

# EXECUTIVE SUMMARY

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## INTRODUCTION

The staff of the Federal Energy Regulatory Commission (FERC or Commission) has prepared this draft Environmental Impact Statement (EIS) for the proposed Sparrows Point Liquefied Natural Gas (LNG) Terminal and the Mid-Atlantic Express Pipeline Project (collectively referred to as the Project) to fulfill the requirements of the National Environmental Policy Act (NEPA) and the Commission's implementing regulations. The purpose of this document is: to inform the public and the relevant federal and state permitting agencies about the potential environmental impacts resulting from the construction and operation of the proposed Project including the use of the marine transit route required to access the proposed terminal; identify and discuss project alternatives; and recommend practical, reasonable, and appropriate mitigation measures that would avoid or reduce environmental impacts. The U.S. Army Corps of Engineers (COE), U.S. Coast Guard (Coast Guard), U.S. Environmental Protection Agency (EPA), and Pennsylvania Department of Conservation and Natural Resources (PDCNR) have acted as cooperating agencies in the development of this EIS.

## PROJECT BACKGROUND

On April 3, 2006, we<sup>1</sup> approved the AES Sparrows Point LNG, LLC's (AES) and the Mid-Atlantic Express, LLC's (Mid-Atlantic Express) request to use the Commission's Pre-Filing Review Process (pre-filing) for the proposed Project. The purpose of pre-filing is to work in partnership with project sponsors, other federal, state and local agencies, and concerned citizens and non-governmental organizations, to identify and address project-related issues prior to the filing of an application(s) with the Commission.

On January 8, 2007, AES filed an application with the Commission pursuant to section 3(a) of the Natural Gas Act (NGA) and Parts 153 and 380 of the Commission's regulations for authorization to site, construct and operate a LNG receiving terminal and associated facilities. Also on January 8, 2007, Mid-Atlantic Express filed pursuant to Section 7(c) of the NGA and the Commission's regulations an application for a certificate of public convenience and necessity to construct, own and operate an interstate natural gas transmission pipeline and ancillary facilities.

## PROPOSED ACTION

AES proposes to construct and operate the Sparrows Point LNG Terminal in Baltimore County, Maryland to import, store, vaporize, and transport about 1.5 billion cubic feet of natural gas per day (Bcf/d). Specifically, AES proposes to construct and operate the following facilities:

- a ship unloading facility, with two berths, capable of receiving LNG ships with capacities up to 217,000 cubic meters (m<sup>3</sup>);
- three full-containment LNG storage tanks, each with a nominal working volume of approximately 160,000 m<sup>3</sup> (1,006,000 barrels equivalent);
- a closed-loop shell and tube heat exchanger vaporization system; and

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<sup>1</sup> "We", "us" and "our" refer to the environmental staff of the FERC's Office of Energy Project.

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- various ancillary facilities including administrative offices, a main control room, and security offices.

Mid-Atlantic Express proposes to construct and operate an interstate natural gas pipeline to connect AES's proposed Sparrows Point LNG Terminal with three interstate natural gas pipelines near Eagle, Pennsylvania. Specifically, Mid-Atlantic Express proposes to construct and operate the following facilities:

- approximately 88 miles of 30-inch-diameter natural gas pipeline;
- pig launching and receiving facilities at the beginning and ending of the proposed pipeline, respectively; and
- other ancillary facilities including 9 mainline valves and 3 meter and regulation stations.

