

169 FERC ¶ 61,135
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Neil Chatterjee, Chairman;
Richard Glick and Bernard L. McNamee.

Corpus Christi Liquefaction Stage III, LLC
Corpus Christi Liquefaction, LLC

Docket Nos. CP18-512-000

Cheniere Corpus Christi Pipeline, LP

CP18-513-000

ORDER GRANTING AUTHORIZATIONS UNDER SECTIONS 3 AND 7
OF THE NATURAL GAS ACT

(Issued November 22, 2019)

1. On June 28, 2018, Corpus Christi Liquefaction Stage III, LLC (CCL Stage III) and Corpus Christi Liquefaction, LLC (Corpus Christi Liquefaction) filed an application in Docket No. CP18-512-000, for authorization under section 3 of the Natural Gas Act (NGA)¹ and Part 153 of the Commission's regulations² to site, construct, and operate additional facilities for the liquefaction and export of domestically-produced natural gas (Stage 3 LNG Project) at Corpus Christi Liquefaction's existing liquefied natural gas (LNG) terminal on the northern shore of Corpus Christi Bay in San Patricio and Nueces Counties, Texas (Liquefaction Project). The proposed Stage 3 LNG Project consists of the addition of seven midscale liquefaction trains and one LNG storage tank.

2. In the same application, Cheniere Corpus Christi Pipeline, L.P. (Cheniere Pipeline) filed an application in Docket No. CP18-513-000, under NGA section 7(c),³ for a certificate of public convenience and necessity to construct and operate new interstate natural gas pipeline, compression, and related facilities in San Patricio County, Texas (Stage 3 Pipeline Project). The proposed Stage 3 Pipeline Project comprises a new 21-mile-long, 42-inch-diameter pipeline, additional compressor units at the existing Sinton Compressor Station, meter stations, and appurtenant facilities to transport 1.5 billion cubic feet per day (Bcf/d) of natural gas bi-directionally between the proposed Stage 3 LNG Project facilities and interconnections with existing pipeline systems.

¹ 15 U.S.C. § 717b (2018).

² 18 C.F.R. pt. 153 (2019).

³ 15 U.S.C. § 717f.

3. For the reasons discussed in this order, we will authorize CCL Stage III and Corpus Christi Liquefaction's proposal under section 3 to site, construct, and operate the Stage 3 LNG Project. We will also grant Cheniere Pipeline's requested authorizations under section 7(c) to construct and operate the Stage 3 Pipeline Project. These authorizations are subject to the conditions discussed herein.

I. Background

4. CCL Stage III, Corpus Christi Liquefaction, and Cheniere Pipeline are Delaware limited liability companies with their principal places of business in Houston, Texas, and are wholly owned indirect subsidiaries of Cheniere Energy, Inc. Cheniere Pipeline is a "natural gas company" within the meaning of section 2(6) of the NGA⁴ and is subject to the Commission's jurisdiction. Because their operations will not be in interstate commerce, CCL Stage III and Corpus Christi Liquefaction will not be a "natural gas company" as defined in the NGA but are subject to the Commission's jurisdiction under NGA section 3.

5. On December 30, 2014, the Commission issued an order⁵ authorizing Corpus Christi Liquefaction to site, construct, and operate the Liquefaction Project, which includes three LNG trains,⁶ each with a liquefaction capacity of approximately 5 million metric tons per annum (MMTPA); two trains of ambient air vaporizers, each with an average vaporization capacity of 200 MMcf/d of natural gas; three 160,000 cubic meter (m³) LNG storage tanks; and a marine terminal with two berths capable of receiving LNG carrier vessels. The Liquefaction Project is designed to export approximately 15 MMTPA of LNG and vaporize approximately 400 million cubic feet per day (MMcf/d) of imported natural gas. Corpus Christi Liquefaction states that Cheniere Marketing, LLC⁷ will export the LNG by LNG carriers through Corpus Christi Bay.⁸ In February

⁴ 15 U.S.C. § 717a(6).

⁵ *Corpus Christi Liquefaction, LLC*, 149 FERC ¶ 61,283 (2014) (2014 Order), *reh'g denied*, 151 FERC ¶ 61,098 (2015).

⁶ An LNG "train" refers to the facility used to convert natural gas into LNG. The three-step process to convert natural gas into LNG includes: gas treatment (to remove impurities and water), gas compression, and refrigeration. After treatment, purified gas goes to the compressors to be transformed from gas into liquid by refrigeration to approximately -265 degrees Fahrenheit (°F).

⁷ Cheniere Marketing is an affiliate of Corpus Christi Liquefaction and Cheniere Pipeline and an indirect subsidiary of Cheniere Energy, Inc.

⁸ *Cheniere Marketing, LLC*, DOE/FE Order No. 3164, FE Docket No. 12-99-

2015, Corpus Christi Liquefaction commenced construction of the Liquefaction Project. The first LNG train and loading berth as well as two of the full containment LNG storage tanks were placed into service during March 2019. The remaining two LNG trains, LNG storage tank, marine berth, and associated LNG facilities continue to be under construction.

6. The 2014 Order also authorized Cheniere Pipeline to construct and operate the Corpus Christi Pipeline, a 23-mile-long, 48-inch-diameter pipeline in San Patricio County, Texas, capable of transporting up to 2.25 Bcf/d of natural gas bi-directionally between the Liquefaction Project and existing interstate and intrastate natural gas pipeline systems in Sinton, Texas. The 2014 Order also authorized the construction and operation of the Sinton Compressor Station, metering and regulation stations (M&R) along the pipeline, and appurtenant facilities.⁹ Cheniere Pipeline received authorization from the Commission to place the Corpus Christi Pipeline in service on May 23, 2018.

II. Proposals

A. Stage 3 LNG Project (CP18-512-000)

7. The proposed Stage 3 LNG Project, an expansion of the Liquefaction Project currently under construction at the Corpus Christi LNG Terminal, would be located adjacent to the site of the Liquefaction Project in San Patricio County, Texas. Specifically, CCL Stage III proposes to construct seven midscale liquefaction trains

LNG, Order Granting Long-Term, Multi-Contract Authorization to Export Liquefied Natural Gas by Vessel from the Proposed Corpus Christi Liquefaction Project to Free Trade Agreement Nations (Oct. 16, 2012), *amended Cheniere Marketing, LLC*, DOE/FE Order Nos. 3538 and 3164-A, FE Docket Nos. 12-97-LNG and 12-99-LNG, Order Amending Application in Docket No. 12-97-LNG to Add Corpus Christi LNG, LLC as Applicant, and Granting Request in DOE/FE Order No. 3164, Docket No. 12-99-LNG, to Add Corpus Christi Liquefaction, LLC as Authorization Holder (Oct. 29, 2014).

⁹ 2014 Order, 149 FERC ¶ 61,283 at P 10, *order vacating in part*, 154 FERC ¶ 61,163 (2016).

which will liquefy the natural gas delivered to the facility,¹⁰ each with a nameplate production capacity¹¹ of 1.36 MTPA and a maximum capacity of approximately 1.64 MTPA of LNG. Each liquefaction train will consist of two liquefaction units, each with a nameplate capacity of 0.681 MTPA and a maximum capacity of approximately 0.82 MTPA. The project will have the capacity to produce approximately 11.45 MTPA of LNG for export.

8. CCL Stage III also proposes to construct one 160,000 m³ full-containment tank, designed to store the LNG at a temperature range of -260°F to -270°F and with a normal operating pressure of 1.5 pounds per square inch gauge (psig) to a maximum internal pressure of 4.2 psig.

9. In addition to the above proposed facilities, Corpus Christi Liquefaction proposes to construct and operate new infrastructure at the Liquefaction Project. Specifically, Corpus Christi Liquefaction proposes to expand the Liquefaction Project's control building to accommodate the Stage 3 LNG Project. Corpus Christi Liquefaction also proposes to install an LNG transfer line and various interconnects to connect the Stage 3 LNG project to the Liquefaction Project and its storage tanks.

10. Corpus Christi Liquefaction and Cheniere Pipeline own the land that would be occupied by the Stage 3 LNG Project. The Stage 3 LNG Project will be located primarily within an area referred to as the Dredged Material Placement Area 2, which was authorized for dredge material placement in the Commission's 2014 Order.¹²

11. CCL Stage III proposes to utilize the same marine terminal facilities for mooring and loading LNG carriers as the Liquefaction Project; therefore, no new marine facilities will be required for the Stage 3 LNG Project. LNG carriers will access the Stage 3 LNG

¹⁰ Each train will contain: (1) facilities to remove carbon dioxide, hydrogen sulfide, and sulfur compounds from the feed gas; (2) facilities to remove water, mercury, and heavy hydrocarbons from the feed gas; (3) a thermal oxidizer for combusting waste gas; (4) electric-motor driven refrigerant compressors and associated cold boxes; (5) induced draft air coolers; (6) associated fire and gas safety systems; and (7) associated control systems and electrical infrastructure.

¹¹ Nameplate capacity is a rating that conservatively accounts for fuel, planned and unplanned shutdowns, production variations due to temperature and other conditions, LNG composition changes, boil-off, equipment aging, shipping constraints, and other factors for a calendar year, averaged over a 30-year operating cycle.

¹² See *Environmental Impact Statement for the Corpus Christi LNG Project*, Docket No. CP12-507-000, at 2-5 through 2-7 (October 8, 2014).

Project via a federally-maintained channel that extends from the open Gulf of Mexico, through the entrance jetties at Aransas Pass, along the Corpus Christi Ship Channel and up the La Quinta Ship Channel. CCL Stage III states that this is the same route that was analyzed by the United States Coast Guard (Coast Guard) for the Liquefaction Project. Once the Stage 3 LNG Project is completed, CCL Stage III anticipates an increase in the maximum marine vessel traffic of up to 100 LNG carriers per year, i.e., a total of up to 400 LNG carriers per year as compared to the 300 LNG carriers per year anticipated for the existing facilities.

12. CCL Stage III received authorization from the Department of Energy, Office of Fossil Energy (DOE/FE) in November 2018 to export annually up to 582.14 Bcf equivalent of natural gas in the form of LNG to countries with which the United States has a Free Trade Agreement.¹³ In addition, CCL Stage III currently has pending before DOE/FE an application to export LNG to other nations with which the US permits such trade, but has not entered into a Free Trade Agreement.¹⁴

B. Stage 3 Pipeline Project (CP18-513-000)

13. In conjunction with the proposed Stage 3 LNG Project, Cheniere Pipeline requests authorization to construct, operate, and maintain the Stage 3 Pipeline, a 21-mile-long, 42-inch-diameter pipeline originating at Cheniere Pipeline's existing Sinton Compressor Station in San Patricio County, Texas, and running parallel to Cheniere Pipeline's existing Corpus Christi Pipeline. The pipeline will have a permanent right-of-way width of 50 feet that will overlap by 25 feet the existing Corpus Christi Pipeline right-of-way. The Stage 3 pipeline will be designed for a maximum allowable operating pressure of 1,440 psig, and a capacity of approximately 1.5 Bcf/d. The pipeline will be capable of transporting natural gas bi-directionally between the Stage 3 LNG facilities and interconnections with existing pipeline systems.

14. Additionally, Cheniere Pipeline proposes to:

- install two Titan 130E gas-fired compressor units at the Sinton Compressor Station to generate an additional 44,000 horsepower (hp) (22,000 hp each);¹⁵

¹³ *Corpus Christi Liquefaction Stage III, LLC*, FE Docket No. 18-78-LNG, Order No. 4277 (November 9, 2018).

¹⁴ *Id.* at 3.

¹⁵ Currently, the Sinton Compressor Station includes two Solar Titan 130 gas-fired compressor units (20,387 hp each) and two Solar electric motor drive compressor units

- construct and operate one M&R station at the Stage 3 LNG Project (at MP 0.0) and two 750 MMcf/d M&R stations within the Sinton Compressor Station;¹⁶
- construct and operate permanent pig launcher/receiver facilities, located within the Sinton Compressor Station boundary and within the Stage 3 LNG Project M&R station; and
- install four new mainline valve facilities (MLVs): two of which will be located at the inception and terminus of the pipeline, at mile point (MP) 0.0 and MP 21.0, respectively, the other two will be located along the Stage 3 Pipeline route at MP 7.3 and at MP 12.8. Since all four proposed MLVs are within the permanent easement of the Stage 3 Pipeline, no additional workspace will be required for their construction or operation.

15. Cheniere Pipeline conducted a binding open season from December 10, 2018, to December 21, 2018, for the purpose of soliciting interest from potential customers wishing to contract for the pipeline transportation capacity on the Stage 3 Pipeline. The open season resulted in the submission of one binding bid from CCL Stage III. On December 11, 2018, Cheniere Pipeline and CCL Stage III executed a binding precedent agreement for 100 percent of the firm transportation capacity for a term of twenty years. Pursuant to the agreement, CCL Stage III committed to 1,530,000 dekatherms per day (Dth/d) of firm transportation service on the Stage 3 Pipeline Project.

16. Cheniere Pipeline estimates the total cost of the Stage 3 Pipeline to be approximately \$312,533,049.¹⁷ To recover the costs of the Stage 3 Pipeline Project, Cheniere Pipeline proposes to establish an initial incremental daily recourse reservation rate for service on the Stage 3 Pipeline project facilities under its existing firm transportation service (FTS) and interruptible transportation service (ITS) rate schedules as set forth in Cheniere Pipeline's currently effective tariff.

(14,800 hp each).

¹⁶ The third party pipelines which will deliver project volumes to Cheniere Pipeline at the Sinton Compressor Station are currently unknown and will be determined later in the project development process.

¹⁷ Cheniere Pipeline Application at Exhibit K.

III. Public Notice, Interventions, and Comments

17. Notice of CCL Stage III, Corpus Christi Liquefaction, and Cheniere Pipeline's joint application was issued on July 12, 2018, and published in the *Federal Register* on July 18, 2018.¹⁸ The notice established August 2, 2018, as the deadline for filing comments and interventions. Public Citizen, Inc. filed a timely, unopposed motion to intervene, which is granted by operation of Rule 214(c)(1) of the Commission's Rules of Practice and Procedure.¹⁹

IV. Discussion

A. Stage 3 LNG Project (Docket No. CP18-512-000)

18. Because the proposed facilities will be used to export natural gas to foreign countries, the siting, construction and operation of the facilities require Commission approval under NGA section 3.²⁰ Although section 3 provides that an application shall be approved unless the proposal "will not be consistent with the public interest," section 3 also provides that an application may be approved "in whole or in part, with such modification and upon such terms and conditions as the Commission may find necessary or appropriate."²¹

¹⁸ 83 Fed. Reg. 33,927 (2018).

¹⁹ 18 C.F.R. § 385.214(c)(1) (2019).

²⁰ The regulatory functions of NGA section 3 were transferred to the Secretary of Energy in 1977 pursuant to section 301(b) of the Department of Energy Organization Act, Pub. L. No. 95-91, 42 U.S.C. § 7101 *et seq.* In reference to regulating the imports or exports of natural gas, the Secretary subsequently delegated to the Commission the authority to approve or disapprove the construction and operation of natural gas import and export facilities and the site at which such facilities shall be located. The most recent delegation is in DOE Delegation Order No. 00-004.00A, effective May 16, 2006. Applications for authorization to import or export natural gas must be submitted to the Department of Energy (DOE). The Commission does not authorize importation or exportation of the commodity itself. *See EarthReports, Inc. v. FERC*, 828 F.3d 949, 952-53 (D.C. Cir. 2016) (detailing how regulatory oversight for the export of LNG and supporting facilities is divided between the Commission and DOE).

