

**Federal Energy Regulatory Commission
Office of Energy Projects, Division of Gas-Environment & Engineering**

ENVIRONMENTAL ASSESSMENT REPORT

Name of Applicant: Freeport LNG Development, L.P., FLNG Liquefaction, LLC., FLNG Liquefaction 2, LLC., FLNG Liquefaction 3, LLC

Date Filed: 6/15/2015

Docket No: CP15-518-000

Type: Section 3(a) - Amendment

Cost: Not Provided

Facilities:

Freeport LNG Development, L.P., FLNG Liquefaction, LLC., FLNG Liquefaction 2, LLC., FLNG Liquefaction 3, LLC seeks authorization from the Commission to increase the total liquefied natural gas production capacity Liquefaction Plant in Brazoria County, Texas. The Liquefaction Project is currently authorized to produce 1.8 billion cubic feet (Bcf) per day (657 Bcf per year) to 2.14 Bcf per day (782 Bcf per year). The increase in maximum LNG production capacity would be accomplished with no additional construction of new facilities or the modification of the previously authorized facilities. No new facilities are proposed; the increase is based solely on revised equipment availability information and a revised design feed gas composition case. The maximum LNG production capacity would be accomplished with no change to the ranges of process flow parameters previously authorized and with no additional construction of new facilities or the modification of the previously authorized facilities. The Liquefaction Project would achieve its maximum LNG production level and remain in full compliance with all applicable air emission and other regulatory requirements.

Environmental Impact -- Conclusions:

☐ **Categorical Exclusion**

☐ **Deficiency Letter Required**

☐ **Environment Not Involved**

☒ **EA/EIS Required**

☒ **Environment Complete**

☒ **No NOI Required**

☐ **NOI Required**

Environmental Considerations or Comments:

Environmental Assessment for the proposed action is attached.

Prepared by:
/s/Eric Tomasi

Date:
3/31/2016

Approved by Branch Chief:
/s/ James Martin

Date:
3/31/2016

**Freeport LNG Development, L.P., FLNG Liquefaction, LLC., FLNG
Liquefaction 2, LLC., FLNG Liquefaction 3, LLC
Docket No. CP15-518-000**

ENVIRONMENTAL ASSESSMENT

A. PROPOSED ACTION

On June 15, 2015 Freeport LNG Development, L.P., FLNG Liquefaction, LLC, FLNG Liquefaction 2, LLC, and FLNG Liquefaction 3, LLC (collectively referred to as Freeport LNG), filed an application pursuant to Section 3(a) of the Natural Gas Act (NGA), and Part 153 of the Commission's Regulations, to amend the authorizations granted on July 30, 2014 in Docket Nos. CP12-509-000 and CP12-29-000 (Order). The July 30, 2014 *Order Granting Authorizations under Section 3 of the Natural Gas Act* (Order) authorized Freeport LNG to construct and operate facilities for the liquefaction and export of domestically-produced natural gas at the existing Freeport Liquefied Natural Gas Terminal, in Brazoria County, Texas. The project, known as the Liquefaction Project included three LNG process trains (trains 1 through 3), each with an authorized total nominal liquefaction capacity of about 1.8 billion cubic feet (Bcf) per day of natural gas, feed-gas metering, pretreatment facilities, flares, refrigerant storage, boil-off gas and water handling systems, new buildings, and new utility and power generation facilities. Construction of the Liquefaction Project is currently underway.

With this application, Freeport LNG seeks authorization from the Commission to increase the total liquefied natural gas production capacity of its Liquefaction Project from the currently authorized 1.8 Bcf per day (657 Bcf per year) to 2.14 Bcf per day (782 Bcf per year). No additional construction or modification of previously-authorized facilities is required.

Freeport LNG explains that the requested 2.14 Bcf per day production capacity represents updated equipment availability information and a revised design feed gas composition case, which both allow for greater LNG production than the assumptions used to calculate the authorized liquefaction capacity. The revised design feed gas composition case is within the range of those already evaluated during the FERC engineering and siting review that was conducted prior to authorization of the Liquefaction Project.

