

1 Introduction

This document has been prepared as an Addendum to the Final EIA for the Vlorë Combined Cycle Generation Facility as prepared by MWH and issued October 6, 2003. The information in this Addendum is intended to address additional comments by the Albanian Ministry of Industry and Energy, the World Bank, EBRD, and EIB following release of the Final EIA. *This Addendum should be read in its entirety and in conjunction with both the Executive Summary and Main Body of the Final EIA.* Please note that the officially released version is the hard copy version with the aforementioned date, as it includes information that is not available in electronic format.

Many of the comments received on the Final EIA refer to the need for collection of site-specific baseline data, which was not included in the original scope of work. However, provisions have been made by the donor community to assist KESH in the collection of this information, and after its collection, reconfirmation of the Final EIA results. This information, which was highlighted in the Final EIA, includes:

- Mercury levels in the offshore sediments
- Ambient air quality
- Site-specific meteorological data
- Cooling water intake and outfall location data
- Baseline noise data
- Transmission electromagnetic field monitoring data

The collection and analysis of this data will be integrated into further plans and studies that are recommended throughout the EIA. A listing of these plans and studies can be seen in Section 7.5 of this document. We anticipate that after this data is collected and analyzed, the resulting conclusions of the Final EIA will not change.

The Final EIA provides a summary of baseline conditions in the area where the Project is to be located. It also describes the potential environmental impacts of the Project on those baseline conditions. The installed capacity of the Project will depend upon equipment offers during the EPC bidding process, but will be in the 90 to 130 MW range. However, all analyses performed for the Final EIA were based on the largest potential capacity size. Finally, it presents mitigation measures to be employed to help prevent or minimize the environmental and social impacts of the Project. As shown in Section 8 of the Final EIA, these mitigation measures are the responsibility of the EPC Contractor and/or KESH. Section 8 of the Final EIA also highlights the costs of these mitigation measures. The cost of these mitigation measures as they relate to the construction phase are included in the total Project costs, and those related to mitigation measures during the operation phase are included in the standard operation and maintenance cost estimates. As part of the mitigation measures, the Project will use state of the art generation technology, and be equipped with all required environmental control equipment. This equipment, which will be specified in the EPC bid documents, includes:

- Water injection for control of oxides of nitrogen emissions
- Oil/water separators

- Secondary containment for fuel storage
- Package wastewater treatment system for domestic wastewater
- Outfall diffuser
- Spill response equipment including a small boat, oil containment boom, and oil dispersant chemicals
- Residual chlorine monitoring
- Good Engineering Practice stack height
- Low sulfur distillate fuel oil
- Acoustic enclosures
- Low velocity water intake with screens

Finally, per a letter to the World Bank, dated October 17, 2003, the Albanian Ministry of Economy, Ministry of Industry and Energy, and Ministry of Environment have agreed to implement all recommendations provided in the Final EIA.

2 FINAL EIA EXECUTIVE SUMMARY

One of the comments received had to do with the inclusion of additional language in the Executive Summary of the Final EIA. This additional language is found in the sections entitled, 'Monitoring Plan' and "Public Consultant." However, to ensure continuity with the Final EIA Executive Summary, we have included a reprint of the entire Final EIA Executive Summary here with the addition of the aforementioned sections.

2.1 BACKGROUND

The Power Sector of Albania is managed by KESH, a vertically integrated utility with generation, transmission, and distribution assets. KESH is also responsible for purchased power and energy exchange with several neighboring countries. KESH is a monopoly and, for practical purposes, is the only company in the Albanian electricity sector.

Presently, the Albanian electric power system is experiencing severe problems. Hydropower represents more than 98 percent of Albania's domestic generation. According to the Strategic Action Plan, dated February 28, 2001, and prepared by the Albania Power Sector Reform Task Force, KESH is facing unusual severe drought conditions and has had to curtail electricity service to consumers in some regions for up to 10 to 12 hours per day.

The daily electricity consumption in wintertime is about 22 million kilowatt hours (kWh) per day. Under normal weather conditions, the domestic hydroelectric generation is 7 to 13 million kWh per day, while generation from thermal power plants is only 1.2 million kWh per day. Therefore, the domestic electricity production cannot meet the demand, forcing Albania to become a net electricity importer.

As can be seen, Albania lacks reasonable security and reliability of its electric energy supply and the Task Force has recommended that the Parliament should implement a comprehensive energy policy that includes the addition of new generation taking into account both least cost options and fuel diversity to

assure a reliable supply of electricity throughout the year. As a result, the Ministry of Industry and Energy and KESH have begun to study the technical and financial viability of installing new base load thermal generation facilities in Albania.