²¹ 15 U.S.C. §§ 717b(a) and 717b(e)(3). For a discussion of the Commission's authority to condition its approvals of LNG facilities under section 3 of the NGA, *see, e.g., Distrigas Corporation v. FPC*, 495 F.2d 1057, 1063-64 (D.C. Cir. 1974), *cert.*

19. As noted above, DOE/FE, pursuant to its authority under NGA section 3, has issued CCL Stage III authorization to export up to 582.14 Bcf equivalent of LNG by vessel to free trade nations from the proposed Stage 3 LNG Project in San Patricio and Nueces Counties, Texas.²² DOE/FE's orders approving Stage 3 LNG Project's export volumes state that "[i]n light of DOE's statutory obligation to grant this Application without modification or delay, there is no need for DOE/FE to review other arguments asserted by CCL Stage III in support of the Application."²³

20. We have reviewed CCL Stage III and Corpus Christi Liquefaction's application to determine if the siting, construction, and operation of its expansion of the existing LNG terminal as proposed would not be consistent with the public interest.²⁴ The environmental assessment (EA) prepared by Commission staff regarding the proposed project finds that the Stage 3 LNG Project will be located almost entirely within the footprint of the previously-approved and currently-under-construction Corpus Christi Liquefaction site.²⁵ Further, the impacts for the project are generally localized and within previously disturbed areas and would not be expected to contribute significantly to the cumulative impacts in the region²⁶ or the quality of the human environment.²⁷

denied, 419 U.S. 834 (1974), and *Dynegy LNG Production Terminal, L.P.*, 97 FERC ¶ 61,231 (2001).

²² DOE/FE Order No. 4277 at 10.

²³ *Id.* at 6-7. Section 3(c) of the NGA provides that the exportation and importation of natural gas to and from countries with which there is in effect a Free Trade Agreement "shall be deemed consistent with the public interest and applications for such importation and exportation shall be granted without modification or delay." See 15 U.S.C. § 717b(c).

²⁴ See *National Steel Corp.*, 45 FERC ¶ 61,100, at 61,332-33 (1988) (observing that DOE, "pursuant to its exclusive jurisdiction, has approved the importation with respect to every aspect of it except the point of importation" and that the "Commission's authority in this matter is limited to consideration of the place of importation, which necessarily includes the technical and environmental aspects of any related facilities.").

²⁵ EA at 50.

²⁶ *Id.* at 219. An additional 12.9 acres that were not previously impacted by the Liquefaction Project would be permanently impacted by the Stage 3 LNG Facilities.

²⁷ *Id.* at 244.

21. In accordance with the Memorandum of Understanding signed on August 31, 2018, by the Commission and the Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA),²⁸ PHMSA undertook a review of the proposed facility's ability to comply with the federal safety standards contained in Part 193, Subpart B, of Title 49 of the Code of Federal Regulations.²⁹ On May 20, 2019, PHMSA issued a Letter of Determination (LOD) indicating that CCL Stage III has demonstrated that the siting of its proposed LNG facilities comply with those federal safety standards. If the proposed Stage 3 LNG Project is subsequently modified so that it differs from the details provided in the documentation submitted to PHMSA, further review would be conducted by PHMSA.

22. Corpus Christi Liquefaction operates its existing facilities under the terms and conditions mutually agreed to by its customers. CCL Stage III is proposing similarly to operate its expansion of the approved LNG terminal under the terms and conditions mutually agreed to by its customers, and will solely bear the responsibility for the recovery of any costs associated with construction and operation of the terminal.

23. In view of the above, we find that CCL Stage III and Corpus Christi Liquefaction's proposal is not inconsistent with the public interest. Therefore, we will grant their application for authorization under section 3 of the NGA to site, construct, and operate its proposed Stage 3 LNG Project.³⁰

B. Stage 3 Pipeline (Docket No. CP18-513-000)

24. Because the Stage 3 Pipeline Project will be used to transport natural gas in interstate commerce subject to the jurisdiction of the Commission, the construction and

²⁸ FERC, *Memorandum of Understanding Between the Department of Transportation and the Federal Energy Regulatory Commission Regarding Liquefied Natural Gas Transportation Facilities* (Aug. 31, 2018), <https://www.ferc.gov/legal/mou/2018/FERC-PHMSA-MOU.pdf>.

²⁹ 49 C.F.R. pt. 193, subpart B (2019).

³⁰ The dissent alleges the Commission did not appropriately assess the public safety for the Stage 3 LNG Project because it did not discuss issues that occurred at another facility owned and operated by an affiliate of the applicant. The Commission considers each application on its merits. The record of this proceeding supports our opinion that the project is not inconsistent with the public interest. We also note that the Commission applies lessons learned at any LNG facility to all such facilities. As appropriate, any relevant information would be incorporated in the final design review of the project.

operation of the facilities are subject to the requirements of subsections (c) and (e) of section 7 of the NGA.³¹

Certificate Policy Statement

25. The Commission's Certificate Policy Statement provides guidance for evaluating proposals to certificate new pipeline construction.³² The Certificate Policy Statement establishes criteria for determining whether there is a need for a proposed project and whether the proposed project will serve the public interest. The Certificate Policy Statement explains that in deciding whether to authorize the construction of major new pipeline facilities, the Commission balances the public benefits against the potential adverse consequences. The Commission's goal is to give appropriate consideration to the enhancement of competitive transportation alternatives, the possibility of overbuilding, subsidization by existing customers, the applicant's responsibility for unsubscribed capacity, the avoidance of unnecessary disruptions of the environment, and the unneeded exercise of eminent domain in evaluating new pipeline construction.

26. Under this policy, the threshold requirement for applicants proposing new projects is that the applicant must be prepared to financially support the project without relying on subsidization from its existing customers. The next step is to determine whether the applicant has made efforts to eliminate or minimize any adverse effects the project might have on the applicant's existing customers, existing pipelines in the market and their captive customers, or landowners and communities affected by the route of the new facilities. If residual adverse effects on these interest groups are identified after efforts have been made to minimize them, the Commission will evaluate the project by balancing the evidence of public benefits to be achieved against the residual adverse effects. This is essentially an economic test. Only when the benefits outweigh the adverse effects on economic interests will the Commission proceed to consider the environmental analysis where other interests are addressed.

27. As discussed above, the threshold requirement for applicants proposing new projects is that the pipeline must be prepared to financially support the project without subsidization from existing customers. The Commission has determined that where a pipeline proposes to charge incremental rates for new construction that are higher than the company's existing system rates, the pipeline satisfies the threshold requirement that

³¹ 15 U.S.C. §§ 717f(c) and 717f(e).

³² *Certification of New Interstate Natural Gas Pipeline Facilities*, 88 FERC ¶ 61,227 (1999), *clarified*, 90 FERC ¶ 61,128, *further clarified*, 92 FERC ¶ 61,094 (2000) (Certificate Policy Statement).

the project will not be subsidized by existing shippers.³³ As discussed below, Cheniere Pipeline is proposing an incremental recourse reservation rate of \$3.8004/Dth to recover the costs of the Stage 3 Pipeline Project, which is higher than Cheniere Pipeline's existing system-wide rate of \$2.8172/Dth.³⁴ Thus, there will be no subsidization of the expansion project by existing customers, satisfying the threshold requirement established by the Commission's Certificate Policy Statement. Further, the Stage 3 Pipeline Project will not adversely impact existing customers service because the facilities are designed to provide the new incremental service while still providing the existing services. In addition, the Stage 3 Pipeline Project will not adversely affect existing pipelines and their captive customers. The Stage 3 Pipeline Project is designed to provide transportation of feed gas to CCL Stage III liquefaction facilities at the Corpus Christi LNG terminal and thus will not bypass any existing pipeline or provide service already provided by another pipeline facility. Further, no pipeline company or their captive customers have protested Cheniere Pipeline's application.

28. We are also satisfied that Cheniere Pipeline has taken appropriate steps to minimize adverse impacts on landowners and surrounding communities. Approximately 99 percent of the pipeline route will be collocated with the Corpus Christi Pipeline, thereby minimizing construction impacts and other adverse effects to nearby landowners and communities.³⁵

29. Cheniere Pipeline's proposed pipeline will enable it to transport gas to CCL Stage III's proposed Stage 3 LNG Project, where the gas will be liquefied for export. Cheniere Pipeline has executed a precedent agreement with CCL Stage III for 100 percent of the transportation service provided by the capacity of the proposed facilities. Based on the benefits that will result from the project, with no adverse impacts on Cheniere Pipeline's existing customers and other pipelines and their captive customers and minimal impacts on landowners and surrounding communities, we find that Cheniere Pipeline's proposal is consistent with the Certificate Policy Statement, and, as conditioned in this order, is required by the public convenience and necessity.

³³ *Gulf South Pipeline Company, LP*, 163 FERC ¶ 61,124, at P 12 (2018).

³⁴ Cheniere Pipeline also proposes an authorized overrun charge of \$0.1249 per Dth under Rate Schedule FTS and an incremental interruptible charge of \$0.1249 per Dth.

³⁵ EA at 243.

C. Rates

1. Initial Rates

30. Cheniere Pipeline proposes to offer incremental transportation service on the Stage 3 Pipeline under its existing Rate Schedules FTS and ITS, as set forth in its currently effective tariff. Cheniere Pipeline designed its incremental rates based on a proposed incremental cost of service of \$69,775,132 and annual FTS reservation determinants of 18,360,000 Dth (design capacity of 1,530,000 Dth times 12). Cheniere Pipeline proposes a firm incremental reservation charge of \$3.8004 per Dth per month and an authorized overrun charge of \$0.1249 per Dth under Rate Schedule FTS.

31. Additionally, Cheniere Pipeline proposes an incremental interruptible charge of \$0.1249 per Dth based on a 100 percent load factor derivative of the Rate Schedule FTS rates. Cheniere Pipeline proposes zero variable costs, therefore the proposed incremental usage charge is \$0.0000 per Dth.

32. The major cost components underlying Cheniere Pipeline's proposed rates include a capital structure of 50 percent debt and 50 percent equity, a projected cost of debt of 7.75 percent, and a return on equity of 14 percent. Cheniere Pipeline states this capital structure is in line with what has been approved by the Commission for other new pipeline projects.³⁶ Cheniere Pipeline states its rates are based on a federal income tax rate of 21 percent and a Texas tax rate of zero percent. Cheniere Pipeline also proposes a depreciation rate of 4 percent.

Variable Costs

33. On December 7, 2018, the Commission issued a data request directing Cheniere Pipeline to provide a breakdown of projected Operation and Maintenance (O&M) expenses by FERC account number and labor and non-labor costs for the new pipeline facilities, compression, and measuring and regulating facilities. In its response, Cheniere Pipeline identified a total of \$1,579,171 in non-labor O&M costs in Account Nos. 853, 857, 864 and 865.³⁷ Consistent with the Commission's regulation requiring the use of

³⁶ Application at 23 citing *Rover Pipeline LLC*, 158 FERC ¶ 61,109, at 76 (2017) (citing *Florida Southeast Connection, LLC*, 156 FERC ¶ 61,160, at P 25 (2016) (noting the Commission's approval of 14 percent return on equity for greenfield pipelines based on a capital structure that contains no more than 50 percent equity)).

³⁷ Cheniere Pipeline's December 12, 2018 response to Commission staff's December 7, 2018 data request.

straight fixed-variable rate design (SFV),³⁸ these costs are classified as variable costs and should not be recovered through the reservation charge.³⁹ Accordingly, Cheniere Pipeline is directed to recalculate its incremental recourse reservation charge to recover only fixed costs when it files actual tariff records.

Return on Equity

34. The Commission has generally approved higher rates of return on equity (ROE) for greenfield projects to reflect the higher risks associated with such projects.⁴⁰ With respect to developing incremental rates for expansions of existing pipeline systems, our general policy is to use the rate of return components approved in the pipeline's last NGA section 4 rate proceeding.⁴¹

35. Cheniere Pipeline has not filed an NGA section 4 rate case since it went into service. We find it is not appropriate to use the 14 percent ROE approved in Cheniere Pipeline's initial certificate authorizations in determining the cost of service for the Stage 3 Pipeline because it would not adequately reflect the lower risks associated with expanding an existing pipeline system. The Stage 3 Pipeline has more in common with the incremental expansions constructed by existing pipelines than with greenfield pipeline projects, and, because Cheniere Pipeline does not have an ROE established in an NGA section 4 rate case, we find that it is more appropriate to use the most recent ROE approved in a litigated NGA section 4 rate case as the ROE for designing the incremental rates for this project.⁴² This is the approach the Commission has adopted in determining the ROE to be used in developing initial rates for other projects where the pipeline does not have an ROE on file, such as existing facilities being acquired by a new interstate pipeline, and the Commission believes it is appropriate to use in these circumstances.⁴³

³⁸ 18 C.F.R. § 284.7(e) (2019).

³⁹ *Columbia Gulf Transmission, LLC*, 152 FERC ¶ 61,214 (2015); and *Dominion Transmission, Inc.*, 153 FERC ¶ 61,382 (2015).

⁴⁰ *See, e.g., PennEast Pipeline Co., LLC*, 162 FERC ¶ 61,053 (2018).

⁴¹ *See, e.g., Transcontinental Gas Pipe Line Co.*, 161 FERC ¶ 61,250 (2017), *order on reh'g; Transcontinental Gas Pipe Line Co.*, 158 FERC ¶ 61,125 (2016).

⁴² *Sierrita Gas Pipeline LLC*, 165 FERC ¶ 61,001, at n.27 (2018); *Alliance Pipeline L.P.*, 140 FERC ¶ 61,212, at PP 18-20 (2012).

⁴³ *Florida Southeast Connection, LLC*, 164 FERC ¶ 61,091, at P19 (2018).

The last applicable litigated ROE is 10.55 percent, as approved in *El Paso Natural Gas Co.*⁴⁴ Therefore, we will require Cheniere Pipeline to revise its proposed incremental recourse rates to reflect this revised ROE.

Interruptible Rate

36. Cheniere Pipeline proposes to charge an incremental interruptible transportation rate of \$0.1249 per Dth for service on the Stage 3 Pipeline. However, for integrated incremental expansions such as this, Commission policy is to require a pipeline to charge its current system interruptible rate for any interruptible service rendered on additional capacity made available as a result of an incremental expansion that is integrated with existing pipeline facilities.⁴⁵ This is because the pipeline generally is unable to determine whether the capacity available on a given day is due to the existing facilities or to the new, integrated expansion. Therefore, Cheniere Pipeline's proposal to charge a separate Stage 3 Pipeline interruptible rate is rejected, and Cheniere Pipeline is directed to revise its proposal accordingly.

37. We have reviewed Cheniere Pipeline's proposed cost of service, allocation, and rate design used to develop the incremental rates and find that, with the exception of the items discussed above, they reasonably reflect current Commission policy. As the proposed incremental reservation charge, revised to reflect the appropriate return on equity and the recovery of only fixed costs, appears to be higher than Cheniere Pipeline's existing firm transportation system-wide rate of \$2.8172 per Dth per month, we will approve Cheniere Pipeline's use of incremental reservation rates for the Stage 3 Pipeline.

2. Fuel

38. Cheniere Pipeline proposes to charge an incremental fuel retainage percentage for the Stage 3 Pipeline of 0.70 percent. Cheniere Pipeline states the fuel retainage percentage is applicable to fuel, loss and unaccounted for (LAUF) gas, and any imbalances due to meter equipment tolerances between receipt and delivery point meters. The currently effective fuel retainage percentage is 0.50 percent. In a November 16, 2018 response to a staff data request, Cheniere Pipeline explained that the proposed incremental retainage percentage was calculated from the expected additional horsepower requirements for the incremental capacity based on the average fuel gas requirements of the summer and peak scenarios.⁴⁶ Cheniere Pipeline states that it will continue to adjust

⁴⁴ 145 FERC ¶ 61,040, at P 642 (2013), *reh'g denied*, 154 FERC ¶ 61,120 (2016).

⁴⁵ See, e.g., *Gulf South Pipeline Co., LP*, 163 FERC ¶ 61,124, at P 26. (2018); *Texas Eastern Transmission, LP*, 139 FERC ¶ 61,138, at P 31 (2012).

⁴⁶ Cheniere Pipeline Data Response No. 1 at 1. Cheniere Pipeline calculated a

its fuel retainage percentage semi-annually to better align fuel usage and retainage. The Commission accepts Cheniere Pipeline's proposed incremental fuel retention percentage for the Stage 3 Pipeline Project.