## **PUBLIC OUTREACH AND COMMENTS**

On May 16, 2006, the FERC issued a *Notice of Intent to Prepare an Environmental Impact Statement for the Proposed AES Sparrows Point LNG Terminal and Pipeline Project, Request for Comments on Environmental Issues, and Notice of Public Scoping Meetings* (NOI). The NOI was sent to approximately 2,750 interested parties, including: federal, state and local officials; agency representatives; Native American Tribes; conservation organizations; local libraries and newspapers; and property owners within 0.5 mile of the proposed LNG terminal and along the pipeline route. Also, as part of our scoping process, staff conducted two public site visits and held three public scoping meetings; one near the proposed LNG terminal and two along the proposed pipeline. In response to our NOI, public scoping meetings, and public site visits, we received over 500 comments from potentially affected property owners, concerned citizens, public officials, and government agencies. These comments expressed concern with public safety and security; facility siting alternatives; impacts from dredging and dredged material disposal; impacts on fisheries, wildlife and vegetation; boating and fishing disruption; wetlands and waterbody impacts; socioeconomic impacts; land use, residential and recreational impacts; air quality and noise impacts and cumulative impacts. Transcripts of each scoping meeting and all written comments provided at the meetings as well as all comments provided in response to the NOI have been entered into the public record for the proposed Project. Additionally, staff also consulted with several federal and state regulatory agencies to determine the impacts to the environment that would result from the construction and operation of the proposed Project and the measures necessary to minimize and mitigate these impacts. This draft EIS was mailed to interested parties and submitted to the EPA for formal public notice of availability.

## **ENVIRONMENTAL IMPACTS AND MITIGATION**

Construction and operation of the proposed Project would result in temporary and/or long-term impacts to: geology and soils; water resources and wetlands; vegetation, wildlife and threatened and endangered species; land use, recreation and socioeconomics; cultural resources; and air and noise quality. Potential impacts to: safety and reliability; and coastal zone use were also considered in our analyses.

Geological resources including those found along the proposed marine transit route would not be significantly impacted by the construction and operation of the proposed Project. In general, construction and operation of the proposed LNG terminal and pipeline would not impact any current mineral resource operations and the potential for geologic hazards or flooding events to significantly affect the proposed Project is low. However, sections of the proposed terminal site may contain liquefaction-susceptible sands; therefore we have recommended additional geotechnical investigations at the proposed site prior to the completion of the final foundation design.

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There is evidence of soil contamination at the proposed LNG terminal site and along the pipeline route. To minimize potential impacts related to these soils, AES has prepared a *Potentially-Contaminated Soils Management Plan* and based on our review of this plan, we have recommended that AES submit an amended Plan including additional mitigative measures prior to construction and address potential soil contamination near the Back River.

Construction of the proposed LNG terminal would require the dredging of approximately 3.7 million cubic yards (CY) of sediment. Associated maintenance would require the dredging of approximately 500,000 CY of sediment about every six years. Proposed dredging activities would cause temporary and localized impacts to aquatic organisms including changes in habitat, potential short-term and seasonal low dissolved oxygen levels, and high turbidity levels. Additionally, construction of the proposed LNG terminal would impact the water quality of the Patapsco River. To ensure that potential impacts related to proposed dredging activities are minimized, we have recommended that AES prepare a Dredged Material Placement Plan. We believe that with the application of the appropriate mitigation methods, and the proposed monitoring and handling of the dredged material, the proposed dredging can be done with minimal environmental impacts to water quality and other aquatic resources.

Construction of the proposed pipeline would impact 177 surface waterbodies. Mid-Atlantic Express proposes to use horizontal directional drills (HDD) for three waterbodies; we have recommended HDD contingency plans in the event of HDD failure. No wetlands would be affected by the construction or operation of the proposed LNG terminal. Construction of the proposed pipeline would impact approximately 19.4 acres of wetlands. Operation would convert 4.5 acres of forested wetlands to scrub/shrub or emergent wetlands. To minimize impacts to waterbodies and wetlands, Mid-Atlantic Express would implement measures outlined in its Environmental Construction Plan (ECP) including topsoil segregation and erosion control devices. We have recommended that Mid-Atlantic Express develop an agency-reviewed Aquatic Resources Mitigation Plan (ARMP) to address mitigation to minimize impacts to these and other aquatic resources. Other than temporary increases in suspended solids or turbidity of the water, no permanent impacts are expected to waterbodies.