A generation expansion plan was developed for the country by a consortium of European firms. This consortium includes Deutsche Energie-Consult Ingenieurgesellschaft (DECON), Electricité de France (EDF), and LDK Consultants. According to the generation expansion plan, power supply in Albania will become increasingly vulnerable without new thermal generation due to the country's high dependence on hydropower, lack of rainfall, and uncertain power imports. The report stresses the need to accelerate both detailed project design and further project planning to increase the generation share of thermal power generation in the country. Developing more thermal power generation in Albania represents a prudent approach towards avoiding a too high dependence upon potentially uncertain hydropower resources and power imports.

The United States Trade and Development Agency (USTDA) awarded a grant to the Government of Albania to assist in the development of a new thermal generation facility. The Albanian Ministry of Industry and Energy subsequently retained Montgomery Watson Harza (MWH) to perform three tasks. Task One was to evaluate and select the best site, technology, and fuel for a new base load, thermal generation facility. Task Two was to conduct a feasibility study to evaluate the technical requirements as well as the environmental, economic, and financial viability of the generation facility at the selected site. Finally, Task Three was to conduct an Environmental Impact Assessment (EIA) of the proposed generating facility. This work commenced in 2001.

In Task One, MWH evaluated seven potential sites including sites near Durrës, Elbasan, Korçë, Fier, Shëngjin and two sites near Vlorë – Vlorë A and B. The sites were evaluated using an automated methodology, which scored each site on a number of development criteria such as fuel supply, water supply, transmission availability, cost, and environmental considerations, among others. A Draft Siting Report documenting the results of Task One was issued on June 6, 2002 and recommended Vlorë B, hereafter refer to as the Vlorë site, as the best site and distillate oil-fired, base load, combined cycle generation as the best generation technology. Moreover, the Report did not identify any initial fatal flaws in regards to fuel supply, water supply, transmission availability, and environmental considerations. On June 21, 2002, the Ministry of Industry and Energy and KESH agreed with MWH's recommendation and provided authorization to proceed with Task Two.

Based on the site location, technology, and fuel selected in Task One, MWH conducted a detailed feasibility study in Task Two to evaluate the technical requirements as well as the financial, environmental, and social viability of the potential generation facility at the selected site. More specifically, MWH:

- Developed technical requirements for the proposed generation facility
- Developed project cost estimates
- Conducted economic and financial analyses
- Conducted a preliminary environmental analysis

The Feasibility Study focused on the development of a facility with an installed capacity range of 90 to 130 MW. The Study reconfirmed the following recommendations that were originally provided in the Siting Study, namely:

- Vlorë is the best overall site for the installation of a new base load thermal generation facility

- Combined cycle technology is more advantageous than coal-fired steam technology for new base load generation in Albania
- A distillate-oil fired combined cycle generation facility is technically, environmentally, economically, and financially feasible.
- The Vlorë site has the lowest levelized generation cost of power compared to the other sites.

The study was completed on October 21, 2002 and subsequently approved by KESH. MWH was then authorized to proceed with Task Three, which was to conduct the EIA on the Vlorë site.

In addition, the generation expansion plan performed by DECON-EDF-LDK independently confirmed the results of MWH's analysis, that a distillate oil-fired combined cycle generation facility located at the Vlorë site was the best new generation option for Albania.

2.2 ENVIRONMENTAL IMPACT ASSESSMENT (EIA) PROCESS

2.2.1 EIA Requirements

It is anticipated that the World Bank, the European Bank for Reconstruction and Development (EBRD), and the European Investment Bank (EIB) will jointly provide the debt financing for the proposed Vlorë power generation facility. Each financing institution has specific policies and procedures for promoting environmental protection and sustainable development. These procedures include a detailed environmental review process and preparation of an EIA prior to final approval of financing for the project. The EIA for the proposed Vlorë facility was prepared in accordance with the requirements of all three financing institutions as well as the European Union standards. The requirements of the cofinanciers are similar in nature and the most stringent of the four standards have been incorporated into this EIA. For simplicity, the standards are reference hereafter as international standards.

The EIA provides a summary of available information on the baseline site conditions including the physical and atmospheric conditions, water and biological resources, cultural resources and socioeconomic conditions of the area. In the EIA process, information on the baseline site conditions along with the applicable standards and norms are used to assess the potential environmental and social impacts of the proposed generation facility.

The potential environmental impacts considered in the EIA process include impacts to the air quality, water resources, land resources, and socioeconomic/cultural conditions during construction and operation of the generation facility and associated transmission infrastructure. The social/cultural resources evaluated include labor employment, land use, raw material sources, fisheries, coastal navigation, transportation, and local community services.

The EIA also presents mitigation measures to be employed to help prevent or minimize the environmental and social impacts of the project. These are included in an environmental management plan (EMP), which can be seen in detail in the report. The EMP consists of the set of mitigation, monitoring, and institutional measures to be taken during construction and operation of the planned generation facility to eliminate, offset, or reduce adverse environmental and social impacts. The plan also includes the actions needed to implement these measures. Moreover, the EIA outlines specific environmental management and monitoring plans and identifies any necessary reporting requirements and schedules.

