Sierra Club’s protest observed that in evaluating this project, FERC must consider the cumulative effect this project will have together with other past, present, and future LNG export projects.³⁸

At the time the Environmental Assessment was issued, FERC had authorized exports from four terminal sites,³⁹ FERC had released environmental impact statements for exports from two other sites,⁴⁰ and FERC was actively proceeding with review three other formal construction-permit applications.⁴¹ These

³⁷ *Id.* at 77826.

³⁸ Sierra Club Protest at 15-18.

³⁹ *Sabine Pass Liquefaction, LLC and Sabine Pass LNG, L.P.*, 139 FERC ¶ 61,039 (2012) and *Sabine Pass Liquefaction, LLC and Sabine Pass LNG, L.P.*, 146 FERC ¶ 61,117 (Feb. 20, 2012) (together, authorizing 2.76 bcf/d); *Cameron LNG, LLC and Cameron Interstate Pipeline, LLC*, 147 FERC ¶ 61,230, (June 19, 2014) (authorizing 1.7 bcf/d); *Freeport LNG Development, L.P., FLNG Liquefaction, LLC, FLNG Liquefaction 2, LLC, FLNG Liquefaction 3, LLC, and Freeport LNG Development, L.P.*, 148 FERC ¶ 61,076 (July 30, 2014) (authorizing 1.4 bcf/d); *Dominion Cove Point LNG, LP* 148 FERC ¶ 61,244, FERC Docket CP13-113 (Sept. 29, 2014) (authorizing 0.77 bcf/d).

⁴⁰ *Corpus Christi Liquefaction, LLC and Cheniere Corpus Christi Pipeline, LP* 79 Fed. Reg. 35,344, FERC Dockets CP12-507, CP12-508 (June 20, 2014) (draft EIS for 2.1 bcf/d); *Jordan Cove Energy Project LNG and Pacific Connector Gas Pipeline LP*, 79 Fed. Reg. 68433, FERC Dockets CP13-483, CP13-492 (November 7, 2014) (draft EIS 0.8 bcf/d).

⁴¹ *LNG Development Company (d/b/a Oregon LNG)*, 78 Fed. Reg. 38,703, FERC Dockets CP09-6 and CP09-7 (June 27, 2013) (1.25 bcf/d); *Elba Liquefaction Company, LLC and Southern LNG Company, LLC*, 79 Fed. Reg. 19,895, FERC Docket CP14-103 (April 10, 2014) (0.5 bcf/d); *Trunkline Gas Company, LLC, and Trunkline LNG Export, LLC*, 79 Fed. Reg. 19894, FERC Dockets CP14-119.

amount to 13.28 billion cubic feet per day of export capacity, in addition to the 1.38 bcf/d of capacity provided by the project at issue here. Because these projects are plainly “past, present, [or] reasonably foreseeable future actions,” FERC was required to consider the cumulative effects of authorizing construction and operation of 14.66 bcf/d of export facilities.

Even if FERC were to conclude, wrongly, that it was impossible to predict whether the project will itself have the indirect effects we describe above, it is clear that the cumulative effects of the many proposed export projects will likely include increases in gas production, increases in domestic coal use, and increases in gas use in importing countries. Each of these projects, individually, has significant environmental impacts of each of these types; when considered cumulatively, these impacts are even more obvious. Nor would such an analysis have been difficult or fruitless. *See N.Y. Natural Res. Def. Council, Inc. v. Kleppe*, 429 U.S. 1307, 1311 (1976) (holding that an agency may not limit the scope of inquiry unless “evaluation of the project . . . [would be] so all-encompassing in scope that the task of preparing it would become either fruitless or well nigh impossible.”).

As Sierra Club observed, the most effective way to undertake the legally required cumulative effects analysis would be to conduct a programmatic environmental impact statement. This suggestion is consistent with the Council on Environmental Quality’s suggestion that a programmatic EIS is appropriate when an agency is faced with “several similar actions or projects in a region *or nationwide*.”⁴² The Order states that FERC has determined that a programmatic EIS is not appropriate. Order ¶ 107. FERC’s decision not to prepare a programmatic EIS, however, does not excuse FERC’s obligation to consider the cumulative impact of the slew of export terminal projects. If FERC does not consider

CP14-120, and CP14-122 (April 10, 2014) (2 bcf/d). In addition, FERC had received an application for a Lavaca Bay project, but this application was being held in abeyance.

⁴² Council on Environmental Quality, *Effective Use of Programmatic NEPA Reviews*, 14 (Dec. 18, 2014) (emphasis added), available at https://www.whitehouse.gov/sites/default/files/docs/effective_use_of_programmatic_nepa_reviews_final_dec2014_searchable.pdf.

these impacts programmatically, FERC must evaluate their cumulative effect in each individual export docket.

D. FERC Unlawfully Determined that the Project Impacts Were Not Significant, and that a Full Environmental Impact Statement Was Not Required.

The Order and EA further violate NEPA by concluding that the impacts of the Project are insignificant and by refusing to prepare a full environmental impact statement. To avoid preparing an EIS, FERC bears the burden of “put[ting] forth a ‘convincing statement of reasons’ that explains why the project will impact the environment no more than insignificantly.” *Ocean Advocates v. U.S. Army Corps of Engineers*, 402 F.3d 846, 864 (9th Cir. 2005), *cf. Ctr. for Biological Diversity*, 937 F. Supp. 2d 1140, 1154 (N.D. Cal. 2013) (explaining that “to prevail on a claim that the agency violated its statutory duty to prepare an EIS, a plaintiff need not show that significant impacts will in fact occur. It is enough for the plaintiff to raise substantial questions whether a project may have a significant effect on the environment”).

FERC has not explained how the direct impacts of the Project itself do not rise to the level of significance. For example, FERC offers no explanation for its implicit conclusion that the 2,770,000 tons of carbon dioxide equivalent that operation of project facilities will emit annually will not significantly affect the environment.

When the indirect and cumulative effects discussed above are considered, it becomes even clearer that the total impact of the project rises far above the level of insignificance.

Finally, FERC’s repeated assertion that impacts are uncertain undermines FERC’s conclusion that the impacts of the project are in fact insignificant. FERC asserts that the environmental impacts of any production caused by the project are difficult to foresee, that there is uncertainty regarding the impact of the projects’ greenhouse gas emissions, that the EIA, National Energy Technology Laboratory,

and other agency reports and tools are uncertain, etc. Although Sierra Club contends that in each instance, FERC has overstated the actual amount of uncertainty, a finding of uncertainty or complexity with regard to any and all of these issues would indicate that more, rather than less, analysis is appropriate. Insofar as FERC contends that it does not know what these impacts will be, FERC cannot support the conclusion that these impacts will be insignificant. Instead, this is a project where the searching “hard look” required by NEPA is particularly appropriate.

IV. Conclusion

Based on the foregoing, Sierra Club respectfully requests that FERC grant this request for rehearing and rescission of the Order, and that FERC undertake a renewed NEPA analysis to correct the deficiencies identified above.

Respectfully submitted,

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