An LNG release along the marine transit route would not significantly affect water quality in any of the Zones of Concern as the product would vaporize rapidly and thus would not leave any residual in the water column. An LNG release would significantly, though temporarily, affect water temperature to a limited depth under the LNG pool.

No significant impacts would occur to terrestrial or aquatic vegetation at the proposed LNG terminal site or along the proposed pipeline route. To minimize potential impacts to sensitive wildlife habitat including Maryland Designated Critical Areas, Forest Interior Dwelling Bird Habitat, and Nontidal Wetlands of Special State Concern, we have recommended that Mid-Atlantic Express develop a management/mitigation plan. Through continuing consultation with the U.S. Fish and Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS), we have determined that the proposed Project would have no effect or is not likely to adversely affect threatened and endangered species or protected marine mammals, if our recommended mitigation for bog turtles, sea turtles, and marine mammals is implemented. We also believe that Essential Fish Habitat would not be significantly affected by the proposed Project.

Impacts to aquatic organisms near the LNG facility could result from pressure waves associated with pile driving activities during pier construction, vessel strikes from LNG boat traffic, and entrainment and impingement of organisms during water withdrawals for hydrostatic testing of LNG tanks and for ballast water for LNG ships. These impacts would be addressed via agency-reviewed mitigation measures or are considered to be short-term and/or minor.

Along the marine transit route, there is no appreciable terrestrial wildlife habitat that falls within Zones 1 or 2, so any LNG release with ignition would not significantly affect terrestrial wildlife. Normal operations of the

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LNG ships would not have a significant impact on vegetative, wildlife, and threatened and endangered species. A release of LNG with or without ignition could cause thermal shock to aquatic organisms that come into contact or that are in the vicinity of the LNG pool in Zone 1, with impacts decreasing outward through Zones 2 and 3.

Construction of the proposed Project would temporarily impact about 1,801.4 acres of land. There are no existing residences within one mile of the proposed terminal. The proposed pipeline would cross within 50 feet of 179 residences and 46 other buildings. Pipeline construction could also affect wells and septic systems; therefore, we have recommended that Mid-Atlantic Express file site-specific plans for residences within 25 feet of the pipeline construction workspace as well as measures for mitigating impacts to septic systems. We have recommended sit-specific plans be prepared to minimize disruptions to schools. In addition, impacts to trails, parks, camps and other public use areas would be minimized with the development of site-specific plans for these resources.

The viewshed of the LNG facility portion of the proposed Project would be changed from its present condition, though the tanks would be consistent in size and nature with existing industrial facilities within the Sparrows Point Industrial area. The viewsheds of points along the proposed pipeline could be affected during construction and operation of the pipeline, particularly in the riparian zones of some of more forested segments. Therefore we have recommended plans for these crossings to minimize visual impacts.

Along the marine transit route, potential impacts, though short-term, could be significant to boaters and fishermen by interfering with their normal and accustomed practices of using the Chesapeake Bay and the Patapsco River. In addition, LNG ship transit (with the traveling safety/security zone) may impact special marine events. We have recommended that AES develop guidelines to minimize disruption to waterway users.

Construction and operation of both the LNG Terminal and the pipeline would have minimal impact on the availability of housing, local schools or social services. To ensure that potential traffic impacts are minimized, we have recommended that AES address impacts on traffic from construction and the removal of processed dredged material.

We have recommended that, prior to construction, AES and Mid-Atlantic Express receive concurrence that the Project is consistent with the Coastal Zone Management Act. The Coast Guard is responsible for ensuring compliance with the Coastal Zone Management Act as it relates to establishment of the safety and security zones for LNG marine traffic affecting Maryland and Virginia waters.