Freeport LNG further states that the Liquefaction Project can achieve this LNG production level while remaining in full compliance with applicable air emission and other regulatory requirements. Freeport LNG acknowledges that the export of quantities beyond the U.S. Department of Energy's (DOE) previously authorized is subject to its receipt of additional LNG export authorization from DOE.

Freeport LNG has not received the authorization for additional export volume at this time.

B. ENVIRONMENTAL ANALYSIS

The FERC's Notice of Application for Docket No. CP15-518-000 was issued on June 24, 2015. On July 15, 2015, the Sierra Club filed a motion to intervene, protest, and submitted comments.

The Sierra Club contends that the proposal would result in an increase in air emissions that would be associated with an increase of the total LNG production capacity of the Liquefaction Project. The Sierra Club argues that increasing LNG output from trains 1-3 would cause a corresponding increase in emissions of air pollutants from the pretreatment and liquefaction process and the same increase in environmental impacts from induced gas production, pipeline transportation, and tanker shipping. Sierra Club further argues that there is a direct correlation between the Liquefaction Project's LNG production capacity and the air emissions associated with such production (i.e., a 19 percent increase in LNG production capacity yields a 19 percent increase in air pollution from the Liquefaction Project). The Sierra Club further indicated that the proposed action would increase greenhouse gases and pollutants; and adversely affect the environment considering the cumulative impact of other projects in the area. The Sierra Club air quality comments are addressed below.

The Sierra Club also raises many of the same arguments that the Commission rejected in its 2014 Order authorizing construction of the Liquefaction Project. These issues include whether the application would induce additional natural gas production, particularly from hydraulic fracturing of shale gas sources, causing environmental harms associated with such production on air, water, recreational resources; increase domestic natural gas prices, increase unemployment, and reduce manufacturing. These issues were fully considered discussed in the Liquefaction Project EIS and Order and are not discussed in this EA.

Our¹ analysis indicates that because Freeport LNG's proposal (the Amendment) analyzed in this docket does not require the construction of new facilities or the modification of previously-authorized facilities, and would not operate outside the range of feed gas composition cases previously authorized, it would not affect the following resources:

- ground water, springs, or aquifers;
- wetlands or waterbodies;
- surface water, water intakes, or sources water protection areas;
- cultural;
- forested lands and vegetation;
- residential or commercial areas;
- wildlife including federally threatened and/or endangered species;
- geologic resources;
- soils;
- public safety;
- noise; and
- state or national parks, forests, recreation areas, or refuge areas.

To confirm this, Staff issued environmental and engineering information requests on September 10, 2015 and October 15, 2015, and Freeport LNG responded on September 22, 2015 and October 27, 2015. The response from Freeport LNG confirmed its prior assessment that the Project would not effect environmental resources. Based on the comment received from the Sierra Club, we provide a review and impact analysis of air quality

Under the requirements of the National Environmental Policy Act (NEPA), Staff performed an analysis of the original Liquefaction Project. The Liquefaction Project final EIS identified the potential annual emissions for criteria pollutants and hazardous air pollutants for both the Liquefaction Plant and Pretreatment Plant. The emission data included in the final EIS was based on US Environmental Protection Agency (USEPA) emission factors obtained from the AP 42 Compilation of Air Pollutant Emission Factors, applicable federal and/or state regulatory emission limitation, and manufacturer-supplied emissions factors. Potential to emit is based on continuous operation (8,760 hours per year) at 100 percent load.

Freeport LNG has indicated, both in the application, as well as in its responses to the October 27, 2015 data request response, that while additional feedgas may be

¹ The pronouns "we," "us," "our", and "Staff" refer to environmental staff of the FERC's Office of Energy Projects (OEP).

supplied, the Liquefaction Project can achieve its maximum LNG production level while remaining in full compliance with applicable air emission requirements and within the emission levels and modelled emissions analyzed in our June 2014 final EIS. This includes the emissions produced from the generation of the electric load required for liquefaction trains 1-4. Therefore, emissions from generation of the electricity required to run the Liquefaction Plant would not increase.

