



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 6

1445 Ross Avenue, Suite 1200

Dallas, TX 75202-2733

August 4, 2014

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street NE, Room 1A
Washington, DC 20426

Re: OEP/DG2E/Gas 2; Corpus Christi Liquefaction, LLC and Cheniere Corpus Christi Pipeline, LP; Docket Nos. CP12-507-000 & CP12-508-000

In accordance with our responsibilities under Section 309 of the Clean Air Act (CAA), the National Environmental Policy Act (NEPA), and the Council on Environmental Quality (CEQ) regulations for implementing NEPA, the U.S. Environmental Protection Agency (EPA) Region 6 office in Dallas, Texas, has completed its review of the Federal Energy Regulatory Commission (FERC) Draft Environmental Impact Statement (DEIS) for the Corpus Christi Liquefied Natural Gas Project (CCLNG or Project). The purpose of this DEIS is to inform the FERC decision-makers, the public, and the permitting agencies about the potential adverse and beneficial impacts of the proposed Project and its alternatives, and recommend mitigation measures that would reduce adverse impacts to the extent practicable.

EPA's review identified a number of potential adverse impacts to aquatic resources, air quality, environmental justice populations, and wetlands. In addition, the draft does not contain enough information to fully consider environmental justice, wetlands, indirect effects and greenhouse gas emissions. For these reasons we have rated the DEIS as "Environmental Concerns – Insufficient Information" (EC-2). The EPA's Rating System Criteria can be found at <http://www.epa.gov/compliance/nepa/comments/ratings.html>. EPA recommends that these issues be addressed in the Final EIS. We have enclosed detailed comments which clarify our concerns.

EPA appreciates the opportunity to review the DEIS. Please send our office one copy of the FEIS when it is electronically filed. This letter will be published on the EPA website, www.epa.gov, according to our responsibility under Section 309 of the CAA to inform the public of our views on the proposed Federal action. If you have any questions or concerns, I can be reached at 214-665-7505, or contact Keith Hayden of my staff at hayden.keith@epa.gov or 214-665-2133.

Sincerely,

A handwritten signature in black ink, appearing to read "Craig Weeks", with a long horizontal line extending to the right.

Craig Weeks
Chief, Office of Planning
and Coordination

Enclosures

**DETAILED COMMENTS ON THE
FEDERAL ENERGY REGULATORY COMMISSION
DRAFT ENVIRONMENTAL IMPACT STATEMENT
FOR THE CORPUS CHRISTI LNG PROJECT**

BACKGROUND: The proposed action would provide facilities necessary to import, export, store, vaporize, and liquefy natural gas and deliver the resulting product either into existing interstate and intrastate natural gas pipelines in the Corpus Christi area, or export LNG elsewhere. Terminal, pipeline, and other facilities would be constructed to accomplish the proposed action.

Cheniere would construct the LNG import and export terminal on a 991-acre site located along the northern shore of Corpus Christi Bay at the north end of the La Quinta Channel in San Patricio and Nueces Counties, Texas. Cheniere would also construct approximately 23 miles of 48-inch-diameter natural gas pipeline, two compressor stations, and six meter and regulator stations.

WETLANDS

Evaluation of wetland impacts; page 4-27 to 4-29

The DEIS states “Based on Cheniere’s proposed impact mitigation measures as well as preparation of the functional assessment and Aquatic Resources Mitigation Plan (ARMP) to be approved by the Corps of Engineers (COE), we have determined that constructing and operating the Terminal would not have a significant impact on wetlands.” However, the DEIS also states the ARMP has not been fully revised since the 404 permitting for the originally proposed import facility was completed in 2005, and neither a draft nor final ARMP is included in the document. Therefore, the DEIS conclusion does not appear well supported.

In the absence of a final compensatory mitigation plan that would clearly result in a net benefit to wetland habitat and functions based on a functional assessment, the construction of the terminal would result in a net loss of wetlands and special aquatic sites, and could therefore have a significant impact on these resources.

Although the project site is characterized as highly disturbed and industrial, the wetlands and special aquatic habitats present appear to be diverse, including mangroves, high and low cordgrass marsh, flats, and seagrasses or submerged aquatic vegetation (SAV). In the absence of a functional assessment, the quality of these habitats and the functions they provide is currently unknown.