Five aboveground architectural resources have been identified, of which three may be eligible for inclusion on the National Register of Historic Places (NRHP). In consultation with the Maryland State Historic Preservation Officer (SHPO) and FERC, AES would develop an appropriate mitigation plan for potential adverse impacts to these historic properties. The LNG facility would have no impact on terrestrial or submerged archaeological sites. For the pipeline, ten sites may be eligible for the NRHP and Phase I evaluations of four sites are incomplete and would be completed. We have recommended that, prior to construction, Mid-Atlantic Express complete all remaining cultural surveys, file these results with the Maryland and Pennsylvania SHPOs, and file the final reports of these surveys with the Secretary for review and written approval. The proposed pipeline right-of-way would be located within two NRHP listed historic districts – Doe’s Run Village and Kirk’s Mill Historic District, both located in Pennsylvania. AES would consult with the PA-SHPO and FERC to develop appropriate mitigation measures.

Sixty-five terrestrial archaeological sites and 33 submerged cultural resources are recorded within the transit Zones of Concern. None are listed on the NRHP. Nine NRHP listed and four NRHP eligible aboveground historic resources are located within the transit route Zones. No significant additional impacts to

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archaeological sites are expected due to LNG vessel traffic along the waterway. No national historic landmarks or tribal land/fishing areas are located within the proposed transit route or Zones.

The proposed LNG terminal site has been categorized by EPA as nonattainment for ozone and particulate matter with a diameter of 2.5 micrometers or less, which means that additional mitigation may be needed to reduce emissions and offset any impacts of future projects. With implementation of the mitigation and offsets and adherence to the applicable permit requirements, impacts to regional air quality during operation of the Project would comply with the National Ambient Air Quality Standards (NAAQS) and would continue for the life of the Project.

A General Conformity Analysis is being prepared for the proposed Project to show how the proposed Project would be constructed and would operate in conformance with the Maryland, Virginia, and Pennsylvania state implementation plans under the current 1-hour ozone standard, insofar as it applies in the future. We have recommended that AES and Mid-Atlantic Express provide updated construction emissions and prepare and file a Fugitive Dust Control Plan to further address construction impacts on air quality.

Operation of the proposed LNG terminal and pipeline should not create a significant noise impact at the nearest noise sensitive areas (NSAs). However, we have recommended that Mid-Atlantic Express provide a commitment to use sound dampening barriers at all HDD locations and provide an updated noise analysis for HDD activities with NSAs within one-half mile of the entry or exit site.

As a result of our technical review of the proposed design and installation of the AES facilities, we identified a number of concerns relating to the reliability, operability, and safety of the proposed design. We have made specific recommendations to address a number of issues in the next phase of project development. Thermal radiation and vapor dispersion exclusion zones were calculated and were determined to be in compliance with 49 CFR Part 193. However, the exclusion zones for the 1,600 and 3,000 British thermal units (Btu)/ft<sup>2</sup>-hr incident fluxes from the storage tanks would extend beyond the property line of the terminal site. AES has entered into an option to lease agreement with SPS Limited Partnership LLLP (SPS) (the owner of the terminal site) restricting SPS from permitting the use or occupancy of land within 3,000 feet of the terminal site boundary in any manner that would conflict with the prohibited uses under the provisions of NFPA 59A, 2001 edition. Therefore, we have recommended that AES file a finalized copy of the option-to-lease agreement with the Secretary prior to initial site preparation.

The Coast Guard's February 25, 2008 Waterway Suitability Report (WSR) for AES's proposal identifies specific risk mitigation measures which must be in place to responsibly manage the maritime safety and security risks of the proposed LNG facility. Accordingly, we have recommended that the proposed facility comply with all requirements set forth by the Coast Guard.

We identified 17 existing, approved, or proposed activities/projects that could potentially result in cumulative impacts when considered with the Sparrows Point Project. Cumulatively, the proposed Project would result in more frequent impacts on the water quality and aquatic habitat of the Patapsco River; however, we expect these would be minimal and localized. With AES's implementation of Best Management Practices and an ARMP, the Project's contribution to cumulative impacts to the waters crossed by the project would be minor.