3. Reporting Incremental Costs

39. Section 154.309 of the Commission's regulations includes bookkeeping and accounting requirements applicable to all expansions for which incremental rates are charged to ensure that costs are properly allocated between pipelines' existing shippers and incremental expansion shippers.⁴⁷ Therefore, Cheniere Pipeline must keep separate books and accounting of costs and revenues attributable to the Stage 3 Pipeline Project, as required by section 154.309 of the Commission's regulations. The books should be maintained with applicable cross-references as required by section 154.309. This information must be in sufficient detail so that the data can be identified in Statements G, I, and J in any future NGA section 4 or 5 rate case, and the information must be provided consistent with Order No. 710.⁴⁸

V. Environmental Analysis

40. On August 17, 2015, the Commission issued a *Notice of Intent to Prepare an Environmental Assessment for the Proposed Stage 3 Project and Request for Comments on Environmental Issues* (NOI).⁴⁹ The NOI was published in the *Federal Register*⁵⁰ and mailed to interested parties including federal, state, and local officials; agency representatives; environmental and public interest groups; Native American tribes; local libraries and newspapers; and affected property owners. We received comments in response to the NOI from the U.S. Fish and Wildlife Service (FWS), Federal Emergency Management Agency (FEMA), U.S. Environmental Protection Agency (EPA), and Texas Parks and Wildlife Department. The primary issues raised during the scoping process included alternatives, as well as impacts on water quality and supply, wetlands,

summer Fuel and LAUF usage of 0.69 percent and a peak winter Fuel and LAUF usage of 0.72 percent; the average Fuel and LAUF usage for the incremental project is 0.70 percent, as proposed.

⁴⁷ 18 C.F.R. § 154.309 (2019).

⁴⁸ *Revisions to Forms, Statements, and Reporting Requirements for Natural Gas Pipelines*, Order No. 710, 122 FERC ¶ 61,262, at P 23 (2008).

⁴⁹ The proposed Stage 3 LNG and Stage 3 Pipeline facilities are collectively referred to herein as the Stage 3 Project.

⁵⁰ 80 Fed. Reg. 50,843 (2015).

vegetation, wildlife and habitats, migratory birds, land use plans, floodplains, socioeconomics, cultural resources, air quality, and climate change.

41. To satisfy the requirements of the National Environmental Policy Act of 1969, our staff prepared an Environmental Assessment (EA) for CCL Stage III, Corpus Christi Liquefaction, and Cheniere Pipeline's (collectively, Cheniere) proposal. The EA was prepared with the cooperation of the U.S. Army Corps of Engineers, EPA, U.S. Department of Energy, USDOT, Coast Guard, and FWS. The analysis in the EA addresses geology, soils, water resources, wetlands, vegetation, fisheries, wildlife, threatened and endangered species, land use, recreation, visual resources, cultural resources, air quality, noise, safety, socioeconomics, cumulative impacts, and alternatives. All substantive comments received in response to the NOI were addressed in the EA.

42. The EA was issued for a 30-day comment period and placed into the public record on March 29, 2019. Comments were received from the Texas Commission on Environmental Quality (TCEQ) on April 16, 2019, from CCL Stage III on April 29, 2019, and from the EPA and FEMA on April 30, 2019. EPA stated that the agency has no comments on the EA; all other comments are addressed below.

TCEQ Comments

43. The TCEQ recommends that best management practices be used to control runoff from construction sites to prevent detrimental impacts to surface and ground water. Sections 8.2.1 (General Construction Procedures) and 3.0 (Water Resources) of the EA discuss the best management practices outlined in the *Upland Erosion Control, Revegetation, and Maintenance Plan* (Plan) and the *Wetland and Waterbody Construction and Mitigation Procedures* (Procedures) and erosion controls such as silt fences, straw bales, and hay bales, which would reduce the runoff velocity and divert water off the construction right-of-way. In addition, Cheniere Pipeline has a Storm Water Pollution Prevention Plan for managing stormwater runoff during construction and operation. We find that the measures included in the Plan, Procedures and Storm Water Pollution Prevention Plan are sufficient to minimize detrimental impacts to surface and groundwater from runoff from construction areas.

FEMA Comments

44. FEMA requests that CCL Stage III and Cheniere Pipeline contact the Community Floodplain Administrators to review permit requirements for the Stage 3 Project. CCL Stage III and Cheniere Pipeline are directed to submit documentation to verify that they have contacted the Community Floodplain Administrators in accordance with FEMA's request.

45. FEMA also requests that CCL Stage III comply with Executive Orders 11988 and 11990, if applicable.⁵¹ CCL Stage III and Cheniere Pipeline must file with the Secretary of the Commission documentation that it has received all applicable authorizations required under federal law (or evidence of waiver thereof), as required by Environmental Condition No. 10 in the appendix to this order.

CCL Stage III Comments

46. CCL Stage III indicates that it will file a plan for containment and disposal of affected groundwater that may be encountered in the course of construction, but requests that the Commission eliminate reference to consultation with TCEQ, as proposed in Environmental Recommendation No. 15 of the EA.⁵² CCL Stage III said that this plan will be developed in compliance with TCEQ regulations (specifically, Texas Administrative Code Title 30 Chapter 335 – Industrial Solid Waste and Municipal Hazardous Waste) and guidance for waste classification. However, CCL Stage III avers that these regulations and guidance are self-implementing and do not require consultation with TCEQ.

47. Based on information provided by CCL Stage III, a portion of the proposed project area is part of on-going groundwater remediation efforts which are managed by the TCEQ. The EA explains that construction activities, including the installation of ground improvement columns and dewatering, within areas of known groundwater contamination could further the spread of the contamination if special construction and material handling methods are not utilized. Therefore, we agree with the EA's recommendation that CCL Stage III consult with the TCEQ to ensure that CCL Stage III's proposed groundwater containment and disposal guidelines and practices are conducive to continued groundwater remediation. CCL Stage III is required to consult with TCEQ, as required by Environmental Condition No. 15 in the appendix to this order.

48. CCL Stage III also requests that the timing of complying with the EA's Environmental Recommendation Nos. 24, 25, and 27 be modified, from "prior to initial site preparation" to "prior to construction of final design." Environmental

⁵¹ Executive Order 11988 (Floodplain Management), 42 Fed. Reg. 26,951 (1977); Executive Order 11990 (Protection of Wetlands), 42 Fed. Reg. 26,961 (1977).

⁵² Environmental Recommendation No. 15 states: "Prior to construction of the Stage 3 LNG Facilities, CCL Stage III shall file with the Secretary, for review and written approval by the Director of the OEP, groundwater containment and disposal guidelines and practices that will be implemented during construction in areas of known groundwater contamination. CCL Stage III shall develop the groundwater containment and disposal guidelines and practices in consultation with the TCEQ, and its filing shall include documentation of its consultation with TCEQ."

Recommendation No. 24 would require that, prior to initial site preparation, CCL Stage III provide documentation of consultation with the USDOT Pipeline and Hazardous Materials Safety Administration (PHMSA) on whether using normally-closed valves as a stormwater removal device on curbed areas will meet the requirements of 49 C.F.R. Part 193 (section B.9.1.6). CCL Stage III contends that the use of closed drain valves as a stormwater removal device on curbed areas is more closely related to installation of piping and equipment than it is initial site preparation. We agree and have revised Environmental Condition No. 24 in the appendix to this order accordingly.

49. The EA's Environmental Recommendation No. 25 would require that prior to initial site preparation, CCL Stage III provide supplemental geotechnical investigations for Trains 5 through 7, remaining portions of Train 4, LNG tank area, and flare areas. CCL Stage III contends that the geotechnical investigations to be conducted for Trains 5 through 7 and remaining portions of Train 4 are more closely related to installation of foundations than initial site preparation. Soil improvement, which would be influenced by the results of geotechnical investigations, is considered by the Commission to be an initial site preparation activity. However, performing the geotechnical investigation prior to the placement of soils beneath Trains 5 through 7 would provide incomplete information due to the placement of fill material during site preparation activities for the areas mentioned above. Therefore, CCL Stage III must file a schedule and scope of work for a supplemental geotechnical investigation prior to initial site preparation, and then file the supplemental geotechnical investigation for the discussed areas prior to construction of final design. Environmental Condition Nos. 25 and 26 in the appendix to this order reflect these requirements.

50. Environmental Recommendation No. 27 requires that, prior to initial site preparation, CCL Stage III provide the upper limit for total settlement for large flexible foundations and the maximum total edge settlement at the proposed project area for the LNG tanks that the Controlled Modulus Columns will be designed to satisfy (EA section B.9.1.6). CCL Stage III contends that the requested settlement information is more closely related to construction of foundations than initial site preparation. In addition, CCL Stage III states that this information will be developed in support of detailed design and is not expected to be available prior to the commencement of initial site preparation, and thus the time frame for this recommendation should be changed from "prior to initial site preparation" to "prior to construction of final design." The settlement limits would be a consideration and bounding condition for foundation design and, as it is necessary to verify if ground improvement is sufficient based on the conditions present on the site, we find that the current timing of this requirement is appropriate and adopt it as Environmental Condition No. 28 in the appendix to this order.

51. Additionally, CCL Stage III requests that we revise the standard applicable to structures not covered by USDOT PHMSA's Letter of Determination (LOD), as well as modify the timing of complying to the EA's recommended Environmental Condition

No. 32 (from “American Society of Civil Engineers (ASCE) 7-16” to “ASCE 7-05” and “prior to initial site preparation” to “prior to construction of final design”). Environmental Recommendation No. 32 requires that CCL Stage III provide its design wind speed criteria for all other facilities not covered by USDOT PHMSA’s LOD to be designed to withstand wind speeds commensurate with the risk and reliability associated with the facilities in accordance with ASCE 7-16 or equivalent prior to initial site preparation.⁵³ CCL Stage III contends that ASCE 7-16 is not applicable to the proposed project and that the wind speed criteria for CCL Stage III would conform with all applicable codes and standards to withstand wind speeds commensurate with the risk and reliability associated with the facilities covered and not covered by USDOT PHMSA’s LOD in accordance with ASCE 7-05 and thus, it requests that the environmental recommendation be revised to reference ASCE 7-05 or equivalent rather than ASCE 7-16. While USDOT PHMSA’s LOD would apply 49 C.F.R. § 193.2067 to facilities that fall under their jurisdiction, structures that do not fall under that jurisdiction should be designed to ASCE 7-16, as that would result in a more conservative wind load than those developed by ASCE 7-05 after importance factors are applied, as stated in the application, and an overall safer design. We note that CCL Stage III filed an updated wind design category table that is inconsistent with what was filed in the application and what was filed with DOT PHMSA.⁵⁴ Based on the updated table, certain structures would have adequate wind speed design criteria, but other structures would not have sufficient wind speed criteria applied. In addition, we disagree that the determinations to wind speed design criteria are more closely related to detailed foundation and structural design than initial site preparations as the recommendation speaks to the basis of design, not the final requirements. Therefore, we find that the current application of ASCE 7-16 to apply to structures not covered by USDOT PHMSA’s LOD, as well as the current timing recommended in the EA, is appropriate and adopt the EA’s recommended requirements as Environmental Condition No. 33 in the appendix to this order.

52. CCL Stage III requests we remove three engineering information requests (EIRs) from the EA’s Environmental Recommendation No. 36 (EIR Nos. 27, 34, and 64). Environmental Recommendation No. 36 requires that CCL Stage III file information/revisions pertaining to its response to various EIRs prior to construction of final design. CCL Stage III contends that it filed complete responses to EIR Nos. 27, 24, and 64 of staff’s January 3, 2019 data request in filings dated January 23, 2019 (Comment No. 64) and February 22, 2019 (Comment Nos. 27 and 34); thus, EIR Nos. 27, 34, and 64 should be removed from Environmental Recommendation No. 36. According to CCL Stage III, CCL Stage III’s January 23, 2019 response regarding EIR 64 states that wind design criteria would be included in the engineering procurement, and construction

⁵³ EA at 196.

⁵⁴ Comments filed by CCL Stage III on April 29, 2019.

firm's basis of design documents. Once this information is provided in the final design, this item will be closed. Regarding EIR 27 and EIR 34, we have confirmed that the responses provided by CCL Stage III provided on February 22, 2019 are sufficient. However, additional information is needed with regards to EIR 64. We have revised the condition accordingly as Environmental Condition No. 37 in the appendix to this order.

53. CCL Stage III requests that we fix a typographical mistake in the EA's Environmental Recommendation No. 61. In its comments, CCL Stage III notes that the code applicable to this recommendation is American Petroleum Institute (API) standard 661, not API 662. We have revised the condition accordingly and adopt it as Environmental Condition No. 62 in the appendix to this order.

54. We have also modified Environmental Condition 96 to clarify the requirements for active and passive mitigation for pool and jet fires and to provide more flexibility in demonstrating the effectiveness of the mitigation for pool and jet fires.

55. In addition, CCL Stage III provided corrections and clarifications on certain air quality sections of the EA. We acknowledge these comments, but find that these corrections and clarifications do not change any of the findings in the EA, including the conclusion that emissions associated with construction and operation of the project, including emissions associated with anticipated LNG carrier calls, would not have a significant impact on local or regional air quality.⁵⁵

Updated Greenhouse Gas (GHG) Emissions

56. The EA discloses the GHG emissions from construction and operation of the Stage 3 Project,⁵⁶ the climate change impacts in the region,⁵⁷ and the regulatory structure for GHGs under the Clean Air Act.⁵⁸ Specifically, the Stage 3 LNG Project EA estimates that operation of the project, including the terminal expansion, modifications to the Sinton Compressor Station, fugitive emissions from pipeline operations, and marine emissions, will result in direct and indirect GHG emissions of up to 619,700 metric tons per year of carbon dioxide equivalent (CO₂e). To put that into context, we note that according to the national net CO₂e emissions estimate in the EPA's Inventory of U.S. Greenhouse Gas Emissions and Sinks (EPA 2019), 5.743 billion metric tons of CO₂e

⁵⁵ EA at 132.

⁵⁶ *Id.* 121-132.

⁵⁷ *Id.* at 233-236.

⁵⁸ *Id.* at 113, 115, 117-118.

were emitted at a national level in 2017 (inclusive of CO₂e sources and sinks).⁵⁹ The direct and indirect operational emissions of the terminal expansion and modifications to the Sinton Compressor Station could potentially increase CO₂e emissions based on the 2017 levels by 0.01 percent at the national level. Currently, there are no national targets to use a benchmarks for comparison.⁶⁰

57. The EA also includes a qualitative discussion that discloses various effects of climate change.⁶¹ The EA acknowledges that the GHG emissions, such as those emitted from the construction and operation of the project will contribute incrementally to climate change.⁶² The Commission has previously concluded it could not determine a project's incremental physical impacts on the environment caused by GHG emissions.⁶³ We have also previously concluded it could not determine whether a project's contribution to climate change would be significant.⁶⁴ That situation has not changed.

58. On June 11, 2019, Corpus Christi Liquefaction submitted a letter outlining the Liquefaction Project's construction and in-service schedule updates. Accordingly, in Table 1 below we provide information on the overlapping of emissions from construction, commissioning, and operation activities for the Liquefaction Project and Stage 3 Project.

59. Table 1 reflects Trains 1 and 2 commencing operations in 2019, and Train 3 commencing operation in 2021. Thus, in 2019, 2020, and 2021, construction, commissioning, and operational emissions for the Liquefaction Project would occur concurrently with construction emissions for the Stage 3 Project. In 2022 and 2023,

⁵⁹ EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2017* at ES6-8 (Table ES-2), <https://www.epa.gov/sites/production/files/2019-04/documents/us-ghg-inventory-2019-main-text.pdf> (accessed June 2019).

