

EXECUTIVE SUMMARY

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The staff of the Federal Energy Regulatory Commission (FERC or Commission) prepared this draft Environmental Impact Statement (EIS) to assess the environmental impacts associated with the construction of facilities proposed by Cameron LNG, LLC (Cameron LNG) and Cameron Interstate Pipeline, LLC (Cameron Interstate), which are collectively referred to as Cameron. The draft EIS was prepared in accordance with the requirements of the National Environmental Policy Act of 1969 (NEPA) and the Commission's implementing regulations under Title 18 of the Code of Federal Regulations, Part 380 (18 CFR 380). On December 7, 2012, Cameron LNG filed an application with the FERC in Docket Number CP13-25-000 pursuant to Section 3(a) of the Natural Gas Act (NGA) and Part 153 of the Commission's regulations. On December 14, 2012, Cameron Interstate filed an application with the FERC in Docket Number CP13-27-000 under Section 7 of the NGA, as amended, and Parts 157 and 284 of the Commission's regulations. This project is referred to as the Cameron Liquefaction Project (Project) and consists of the Cameron LNG Terminal Expansion (Terminal Expansion) and the Cameron Pipeline Expansion (Pipeline Expansion).

Cameron proposes to construct and operate onshore natural gas liquefaction and associated facilities to allow the export of liquefied natural gas (LNG), and to construct, own, operate, and maintain a new interstate natural gas pipeline, compressor station, and ancillary facilities in Louisiana.

The purpose of the EIS is to inform the FERC decision-makers, the public, and the permitting agencies about the potential adverse and beneficial environmental impacts of the proposed Project and its alternatives, and recommend mitigation measures that would reduce adverse impacts to the extent practicable. We¹ prepared our analysis based on information provided by Cameron and further developed from data requests, field investigations, scoping, literature research, and contacts with or comments from federal, state, and local agencies, Native American tribes, and individual members of the public.

The FERC is the federal agency responsible for authorizing interstate natural gas transmission facilities under the NGA, and is the lead federal agency for the preparation of this EIS in compliance with the requirements of NEPA. The U.S. Army Corps of Engineers (COE), U.S. Coast Guard (Coast Guard), U.S. Department of Energy, and the U.S. Department of Transportation (DOT) are cooperating agencies for the development of this EIS consistent with 40 CFR 1501.6(b). A cooperating agency has jurisdiction by law or has special expertise with respect to environmental resource issues associated with the Project.

PROPOSED ACTION

According to Cameron, the Project would transport and liquefy domestic natural gas into LNG for export, and deliver competitively-priced LNG to foreign markets.

Cameron designed its Project to meet each of the following purposes:

- enable bi-directional flow of natural gas along the Cameron Interstate Pipeline system and allow natural gas to be received from five pipeline interconnections;

¹ "We", "us", and "our" refer to the environmental staff of the FERC's Office of Energy Projects.

- allow natural gas to be received by pipeline at the expanded LNG Terminal that would be treated, liquefied, stored, and loaded from LNG storage tanks into vessels berthed at the terminal's existing marine facility;
- preserve the import and re-gasification capabilities of the Cameron LNG Terminal; and
- preserve export capability of foreign-sourced LNG at the Cameron LNG Terminal.

Terminal Expansion

Cameron LNG would construct the Terminal Expansion on a 502-acre site between Louisiana State Highway 27 (LA-27) and the Calcasieu Ship Channel, about 2 miles north of the community of Hackberry, Louisiana. The proposed site is north of and partially within the existing terminal fence line in Cameron and Calcasieu Parishes, Louisiana. The Terminal Expansion would include the following key facilities:

- three separate systems that liquefy natural gas, each capable of producing 4 million metric tons per year of LNG for export;
- a 160,000-cubic-meter, full-containment LNG storage tank;
- refrigerant make-up and condensate product storage tanks;
- a truck loading/unloading area;
- a marine work dock for delivery of equipment and construction materials;
- utilities and associated systems; and
- minor modifications to existing terminal facilities.