2.2.2 Project Description

The following discussion provides an overview of the key features of the planned thermal generation facility in Vlorë as they relate to the EIA analysis.

Site Description

The selected Vlorë site is a six hectare green field site adjacent to the offshore oil tanker terminal located on the Adriatic coast north of the Port of Vlorë. It is located approximately six km from the Port of Vlorë. The site is situated on a relatively barren coastal area with little vegetation or wildlife.

There are no major point sources of air emissions in the Vlorë area. Several industrial facilities that operated in Vlorë in the past were shutdown in the 1990's. In addition, there is no reliable existing air quality data for the Vlorë area. Due to the lack of industrial activity in the area and the lack of reliable data, it is assumed that current air quality conditions in the Vlorë area satisfy a "moderate" air quality classification according to World Bank criteria. Regardless, the Albanian Government should begin collecting site specific air quality data as soon as possible (at least 12 months). As soon as sufficient site data is available, additional air modeling should be performed to confirm the findings of this EIA and recommend any further mitigation measures, if necessary, while the Project is still being implemented.

Plant Technology

The EIA is based upon a two combustion turbines with one steam turbine (2-on-1) combined cycle configuration.

The emissions to the ambient air from combustion of distillate fuel oil in a combustion turbine include sulfur dioxide (SO₂), nitrogen oxides (NO_x), carbon monoxide (CO), particulate matter less than ten microns (PM₁₀), carbon dioxide (CO₂), and volatile organic compounds (VOC). Computer modeling of the impacts of the emission of SO₂, NO_x, CO, and PM₁₀ are described later in this executive summary. No air quality standards are set for CO₂, and VOC's; therefore, these pollutants are not modeled. The particulates may contain small amounts of trace metals that are also emitted to the atmosphere. These pollutants are emitted in negligible quantities and are therefore not modeled.

The best available technology for controlling air emissions will be used at the generation facility in order to meet applicable air quality and emission control standards. The combustion turbines will employ good combustion control and water injection technology to control the emission of NO_x. In addition, the combustion turbines will also use good combustion control to minimize the products of incomplete combustion and reduce emissions of PM₁₀, CO, and VOC's. Limiting the sulfur content of the fuel will control SO₂ emissions as well.

The international air emission standards for thermal power generating facilities are summarized along with the estimated emissions from operation of the planned Vlorë plant in Table 1.1. A computer model, which is described later in this section as well as the body of the report, uses these emission rates to predict the impact of the planned facility on local air quality. As can be seen, the estimated Vlorë plant emissions are well below, and thus better, than the international emission standards. For example, estimated PM₁₀ emissions from the Vlorë plant are over three times better than the standards. Estimated NO_x emissions from the plant are approximately 40 percent better than the standards. And SO₂ emissions from the plant are several hundred times better than the standards.

TABLE A.1 (REVISED TABLE 1.1 FROM FINAL EIA)

AIR EMISSION STANDARDS

Pollutant	Thermal Generation Facility Emission Standard		Estimated Vlorë Plant Emissions
	World Bank ^a	European Union ^b	
PM ₁₀	50 mg/Nm ³	50 mg/Nm ³ (dry @ 3% O ₂)	14 mg/Nm ³
NO _x	165 mg/Nm ³ (dry @ 15% O ₂)	450 mg/Nm ³ (dry @ 3% O ₂)	97 mg/Nm ³
SO ₂ ^c	0.20 TPD/MW 2,000 mg/Nm ³ (dry @3% O ₂)	1,700 mg/Nm ³ (dry @3% O ₂)	0.0048 TPD/MW 57.4 mg/Nm ³

^a World Bank Pollution Prevention and Abatement Handbook, Thermal Power: Guidelines for New Plants – July 1998

^b Directive 2001/80/EC of the European Parliament and of the Council of 23 October 2001 On the limitation of emissions of certain pollutants into the air from large combustion plants. If the total plant capacity exceeds 300 MW, then the SO₂ limit is more restrictive, depending on the size of the plant.

^c Sulfur Dioxide emissions based on 0.1% sulfur in the fuel. This is compliant with Directive 1999/32/EC Article 4

Noise

Offsite noise emitted from operation of the planned generation facility will meet the international standard of 70dB(A) for commercial/industrial areas. The combustion turbines should be enclosed in an acoustic enclosure to ensure that noise does not exceed 85 dB(A) at one m.

Fuel Supply

An offshore fuel oil tanker terminal and pipeline is located adjacent to the north boundary of the site. The new distillate oil-fired generation facility will utilize the existing, operating pipelines that run from the offshore terminal to the nearby Narta storage facility.