⁶⁰ The national emissions reduction targets expressed in the EPA's Clean Power Plan were repealed, *Greenhouse Gas Emissions From Existing Electric Utility Generating Units; Revisions to Emissions Guidelines Implementing Regulations*, 84 Fed. Reg. 32,520, 32,522-32,532 (July 8, 2019), and the targets in the Paris climate accord are pending withdrawal.

⁶¹ EA at 233-236.

⁶² *Id.* at 235.

⁶³ *Dominion Transmission, Inc.*, 163 FERC ¶ 61,128, at PP 67-70 (2018) (LaFleur, Comm'r, *dissenting in part*; Glick, Comm'r, *dissenting in part*).

⁶⁴ *Id.*

emissions from operation of Liquefaction Project Trains 1, 2, and 3 would occur concurrently with emissions from construction, commissioning, and operation of the Stage 3 Project. Table 1 shows the overlapping emissions from construction, commissioning, and operation activities for the Liquefaction Project and the Stage 3 Project by year. Since all construction activities for the Stage 3 Project would be completed in 2023, 2024 would be the first full year of operation for both the Liquefaction Project and the Stage 3 Project.

60. In 2024, the majority of emissions shown in Table 1 would be generated by the Liquefaction Project. For example, the Liquefaction Project would be responsible for approximately 85 percent of the total GHG (CO₂e) emissions shown in Table 1 for that year. The Stage III Project would have a smaller contribution of GHG compared to the Liquefaction Project.

**TABLE 1.
Liquefaction Project and Stage 3 Project Combined Construction, Commissioning, and Operation Emissions (tpy)**

Year	Pollutant							CO ₂ e ^a
	NO _x	VOC	CO	SO ₂	PM ₁₀	PM _{2.5}	Total HAPs	
2019 ^b	2,136	226	3,215	95	1,260	212	18	1,630,452
2020 ^c	2,654	234	2,696	101	815	185	24	2,518,222
2021 ^d	2,427	233	3,246	91	409	127	30	2,637,328
2022 ^e	2,930	492	2,816	77	376	143	39	3,899,949
2023 ^f	2,948	961	2,746	97	376	139	39	4,280,839
2024 ^g (full operation)	2,955	314	3,508	116	125	124	40	4,201,607

^a Metric tons

^b 2018 construction emissions from Table 4.11-4 from the Liquefaction Project final EIS (FERC, 2014) plus commissioning emissions for Trains 1 and 2 from Table 4.11-8 of the Liquefaction Project final EIS plus operation emissions for Trains 1 and 2 from Tables 4.11-6, 4.11-9, 4.11-10, and 4.11-12 of the Liquefaction Project final EIS plus construction emissions from the Stage 3 Project for 2019.

^c 2019 construction emissions from Table 4.11-4 from the Liquefaction Project final EIS (FERC, 2014) plus operation emissions for Trains 1 and 2 from Tables 4.11-6, 4.11-9, 4.11-10, and 4.11-12 of the Liquefaction Project final EIS plus construction emissions from the Stage 3 Project for 2020.

^d 2020 construction emissions from Table 4.11-4 from the Liquefaction Project final EIS (FERC, 2014) plus commissioning emissions for Train 3 from Table 4.11-8 of the Liquefaction Project final EIS plus

operation emissions for Trains 1, 2, and 3 from Tables 4.11-6, 4.11-9, 4.11-10, and 4.11-12 of the Liquefaction Project final EIS plus construction emissions from the Stage 3 Project for 2021.

^e Operation emissions for Trains 1, 2, and 3 from Tables 4.11-6, 4.11-9, 4.11-10, and 4.11-12 of the Liquefaction Project final EIS (FERC, 2014) plus construction, commissioning, and operation emissions from the Stage 3 Project for 2022.

^f Operation emissions for Trains 1, 2, and 3 from Tables 4.11-6, 4.11-9, 4.11-10, and 4.11-12 of the Liquefaction Project final EIS (FERC, 2014) plus construction, commissioning, and operation emissions from the Stage 3 Project for 2023.

^g Operation emissions for Trains 1, 2, and 3 from Tables 4.11-6, 4.11-9, 4.11-10, and 4.11-12 of the Liquefaction Project final EIS (FERC, 2014) plus operation emissions from the Stage 3 Project.

61. Based on the analysis in the EA, as updated with the information in this order, we conclude that if constructed and operated in accordance with Cheniere's application and supplements, and in compliance with the environmental conditions in the appendix to this order, our approval of this proposal would not constitute a major federal action significantly affecting the quality of the human environment. Compliance with the environmental conditions appended to our orders is integral to ensuring that the environmental impacts of approved projects are consistent with those anticipated by our environmental analyses. Thus, Commission staff carefully reviews all information submitted. Commission staff will only issue a construction notice to proceed with an activity when satisfied that the applicants have complied with all applicable conditions. We also note that the Commission has the authority to take whatever steps are necessary to ensure the protection of environmental resources during construction and operation of the project, including authority to impose any additional measures deemed necessary to ensure continued compliance with the intent of the conditions of the order, as well as the avoidance or mitigation of unforeseen adverse environmental impacts resulting from project construction and operation.

62. Any state or local permits issued with respect to the jurisdictional facilities authorized herein must be consistent with the conditions of this authorization. We encourage cooperation between jurisdictional companies and local authorities. However, this does not mean that state and local agencies, through application of state or local laws, may prohibit or unreasonably delay the construction or operation of facilities approved by this Commission.⁶⁵

⁶⁵ See 15 U.S.C. § 717r(d) (state or federal agency's failure to act on a permit considered to be inconsistent with Federal law); see also *Schneidewind v. ANR Pipeline Co.*, 485 U.S. 293, 310 (1988) (state regulation that interferes with FERC's regulatory authority over the transportation of natural gas is preempted) and *Dominion*

63. At a hearing held on November 21, 2019, the Commission on its own motion received and made a part of the record in this proceeding all evidence, including the application, and exhibits thereto, and all comments, and upon consideration of the record,

The Commission orders:

(A) In Docket No. CP18-512-000, CCL Stage III and Corpus Christi Liquefaction are authorized under section 3 of the NGA to site, construct, and operate the proposed project located in San Patricio County, Texas, as described and conditioned herein, and as more fully described in the application and supplements, including any commitments made therein, and subject to the environmental conditions contained in the appendix to this order.

(B) CCL Stage III's and Corpus Christi Liquefaction's proposed liquefaction facilities shall be constructed and made available for service within five years of the date of this order.

(C) In Docket No. CP18-513-000, a certificate of public convenience and necessity under section 7(c) of the NGA is issued to Cheniere Pipeline authorizing it to construct and operate the proposed project, as described and conditioned herein, and as more fully described in Cheniere Pipeline's application and supplements, including any commitments made therein.

(D) The certificate authorized in Ordering Paragraph (C) above is conditioned on:

- (1) Cheniere Pipeline's facilities being constructed and made available for service within five years of the date of this order;
- (2) Cheniere Pipeline's compliance with all applicable Commission regulations under the NGA, particularly the general terms and conditions set forth in Parts 154, 157, and 284, and paragraphs (a), (c), (e), and (f) of section 157.20 of the regulations;
- (3) Cheniere Pipeline's compliance with the environmental conditions contained in the appendix to this order.

(E) Cheniere Pipeline's proposed incremental recourse reservation and

Transmission, Inc. v. Summers, 723 F.3d 238, 245 (D.C. Cir. 2013) (noting that state and local regulation is preempted by the NGA to the extent it conflicts with federal regulation, or would delay the construction and operation of facilities approved by the Commission).

authorized overrun charges are approved as initial rates for the Stage 3 Pipeline, as conditioned above.

(F) Cheniere Pipeline's proposed incremental fuel retainage percentage is approved.

(G) Cheniere Pipeline shall file actual tariff records with the incremental initial rates at least 60 days prior to the date the project facilities go into service.

(H) Cheniere Pipeline shall keep separate books and accounts of costs attributable to the proposed incremental services, as described above.

(I) CCL Stage III, Corpus Christi Liquefaction, and Cheniere Pipeline shall notify the Commission's environmental staff by telephone or e-mail of any environmental noncompliance identified by other federal, state, or local agencies on the same day that such agency notifies CCL Stage III, Corpus Christi Liquefaction, or Cheniere Pipeline. CCL Stage III, Corpus Christi Liquefaction, and Cheniere Pipeline shall file written confirmation of such notification with the Secretary of the Commission within 24 hours.

By the Commission. Commissioner Glick is dissenting with a separate statement attached.

(S E A L)

Kimberly D. Bose,
Secretary.

Appendix

Environmental Conditions

As recommended in the environmental assessment (EA), this authorization includes the following conditions:

1. Corpus Christi Liquefaction Stage III, LLC (CCL Stage III), Corpus Christi Liquefaction, LLC, and Cheniere Corpus Christi Pipeline, L.P. (CCPL) (collectively referred to as Cheniere) shall follow the construction procedures and mitigation measures described in its application and supplements (including responses to staff data requests) and as identified in the EA, unless modified by the Order. Cheniere must:
 - a. request any modifications to these procedures, measures, or conditions in a filing with the Secretary of the Commission (Secretary);
 - b. justify each modification relative to site-specific conditions;
 - c. explain how that modification provides an equal or greater level of environmental protection than the original measure; and
 - d. receive approval in writing from the Director of the Office of Energy Projects (OEP) before using that modification.
2. **For the Stage 3 LNG Facilities**, the Director of OEP, or the Director's designee, has delegated authority to address any requests for approvals or authorizations necessary to carry out the conditions of the Order, and take whatever steps are necessary to ensure the protection of life, health, property, and the environment during construction and operation of the Stage 3 LNG Facilities. This authority shall allow:
 - a. the modification of conditions of the Order;
 - b. stop-work authority and authority to cease operation; and
 - c. the imposition of any additional measures deemed necessary to ensure continued compliance with the intent of the conditions of the Order as well as the avoidance or mitigation of unforeseen adverse environmental impact resulting from the Project construction and operation.
3. **For the Stage 3 Pipeline**, the Director of OEP, or the Director's designee, has delegated authority to address any requests for approvals or authorizations necessary to carry out the conditions of the Order, and take whatever steps are necessary to ensure the protection of environmental resources during construction and operation of the Stage 3 Pipeline. This authority shall allow:

- a. the modification of conditions of the Order;
 - b. stop-work authority; and
 - c. the imposition of any additional measures deemed necessary to ensure continued compliance with the intent of the conditions of the Order as well as the avoidance or mitigation of unforeseen adverse environmental impact resulting from Project construction and operation.
4. **Prior to any construction**, Cheniere shall file an affirmative statement with the Secretary, certified by a senior company official, that all company personnel, environmental inspectors (EIs), and contractor personnel will be informed of the EI's authority and have been or will be trained on the implementation of the environmental mitigation measures appropriate to their jobs **before** becoming involved with construction and restoration activities.
 5. The authorized facility locations shall be as shown in the EA, as supplemented by filed alignment sheets. **As soon as they are available, and before the start of construction**, Cheniere shall file with the Secretary any revised detailed survey alignment maps/sheets at a scale not smaller than 1:6,000 with station positions for all facilities approved by the Order. All requests for modifications of environmental conditions of the Order or site-specific clearances must be written and must reference locations designated on these alignment maps/sheets.

For the pipeline, CCPL's exercise of eminent domain authority granted under Natural Gas Act (NGA) section 7(h) in any condemnation proceedings related to the Order must be consistent with these authorized facilities and locations. CCPL's right of eminent domain granted under NGA section 7(h) does not authorize it to increase the size of its natural gas pipeline to accommodate future needs or to acquire a right-of-way for a pipeline to transport a commodity other than natural gas.

6. Cheniere shall file with the Secretary detailed site plan drawings, alignment maps/sheets, and aerial photographs at a scale not smaller than 1:6,000 identifying all route realignments or facility relocations, and staging areas, pipe storage yards, new access roads, and other areas that would be used or disturbed and have not been previously identified in filings with the Secretary. Approval for each of these areas must be explicitly requested in writing. For each area, the request must include a description of the existing land use/cover type, documentation of landowner approval, whether any cultural resources or federally listed threatened or endangered species would be affected, and whether any other environmentally sensitive areas are within or abutting the area. All areas shall be clearly identified on the maps/sheets/aerial photographs. Each area must be approved in writing by the Director of OEP **before construction in or near that area**.

This requirement does not apply to extra workspace allowed by the Commission's *Upland Erosion Control, Revegetation, and Maintenance Plan* and/or minor field

realignments per landowner needs and requirements which do not affect other landowners or sensitive environmental areas such as wetlands.

Examples of alterations requiring approval include all route realignments and facility location changes resulting from:

- a. implementation of cultural resources mitigation measures;
- b. implementation of endangered, threatened, or special concern species mitigation measures;
- c. recommendations by state regulatory authorities; and
- d. agreements with individual landowners that affect other landowners or could affect sensitive environmental areas.

7. **Within 60 days of the Order and before construction begins**, Cheniere shall file an Implementation Plan with the Secretary for review and written approval by the Director of OEP. Cheniere must file revisions to the plan as schedules change. The plan shall identify:

- a. how Cheniere will implement the construction procedures and mitigation measures described in its application and supplements (including responses to staff data requests), identified in the EA, and required by the Order;
- b. how Cheniere will incorporate these requirements into the contract bid documents, construction contracts (especially penalty clauses and specifications), and construction drawings so that the mitigation required at each site is clear to onsite construction and inspection personnel;
- c. the number of EIs assigned, and how the company will ensure that sufficient personnel are available to implement the environmental mitigation;
- d. company personnel, including EIs and contractors, who will receive copies of the appropriate material;
- e. the location and dates of the environmental compliance training and instructions Cheniere will give to all personnel involved with construction and restoration (initial and refresher training as the Project progresses and personnel change), with the opportunity for OEP staff to participate in the training session(s);
- f. the company personnel (if known) and specific portion of Cheniere's organization having responsibility for compliance;
- g. the procedures (including use of contract penalties) Cheniere will follow if non-compliance occurs; and
- h. for each discrete facility, a Gantt or PERT chart (or similar project scheduling diagram), and dates for:
 - (1) the completion of all required surveys and reports;

- (2) the environmental compliance training of onsite personnel;
 - (3) the start of construction; and
 - (4) the start and completion of restoration.
8. Cheniere shall employ a team of EIs, including at least one EI for the Stage 3 LNG Facilities, and at least one EI per construction spread for the Stage 3 Pipeline Facilities. The EI(s) shall be:
 - a. responsible for monitoring and ensuring compliance with all mitigation measures required by the Order and other grants, permits, certificates, or other authorizing documents;
 - b. responsible for evaluating the construction contractor's implementation of the environmental mitigation measures required in the contract (see condition 6 above) and any other authorizing document;
 - c. empowered to order correction of acts that violate the environmental conditions of the Order, and any other authorizing document;
 - d. a full-time position, separate from all other activity inspectors;
 - e. responsible for documenting compliance with the environmental conditions of the Order, as well as any environmental conditions/permit requirements imposed by other federal, state, or local agencies; and
 - f. responsible for maintaining status reports.
9. Beginning with the filing of its Implementation Plan, Cheniere shall file updated status reports with the Secretary on a **biweekly** basis for the Stage 3 Pipeline Facilities and a **monthly** basis for the Stage 3 LNG Facilities until all construction and restoration activities are complete. Problems of a significant magnitude shall be reported to the Federal Energy Regulatory Commission (FERC) **within 24 hours**. On request, these status reports will also be provided to other federal and state agencies with permitting responsibilities. Status reports shall include:
 - a. an update on Cheniere's efforts to obtain the necessary federal authorizations;
 - b. Project schedule, including current construction status of the Project, work planned for the following reporting period, and any schedule changes for stream crossings or work in other environmentally-sensitive areas;
 - c. a listing of all problems encountered, contractor nonconformance/deficiency logs, and each instance of noncompliance observed by the EI during the reporting period (both for the conditions imposed by the Commission and any environmental conditions/permit requirements imposed by other federal, state, or local agencies);

- d. a description of the corrective and remedial actions implemented in response to all instances of noncompliance, nonconformance, or deficiency;
 - e. the effectiveness of all corrective and remedial actions implemented;
 - f. a description of any landowner/resident complaints which may relate to compliance with the requirements of the Order, and the measures taken to satisfy their concerns; and
 - g. copies of any correspondence received by Cheniere from other federal, state, or local permitting agencies concerning instances of noncompliance, and Cheniere's response.
10. Cheniere must receive written authorization from the Director of OEP **before commencing construction of any Project facilities**. To obtain such authorization, Cheniere must file with the Secretary documentation that it has received all applicable authorizations required under federal law (or evidence of waiver thereof).
 11. CCL Stage III must receive written authorization from the Director of OEP **prior to introducing hazardous fluids into the Stage 3 LNG Facilities**. Instrumentation and controls, hazard detection, hazard control, and security components/systems necessary for the safe introduction of such fluids shall be installed and functional.
 12. CCPL must receive written authorization from the Director of OEP **before placing the Stage 3 Pipeline Facilities into service**. Such authorization will only be granted following a determination that rehabilitation and restoration of the right-of-way and other areas affected by the Stage 3 Pipeline Facilities are proceeding satisfactorily.
 13. CCL Stage III must receive written authorization from the Director of OEP **before placing the Stage 3 LNG Facilities into service**. Such authorization will only be granted following a determination that the facilities have been constructed in accordance with FERC approval, can be expected to operate safely as designed, and the rehabilitation and restoration of the areas affected by the Stage 3 LNG Facilities are proceeding satisfactorily.
 14. **Within 30 days of placing the authorized facilities in service**, Cheniere shall file an affirmative statement with the Secretary, certified by a senior company official:
 - a. that the facilities have been constructed in compliance with all applicable conditions, and that continuing activities will be consistent with all applicable conditions; or
 - b. identifying which of the conditions in the Order Cheniere has complied with or will comply with. This statement shall also identify any areas affected by the Project where compliance measures were not properly implemented, if not previously identified in filed status reports and the reason for noncompliance.