Pipeline Expansion

Cameron Interstate proposes to construct and operate about 21 miles of 42-inch-diameter pipeline, a compressor station (Holbrook Compressor Station) totaling about 56,820 horsepower, and associated facilities in Cameron, Calcasieu, and Beauregard Parishes, Louisiana. The pipeline would extend from an existing Cameron Interstate Pipeline interconnection at the Florida Gas Transmission (FGT) pipeline to a new interconnection with Trunkline Gas Pipeline (Trunkline). Cameron would construct and operate a new interconnection with Trunkline; modify existing interconnections and metering facilities with the Transcontinental Gas Pipeline Corporation, Texas Eastern Transmission Company, FGT, and Tennessee Gas Pipeline systems; and construct and operate associated facilities, including metering facilities, pig receivers and launchers,² and mainline valves.

² A pipeline "pig" is an internal device to clean or inspect the pipeline. A pig launcher/receiver is an aboveground facility where pigs are inserted into or retrieved from the pipeline.

PUBLIC INVOLVEMENT

On May 6, 2012, the FERC began its pre-filing review of Cameron's Project and established pre-filing Docket Numbers PF12-12-000 and PF12-13-000 to place information related to the Project into the public record. As part of the pre-filing process, Cameron sponsored public open houses in Sulphur and Hackberry, Louisiana on June 26, 2012. The purpose of the open houses was to provide affected landowners, government and agency officials, and the general public with information about the Project and to give them an opportunity to ask questions and express their concerns. We participated in the open houses and provided information regarding the Commission's environmental review process to interested stakeholders.

On August 6, 2012, the FERC issued a *Notice of Intent to Prepare an Environmental Impact Statement for the Planned Cameron Pipeline Expansion Project and Cameron LNG Liquefaction Project, Request for Comments on Environmental Issues, and Notice of Public Scoping Meeting* (NOI). This notice was sent to about 300 interested parties including federal, state, and local officials; agency representatives; conservation organizations; Native American tribes; local libraries and newspapers in the Project area; and property owners in the vicinity of proposed Project facilities. On August 21, 2012, we held a public scoping meeting in Sulphur, Louisiana, to provide an opportunity for the public to learn more about the Project and to provide oral comments on environmental issues to be addressed in the EIS.

Additionally, we initiated consultations with federal and state agencies to identify issues that should be addressed in the EIS. We conducted an interagency meeting for the Project on October 3, 2012 in Baton Rouge, Louisiana. We also conducted an agency meeting and site visit at the Cameron LNG Terminal on January 17, 2013.

Through the scoping and agency comment process, we received comments on a variety of environmental issues. We continued to receive and consider public comments during the entire pre-filing period and throughout development of this EIS. Substantive environmental issues identified through this public review process are addressed in this EIS. The transcripts of the public scoping meetings and all written comments are part of the FERC's public record for the Terminal Expansion and Pipeline Expansion and are available for viewing under their respective dockets.^{3,4}

PROJECT IMPACTS

We evaluated the potential impacts of construction and operation of the Project on geology; soils; water use and quality; wetlands; vegetation; wildlife, aquatic resources, and essential fish habitat (EFH); threatened, endangered, and special status species; land use, recreation, and visual resources; socioeconomics; cultural resources; air quality and noise; reliability and safety; and cumulative impacts. Where necessary, we are recommending

³ Transcripts of the public scoping meeting for the Terminal Expansion (Docket No. PF12-13-000, Accession No. 20121016-4006) and Pipeline Expansion (Docket No. PF12-12-000, Accession No. 20121016-4007) are available on the FERC website at <http://ferc.gov/docs-filing/elibrary.asp>.

⁴ Comments submitted after the Project applications were filed with the FERC are part of the public record for the Terminal Expansion (Docket No. CP13-25-000) and Pipeline Expansion (Docket No. CP13-27-000) and are available on the FERC website at <http://ferc.gov/docs-filing/elibrary.asp>.

additional mitigation to minimize or avoid these impacts. Section 5.4 of the EIS contains a compilation of our recommendations.

Overall, construction of Project facilities would temporarily disturb about 825 acres for construction, including extra temporary workspaces, a contractor yard, access roads, and aboveground facilities. About 590 acres would be retained as permanent easements for operation of the facilities. Cameron would allow the remaining 235 acres of land disturbed during construction to return to pre-construction conditions and uses.