Potential impacts from distillate fuel oil handling and storage will be mitigated through use of best management practices (BMP), which are, as their name implies, practices that public and private entities adopt to incorporate pollution prevention into their operations. A spill response plan and necessary response equipment should be provided to respond to accidental releases of the distillate fuel oil. KESH is responsible for preparation of this plan during construction of the facility and for providing the necessary response equipment. It is anticipated that as many as 30 deliveries will be made per year. The minimum vessel size for this delivery schedule is 3,260 m³. Monitoring and enforcement of sea conditions under which a vessel may make deliveries should be part of the plant procedures and implemented through the delivery contract. Secondary containment should be provided for on-site distillate fuel oil storage tanks.

Transmission

The transmission interconnection will require a seven km line from the planned Vlorë facility switchyard to the planned Babica substation. If the Babica substation is not constructed in time, the interconnection will be to the Vlorë substation, which is located 4.5 km away. Either transmission line will have minimal environmental impact. The typical right of way width for a 230 kV transmission line is between 40 m and 60 m. Clearing only vegetation that interferes with construction access or line operation will minimize the environmental impact from construction and operation of these lines. Where practical, access areas should be revegetated using indigenous plants.

Water

Once through cooling utilizing seawater is required for the facility. Submerged intake and discharge diffusers are anticipated to be located approximately 600 m offshore. Impacts on the marine environment due to construction of the water intake and discharge will be minimized through siting of the exact location of the intake and outfall. Construction wastes should not be disposed of in the bay.

The potential impacts on the marine environment due to operation of the water intake will be minimized through the exact siting of the intake. Bar screen intake screens with 25 cm spacing at intake should be utilized. Final screening with traveling water screens at cooling water pump suctions should be employed. An inlet velocity less than one m/s should be used to minimize entrainment of marine organisms.

Potential impacts to the marine environment from the cooling water discharge include:

- Change to the temperature regime of the water column, and perhaps the sediment, of the receiving environment;
- Lethal and sub-lethal responses of marine organisms to the change in temperature regime;
- Stimulation in productivity in a range of organisms;
- Reduction in the dissolved oxygen saturation;
- Changes in the distribution and composition of communities of marine organisms comprising European marine sites (particularly estuaries)
- Localized changes in bird distributions usually in response to increased macroinvertebrate or fish food supplies close to thermal discharges.

The modeled thermal impacts of the cooling water discharge on the marine environment in the Bay of Vlorë are discussed in detail later in this executive summary, as well as the body of the report.

General plant wastewater will be collected and conveyed to the plant wastewater collection and treatment system. The treated effluent and cooling water return is then routed to an offshore outlet diffuser.

Chemical discharge in the plant cooling water is expected to be negligible because the only chemical that will be added to the cooling system is sodium hypochlorite, which is added to prevent biofouling of cooling system components. Other than the hypochlorite addition, cooling water will simply be pumped from the sea, circulated once through the plant and discharged back to the sea. Chlorine concentrations in the process water will be maintained at or below 0.2 mg/l to minimize the effect of chlorine at the cooling water discharge point. This level meets the requirements of the guidelines for new thermal power plants found in the World Bank Pollution Prevention and Abatement Handbook. The residual chlorine value is typically lower than 0.2 mg/l in practice.

2.2.3 Modeled Impacts

The following discusses the modeled impacts of the generation facility air emissions on local air quality and the thermal impacts of the cooling water discharge on the marine environment.

Air Quality Impact Modeling

The international air quality standards designed to protect human health and the environment for carbon monoxide (CO), nitrogen oxides (NO_x), particulate matter less than ten microns (PM₁₀), and sulfur dioxide (SO₂) are summarized in Table 1.2. Computer modeling was used to predict outdoor

concentration impacts of facility emissions (see Table 1.1), and to show that the impact from the planned facility will meet the required international standards.

For this analysis, the USEPA model, Industrial Source Complex Short Term - Version 3 (ISCST3) with the Plume Rise Model Enhancement (ISC-PRIME) algorithms, were used to estimate the maximum off-property concentrations of CO, NO₂, PM₁₀, and SO₂ at ground-level. ISCST3 is an internationally recognized air modeling computer program. The model has been validated for coastal environments such as the proposed Vlorë site. The results of the modeling are shown in Table 1.2 along with the international standards. As can be seen, the results are well below, and thus better, than the air quality standards, and demonstrate that the generation facility air emissions will have minimal air quality impact and no appreciable impact on human health.

In addition, the modeling results are well below, and thus better, than the concentration limits designed to protect vegetation and ecosystems from acid deposition. Based on these results, the planned generation facility will have a negligible impact on the flora and fauna in the area. There will be no appreciable effect on other natural resources in the area due to acid deposition from the planned facility.