15. **Prior to construction of the Stage 3 LNG Facilities**, CCL Stage III shall file with the Secretary, for review and written approval by the Director of the OEP, groundwater containment and disposal guidelines and practices that will be implemented during construction in areas of known groundwater contamination. CCL Stage III shall develop the groundwater containment and disposal guidelines and practices in consultation with the Texas Commission on Environmental Quality, and its filing shall include documentation of its consultation with Texas Commission on Environmental Quality.
16. **Prior to construction of the Stage 3 Pipeline**, CCPL shall file with the Secretary, for review and written approval by the Director of the OEP, an updated *Horizontal Directional Drill Procedures and Inadvertent Return Plan* that includes procedures for environmental testing of drilling mud prior to any placement in upland areas or other beneficial reuse, including a list of testing parameters.
17. **Prior to construction of the Stage 3 Pipeline**, CCPL shall file with the Secretary, for review and written approval by the Director of OEP, revised alignment sheets and horizontal directional drill (HDD) plan and profile drawings that:
 - a. removes all workspace, except the minimum amount necessary to place guide wires, between the HDD entry and exit locations at milepost 1.2 and 1.6; and
 - b. depicts all workspace necessary for placement and operation of equipment around each HDD entry and exit location, including that proposed to be located within an existing permanent easement.
18. **Prior to construction of the Stage 3 Pipeline**, CCPL shall consult with the Texas Parks and Wildlife Department and the South Texas Plant Materials Center regarding the suitability of the proposed seed mix for support of pollinator species, and file with the Secretary documentation of its consultations and a final proposed seed mix, for review and written approval by the Director of OEP.
19. Cheniere shall **not begin** construction activities **until**:
 - a. the FERC staff receives comments from the FWS and the National Marine Fisheries Service regarding the proposed action;
 - b. the FERC staff completes formal ESA consultation with the FWS , if required; and
 - c. Cheniere has received written notification from the Director of OEP that construction or use of mitigation may begin.
20. Cheniere shall **not begin construction** of the Project **until**:
 - a. CCPL files with the Secretary supplemental cultural resource survey reports for the Stage 3 Pipeline workspaces where surveys have not been completed,

along with the Texas State Historic Preservation Office comments on the reports;

- b. Advisory Council on Historic Properties is afforded an opportunity to comment if historic properties would be adversely affected; and
- c. FERC staff reviews and the Director of the OEP approves all reports and plans and notifies Cheniere in writing that construction may proceed.

All materials filed with the Commission containing **location, character, and ownership information** about cultural resources must have the cover and any relevant pages therein clearly labeled in bold lettering: “**CUI//PRIV - DO NOT RELEASE.**”

- 21. CCL Stage III shall file a full power load noise survey with the Secretary **no later than 60 days** after each liquefaction train is placed into service. If the noise attributable to operation of the equipment at the LNG terminal exceeds a day-night equivalent sound level (L_{dn}) of 55 A-weighted decibels (dBA) at the nearest noise sensitive area (NSA), **within 60 days** CCL Stage III shall modify operation of the Stage 3 LNG Facilities or install additional noise controls until a noise level below an L_{dn} of 55 dBA at the NSA is achieved. CCL Stage III shall confirm compliance with the above requirement by filing a second noise survey with the Secretary **no later than 60 days** after it installs the additional noise controls.
- 22. CCL Stage III shall file a noise survey with the Secretary **no later than 60 days** after placing the entire Stage 3 LNG Facilities into service. If a full-load noise survey is not possible, CCL Stage III shall provide an interim survey at the maximum possible horsepower load **within 60 days** of placing the Stage 3 LNG Facilities into service and provide the full-load noise survey **within 6 months**. If the noise attributable to operation of the equipment at the LNG terminal exceeds an L_{dn} of 55 dBA at the nearest NSA under interim or full horsepower load conditions, CCL Stage III shall file a report on what changes are needed and shall install the additional noise controls to meet the level **within 1 year** of the in-service date. CCL Stage III shall confirm compliance with the above requirement by filing an additional full-load noise survey with the Secretary **no later than 60 days** after it installs the additional noise controls.
- 23. CCPL shall file noise surveys with the Secretary **no later than 60 days** after placing the modified Sinton Compressor Station in service. If a full load condition noise survey is not possible, CCPL shall provide an interim survey at the maximum possible horsepower load and provide the full load survey **within 6 months**. If the noise attributable to the operation of all of the equipment at the compressor station, under interim or full horsepower load conditions, exceeds an L_{dn} of 55 dBA at any nearby NSAs, CCPL shall file a report on what changes are needed and shall install the additional noise controls to meet the level **within 1 year** of the in-service date. CCPL shall confirm compliance with the above requirement by filing a second noise

survey with the Secretary **no later than 60 days** after it installs the additional noise controls.

24. **Prior to construction of final design**, CCL Stage III shall file with the Secretary documentation of consultation with the USDOT Pipeline and Hazardous Materials Safety Administration on whether using normally-closed valves as a stormwater removal device on curbed areas will meet the requirements of 49 CFR 193.
25. **Prior to initial site preparation**, CCL Stage III shall file with the Secretary a schedule and scope of work for a supplemental geotechnical investigation for Trains 5 through 7, remaining portions of Train 4, the LNG tank area, and flare areas.
26. **Prior to construction of final design**, CCL Stage III shall file with the Secretary a supplemental geotechnical investigation for Trains 5 through 7, remaining portions of Train 4, the LNG tank area, and flare areas. The geotechnical reports shall be stamped and sealed by the professional engineer-of-record registered in Texas and shall include a geotechnical investigation location plan with spacing of no more than 300 feet and field sampling methods and laboratory tests that are at least as comprehensive as the existing geotechnical investigations. Geotechnical test boring shall be performed to a minimum depth of 100 feet below grade, or until refusal. In addition, the geotechnical investigations and reports must demonstrate soil modifications and foundation designs will be similar to Trains 1-3 and portions of the LNG tank and flare areas already investigated.
27. **Prior to construction of final design**, CCL Stage III shall file with the Secretary the following information, stamped and sealed by the professional engineer-of-record registered in Texas:
 - a. site preparation drawings and specifications;
 - b. LNG storage tank and foundation design drawings and calculations;
 - c. LNG terminal structures and foundation design drawings and calculations (including prefabricated and field constructed structures as well as demonstrating the cold box will take all wind loads and that no wind loads will be transmitted from the cold box to the Heavies Removal Scrub Column/Reflux Drum, 01-C-1511/01-V-1511);
 - d. seismic specifications for procured equipment prior to issuing requests for quotations; and
 - e. quality control procedures to be used for civil/structural design and construction.

In addition, CCL Stage III shall file, in its Implementation Plan, the schedule for producing this information.

28. **Prior to initial site preparation**, CCL Stage III shall file with the Secretary the upper limit for total settlement for large flexible foundations and the maximum total

edge settlement at the proposed Project area for the LNG tanks that the Controlled Modulus Columns will be designed to satisfy.

29. **Prior to initial site preparation**, CCL Stage III shall file with the Secretary a detailed analysis that demonstrates external loads exerted by vehicular traffic and construction equipment will not exceed the maximum live load capability of buried pipelines at or adjacent to the Project. The analysis shall be stamped and sealed by the professional engineer-of-record, registered in Texas and shall include the depth of existing buried pipelines and evidence that the maximum load shall be higher than plant construction and operation activities require. In addition, provide construction and operations procedures to demonstrate that the maximum allowable weight will never be exceeded.

Information pertaining to recommendations 30 through 125 shall be filed with the Secretary for review and written approval by the Director of OEP, or the Director's designee, within the timeframe indicated by each recommendation. Specific engineering, vulnerability, or detailed design information meeting the criteria specified in Order No. 833 (Docket No. RM16-15-000), including security information, shall be submitted as critical energy infrastructure information pursuant to 18 CFR 388.113. See Critical Electric Infrastructure Security and Amending Critical Energy Infrastructure Information, Order No. 833, 81 Fed. Reg. 93,732 (December 21, 2016), FERC Stats. & Regs. 31,389 (2016). Information pertaining to items such as offsite emergency response, procedures for public notification and evacuation, and construction and operating reporting requirements shall be subject to public disclosure. All information shall be filed a **minimum of 30 days** before approval to proceed is requested.

30. **Prior to initial site preparation**, CCL Stage III shall file an overall Project schedule, which includes the proposed stages of the commissioning plan.
31. **Prior to initial site preparation**, CCL Stage III shall file procedures for controlling access during construction.
32. **Prior to initial site preparation**, CCL Stage III shall file quality assurance and quality control procedures for construction activities.
33. **Prior to initial site preparation**, CCL Stage III shall file its design wind speed criteria for all other facilities not covered by USDOT Pipeline and Hazardous Materials Safety Administration's Letter of Determination to be designed to withstand wind speeds commensurate with the risk and reliability associated with the facilities in accordance with American Society of Civil Engineers 7-16 or equivalent.
34. **Prior to initial site preparation**, CCL Stage III shall develop an Emergency Response Plan (including evacuation) which integrates the CCL Stage III Facilities into the existing plan for the Liquefaction Project and coordinate procedures with the Coast Guard; state, county, and local emergency planning groups; fire

departments; state and local law enforcement; and appropriate federal agencies. This plan shall include at a minimum:

- a. designated contacts with state and local emergency response agencies;
- b. scalable procedures for the prompt notification of appropriate local officials and emergency response agencies based on the level and severity of potential incidents;
- c. procedures for notifying residents and recreational users within areas of potential hazard;
- d. evacuation routes/methods for residents and public use areas that are within any transient hazard areas along the route of the LNG marine transit;
- e. locations of permanent sirens and other warning devices; and
- f. an “emergency coordinator” on each LNG carrier to activate sirens and other warning devices.

CCL Stage III shall notify the FERC staff of all planning meetings in advance and shall report progress on the development of its Emergency Response Plan **at 3-month intervals.**

35. **Prior to initial site preparation,** CCL Stage III shall file a Cost-Sharing Plan identifying the mechanisms for funding all Project-specific security/emergency management costs that shall be imposed on state and local agencies. This comprehensive plan shall include funding mechanisms for the capital costs associated with any necessary security/emergency management equipment and personnel base. CCL Stage III shall notify FERC staff of all planning meetings in advance and shall report progress on the development of its Cost Sharing **Plan at 3-month intervals.**
36. **Prior to construction of final design,** CCL Stage III shall file change logs that list and explain any changes made from the front end engineering design provided in CCL Stage III’s application and filings. A list of all changes with an explanation for the design alteration shall be provided and all changes shall be clearly indicated on all diagrams and drawings.
37. **Prior to construction of final design,** CCL Stage III shall file information/revisions pertaining to its response to numbers 4, 13, 39, 44, 45, 46, 52, and 58 of the December 19, 2018 data request and to its response to numbers 3, 8, 9, 20, 21, 22, 23, 24, 31, 38, 39, 41, 47, and 64 of the January 3, 2019 data request, which indicated features to be included or considered in the final design.
38. **Prior to construction of final design,** CCL Stage III shall file lighting drawings. The lighting drawings shall show the location, elevation, type of light fixture, and lux levels of the lighting system and shall be in accordance with the proposed specification to meet American Petroleum Institute (API) 540 and provide

illumination along the perimeter of the facility and along paths/roads of access and egress to facilitate security monitoring and emergency response operations.

39. **Prior to construction of final design**, CCL Stage III shall file security camera and intrusion detection drawings. The security camera drawings shall show the location, areas covered, and features of the camera (fixed, tilt/pan/zoom, motion detection alerts, low light, mounting height, etc.) to verify camera coverage of the entire perimeter with redundancies, and cameras interior to the terminal that will enable rapid monitoring of the LNG terminal including a camera be provided at the top of the LNG storage tank, and coverage within pretreatment areas, within liquefaction areas, within truck transfer areas, and buildings. The drawings shall show or note the location of the intrusion detection to verify it covers the entire perimeter of the LNG plant.
40. **Prior to construction of final design**, CCL Stage III shall file fencing drawings. The fencing drawings shall provide details of fencing that demonstrates it will restrict and deter access around the entire facility and has a setback from exterior features (e.g., power lines, trees, etc.) and from interior features (e.g., piping, equipment, buildings, etc.) that does not allow for the fence to be overcome.
41. **Prior to construction of final design**, CCL Stage III shall file drawings and specifications for crash rated vehicle barriers at each facility entrance for access control.
42. **Prior to construction of final design**, CCL Stage III shall file a plot plan of the final design showing all major equipment, structures, buildings, and impoundment systems.
43. **Prior to construction of final design**, CCL Stage III shall file three-dimensional plant drawings to confirm plant layout for maintenance, access, egress, and congestion.
44. **Prior to construction of final design**, CCL Stage III shall file up-to-date process flow diagrams (PFDs) and piping and instrumentation diagrams (P&IDs). The PFDs shall include heat and material balances at low, design, and high ambient temperatures and demonstrate the peak liquefaction rate of 11.45 million tons per annum is achievable. The P&IDs shall include vendor P&IDs and the following information:
 - a. equipment tag number, name, size, duty, capacity, and design conditions;
 - b. equipment insulation type and thickness;
 - c. storage tank pipe penetration size and nozzle schedule;
 - d. valve high pressure side and internal and external vent locations;
 - e. piping with line number, piping class specification, size, and insulation type and thickness;

- f. piping specification breaks and insulation limits;
 - g. all control and manual valves numbered;
 - h. relief valves with size and set points; and
 - i. drawing revision number and date.
45. **Prior to construction of final design**, CCL Stage III shall file P&IDs, specifications, and procedures that clearly show and specify the tie-in details required to safely connect subsequently constructed facilities with the operational facilities.
 46. **Prior to construction of final design**, CCL Stage III shall file a car seal philosophy and a list of all car-sealed and locked valves consistent with the P&IDs.
 47. **Prior to construction of final design**, CCL Stage III shall file a hazard and operability review prior to issuing the P&IDs for construction. A copy of the review, a list of the recommendations, and actions taken on the recommendations shall be filed.
 48. **Prior to construction of final design**, CCL Stage III shall file the safe operating limits (upper and lower), alarm and shutdown set points for all instrumentation (i.e., temperature, pressures, flows, and compositions).
 49. **Prior to construction of final design**, CCL Stage shall provide a means to monitor for mercury breakthrough by means of an analyzer, sample connection downstream of the mercury removal package, or preventative maintenance inspections of the heat exchangers.
 50. **Prior to construction of final design**, CCL Stage III shall provide a dynamic simulation that shows that upon plant shutdown, the loop seal provided upstream of the acid gas removal unit will be sufficient to prevent backflow or provide a check valve.
 51. **Prior to construction of final design**, CCL Stage III shall provide in the design of the acid gas removal unit connections to and space for a temporary or permanent amine reclamation module.
 52. **Prior to construction of final design**, CCL Stage III shall include LNG storage tank fill flow measurement with high flow alarm.
 53. **Prior to construction of final design**, CCL Stage III shall include boil off gas flow measurement from each LNG storage tank.
 54. **Prior to construction of final design**, CCL Stage III shall provide process data sheets that specify the start-up, operating, and shutdown conditions for the Boil-off Gas Compressors.
 55. **Prior to construction of final design**, the design of HV-71031 shall be provided with administrative controls to prevent it from isolating the discretionary vent.