Construction of the Terminal Expansion would result in permanent impacts on about 502 acres of open land, industrial/commercial land, forested and non-forested wetlands, and open water. All affected acres would be permanently converted to industrial land. The entire 21 miles of pipeline right-of-way would be within or abutting existing rights-of-way, and about 15.5 miles would be collocated with Cameron Interstate's existing pipeline right-of-way. Construction of the Pipeline Expansion would affect forested, scrub-shrub, and emergent wetlands, upland forest and planted pine forest, open space, open water, residential land, industrial land, and agricultural land, but we believe that the impacts would not be significant.

Based on our analysis, scoping, and agency consultations, the major issues are impacts on wetlands, EFH, federally listed species, traffic, air quality, noise, safety, and cumulative impacts.

Wetlands

Construction and operation of the Terminal Expansion would affect a total of 213.7 acres of wetlands. Cameron LNG would permanently fill all wetlands as part of construction of the Terminal Expansion, but would offset impacts on COE-jurisdictional wetlands by COE-approved mitigation measures, including creation of offsite tidal fresh/intermediate marsh wetland habitat. Construction and operation of the Pipeline Expansion would affect about 61.6 acres of wetlands, of which Cameron Interstate would permanently impact 17.0 acres, including permanent conversion of 1.3 acres from forested to emergent wetlands. The remaining emergent and scrub-shrub wetlands would only be temporarily impacted because the vegetation would return to a community that would function similarly to the pre-construction community. However, the clearing of forested wetlands at temporary workspaces would result in a long-term impact because of the slow growth rate of trees. Cameron Interstate would implement the mitigation measures in its Wetland and Waterbody Construction and Mitigation Procedures (Cameron Interstate Procedures) to control erosion and restore the grade and hydrology after construction in wetlands. To offset the loss of functional value within palustrine forested and palustrine scrub/shrub wetlands, Cameron Interstate would purchase mitigation credits from COE-approved wetland mitigation banks.

Essential Fish Habitat

Based on the results of consultation with the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NMFS), we determined that the proposed work dock is within EFH, as defined by the Magnuson-Stevens Fishery Conservation and Management Act. Although construction of the work dock would involve permanent conversion of EFH estuarine sub-tidal water bottom habitat to deep water habitat, the deep water habitat would recolonize with soft-bottom benthic organisms after completion of dredging and would

continue to provide a prey base for EFH species. To minimize impacts from dredging on EFH and EFH species, Cameron LNG would use a suction dredge that would reduce sedimentation and turbidity for initial and maintenance dredging. Cameron LNG would beneficially reuse dredged materials at existing disposal sites and in Cameron LNG's proposed marsh mitigation area.

Threatened and Endangered Species

Based on consultations with the U.S. Fish and Wildlife Service (FWS) and NMFS and Cameron's species-specific surveys, four federally listed species potentially occur in the general Project area. We anticipate that construction and operation of the Project would not likely adversely affect the Kemp's ridley sea turtle, the West Indian manatee, the piping plover, or the red-cockaded woodpecker. We are recommending that Cameron Interstate conduct updated surveys for the red-cockaded woodpecker within 1 year prior to construction. To comply with Section 7 of the Endangered Species Act, we are requesting that the FWS and NMFS consider this EIS as our biological assessment for the Project and requesting that the agencies concur with our determinations.

Land Use

Cameron LNG purchased the only residence within 50 feet of the boundary of the Terminal Expansion. One residence is within 50 feet of the proposed Pipeline Expansion construction right-of-way, and Cameron Interstate developed a site-specific construction plan to minimize the impacts of construction on that residence (included in Appendix D of the EIS). The residence nearest to the proposed Holbrook Compressor Station is about 0.6 mile from the site.

With incorporation of our recommended mitigation measure, there would not be a significant impact on traffic along LA-27 in the vicinity of the Terminal Expansion site. The primary effect of barge traffic on marine transportation would occur during the first 5 months of construction of the Terminal Expansion and would not be significant. There would not be an impact on marine traffic during operation of the Project beyond that previously assessed.

Cultural Resources

Cameron completed cultural resource surveys for the Project, and no cultural resources were identified. The Louisiana State Historic Preservation Office (SHPO) reviewed the Phase I survey reports and concurred that the Project would not affect historic properties, and we agree. The review process under Section 106 of the National Historic Preservation Act is complete for the Project.