Recommendation:

Include a functional wetlands assessment, compensatory mitigation plan and a finalized copy of the ARMP in the Final EIS.

Evaluation of Seagrass/SAV impacts: page 4-31

A number of project components could result in localized increases in turbidity and sedimentation, despite employment of best management practices and use of a hydraulic cutterhead dredge. For instance, increased wave action from ship and boat traffic, ballast water discharge, and initial and maintenance dredging may contribute to increased, potentially chronic turbidity within several hundred feet of the Terminal site.

Section 4.5.1.2 of the DEIS addresses impacts to SAV due to dredging within the construction area. Direct impacts to SAV are quantified in the DEIS (Table 4.4-1); however, the indirect impacts to existing SAV due to light attenuation, caused by increased turbidity that may be ongoing due to operation and maintenance of the Terminal facilities, have not been quantified or described in the document.

The conclusions of a U.S. Army Corps of Engineers and Texas A&M study on the effects of dredge deposits on seagrasses in the Laguna Madre state that, "...dredging operations are very likely to have a measurable negative impact on the health when (1) dredging activities occur over extended periods (weeks) when the plants are metabolically most active (spring through autumn), and (2) the dredging activity and/or disposal of materials occurs within 1 km of the grass bed."¹

Recommendation:

EPA recommends determining whether there are any additional SAV within one kilometer of the proposed dredging area. If so, it may be necessary to mitigate for adverse impacts to these seagrasses as well as those that are directly removed through dredging. Dredging should be conducted in winter, to the maximum extent practicable, in order to minimize impacts.

SOCIOECONOMICS

Environmental Justice: page 4-82

The DEIS includes demographic information at the Census Tract level for the proposed project and states that it is the smallest geographic unit available. Census information is available at the block group level for minority percentage and can provide a finer level of analysis regarding the potential impacts of the project on minority communities. Specifically, EPA is concerned about the following Census Block Groups:

Census Block Group Number	Percent Minority
484090105002	99.63%
484090105001	91.65%

¹ Dunton, K.H., A. Burd, L. Cifuentes, P.M. Eldridge, and J.W. Morse. 2003. Concluding Report. Effects of dredge deposits on seagrasses: an integrative model for Laguna Madre. Volume I: Executive Summary. U.S. Army Corps of Engineers, Galveston District, Galveston, Texas.

484090108004	99.34%
484090108003	96.10%
484090108001	70.27%
484090110001	80.23%
484090110004	87.14%
484090110002	72%

There is no map showing the Census information as it relates to the proposed project, therefore, EPA cannot determine whether any of the project components (compressor stations, pipelines, etc.) pass through or within 0.5 miles of the above listed block groups:

Recommendation:

EPA recommends that FERC assess whether there are any potentially disproportionate impacts on these communities from construction, accidental releases, and operation of the proposed project and alternatives. FERC should describe mitigation measures and address emergency response.

INDIRECT EFFECTS

EPA suggests FERC consider the potential for increased natural gas production as a result of the proposed CCLNG terminal and the potential for environmental impacts associated with these potential increases. Both FERC and the Department of Energy (DOE) have recognized that an increase in natural gas exports will result in increased production.² However, the Draft EIS concludes that the nature of natural gas supply and pipeline system in the U.S. makes it difficult to predict accurately where the additional gas development activity will occur and thus concludes that it is not feasible to more specifically evaluate localized environmental impacts. DOE has recently released a draft study by the National Energy Technology Laboratory (NETL), entitled “Draft Addendum to Environmental Review Documents Concerning Exports of Natural Gas from the United States³”. We note that NETL recognizes that many of the potential impacts will vary considerably by location where the production occurs due to differences in hydrology, geology, ecology, air quality, regulatory structure and other factors. Nonetheless, the Addendum provides the kind of conceptual level analysis of the types of impacts that are likely to occur from increased production. We recommend that this study be considered as part of the decision making for this project and incorporated by reference in the FEIS.