TABLE A.2 (REVISED TABLE 1.2 FROM FINAL EIA)

WORLD BANK & EU AMBIENT AIR QUALITY STANDARDS COMPARED AGAINST MODELED AIR QUALITY IMPACTS OF THE PLANNED VLORË GENERATION FACILITY AIR EMISSIONS

Pollutant	Annual Averaging Period			24-hour Averaging Period			8-hour Averaging Period			1-hour Averaging Period		
	Maximum Modeled Impacts ($\mu\text{g}/\text{m}^3$)	Ambient Air Quality Standards ($\mu\text{g}/\text{m}^3$)		Maximum Modeled Impacts ($\mu\text{g}/\text{m}^3$)	Ambient Air Quality Standards ($\mu\text{g}/\text{m}^3$)		Maximum Modeled Impacts ($\mu\text{g}/\text{m}^3$)	Ambient Air Quality Standards ($\mu\text{g}/\text{m}^3$)		Maximum Modeled Impacts ($\mu\text{g}/\text{m}^3$)	Ambient Air Quality Standards ($\mu\text{g}/\text{m}^3$)	
		World Bank ^a	European Union ^b		World Bank ^a	European Union ^b		World Bank ^a	European Union ^b		World Bank ^a	European Union ^b
CO							40.9		10,000			
NO _x	3.1	100	30 ^c , 40	16.2	150					89.3		200
PM ₁₀	0.3	50	40	1.8	150	50						
SO ₂ ^e	1.9	80	20 ^d	9.7	150	125				53.4		350

Notes:

■ = Not Applicable

a. World Bank Pollution Prevention and Abatement Handbook, Thermal Power: Guidelines for New Plants – July 1998

b. Limit values are effective January 1, 2005. All of these limit values include a maximum allowable occurrence of exceedance.

c. Limit to protect vegetation.

d. Limit to protect ecosystems.

Marine Environment

In order to assess potential thermal impacts from the proposed facility, modeling was performed to predict the potential increase in water temperature to demonstrate compliance with the international thermal liquid discharge temperature increase limit of less than or equal to three degrees Celsius (°C). The once-through plant cooling water discharged into the Bay of Vlorë will increase water temperatures in the vicinity of the discharge location.

Thermal impact modeling was performed utilizing the Cornell Mixing Zone Expert System (CORMIX), developed by the USEPA and Cornell University. The model is an internationally accepted analysis tool for point source discharges and has been validated with field and laboratory data for use in a coastal bay environment (see www.cormix.info/validations.php). Industry standards concerning thermal discharges generally allocate a specific mixing zone for initial assimilation of process water discharge into a receiving body of water. A 23 m mixing zone was used in this modeling to predict the temperature increase due to the cooling water discharge. This value is within the 100 m mixing zone recommended in the guidelines for new thermal power plants found in the World Bank Pollution Prevention and Abatement Handbook.

The worst-case thermal modeling scenario was evaluated in accordance with the facility water balance. The worst-case scenario was selected for the operating condition resulting in the highest temperature differential between the effluent and the ambient water body temperature of the Adriatic Sea. The modeled outfall pipe consists of a multi-port slotted diffuser that extends 600 m from the shore at a 45-degree angle from the shore (horizontal angle) and 0.15 m from the ocean floor.

The modeling results predict a 0.87°C temperature increase above ambient water temperatures at the edge of the mixing zone. This is more than 60 percent lower, and thus better, than the international impact standard of a maximum temperature increase of less than or equal to 3 °C.

2.2.4 Social Requirements

Given the socioeconomic conditions in the Vlorë area, this facility will greatly benefit the region. It is not anticipated that the construction will cause a significant influx of people from other areas. Therefore, stress on the infrastructure of the Vlorë area from this regard should be minimal.

During the eighteen-month construction period of the facility as many as 500 workers will be necessary. Most of the labor force in the Vlorë District has completed secondary schooling. The schools include 19 elementary schools, three general high schools, one trade high school, one industrial high school and one artistic high school. In addition, Vlorë is home to the Polytechnic University. The university offers undergraduate degrees in engineering and other less technical disciplines. The educational infrastructure of the area is strong and the presence of both the planned generation facility and these institutions may be mutually beneficial.

Any potential negative social impacts of the plant are outweighed by its positive impacts. The facility will be incorporated into the industrial district in Vlorë and contribute to its overall social and economic development.

2.3 MONITORING PLAN

The Final EIA includes a detailed environmental monitoring plan. The monitoring program outlined in this plan will be used to verify that predictions of environmental impacts are accurate and that unforeseen impacts are detected at an early stage. This allows corrective measures to be implemented before significant damage has taken place. Monitoring programs for each of the major environmental

components are identified in the Final EIA for both the construction and operation phases of the proposed project. The monitoring plan includes the responsible party for each of the monitoring activities.