Air Quality and Noise

Most Project-related air emissions would be produced by operation of the expanded LNG terminal and the Holbrook Compressor Station, and Cameron would comply with all applicable air permit requirements for those facilities. An air quality screening analysis indicated that Cameron would not exceed the National Ambient Air Quality Standards (NAAQS) at any location, with the exception of nitrogen dioxide for both emitting facilities. An expanded analysis determined that operation of these facilities would not contribute significantly to

exceedances of the 1-hour NAAQS. Additionally, air dispersion modeling for both facilities indicate the impacts would have a minimal effect on the local environment. As a result, we conclude that the Project would not result in a significant adverse impact on either the regional or local air quality.

The Terminal Expansion would increase noise levels at the nearest NSA during operation by 2.9 decibels on the A-weighted scale (dBA), resulting in a day-night (L_{dn}) noise level of 53.8 dBA. This would be below the “barely detectable” noise level increase of 3 dBA, below the FERC L_{dn} limit of 55 dBA, and would result in minor impacts on the nearest NSA. Cameron Interstate’s Holbrook Compressor Station estimated operational noise level would also be below the FERC L_{dn} limit of 55 dBA, but the increase would be clearly noticeable with an increase of 5.8 dBA at the nearest NSA. Cameron Interstate would implement mitigation measures to reduce noise impacts, including use of acoustically-treated enclosures and silencers on air intakes and exhausts. In addition, we are recommending that Cameron Interstate conduct noise analyses during operation of the compressor station to ensure that the noise levels are at or below the L_{dn} of 55 dBA.

Safety

All Project facilities would be designed, constructed, operated, and maintained to meet or exceed the Coast Guard Safety Standards in 33 CFR 105 and 127 and DOT Minimum Federal Safety Standards in 49 CFR 192 and 193, and other applicable federal and state regulations. In addition, we evaluated the safety of the proposed LNG facilities, including a cryogenic design and technical review of the facilities proposed for liquefaction, related facilities, and safety systems. The DOT reviewed our analysis of Cameron LNG’s compliance with the requirements in 49 CFR 193, as well as our recommended mitigation measures, and has no objections at this time. The Coast Guard reviewed the liquefaction facilities and stated that a Letter of Intent or a revision to the Water Suitability Assessment is not required for the Terminal Expansion because the modifications lie outside the Marine Transfer Area. We conclude that by designing and operating the Project in accordance with the applicable standards, the Project would not result in significantly increased public safety risks.

Cumulative Impacts

We also conclude that the potential impacts of the Project, when combined with the impacts from the other projects considered, would not result in a significant impact on resources within the cumulative impact areas. However, concurrent construction of the proposed Project and other projects in the vicinity of the Terminal Expansion site would result in increased workers in the area, periods of significant traffic impact on portions of LA-27 south of Sulphur, Louisiana, and impacts on public services. We believe implementation of the mitigation measures we are recommending would adequately reduce traffic impacts, and Cameron’s proposed mitigation would lessen impacts on public services.

More detailed discussions of Project impacts, Cameron’s proposed mitigation, and our recommendations to avoid or further reduce impacts, are presented in sections 4.0 and 5.0 of this EIS.

ALTERNATIVES CONSIDERED

We assessed alternatives that could achieve the Project objectives. The range of alternatives analyzed included the No-Action Alternative, alternative energy sources, system alternatives, alternative Terminal Expansion sites, alternative Terminal Expansion configurations and designs, alternative Pipeline Expansion aboveground facility sites, and alternative compressor station designs. Alternatives were evaluated and compared to the Project to determine if these alternatives were environmentally preferable to the proposed Project.

Approximately 74 percent of Cameron Interstate's proposed pipeline route overlaps existing rights-of-way, and the remainder of the route is adjacent and parallel to existing rights-of-way. As a result, many types of environmental impacts have been lessened. We did not identify any site-specific environmental concerns that would drive the need to evaluate alternative pipeline routes, nor were any alternatives suggested during the public scoping period.

While the No-Action Alternative would avoid the environmental impacts identified in this EIS, adoption of this alternative would also preclude meeting the Project objectives. If the Project is not approved and built, the need could potentially be met by other LNG export projects developed elsewhere in the Gulf Coast region or in other areas of the United States. Implementation of other LNG export projects would likely result in impacts similar to or greater than those of the proposed Project.