² Effect of Increased Natural Gas Exports on Domestic Energy Markets, as requested by the Office of Fossil Energy. US Energy Information Administration. January 2012 (http://energy.gov/sites/prod/files/2013/04/f0/fe_eia_lng.pdf) and Cameron LNG EIS, Appendix L (Response to Comments), p. L-36 (<http://elibrary.ferc.gov/idmws/common/OpenNat.asp?fileID=13530753>)

³ Draft Addendum to Environmental Review Documents Concerning Exports of Natural Gas from the United States. DOE. (http://energy.gov/sites/prod/files/2014/05/f16/Addendum__0.pdf)

AIR RESOURCES

Greenhouse Gas – Emissions

There are greenhouse gas (GHG) emissions associated with the production, transport, and combustion of the natural gas proposed to be exported by the project. The DEIS contains helpful discussion of the GHG emissions associated with construction of the project, and annual emissions from the operation of the liquefaction facility. DOE has recently issued two documents that are helpful in assessing the GHG emissions implications of the project. They are the Draft Addendum mentioned above, and NETL's recent report, entitled "Life Cycle Greenhouse Gas Perspective on Exporting Liquefied Natural Gas from the United States"⁴. These reports provide a helpful overview of GHG emissions from all stages of a project, from production through transmission and combustion. The GHG report also includes comparative analysis of GHG emissions associated with other domestic fuel sources and LNG exports as they relate to other possible fuel sources in receiving regions. This information is helpful to decision makers in reviewing the foreseeable GHG emissions associated with the increased production of natural gas and the export of LNG and how they compare to other possible fuels. EPA recommends both DOE reports be considered as part of the decision making process for this project and incorporated by reference in the FEIS. FERC may also want to consider adapting this analysis to more specifically consider the GHG implications of this project.

Fugitive Dust Control Plan (FDCP); Appendix D

Appendix D discusses best management practices and other mitigation measures that will be used to control fugitive dust.

Recommendation:

EPA recommends that, in addition to all applicable local, state, or federal requirements, the attached list of mitigation measures be included in the FDCP in order to reduce air quality impacts.

CUMULATIVE IMPACTS

Projects Potentially Contributing to Cumulative Impacts

The DEIS considers a number of projects that could potentially contribute to cumulative impacts. Projects included in the cumulative impact analysis are, among others, the U.S. Army Corps of Engineers' La Quinta Channel Extension project, the Port of Corpus Christi's La Quinta Trade Gateway Terminal, Revolution Energy's Harbor Wind project, Offshore Wind Power Systems of Texas' Foundation Test site, Oxy Ingleside Energy Center's Propane Export Facility, and Papalote Creek's Wind Farm. In addition, the Draft EIS considers the proposed Freeport Liquefaction Project in Brazoria County.

⁴ Life Cycle Greenhouse Gas Perspective on Exporting Liquefied Natural Gas from the United States. DOE/NETL-2014/1649 (<http://energy.gov/fe/life-cycle-greenhouse-gas-perspective-exporting-liquefied-natural-gas-united-states>)

We also note that the DEIS includes a map (Figure 3.1-1) of existing or planned LNG terminals in the vicinity of the CCLNG project. The map depicts the Lavaca Bay LNG terminal and Gulf Coast LNG terminal as closer to the proposed CCLNG project than the Freeport liquefaction project site, yet these two projects are not considered in the cumulative impact analysis.

Recommendation:

We recommend that the FEIS include the proposed Lavaca Bay LNG terminal and Gulf Coast LNG terminal in the cumulative impacts analysis.

Compensatory Mitigation for Wetlands and Special Aquatic Sites; page 4-218

The EPA supports the COE decision to evaluate preservation values for the proposed mitigation on Ransom Point, during a 10-year period rather than a 50-year period. We also support the decision to require a functional assessment to determine the appropriate amount and types of wetland and seagrass mitigation. We particularly recommend that impacts to mangroves be compensated with in-kind restoration to the maximum extent practicable. The EPA will continue to coordinate with the COE to evaluate the ARMP in accordance with the 2008 Final Mitigation Rule.