56. **Prior to construction of final design**, CCL Stage III shall design the hot oil return system and drum to equal pressures or provide dynamic simulation results of a catastrophic tube rupture in the hot oil system that demonstrates the hot oil return system and drum are properly protected and would not fail in the event of a tube rupture in the system.
57. **Prior to construction of final design**, CCL Stage III shall file cause-and-effect matrices for the process instrumentation, fire and gas detection system, and emergency shutdown system for review and approval. The cause-and-effect matrices shall include alarms and shutdown functions, details of the voting and shutdown logic, and set points.
58. **Prior to construction of final design**, CCL Stage III shall file the details of the emergency shutdown system, including a Project-wide emergency shutdown button with proper sequencing and reliability or another system that is demonstrated through a human reliability analysis to provide a means to quickly and reliably shutdown the entire Stage 3 Project.
59. **Prior to construction of final design**, CCL Stage III shall specify that all emergency shutdown valves will be equipped with open and closed position switches connected to the Distributed Control System/Safety Instrumented System.
60. **Prior to construction of final design**, CCL Stage III shall file an evaluation of emergency shutdown valve closure times. The evaluation shall account for the time to detect an upset or hazardous condition, notify plant personnel, and close the emergency shutdown valve.
61. **Prior to construction of final design**, CCL Stage III shall file an evaluation of dynamic pressure surge effects from valve opening and closure times and pump startup and shutdown operations.
62. **Prior to construction of final design**, CCL Stage III shall provide extruded fins for Mixed Refrigerant Interstage Condensers 01-EA-1611, 01-EA-1612, and 01-EA-1611 or demonstrate the fin type will be suitable for the temperature range per API 661 and the crevice of the fin will not result in potential corrosion of the carbon steel tube where corrosion allowances on the tubes are not recommended per API 661.
63. **Prior to construction of final design**, CCL Stage III shall file an up-to-date equipment list, process and mechanical data sheets, and specifications. The specifications shall include:
 - a. building specifications (e.g., control buildings, electrical buildings, compressor buildings, storage buildings, pressurized buildings, ventilated buildings, blast resistant buildings);
 - b. mechanical specifications (e.g., piping, valve, insulation, rotating equipment, heat exchanger, storage tank and vessel, other specialized equipment);

- c. electrical and instrumentation specifications (e.g., power system, control system, safety instrument system, cable, other electrical and instrumentation); and
 - d. security and fire safety specifications (e.g., security, passive protection, hazard detection, hazard control, firewater).
64. **Prior to construction of final design**, CCL Stage III shall file a list of all codes and standards and the final specification document number where they are referenced.
 65. **Prior to construction of final design**, CCL Stage III shall include layout and design specifications of the pig trap, inlet separation and liquid disposal, inlet/send-out meter station, and pressure control.
 66. **Prior to construction of final design**, CCL Stage III shall file complete specifications and drawings of the proposed LNG tank design and installation.
 67. **Prior to construction of final design**, CCL Stage III shall demonstrate that, for hazardous fluids, piping and piping nipples 2 inches or less in diameter are designed to withstand external loads, including vibrational loads in the vicinity of rotating equipment and operator live loads in areas accessible by operators.
 68. **Prior to construction of final design**, CCL Stage III shall provide a stress analysis that demonstrates that piping and adjacent equipment will not be overstressed if travel pins are removed with the pipe empty or flooded with LNG.
 69. **Prior to construction of final design**, CCL Stage III shall file the sizing basis and capacity for the final design of the flares and/or vent stacks as well as the pressure and vacuum relief valves for major process equipment, vessels, and storage tanks. The flare load calculations shall justify the lower emissivity factors and molecular weights used for the dry and wet flares.
 70. **Prior to construction of final design**, CCL Stage III shall demonstrate the flare has been sized for LNG production rates during plant cooldown when the liquefaction exchanger is operating at the rundown rate provided in Process Basis of Design, Document No. G720-15- EM-GEN-G10-0002.
 71. **Prior to construction of final design**, CCL Stage III shall confirm that all overprotection devices downstream of a control valve with a bypass valve arrangement will be sized based on the full flow of a wide open control valve or bypass valve.
 72. **Prior to construction of final design**, CCL Stage III shall file an evaluation of all bypass lines which includes a spec break to ensure the line downstream of the break will not be overpressurized or relocate the spec break to the downstream header.
 73. **Prior to construction of final design**, CCL Stage III shall provide quantitative analysis which evaluates the reliability of the multi point ground flare pilots, including the potential common cause failures of the pilots being designed to less

than 183 miles per hour 3-second gust and having a single fuel source. The analysis shall demonstrate that the fences enclosing the ground flare will reduce the wind velocity to 125 miles per hour or less and multiple sources of fuel gas exist. Otherwise, CCL Stage III shall provide a dispersion analysis of an unlit flare scenario and indicate what safeguards will be in place for preventing offsite impacts from that scenario.

74. **Prior to construction of final design**, CCL Stage III shall file an updated fire protection evaluation of the proposed facilities. A copy of the evaluation, a list of recommendations and supporting justifications, and actions taken on the recommendations shall be filed. The evaluation shall justify the type, quantity, and location of hazard detection and hazard control, passive fire protection, emergency shutdown and depressurizing systems, firewater, and emergency response equipment, training, and qualifications in accordance with National Fire Protection Association (NFPA) 59A (2001). The justification for the flammable and combustible gas detection and flame and heat detection shall be in accordance with ISA 84.00.07 or equivalent methodologies that will demonstrate 90% or more of releases (unignited and ignited) that could result in an off-site or cascading impact that could extend off site will be detected by two or more detectors and result in isolation and de-inventory within 10 minutes. The analysis shall take into account the set points, voting logic, and different wind speeds and directions. The evaluation shall demonstrate jet fires from the pipeline compressor and feed gas tie in will be mitigated (e.g., firewall, water curtain, etc.) such that it does not impede evacuation. The justification for firewater shall provide calculations for all firewater demands (including firewater coverage on the LNG storage tank, refrigerant compressor skid, heavy hydrocarbon removal unit, liquefaction cold box, and adjacent fire zones if they could result in cascading damage) based on design densities, surface area, and throw distance and specifications for the corresponding hydrant and monitors needed to reach and cool equipment.
75. **Prior to construction of final design**, CCL Stage III shall file spill containment system drawings with dimensions and slopes of curbing, trenches, impoundments, and capacity calculations considering any foundations and equipment within impoundments, as well as the sizing and design of the down-comer that will transfer spills from the tank top to the ground-level impoundment system. The spill containment drawings shall show containment for all hazardous fluids, including all liquids handled above their flash point, from the largest flow from a single line for 10 minutes, including de-inventory, or the maximum liquid from the largest vessel (or total of impounded vessels) or otherwise demonstrate that providing spill containment will not significantly reduce the flammable vapor dispersion or radiant heat consequences of a spill.
76. **Prior to construction of final design**, CCL Stage III shall file detailed calculations to confirm that the final fire water volumes will be accounted for when evaluating the capacity of the impoundment system during a spill and fire scenario.

77. **Prior to construction of final design,** CCL Stage III shall file a critical equipment and building siting assessment to ensure plant buildings that are occupied or critical to the safety of the LNG plant are adequately protected from potential hazards involving fires and vapor cloud explosions. The evaluation shall evaluate the potential relocation of the firewater pumps and tank and buildings and their protection from flammable vapors, explosions, and fires from hazardous fluid containing equipment or provide analyses demonstrating they will be adequately protected from such events.
78. **Prior to construction of final design,** CCL Stage III shall file electrical area classification drawings.
79. **Prior to construction of final design,** CCL Stage III shall provide documentation demonstrating adequate ventilation, detection, and electrical area classification based on the final selection of the batteries, and associated hydrogen off-gassing rates.
80. **Prior to construction of final design,** CCL Stage III shall file drawings and details of how process seals or isolations installed at the interface between a flammable fluid system and an electrical conduit or wiring system meet the requirements of NFPA 59A (2001).
81. **Prior to construction of final design,** CCL Stage III shall file details of an air gap or vent installed downstream of process seals or isolations installed at the interface between a flammable fluid system and an electrical conduit or wiring system. Each air gap shall vent to a safe location and be equipped with a leak detection device that shall continuously monitor for the presence of a flammable fluid, alarm the hazardous condition, and shut down the appropriate systems.
82. **Prior to construction of final design,** CCL Stage III shall file complete drawings and a list of the hazard detection equipment. The drawings shall clearly show the location and elevation of all detection equipment. The list shall include the instrument tag number, type and location, alarm indication locations, and shutdown functions of the hazard detection equipment.
83. **Prior to construction of final design,** CCL Stage III shall file a technical review of facility design that:
 - a. identifies all combustion/ventilation air intake equipment and the distances to any possible flammable gas or toxic release; and
 - b. demonstrates that these areas are adequately covered by hazard detection devices and indicates how these devices will isolate or shutdown any combustion or heating ventilation and air conditioning equipment whose continued operation could add to or sustain an emergency.

84. **Prior to construction of final design**, CCL Stage III shall include in its design toxic gas detection near the Mercury/H₂S Absorber and flammable gas detection at each hot oil furnace, thermal oxidizer, and LNG Storage Tank.
85. **Prior to construction of final design**, CCL Stage III shall file drawings of the hazard detection in buildings, including hazard detection in the firewater pump building.
86. **Prior to construction of final design**, CCL Stage III shall file a list of alarm and shutdown set points for all hazard detectors that account for the calibration gas of the hazard detectors when determining the lower flammable limit set points for methane, propane, ethane/ethylene, pentane, and condensate.
87. **Prior to construction of final design**, CCL Stage III shall file a list of alarm and shutdown set points for all hazard detectors that account for the calibration gas of hazard detectors when determining the set points for toxic components such as natural gas liquids and hydrogen sulfide.
88. **Prior to construction of final design**, CCL Stage III shall file an evaluation of the voting logic and voting degradation for hazard detectors.
89. **Prior to construction of final design**, CCL Stage III shall file a design that includes hazard detection suitable to detect high temperatures and smoldering combustion products in electrical buildings and control room buildings.
90. **Prior to construction of final design**, CCL Stage III shall file a drawing showing the location of the emergency shutdown buttons. Emergency shutdown buttons shall be easily accessible, conspicuously labeled, and located in an area which will be accessible during an emergency.
91. **Prior to construction of final design**, CCL Stage III shall file facility plan drawings and a list of the fixed and wheeled dry-chemical, hand-held fire extinguishers, and other hazard control equipment. Plan drawings shall clearly show the location and elevation by tag number of all fixed dry chemical systems in accordance with NFPA 17, and wheeled and hand-held extinguishers location travel distances are along normal paths of access and egress and in compliance with NFPA 10. The list shall include the equipment tag number, manufacturer and model, elevations, agent type, agent capacity, discharge rate, automatic and manual remote signals initiating discharge of the units, and equipment covered.
92. **Prior to construction of final design**, CCL Stage III shall file a design that includes clean agent systems in the instrumentation buildings.
93. **Prior to construction of final design**, CCL Stage III shall file drawings and specifications for the structural passive protection systems to protect equipment and supports from cryogenic releases.

94. **Prior to construction of final design,** CCL Stage III shall file calculations or test results for the structural passive protection systems to protect equipment and supports from cryogenic releases.
95. **Prior to construction of final design,** CCL Stage III shall file drawings and specifications for the structural passive protection systems to protect equipment and supports from pool and jet fires.
96. **Prior to construction of final design,** CCL Stage III shall file a detailed quantitative analysis to demonstrate that adequate mitigation will be provided for each significant component within the 4,000 British thermal units per square foot per hour (Btu/ft²-hr) zone from pool or jet fires that could cause failure of the component. Trucks at the truck transfer station shall be included in the analysis. A combination of passive and active protection for pool fires and passive and/or active protection for jet fires shall be provided and demonstrate the effectiveness and reliability. Effectiveness of passive mitigation shall be supported by calculations or test results for the thickness limiting temperature rise and effectiveness of active mitigation shall be justified with calculations or test results demonstrating flow rates and durations of any cooling water will mitigate the heat absorbed by the vessel.
97. **Prior to construction of final design,** CCL Stage III shall file an evaluation and associated specifications and drawings of how they will prevent cascading damage of transformers (e.g., fire walls or spacing) in accordance with NFPA 850 or equivalent.
98. **Prior to construction of final design,** CCL Stage III shall file facility plan drawings showing the proposed location of the firewater. Plan drawings shall clearly show the location of firewater piping, post indicator valves, and the location and area covered by, each monitor, hydrant, hose, water curtain, deluge system, water-mist system, and sprinkler. The drawings shall demonstrate that each process area, fire zone, or other sections of piping with several users (e.g., NFPA 24 indicates max of six) can be isolated with post indicator valves. The drawings shall also provide coverage in all areas that contain flammable or combustible fluids, including the LNG storage tank, refrigerant compressor skid, heavy hydrocarbon removal unit, and liquefaction cold box, by two or more hydrants or monitors and automatic or remotely operated monitors or fixed systems in areas inaccessible or difficult to access in the event of an emergency. The coverage circles shall take into account obstructions to the firewater coverage and shall reflect the number of firewater needed to reach and cool exposed surfaces in potentially subjected to damaging radiant heats from a fire. Drawings shall also include piping and instrumentation diagrams of the firewater systems.
99. **Prior to construction of final design,** CCL Stage III shall demonstrate that API 650 provides equivalent or greater protections than NFPA 22 and American Water Works Association D-100 in regards to the design of the firewater storage tanks. The equivalency shall address NFPA 22 and American Water Works Association

- D-100 requirements for inflow piping refilling the tank within 8 hours, higher wall thicknesses, venting, manholes, anti-vortex plates, and other pertinent differences.
100. **Prior to construction of final design**, CCL Stage III shall specify that the firewater flow test meter is equipped with a transmitter and that a pressure transmitter is installed upstream of the flow transmitter. The flow transmitter and pressure transmitter shall be connected to the Distributed Control System and recorded to maintain a historical record of pump performance tests.
 101. **Prior to construction of final design**, CCL Stage III shall specify that fire house and shelter are designed to remove the largest firewater pump or other component for maintenance with an overhead or external crane.
 102. **Prior to construction of final design**, CCL Stage III shall file drawings of the storage tank, piping support structure, and support of horizontal piping at grade including pump columns, relief valves, pipe penetrations, instrumentation, and appurtenances.
 103. **Prior to construction of final design**, CCL Stage III shall file the structural analysis of the LNG storage tank and outer containment demonstrating they are designed to withstand all loads and combinations.
 104. **Prior to construction of final design**, CCL Stage III shall file an analysis of the structural integrity of the outer containment of the full containment LNG storage tanks when exposed to a roof tank top fire.
 105. **Prior to construction of final design**, CCL Stage III shall file a projectile analysis to demonstrate that the outer concrete impoundment wall of a full-containment LNG storage tank could withstand projectiles from explosions and high winds. The analysis shall detail the projectile speeds and characteristics and method used to determine penetration or perforation depths.
 106. **Prior to construction of final design**, CCL Stage III shall file drawings and documentation showing the location of all internal road vehicle protections, such as guard rails, barriers, and bollards to protect transfer piping, pumps, and compressors, etc. to ensure that they are located away from roadway or protected from inadvertent damage from vehicles.
 107. **Prior to commissioning**, CCL Stage III shall file a detailed schedule for commissioning through equipment startup. The schedule shall include milestones for all procedures and tests to be completed; prior to introduction of hazardous fluids and during commissioning and startup. CCL Stage III shall file documentation certifying that each of these milestones has been completed before authorization to commence the next phase of commissioning and startup will be issued.
 108. **Prior to commissioning**, CCL Stage III shall file detailed plans and procedures for: testing the integrity of onsite mechanical installation; functional tests; introduction of hazardous fluids; operational tests; and placing the equipment into service.