The Sierra Club contends that the Freeport LNG Amendment would increase emissions from shipping vessels. The application clearly states that no increase in ship traffic is anticipated above current levels. Emissions in Texas from 250 ships per year were analyzed in the Liquefaction Project EIS and the final General Conformity Determination, which included LNG carrier cruising, transit hoteling, and unloading. If implemented, the Amendment would not require any changes to the number of vessels, dredging to the area to accommodate larger vessels, a relocation of the berthing area, or changes to the unloading/unloading rate for the vessels. We have determined that implementation of the Amendment would not cause a change in total facility and marine emissions.

The Liquefaction Project EIS included a modeling² analysis to demonstrate that the Liquefaction Project would be in compliance with National Ambient Air Quality Standards. Operating at the “maximum design capacity” in a particular year, as currently proposed in the Amendment, would not alter any of the design parameters used in the previous air quality modeling analysis. We conclude this because there are no changes to the factors that influence air modeling (e.g. emission rates, air/fuel ratios, exit stack temperatures, exit flow rates, etc.) and because modeling was performed on continuous operation of the equipment, mobile sources and other emissions sources.

Freeport LNG has obtained all necessary air permits for the Liquefaction Project which were issued by the Texas Commission on Environmental Quality (TCEQ). Operating at the “maximum design capacity” in any particular year would not alter any of the design parameters used to demonstrate the Liquefaction Project’s compliance with the National Ambient Air Quality Standards and the permits authorize continuous operation of the Pretreatment and Liquefaction Plant’s at their maximum design rate for 8,760 hours a year. The Amendment does not require any changes to operating load, fuel consumption, or fuel specification.

In conclusion, our analysis indicates that increasing the total LNG production capacity of the Liquefaction Project from the currently authorized 1.8 Bcf per day to 2.14 Bcf per day would not require any construction, and would be in compliance with applicable air emissions and other regulatory requirements.

² Liquefaction Project EA, page 2-60.

Cumulative impacts may result when the environmental effects associated with a proposed action are added to impacts associated with projects in the past, present, or reasonably foreseeable future that occur in the same region. As identified in this EA, the proposed action involves no new construction or modification of facilities. Consequently, the proposed action would not contribute cumulative impacts to other past, present, or reasonably foreseeable projects in the project region.

In accordance with NEPA, we evaluated alternatives to Freeport LNG's proposed action to determine whether they would be preferable to the project as proposed. Our evaluation criteria for selecting potentially preferable alternatives are:

- technical and economic feasibility and practicality;
- significant environmental advantage over the proposed action; and
- ability to increase the total liquefied natural gas production capacity of the Liquefaction Project from the currently authorized 1.8 Bcf per day to 2.14 Bcf per day.

One of the goals of an alternatives analysis is to identify alternatives that avoid significant impacts. As previously identified, we have concluded that the Amendment would not require any new construction or operational impacts that were not previously considered in the final EIS for the Liquefaction Project. Consequently, we identified no siting or facility alternatives that would provide a significant environmental advantage.

Under the no-action alternative, Freeport LNG would not be authorized to increase the total LNG production capacity of the Liquefaction Project from the currently authorized 1.8 Bcf per day to 2.14 Bcf per day. The equipment for the Liquefaction Project is already authorized. All other alternatives to increase the production capacity would either require additional construction at other LNG export/liquefaction terminals, or require a similar uprate. Therefore, we conclude that no alternatives would be able to accomplish the purpose of the Amendment and offer a significant environmental advantage.

C. Conclusions

Based on the analysis in this EA, the OEP staff has determined that if Freeport LNG operates the proposed facilities in accordance with its application and supplements, approval of the Amendment would not constitute a major federal action significantly affecting the quality of the human environment.