In previous mitigation plans submitted to the COE, the applicant has proposed compensatory mitigation for direct impacts to SAV by constructing breakwaters to create shallow water habitat that is more conducive to SAV establishment at both the Shamrock Island (approved and constructed) and Ransom Point (proposed) mitigation sites. The DEIS states that, "Additional mitigation plans have been proposed by the POCCA to compensate for adverse impacts on SAV communities, including the creation of nearly 200 acres of shallow-bottom habitat using dredged material from the La Quinta Ship Channel Extension Project and construction of an Ecosystem Restoration Feature to protect approximately 45 acres of existing SAV." The DEIS does not include further details about these additional SAV mitigation projects. It may be possible to fulfill any additional compensatory mitigation requirements for the 404 permit, as well as the POCCA requirements, with these additional mitigation areas. However, it cannot be determined if this is feasible based on the information provided in the DEIS, and without further evaluation of the extent of SAV beds adjacent to the dredging area.

Recommendation:

We recommend the FEIS include additional details concerning the mitigation plans proposed by the POCCA to compensate for adverse impacts on SAV communities. As previously mentioned, additional compensatory mitigation for indirect SAV impacts within 1 kilometer of the dredging area may be necessary to fulfill the 404(b)(1) Guidelines and offset all losses to special aquatic sites. We recommend evaluating SAV beds adjacent to the dredging area.

CONSULTATION AND COORDINATION

Ongoing consultation and permitting

Coordination with several local, state, and national agencies concerning environmental laws and executive orders is ongoing. The DEIS references many consultation letters received by FERC that detail opinions of resource management agencies. There are also a number of permits referenced in the DEIS that will need to be acquired prior to project construction commencing.

Recommendation:

EPA recommends that FERC include all correspondence with resource agencies mentioned in the DEIS in a dedicated section or appendix of the FEIS, and include an updated status of all permits required for the CCLNG project in the FEIS.

Additional Fugitive Dust BMPs

Fugitive Dust Source Controls:

- EPA recommends that the plan include these general commitments:
 - Stabilize heavily used unpaved construction roads with a non-toxic soil stabilizer or soil weighting agent that will not result in loss of vegetation, or increase other environmental impacts.
 - During grading, use water, as necessary, on disturbed areas in construction sites to control visible plumes.
 - Vehicle Speed:
 - Limit speeds to 25 miles per hour on stabilized unpaved roads as long as such speeds do not create visible dust emissions.
 - Limit speeds to 10 miles per hour or less on unpaved areas within construction sites on un-stabilized (and unpaved) roads.
 - Post visible speed limit signs at construction site entrances.
 - Inspect and wash construction equipment vehicle tires, as necessary, so they are free of dirt before entering paved roadways, if applicable.
 - Provide gravel ramps of at least 20 feet in length at tire washing/cleaning stations, and ensure construction vehicles exit construction sites through treated entrance roadways, unless an alternative route has been approved by appropriate lead agencies, if applicable.
 - Use sandbags or equivalent effective measures to prevent runoff to roadways in construction areas adjacent to paved roadways. Ensure consistency with the project's Storm Water Pollution Prevention Plan, if such a plan is required for the project.
 - Sweep the first 500 feet of paved roads exiting construction sites, other unpaved roads en route from the construction site, or construction staging areas whenever dirt or runoff from construction activity is visible on paved roads, or at least twice daily (less during periods of precipitation).
 - Stabilize disturbed soils (after active construction activities are completed) with a non-toxic soil stabilizer, soil weighting agent, or other approved soil stabilizing method.
 - Cover or treat soil storage piles with appropriate dust suppressant compounds and disturbed areas that remain inactive for longer than 10 days. Provide vehicles (used to transport solid bulk material on public roadways and that have potential to cause visible emissions) with covers. Alternatively, sufficiently wet and load materials onto the trucks in a manner to provide at least one foot of freeboard.
 - Use wind erosion control techniques (such as windbreaks, water, chemical dust suppressants, and/or vegetation) where soils are disturbed in construction, access and maintenance routes, and materials stock pile areas. Keep related windbreaks in place until the soil is stabilized or permanently covered with vegetation.

Administrative controls:

- Prepare an inventory of all equipment prior to construction and identify the suitability of add-on emission controls for each piece of equipment before groundbreaking;
- Develop a construction traffic and parking management plan that maintains traffic flow and plan construction to minimize vehicle trips; and
- Identify sensitive receptors in the project area, such as children, elderly, and infirmed, and specify the means by which impacts to these populations will be minimized (e.g. locate construction equipment and staging zones away from sensitive receptors and building air intakes).