2.4 PUBLIC CONSULTATION

Three public consultation meetings were held in Vlorë regarding the project. The first meeting, held in the fall of 2002, was to introduce the project to the public and to begin the EIA public consultation process. The second meeting, held on April 2, 2003, sought public input on the scope of the EIA. The third meeting was held September 3, 2003, in Vlorë to discuss the Draft EIA. As the Draft EIA was issued on July 23, 2003 with an official letter from the government, the Draft EIA was made available to the Public more than thirty days prior to the meeting. The National Agency for Energy (NAE) coordinated this process closely with the Ministry of Industry and Energy, KESH, Ministry of Environment, Regional Agency of Environment for Vlorë, Ministry of Territory and Tourism, UNDP Project for the Narta Lagoon, the Municipality of Vlorë, District of Vlorë, Prefecture of Vlorë, citizens of Vlorë, Vlorë University students and faculty, local and national television stations, more than 20 non-governmental organizations (NGO's), and others associated with social and environmental issues. During these meetings, the Public provided input on any major concern or issue. The Public was able to provide concerns or issues either in general or with respect to specific effects of the proposed plant. These meetings were covered by Albanian television stations and broadcast through a segment on the nightly news. Minutes are provided in Appendix E of the Final EIA along with a copy of the presentations given and a partial list of attendees. Over 100 people attended the second meeting, however, not all of them signed the attendance sheet.

The Draft EIA was discussed during the third public consultation meeting held on September 3, 2003. During this meeting, additional details about the project and the EIA were disclosed to the public. Participants had the opportunity to discuss the project impacts and provide further input to the EIA process. The meeting was well publicized through local news media outlets. Official Copies of the Draft EIA reside with the Ministry of Environment, Ministry of Territory and Tourism, Ministry of Industry and Energy, KESH, and the NAE. NAE also sent 10 English copies and 20 Albanian copies of the Draft EIA to the Municipality of Vlorë, District of Vlorë, and Prefecture of Vlorë. One English and Albanian copy is also archived in the Vlorë Library.

Additional meetings were held in regards to this aspect of the project. The most important of these meetings include the following:

- Meeting on August 15, 2002 between the Ministry of Environment and representatives of MWH in Tirana, Albania
- Meeting on March 31, 2003 between MWH and the Minister of Environment in Tirana, Albania

2.5 CONCLUSION

The analysis performed to fulfill the EIA requirement follows international standards. The EIA establishes the baseline condition of the site and assesses the impact of the proposed generation facility on area resources. The likely positive and negative impacts of the proposed project are identified and quantified to the extent possible. Mitigation measures to be taken during construction and operation of the facility and any residual negative impacts are identified.

The planned generation facility is a state of the art combined cycle unit and will meet all applicable international standards for air emissions. Modeling was performed as part of the EIA to assess the

impacts of the air emissions on local air quality. The results of the air modeling show that the plant will meet all international ambient air quality concentration standards. In addition, the modeling demonstrates that the planned facility will not result in degradation of the local air quality or the environment.

Modeling was also performed as part of the EIA to assess the impact of discharging heated cooling water into the Bay of Vlorë. Cooling water discharge modeling shows the discharge will have an acceptable impact resulting in a 0.87°C rise in seawater temperature. This level of temperature increase is better than international standards.

In summary, the planned facility meets all international environmental standards and will have a positive impact on the local economy without stressing the local infrastructure and services. In addition, the facility will alleviate many of the severe problems currently being experienced in the Albanian electric power system.

3 Legislative, Regulatory, and Policy Considerations

3.1 STATUS OF LAW ON PROTECTED AREAS

The Albanian Parliament approved the Law on Protected Areas in June 2002. The purpose of the law is to establish protected areas in the Republic of Albania in order to ensure the conservation of natural resources, protect biodiversity, and maintain critical habitats and species. The Law on Protected Areas will also serve to implement certain obligations of international environmental protection treaties to which the Republic of Albania is a party.

The Law on Protected Areas establishes six different categories of protected areas, each with differing degrees of protection. The six categories include the following:

Strict Nature Reserve/Scientific Reserve (Category I): small areas of up to 1,000 hectares that have exceptional natural value and are composed of pristine or only slightly modified ecosystems

National Park (Category II): extensive areas usually larger than 1,000 hectares that are unique according to a national or international standard and are composed primarily of natural ecosystems that have not been affected by human activities

Natural Monument (Category III): natural formations of smaller extent, usually up to 50 hectares, that include a unique geologic formation or a critical habitat of scientific or aesthetic value

Managed Natural Reserve/Habitat and Species Management Area (Category IV): smaller territories, usually up to 1,000 hectares, that contain specially protected species of flora or fauna, are important migration corridors, or are used for research or other educational purposes