109. **Prior to commissioning**, CCL Stage III shall file the operation and maintenance procedures and manuals, as well as safety procedures, hot work procedures and permits, abnormal operating conditions reporting procedures, simultaneous operations procedures, and management of change procedures and forms.
110. **Prior to commissioning**, CCL Stage III shall tag all equipment, instrumentation, and valves in the field, including drain valves, vent valves, main valves, and car-sealed or locked valves.
111. **Prior to commissioning**, CCL Stage III shall file a plan to maintain a detailed training log to demonstrate that operating, maintenance, and emergency response staff has completed the required training.
112. **Prior to commissioning**, CCL Stage III shall file a plan for clean-out, dry-out, purging, and tightness testing. This plan shall address the requirements of the American Gas Association's Purging Principles and Practice, and shall provide justification if not using an inert or non-flammable gas for clean-out, dry-out, purging, and tightness testing.
113. **Prior to commissioning**, CCL Stage III shall file the procedures for pressure/leak tests which address the requirements of American Society of Mechanical Engineers VIII and B31.3. In addition, CCL Stage III shall file a line list with pneumatic and hydrostatic test pressures.
114. **Prior to commissioning**, CCL Stage III shall file the settlement results from hydrostatic testing of the LNG storage containers as well as a routine monitoring program to ensure settlements are as expected and do not exceed applicable criteria in API 620, API 625, API 653, and American Concrete Institute 376. The program shall specify what actions will be taken after seismic events.
115. **Prior to commissioning**, CCL Stage III shall equip the LNG storage tank and adjacent piping and supports with permanent settlement monitors to allow personnel to observe and record the relative settlement between the LNG storage tank and adjacent piping. The settlement record shall be reported in the semi-annual operational reports.
116. **Prior to introduction of hazardous fluids**, CCL Stage III shall complete and document all pertinent tests (Factory Acceptance Tests, Site Acceptance Tests, Site Integration Tests) associated with the distributed control system and safety instrument system that demonstrates full functionality and operability of the system.
117. **Prior to introduction of hazardous fluids**, CCL Stage III shall develop and implement an alarm management program to reduce alarm complacency and maximize the effectiveness of operator response to alarms.
118. **Prior to introduction of hazardous fluids**, CCL Stage III shall complete and document a pre-startup safety review to ensure that installed equipment meets the design and operating intent of the facility. The pre-startup safety review shall

include any changes since the last hazard review, operating procedures, and operator training. A copy of the review with a list of recommendations, and actions taken on each recommendation, shall be filed.

119. **Prior to introduction of hazardous fluids**, CCL Stage III shall complete and document a firewater pump acceptance test and firewater monitor and hydrant coverage test. The actual coverage area from each monitor and hydrant shall be shown on facility plot plan(s).
120. CCL Stage III shall file a request for written authorization from the Director of OEP **prior to unloading or loading the first LNG commissioning cargo**. After production of first LNG, CCL Stage III shall file weekly reports on the commissioning of the proposed systems that detail the progress toward demonstrating the facilities can safely and reliably operate at or near the design production rate. The reports shall include a summary of activities, problems encountered, and remedial actions taken. The weekly reports shall also include the latest commissioning schedule, including projected and actual LNG production by each liquefaction train, LNG storage inventories in each storage tank, and the number of anticipated and actual LNG commissioning cargoes, along with the associated volumes loaded or unloaded. Further, the weekly reports shall include a status and list of all planned and completed safety and reliability tests, work authorizations, and punch list items. Problems of significant magnitude shall be reported to the FERC **within 24 hours**.
121. **Prior to commencement of service**, CCL Stage III shall file a request for written authorization from the Director of OEP. Such authorization will only be granted following a determination by the Coast Guard, under its authorities under the Ports and Waterways Safety Act, the Magnuson Act, the Maritime Transportation Security Act of 2002, and the Security and Accountability For Every Port Act, that appropriate measures to ensure the safety and security of the facility and the waterway have been put into place by CCL Stage III or other appropriate parties.
122. **Prior to commencement of service**, CCL Stage III shall notify the FERC staff of any proposed revisions to the security plan and physical security of the plant.
123. **Prior to commencement of service**, CCL Stage III shall label piping with fluid service and direction of flow in the field, in addition to the pipe labeling requirements of NFPA 59A (2001).
124. **Prior to commencement of service**, CCL Stage III shall file plans for any preventative and predictive maintenance program that performs periodic or continuous equipment condition monitoring.
125. **Prior to commencement of service**, CCL Stage III shall develop procedures for handling offsite contractors including responsibilities, restrictions, and limitations and for supervision of these contractors by CCL Stage III staff.

In addition, conditions 126 through 129 shall apply **throughout the life of the Stage 3**

LNG Facilities.

126. The facility shall be subject to regular FERC staff technical reviews and site inspections on at least an **annual basis** or more frequently as circumstances indicate. Prior to each FERC staff technical review and site inspection, CCL Stage III shall respond to a specific data request including information relating to possible design and operating conditions that may have been imposed by other agencies or organizations. Up-to-date detailed P&IDs reflecting facility modifications and provision of other pertinent information not included in the semi-annual reports described below, including facility events that have taken place since the previously submitted semi-annual report, shall be submitted.
127. **Semi-annual** operational reports shall be filed with the Secretary to identify changes in facility design and operating conditions; abnormal operating experiences; activities (e.g., LNG carrier arrivals, quantity and composition of imported and exported LNG, liquefied and vaporized quantities, boil off/flash gas); and plant modifications, including future plans and progress thereof. Abnormalities shall include, but not be limited to, unloading/loading/shipping problems, potential hazardous conditions from offsite vessels, storage tank stratification or rollover, geysering, storage tank pressure excursions, cold spots on the storage tanks, storage tank vibrations and/or vibrations in associated cryogenic piping, storage tank settlement, significant equipment or instrumentation malfunctions or failures, non-scheduled maintenance or repair (and reasons therefore), relative movement of storage tank inner vessels, hazardous fluids releases, fires involving hazardous fluids and/or from other sources, negative pressure (vacuum) within a storage tank, and higher than predicted boil off rates. Adverse weather conditions and the effect on the facility also shall be reported. Reports shall be submitted **within 45 days after each period ending June 30 and December 31**. In addition to the above items, a section entitled “Significant Plant Modifications Proposed for the Next 12 Months (dates)” shall be included in the semi-annual operational reports. Such information will provide the FERC staff with early notice of anticipated future construction/maintenance at the LNG facilities.
128. In the event the temperature of any region of the LNG storage container becomes less than the minimum specified operating temperature for the material, the Commission shall be notified **within 24 hours** and procedures for corrective action shall be specified.
129. Significant non-scheduled events, including safety-related incidents (e.g., LNG, condensate, refrigerant, or natural gas releases; fires; explosions; mechanical failures; unusual over pressurization; and major injuries) and security-related incidents (e.g., attempts to enter site, suspicious activities) shall be reported to the FERC staff. In the event that an abnormality is of significant magnitude to threaten public or employee safety, cause significant property damage, or interrupt service, notification shall be made **immediately**, without unduly interfering with any

necessary or appropriate emergency repair, alarm, or other emergency procedure. In all instances, notification shall be made to the FERC staff **within 24 hours**. This notification practice shall be incorporated into the LNG facility's emergency plan. Examples of reportable hazardous fluids-related incidents include:

- a. fire;
- b. explosion;
- c. estimated property damage of \$50,000 or more;
- d. death or personal injury necessitating in-patient hospitalization;
- e. release of hazardous fluids for 5 minutes or more;
- f. unintended movement or abnormal loading by environmental causes, such as an earthquake, landslide, or flood, that impairs the serviceability, structural integrity, or reliability of an LNG facility that contains, controls, or processes hazardous fluids;
- g. any crack or other material defect that impairs the structural integrity or reliability of an LNG facility that contains, controls, or processes hazardous fluids;
- h. any malfunction or operating error that causes the pressure of a pipeline or LNG facility that contains or processes hazardous fluids to rise above its maximum allowable operating pressure (or working pressure for LNG facilities) plus the build-up allowed for operation of pressure-limiting or control devices;
- i. a leak in an LNG facility that contains or processes hazardous fluids that constitutes an emergency;
- j. inner tank leakage, ineffective insulation, or frost heave that impairs the structural integrity of an LNG storage tank;
- k. any safety-related condition that could lead to an imminent hazard and cause (either directly or indirectly by remedial action of the operator), for purposes other than abandonment, a 20 percent reduction in operating pressure or shutdown of operation of a pipeline or an LNG facility that contains or processes hazardous fluids;
- l. safety-related incidents from hazardous fluids transportation occurring at or en route to and from the LNG facility; or
- m. an event that is significant in the judgment of the operator and/or management even though it did not meet the above criteria or the guidelines set forth in an LNG facility's incident management plan.

In the event of an incident, the Director of OEP has delegated authority to take whatever steps are necessary to ensure operational reliability and to protect human

life, health, property, or the environment, including authority to direct the LNG facility to cease operations. Following the initial company notification, the FERC staff will determine the need for a separate follow-up report or follow up in the upcoming semi-annual operational report. All company follow-up reports shall include investigation results and recommendations to minimize a reoccurrence of the incident.

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Corpus Christi Liquefaction Stage III, LLC;

Docket No. CP18-512-000

Corpus Christi Liquefaction, LLC;
Corpus Christi Pipeline, L.P.

Docket No. CP18-513-000

(Issued November 22, 2019)

GLICK, Commissioner, *dissenting*:

1. I dissent from today's order because it violates both the Natural Gas Act¹ (NGA) and the National Environmental Policy Act² (NEPA). The Commission once again refuses to consider the consequences its actions have for climate change. Although neither the NGA nor NEPA permit the Commission to assume away the impact that constructing and operating this liquefied natural gas (LNG) facility and associated natural gas pipeline will have on climate change, that is precisely what the Commission is doing here.

2. In today's order authorizing Corpus Christi Liquefaction, LLC's Stage III expansion (Stage III Expansion) at the existing Corpus Christi LNG terminal pursuant to section 3 of the NGA and the associated Corpus Christi natural gas pipeline (Pipeline Project) pursuant to section 7 of the NGA (collectively, Project), the Commission continues to treat climate change differently than all other environmental impacts. The Commission once again refuses to assess whether the impact of the Project's GHG emissions on climate change is significant, even though it quantifies the GHG emissions caused by the Project.³ The refusal to assess the significance of the Project's contribution to the harm caused by climate change is what allows the Commission to misleadingly state that its approval of the Project will not "significantly affect[] the quality of the human environment"⁴ and, as a result, conclude that the Project satisfies the NGA's public interest standards.⁵ Claiming that a project has no significant environmental

¹ 15 U.S.C. §§ 717b, 717f (2018).

² National Environmental Policy Act of 1969, 42 U.S.C. §§ 4321 *et seq.*

³ *Corpus Christi Liquefaction, LLC*, 169 FERC ¶ 61,135, at P 56 (2019) (Certificate Order); Environmental Assessment at Tables B.8.1-5 – B.8.1-11, B.8.1-13 (EA).

⁴ Certificate Order, 169 FERC ¶ 61,135 at PP 20, 61; EA at 244.

⁵ Certificate Order, 169 FERC ¶ 61,135 at PP 23, 29.

impacts while at the same time refusing to assess the significance of the project's impact on the most important environmental issue of our time is not reasoned decisionmaking.

I. The Commission's Public Interest Determinations Are Not the Product of Reasoned Decisionmaking

3. The NGA's regulation of LNG import and export facilities "implicate[s] a tangled web of regulatory processes" split between the U.S. Department of Energy (DOE) and the Commission.⁶ The NGA establishes a general presumption favoring the import and export of LNG unless there is an affirmative finding that the import or export "will not be consistent with the public interest."⁷ Section 3 of the NGA, which governs LNG imports and exports, provides for two independent public interest determinations: One regarding the import or export of LNG itself and one regarding the facilities used for that import or export. DOE determines whether the import or export of LNG is consistent with the public interest, with transactions among free trade countries legislatively deemed to be "consistent with the public interest."⁸ The Commission evaluates whether "an application for the siting, construction, expansion, or operation of an LNG terminal" is itself consistent with the public interest.⁹ Pursuant to that authority, the Commission

⁶ *Sierra Club v. FERC*, 827 F.3d 36, 40 (D.C. Cir. 2016) (*Freeport*).

⁷ 15 U.S.C. § 717b(a); see *EarthReports, Inc. v. FERC*, 828 F.3d 949, 953 (D.C. Cir. 2016) (citing *W. Va. Pub. Servs. Comm'n v. Dep't of Energy*, 681 F.2d 847, 856 (D.C. Cir. 1982) ("NGA [section] 3, unlike [section] 7, 'sets out a general presumption favoring such authorization.'")). Under section 7 of the NGA, the Commission approves a proposed pipeline if it is shown to be consistent with the public interest, while under section 3, the Commission approves a proposed LNG import or export facility unless it is shown to be inconsistent with the public interest. Compare 15 U.S.C. §717b(a) with 15 U.S.C. §717f(a), (e).

⁸ 15 U.S.C. § 717b(c). The courts have explained that, because the authority to authorize the LNG exports rests with DOE, NEPA does not require the Commission to consider the upstream or downstream GHG emissions that may be indirect effects of the export itself when determining whether the related LNG export facility satisfies section 3 of the NGA. See *Freeport*, 827 F.3d at 46-47; see also *Sierra Club v. FERC*, 867 F.3d 1357, 1373 (D.C. Cir. 2017) (*Sabal Trail*) (discussing *Freeport*). Nevertheless, NEPA requires that the Commission consider the direct GHG emissions associated with a proposed LNG export facility. See *Freeport*, 827 F.3d at 41, 46.

⁹ 15 U.S.C. § 717b(e). In 1977, Congress transferred the regulatory functions of NGA section 3 to DOE. DOE, however, subsequently delegated to the Commission authority to approve or deny an application for the siting, construction, expansion, or

must approve a proposed LNG facility unless the record shows that the facility would be inconsistent with the public interest.¹⁰

4. As part of that determination, the Commission examines a proposed facility's impact on the environment and public safety. A facility's impact on climate change is one of the environmental impacts that must be part of a public interest determination under the NGA.¹¹ Nevertheless, the Commission maintains that it need not consider whether the Project's contribution to climate change is significant in this order because it lacks a means to do so—or at least so it claims.¹² However, the most troubling part of the Commission's rationale is what comes next. Based on this alleged inability to assess the significance of the Project's impact on climate change, the Commission concludes that the Project “would not . . . significantly affect[] the quality of the human environment.”¹³ Think about that. The Commission is saying out of one side of its mouth that it cannot assess the significance of the Project's impact on climate change¹⁴ while, out of the other

operation of an LNG terminal, while retaining the authority to determine whether the import or export of LNG to non-free trade countries is in the public interest. *See EarthReports*, 828 F.3d at 952-53.

¹⁰ *See Freeport*, 827 F.3d at 40-41.