## **ALTERNATIVES CONSIDERED**

We considered several alternatives to the proposed action including: Coast Guard alternatives; the no-action and postponed action alternatives, LNG system alternatives, LNG terminal site alternatives, and pipeline system and route alternatives. We evaluated four major route alternatives and 13 route variations. We have recommended: incorporation of two variations; further evaluation of three variations and additional mitigation in two areas.

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Based on our review of the proposed Project, we have determined as modified by our recommended mitigation measures, route variations, and AES's and Mid-Atlantic Express's proposed mitigation, that the proposed Project is the preferred alternative that can meet the project objectives with the minimum amount of environmental impacts.

The Coast Guard's preferred alternative is the issuance of a positive Letter of Recommendation (LOR) (i.e., the waterway is suitable) with a range of conditions and limitations as discussed in the WSR. In some cases, a reasonable alternative for the Coast Guard is the issuance of an LOR without conditions. For the Sparrows Point Project to proceed as proposed, the Coast Guard must issue an LOR finding that the Patapsco River/Chesapeake Bay/territorial seas waterway is suitable for the LNG marine traffic that would be associated with the proposed Sparrows Point import terminal facility, with or without conditions. Alternatives to this action include the issuance of a negative LOR or postponement of the issuance of an LOR. According to the Coast Guard's WSR they have found the waterway currently not suitable for LNG vessel traffic but can be made suitable. AES would need to develop a cost sharing and Transit Management Plan along with the Coast Guard, state, and local entities to ensure the necessary resources are available to make the waterway suitable for increased LNG vessel traffic. The Coast Guard may issue an LOR with conditions finding the waterway suitable for LNG vessel traffic.

## CONCLUSIONS

We have determined that if the project is found to be in the public interest and is constructed and operated in accordance with AES's and Mid-Atlantic Express's proposed mitigation, our recommended mitigation measures presented in section 5.2 of this draft EIS, and the Coast Guard's safety and security measures, construction and operation of the proposed facilities and the related LNG marine traffic would have limited adverse environmental impact and would be an environmentally acceptable action. The primary reasons for our decision are:

- AES would construct its LNG terminal within an industrial port setting and the proposed pipeline facilities would follow existing, maintained rights-of-way for about 84.8 percent of the proposed pipeline route;
- AES and Mid-Atlantic Express would minimize impacts on soils, wetlands, and waterbodies by implementing their ECPs;
- AES and Mid-Atlantic Express would be required to consult with federal and state agencies regarding the development of an ARMP that would compensate for impacts to wetland and waterbody resources;
- The Coast Guard's Waterway Suitability Report has preliminarily determined that the Chesapeake Bay can be made suitable for LNG marine traffic to the proposed facility, provided additional measures necessary to responsibly manage the maritime safety and security risks are put into place;
- AES would incorporate appropriate features and modifications, as specified by staff's recommendations, into the facility design to enhance the safety and operability of the proposed LNG facility;
- The proposed facility would comply with the siting requirements of Title 49, CFR, Part 193;
- AES would be required to develop and implement an Emergency Response Plan that would include involvement by state and local agencies and municipalities; include a Cost-Sharing Plan and a Transit Management Plan; and meet the requirements of the Commission, the Coast Guard, and other federal agencies;

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- AES and Mid-Atlantic Express would complete consultation with the SHPOs and the Advisory Council on Historic Preservation, as required by Section 106 of the National Historic Preservation Act, and with the FWS and NMFS, as required by Section 7 of the Endangered Species Act, before beginning construction;
  - AES and Mid-Atlantic Express would obtain all federal permits and authorizations and would follow the applicable permitting requirements of the States of Maryland and Pennsylvania; and
  - The environmental inspection and mitigation monitoring program would ensure compliance with the mitigation measures that would become conditions to any authorizations of the proposed Project issued by the Commission.