Protected Landscape (Category V): extensive areas, usually larger than 1,000 hectares, with unique or striking landscapes, a significant amount of natural marine or terrestrial ecosystems, and/or preserved monuments of historical value

Multiple Use Protected Area (Category VI): *(currently under development)*

The Albanian Ministry of Environment is responsible for proposing specific categories of protection and designating potential boundaries for areas that qualify for protected status under this law. The Council of Ministers then make the final decision regarding which areas will be classified as protected and what level of protection each area will receive. As indicated in the National Strategy on Biodiversity (NSB), the Ministry of Environment is proposing that both the Narta Lagoon and the Karaburuni Peninsula receive statutory protection under the Law on Protected Areas. The NSB proposes that the Narta Lagoon be designated a Category V Protected Landscape and the Vjose River delta be designated a Category IV Managed Nature Reserve. It also recommends that the entire 35,000-hectare Karaburuni Peninsula area, including the Llogara forests, Sazani Island, Rreza Kanalit Mountains, Oriqumi Lagoon, and Dukati Valley, be classified as a Category II National Park.

An initiative financed by the United Nations Development Program (UNDP) is provided recommendations to the MOE as to proposed boundaries for the Narta Lagoon "Protected Area," which is the closest "protected area" to the Project. The proposed boundary for the Narta Lagoon protected area does not include the Vlorë B site or the adjacent oil terminal and associated pipeline.

The details of the law and its impact are still being developed by the MOE. On October 8, 2002, the MOE reviewed the Draft Siting Study prepared by MWH and gave preliminary approval for the Vlorë B Generation Facility. Moreover, the MOE urged the Ministry of Industry and Energy to begin the EIA process as soon as possible. The MOE subsequently provided input into the preparation of the EIA. And as mentioned earlier, the MOE agreed to implement all recommendations of the Final EIA.

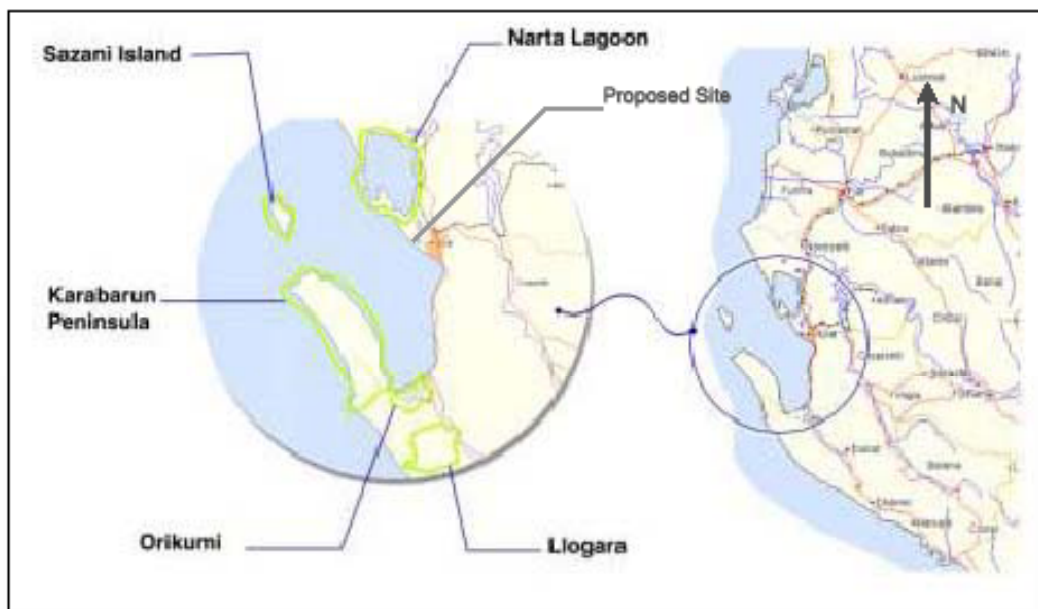
4 Baseline Site Conditions

4.1 LOCATION OF PROTECTED AREAS

Figure A1 shows the location of the proposed site relative to the surrounding proposed protected areas. The Albanian law on protected areas is still in development. However, the proposed law includes provisions that preclude certain types of development within the protected area boundary. These types of development are discussed further in Section 3 of the Final EIA. And as stated in the Final EIA, the closest proposed protected area is the Narta Lagoon. The proposed boundary for the Narta Lagoon does not include the proposed site or the existing offshore oil terminal.