¹¹ *See Sabal Trail*, 867 F.3d at 1373 (explaining that the Commission must consider a pipeline's direct and indirect GHG emissions because the Commission may “deny a pipeline certificate on the ground that the pipeline would be too harmful to the environment”); *see also Atl. Ref. Co. v. Pub. Serv. Comm'n of N.Y.*, 360 U.S. 378, 391 (1959) (holding that the NGA requires the Commission to consider “all factors bearing on the public interest”).

¹² Certificate Order, 169 FERC ¶ 61,135 at P 57; EA at 235-36.

¹³ EA at 244.

¹⁴ Certificate Order, 169 FERC ¶ 61,135 at P 57; EA at 236 (“[W]e are unable to determine the significance of the Project's contribution to climate change.”).

side of its mouth, assuring us that all environmental impacts are not significant.¹⁵ That is ludicrous, unreasoned, and an abdication of our responsibility to give climate change the “hard look” that the law demands.¹⁶

5. It also means that the Project’s impact on climate change does not play a meaningful role in the Commission’s public interest determination, no matter how often the Commission assures us that it does. Using the approach in today’s order, the Commission will always be able to conclude that a project will not have a significant environmental impact irrespective of the project’s actual GHG emissions or those emissions’ impact on climate change. If the Commission’s conclusion will not change no matter how many GHG emissions a project causes, those emissions cannot, as a logical matter, play a meaningful role in the Commission’s public interest determination. A public interest determination that systematically excludes the most important environmental consideration of our time is contrary to law, arbitrary and capricious, and not the product of reasoned decisionmaking.

6. The failure to meaningfully consider the Project’s GHG emissions is all-the-more indefensible because the Commission acknowledges that “GHG emissions due to human activity are the primary cause of increased levels of all GHG since the industrial age” and “GHGs in the atmosphere threaten the public health and welfare of current and future generations through climate change.”¹⁷ In light of this undisputed relationship between

¹⁵ Certificate Order, 169 FERC ¶ 61,135 at PP 20, 61 (stating that the Project “would not constitute a major federal action significantly affecting the quality of the human environment”); EA at 244 (same).

¹⁶ See, e.g., *Myersville Citizens for a Rural Cmty., Inc. v. FERC*, 783 F.3d 1301, 1322 (D.C. Cir. 2015) (explaining that agencies cannot overlook a single environmental consequence if it is even “arguably significant”); see also *Michigan v. EPA*, 135 S. Ct. 2699, 2706 (2015) (“Not only must an agency’s decreed result be within the scope of its lawful authority, but the process by which it reaches that result must be logical and rational.” (internal quotation marks omitted)); *Motor Vehicle Mfrs. Ass’n, Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983) (explaining that agency action is “arbitrary and capricious if the agency has . . . entirely failed to consider an important aspect of the problem, [or] offered an explanation for its decision that runs counter to the evidence before the agency.”).

¹⁷ EA at 112; see also *id.* at 235 (“Construction and operation of the Project would increase the atmospheric concentration of GHGs in combination with past and future emissions from all other sources and contribute incrementally to future climate change impacts.”).

anthropogenic GHG emissions and climate change, the Commission must carefully consider the Project's contribution to climate change when determining whether the Project is consistent with the public interest—a task that it entirely fails to accomplish in today's order.

7. In addition to environmental impacts, the Commission's public interest determination must also consider the Project's effect on public safety.¹⁸ In assessing public safety, the Commission must consider, among other things, whether the applicant responsible for the facility is able and willing to properly perform the proposed services. But today's order does not even mention, no less assess, Cheniere's history, including the recent release of LNG and natural gas that occurred at their only other operational LNG facility, Sabine Pass LNG.¹⁹ The Commission also does not discuss what this release might say about Cheniere's ability to safely and reliably operate the Project. Indeed, today's order does not at all evaluate how the safety and environmental issues at Sabine Pass LNG—and Cheniere's response to those issues—factor into the Commission's assessment of Cheniere's ability to operate a new LNG facility in a manner not inconsistent with the public interest.²⁰ Although Cheniere is pursuing actions to address the incident at Sabine Pass LNG,²¹ the issues remain unresolved as of the date of this

¹⁸ See, e.g., *City of Bos. Delegation v. FERC*, 897 F.3d 241, 254 (D.C. Cir. 2018) (explaining that a determination that a project is in the public interest “requires assessing potential safety concerns” (internal quotation marks omitted)); see also 15 U.S.C. § 717b(e)(1) (“The Commission shall have the exclusive authority to approve or deny an application for the siting, construction, expansion or operation of an LNG facility.”). The Commission shares responsibility for managing the risks associated with LNG facilities with the Department of Transportation and U.S. Coast Guard. All three agencies have oversight and responsibility for the inspection and compliance during an LNG facility's operation. The Commission may impose conditions on LNG facilities under NGA section 3 and ensure those conditions are satisfied during operation.

¹⁹ See Letter re: LNG Storage Tank Operation, Docket Nos. CP04-47-000 *et al.* (Feb. 9, 2019) (discussing the release of LNG and natural gas at the Sabine Pass facility).

²⁰ The Commission's only response to this safety concern is a single elliptical footnote, see Certificate Order, 169 FERC ¶ 61,135 at n.30, which appears to confirm that it did not consider the incident at Cheniere's Sabine Pass facility when making its public interest determination in this proceeding.

²¹ See Letter re: PHMSA Consent Agreement and Order, Docket Nos. CP04-47-000 *et al.*, at 2 & App. A (July 9, 2019) (detailing steps that must be taken before the Sabine Pass facility can reenter service).

order. Given the recent incident at Sabine Pass LNG, failing to discuss or consider Cheniere's operational history is arbitrary and capricious.

II. The Commission Fails to Satisfy Its Obligations under NEPA

8. The Commission's NEPA analysis is similarly flawed. In order to evaluate the environmental consequences of the Project under NEPA, the Commission must consider the harm caused by the Project's GHG emissions and "evaluate the 'incremental impact' that these emissions will have on climate change or the environment more generally."²² As noted, the operation of the Project will directly emit more than 600,000 metric tons of GHGs annually.²³ Although that quantification of the Project's GHG emissions is a necessary step toward meeting the Commission's NEPA obligations, listing the volume of emissions alone is insufficient.²⁴

9. As an initial matter, identifying the consequences that those emissions will have for climate change is essential if NEPA is to play the disclosure and good government roles for which it was designed. The Supreme Court has explained that NEPA's purpose is to "ensure[] that the agency, in reaching its decision, will have available, and will carefully consider, detailed information concerning significant environmental impacts" and to "guarantee[] that the relevant information will be made available to the larger audience that may also play a role in both the decisionmaking process and the

²² *Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1216 (9th Cir. 2008); *WildEarth Guardians v. Zinke*, 368 F. Supp. 3d 41, 51 (D.D.C. 2019) (explaining that the agency was required to "provide the information necessary for the public and agency decisionmakers to understand the degree to which [its] decisions at issue would contribute" to the "impacts of climate change in the state, the region, and across the country").

²³ Certificate Order, 169 FERC ¶ 61,135 at P 56; *see* EA at Tables B.8.1-5 – B.8.1-11, B.8.1-13.

²⁴ *See Ctr. for Biological Diversity*, 538 F.3d at 1216 ("While the [environmental document] quantifies the expected amount of CO₂ emitted . . . , it does not evaluate the 'incremental impact' that these emissions will have on climate change or on the environment more generally"); *Klamath-Siskiyou Wildlands Ctr. v. Bureau of Land Mgmt.*, 387 F.3d 989, 995 (9th Cir. 2004) ("A calculation of the total number of acres to be harvested in the watershed is a necessary component . . . , but it is not a sufficient description of the actual environmental effects that can be expected from logging those acres.").

implementation of that decision.”²⁵ It is hard to see how hiding the ball by refusing to assess the significance of the Project’s climate impacts is consistent with either of those purposes.

10. In addition, under NEPA, a finding of significance informs the Commission’s inquiry into potential ways of mitigating environmental impacts.²⁶ An environmental review document must “contain a detailed discussion of possible mitigation measures” to address adverse environmental impacts.²⁷ “Without such a discussion, neither the agency nor other interested groups and individuals can properly evaluate the severity of the adverse effects” of a project, making an examination of possible mitigation measures necessary to ensure that the agency has taken a “hard look” at the environmental consequences of the action at issue.²⁸

11. The Commission responds that it need not determine whether the Project’s contribution to climate change is significant because “[t]here is no universally accepted methodology” for assessing the harms caused by the Project’s contribution to climate change.²⁹ But the lack of a single consensus methodology does not prevent the

²⁵ *Dep’t of Transp. v. Pub. Citizen*, 541 U.S. 752, 768 (2004) (citing *Robertson v. Methow Valley Citizens Coun.*, 490 U.S. 332, 349 (1989)).

²⁶ 40 C.F.R. § 1502.16 (2018) (NEPA requires an implementing agency to form a “scientific and analytic basis for the comparisons” of the environmental consequences of its action in its environmental review, which “shall include discussions of . . . [d]irect effects and their significance.”).

²⁷ *Robertson*, 490 U.S. at 351.

²⁸ *Id.* at 352. The discussion of mitigation is especially critical under today’s circumstances where the Commission prepared an EA instead of an Environmental Impact Statement to satisfy its NEPA obligations. The EA relies on the fact that certain environmental impacts will be mitigated in order to ultimately find that the Project “would not . . . significantly affect[] the quality of the human environment.” EA at 244. Absent these mitigation requirements, the Project’s environmental impacts would require the Commission to develop an Environmental Impact Statement—a much more extensive undertaking. See *Sierra Club v. Peterson*, 717 F.2d 1409, 1415 (D.C. Cir. 1983) (“If any ‘significant’ environmental impacts might result from the proposed agency action then an [Environmental Impact Statement] must be prepared before the action is taken.”).

²⁹ EA at 235 (stating “there is no universally accepted methodology to attribute discrete, quantifiable, physical effects on the environment to a project’s incremental contribution to GHGs” and “[w]ithout either the ability to determine discrete resource

Commission from adopting *a* methodology, even if that methodology is not universally accepted. The Commission could, for example, select one methodology to inform its reasoning while also disclosing the potential limitations of that methodology or it could employ multiple methodologies to identify a range of potential impacts on climate change. In refusing to assess a project's climate impacts without a perfect model for doing so, the Commission sets a standard for its climate analysis that is higher than it requires for any other environmental impact.

12. In any case, the Commission has several tools to assess the harm from the Project's contribution to climate change. For example, by measuring the long-term damage done by a ton of carbon dioxide, the Social Cost of Carbon links GHG emissions to the harm caused by climate change, thereby facilitating the necessary "hard look" at the Project's environmental impacts that NEPA requires. Especially when it comes to a global problem like climate change, a measure for translating a single project's climate change impacts into concrete and comprehensible terms plays a useful role in the NEPA process by putting the harm in terms that are readily accessible for both agency decisionmakers and the public at large. Yet, the Commission continues to ignore the Social Cost of Carbon, relying instead on deeply flawed reasoning that I have previously critiqued at length.³⁰

13. Furthermore, even without a formal tool or methodology, the Commission can consider all factors and determine, quantitatively or qualitatively, whether the Project's GHG emissions will have a significant impact on climate change. That is precisely what the Commission does in other aspects of its environmental review. For example, consider the Commission's evaluation of the Project's impact on local traffic. The EA finds that the construction of the Project would cause an additional 800 roundtrips per day by trucks and other vehicles. However, the EA determines this is "not expected to significantly impact" traffic flow since it would represent only a two percent increase in daily traffic.³¹ In drawing this conclusion, the EA does not rely on any "universally accepted methodology" to "attribute discrete, quantifiable, physical" effects of increased

impacts or an established target to compare GHG emissions against, we are unable to determine the significance of the Project's contribution to climate change"); *see also* Certificate Order, 169 FERC ¶ 61,135 at P 57 ("The Commission has previously concluded it could not determine a project's incremental physical impacts on the environment caused by GHG emissions.").

³⁰ *See, e.g., Fla. Se. Connection, LLC*, 164 FERC ¶ 61,099 (2018) (Glick, Comm'r, dissenting).

³¹ EA at 96.

traffic on the quality of human environment in order to reach a reasonable determination.³² Instead, the Commission makes a practical judgment based on its assessment of the evidence in the record. Indeed, throughout today's order and in the EA, the Commission makes several other significance determinations without the tools it claims it needs to assess the significance of the Project's impact on climate change.³³ The Commission's refusal to similarly analyze the Project's impact on climate change is arbitrary and capricious.

14. And even if the Commission were to determine that the Project's GHG emissions are significant, that is not the end of the analysis. Instead, as noted above, the Commission could blunt those impacts through mitigation—as the Commission often does with regard to other environmental impacts. The Supreme Court has held that an environmental review must “contain a detailed discussion of possible mitigation measures” to address adverse environmental impacts.³⁴ As noted above, “[w]ithout such a discussion, neither the agency nor other interested groups and individuals can properly evaluate the severity of the adverse effects.”³⁵ Consistent with this obligation, the EA discusses mitigation measures to ensure that the Project's adverse environmental impacts (other than its GHG emissions) are reduced to less-than-significant levels.³⁶ And throughout today's order, the Commission uses its conditioning authority under section

³² *Id.* at 235.

³³ *See, e.g.*, EA at 30, 33, 45, 48, 52, 59, 61, 64, 66, 68 (concluding there will be no significant impact on mineral resources, geological resources, groundwater resources, water quality, wetlands, vegetation, terrestrial wildlife, hazardous material spills, fisheries, marine mammals or sea turtles, and migratory bird populations).

³⁴ *Robertson*, 490 U.S. at 351.

³⁵ *Id.* at 351-52; *see also* 40 C.F.R. §§ 1508.20 (defining mitigation), 1508.25 (including in the scope of an environmental impact statement mitigation measures).

³⁶ EA at 44-45 (concluding that the mitigation measures proposed by the applicant and the Commission's recommendation would adequately avoid or minimize potential impacts on groundwater resources resulting in a finding of no significant impact); *id.* at 147 (concluding that “with the implementation of the mitigation measures presented, and compliance with our recommendations, we conclude that operational noise from the Project would not have a significant impact on the acoustical environment at the nearby NSAs”).

3 and section 7 of the NGA³⁷ to implement these mitigation measures, which support its public interest finding.³⁸ Once again, however, the Project’s climate impacts are treated differently, as the Commission refuses to identify any potential climate mitigation measures or discuss how such measures might affect the magnitude of the Project’s impact on climate change.

15. Finally, the Commission’s refusal to seriously consider the significance of the impact of the Project’s GHG emissions is even more mystifying because NEPA “does not dictate particular decisional outcomes.”³⁹ NEPA “merely prohibits uninformed—rather than unwise—agency action.”⁴⁰ The Commission could find that a project contributes significantly to climate change, but that it is nevertheless in the public interest because its benefits outweigh its adverse impacts, including on climate change. In other words, taking the matter seriously—and rigorously examining a project’s impacts on climate change—does not necessarily prevent any of my colleagues from ultimately concluding that a project satisfies the relevant public interest standard.

For these reasons, I respectfully dissent.

Richard Glick
Commissioner

³⁷ 15 U.S.C. § 717b(e)(3)(A); *id.* § 717f(e); Certificate Order, 169 FERC ¶ 61,135 at P 61 (“[T]he Commission has the authority to take whatever steps are necessary to ensure the protection of environmental resources . . . , including authority to impose any additional measures deemed necessary.”).

³⁸ *See* Certificate Order, 169 FERC ¶ 61,135 at P 61 (explaining that the environmental conditions ensure that the Project’s environmental impacts are consistent with those anticipated by the environmental analyses, which found that the Project would not significantly affect the quality of the human environment).

³⁹ *Sierra Club v. U.S. Army Corps of Engineers*, 803 F.3d 31, 37 (D.C. Cir. 2015).

⁴⁰ *Id.* (quoting *Robertson*, 490 U.S. at 351).