We evaluated 12 system alternatives for the Terminal Expansion, including 5 operating LNG import terminals in the Gulf of Mexico area, and 7 proposed or planned liquefaction and export projects along the Gulf Coast. All of the systems were eliminated from further consideration for reasons that include the need for substantial construction beyond that currently proposed, production volume limitations, in-service dates scheduled significantly beyond Cameron's commitments to its customers, and environmental impacts that were considered comparable to or greater than those of the proposed Project.

We also evaluated two alternative Terminal Expansion sites in proximity to the existing LNG Terminal. Construction of the Terminal Expansion at each of the alternative sites would have greater impacts on open water, marshes, aquatic resources, wetlands, and wildlife than those of the proposed Terminal Expansion site. Therefore, neither site was determined to be environmentally preferable.

For the Terminal Expansion, we considered the use of on-site power generation as a design alternative to the proposed use of purchased power. During operation, emissions and noise levels of the turbine generators under this alternative would be greater than those of purchased power in the vicinity of the Terminal Expansion site. However, based on the available data, it is not possible to determine the overall difference in the levels of the key air emissions of the two design options.

For the Pipeline Expansion, we evaluated three existing pipeline systems as system alternatives. None of the systems were determined to be environmentally preferable, as each would require significant expansion of the existing facilities and would likely result in environmental impacts similar to or greater than those of the Pipeline Expansion.

We evaluated four alternative sites for the Holbrook Compressor Station. We did not determine that these alternative sites were environmentally preferable to the proposed site.

We also evaluated four design options for the compressor station. The use of purchased power would result in increased impacts due to installation of an additional 3.5-mile-long electrical distribution line, would not provide the flexibility and quality of service Cameron Interstate requires, would increase the cost of operation, and does not appear to offer an emissions advantage over the proposed on-site power generation. The use of larger turbine engines would decrease the flexibility and reliability of service because the turbines would not have variable speed control, and large turbines would require more than 35 percent more fuel, resulting in a substantial increase in annual fuel expense. Best available control technology analysis indicated selective catalytic reduction and use of an oxidation catalyst were not feasible pollution control options due to economic, environmental, and energy impacts. As a result, we do not believe there is a significant advantage to any of the design alternatives considered for the Holbrook Compressor Station.

CONCLUSIONS

We conclude that if the Project is constructed and operated in accordance with applicable laws and regulations, Cameron's proposed mitigation, and our recommendations presented in section 5.4 of the EIS, it would result in some adverse environmental impact; however those impacts would not be significant. The principal reasons for our decision include:

- the Terminal Expansion facilities would be an expansion of an existing, operating LNG import terminal with existing LNG storage tanks and berthing and loading/unloading facilities;
- dredged material would be disposed of beneficially to convert an open water area to tidally influenced marsh;
- adequate safety features would be incorporated into the design and operation of the Terminal Expansion facilities;
- the proposed pipeline route would be within or adjacent to existing rights-of-way;
- Cameron would implement the FERC and the Cameron Interstate Upland Erosion Control, Revegetation, and Maintenance Plans and Procedures to minimize construction impacts on soils, wetlands, and waterbodies;
- the use of the horizontal directional drilling method for crossing major waterbodies and sensitive waterbodies would avoid disturbances to the beds and banks of these waterbodies;
- the Project would have no effect or would be not likely to adversely affect any federally or state-listed threatened or endangered species;
- the Project would have no effect on cultural resources;

- all appropriate consultations with the FWS, Louisiana Department of Wildlife and Fisheries, NMFS, and the U.S. Department of Agriculture's Natural Resources Conservation Service would be completed before construction is allowed to start in any given area; and
- the FERC's environmental and engineering inspection and mitigation monitoring program for this Project would ensure compliance with all mitigation measures and conditions of any FERC Authorization.

In addition, we developed site-specific mitigation measures that Cameron should implement to further reduce the environmental impacts that would otherwise result from construction of the Project. We are recommending these mitigation measures, presented in Section 5.4 of the EIS, be attached as conditions to any authorization issued by the Commission for this Project.