Figure A.1

Location of Nearby Sensitive Areas Relative to the Site



The most critical species of concern in the Narta Lagoon and Karaburuni Peninsula areas are three species of fauna that are listed by the IUCN as globally threatened or endangered (2000 Red List of Threatened Species). These species include the Dalmatian Pelican (*Pelecanus crispus*), the Lesser Kestrel (*Falco naumanni*), and the European River Otter (*Lutra lutra*). All three of these species are known to inhabit the Narta Lagoon area. The current range of the Dalmatian Pelican includes the Balkans, Middle East, Eastern Europe, and Asia. The current range of the Lesser Kestrel includes Western Europe, South Africa, and Asia. The current range of the European River Otter is throughout the European and Asian continent, and parts of Africa.

As stated in the Final EIA, the construction or operation of the proposed facility will have acceptable or no impacts on the Narta Lagoon vegetation or ecosystem. Therefore, there will be no impact on the aforementioned species from the construction or operation of a combined cycle power generation facility.

Moreover, the proposed facility uses state of the art generation technology and clean distillate fuel oil meeting stringent sulfur content limitations. The impacts to the environment of this generation technology is small on a mass of pollutant emitted compared to other thermal power generation technology such as reciprocating engines or coal-fired technology. All of the air quality impacts resulting from construction and operation of the facility are shown to be within the international standards for protection of human health, vegetation, and ecosystems. More specifically, the determination of no impacts on the Red Listed species from air emissions is based on the predicted SO₂ and NO_x concentrations, which are approximately half of the EU acceptable limit for each pollutant.

From a water quality point of view, the impacts of the plant on the water quality of the Bay of Vlorë are acceptable – the thermal and chemical discharges meet all the applicable effluent standards. Residual chlorine levels are anticipated to be well below the 0.2 mg/l discharge limit and thermal discharges will result in less than 1 °C temperature rise within a 100 m mixing zone (maximum at 23 m from the outfall diffuser). This is well below the 3 °C rise allowed by international standards. In addition, every precaution will be taken to prevent sediment releases or accidental releases of distillate fuel oil to the environment. As mentioned earlier, the Final EIA provides an estimate of the necessary mitigation cost.

5 Impact Identification and Proposed Mitigation

5.1 ECONOMIC IMPACT

The economic impact of the plant on the area is deemed to be completely positive. With a construction work force of up to 500 people, the multiplier effects of additional money in the local economy will be significant for the two-year construction period. During operation of the facility, a similar positive effect will be seen through the money spent by the up to 40 people working at the facility.

5.2 LIMIT VALUES FOR SULFUR DIOXIDE AND OXIDES OF NITROGEN AND REVISED TABLES

One comment related to an omission of the rule reference for Table 6.10 of the Final EIA. The European Union limit values for sulfur dioxide, nitrogen oxides, and particulate matter come from EU Directive 1999/30/EC.

Some units were omitted from Tables 6.7 and 6.8 in the Final EIA and are correctly shown below in Tables A.3 and A.4.

TABLE A.3 (REVISED TABLE 6.7 FROM FINAL EIA)
COMBUSTION TURBINE STACK PARAMETERS

Stack	X Coordinate (m)	Y Coordinate (m)	Elevation (m)	Height (m)	Temp. (K)	Velocity (m/s)	Diameter (m)
Stack 1	157.5	-142.5	1.5	46.9	399.4	24.7	2.67
Stack 2	187.5	-123	1.5	46.9	399.4	24.7	2.67

TABLE A.4 (REVISED TABLE 6.8 FROM FINAL EIA)
BUILDING PARAMETERS

Building	X Coordinate (m)	Y Coordinate (m)	Elevation (m)	Height (m)	Length (m)	Width (m)	Radius (m)
Air Intake Unit 1	97.5	-82.5	1.5	12	7.2	4.8	NA
Air Intake Unit 2	153	-50	1.5	12	7.2	4.8	NA
Equipment Service Building	81	-147	1.5	6	18	24	NA
Exhaust Duct 1	107.3	-76.4	1.5	5.5	7.2	14.4	NA
Exhaust Duct 2	147.4	-53.6	1.5	5.5	7.2	-14.4	NA
Inlet Elbow Duct 1	153.2	-50.1	1.5	9.5	7.2	-6.6	NA
Inlet Elbow Duct 2	101.7	-80	1.5	9.5	7.2	6.6	NA
Turbine Building	49.5	-96	1.5	18.3	27	36.5	NA
Water Treatment	63.8	-118.9	1.5	6.1	15.2	18.4	NA
Fire/Service Water	52.5	-124.5	1.5	12.2	NA	NA	6.4
Demineralized Water	42	-112.5	1.5	12.2	NA	NA	7.2
Fuel Oil Tank 1	66	18	1.5	12.2	NA	NA	11.6

5.3 EMISSIONS TO WATER

The Final EIA contains information on the wastewater discharges from the proposed facility. Wastewater discharges will meet all the applicable international standards for such discharges as outlined in the Final EIA. Table 3.4 of the Final EIA contains the effluent standards for thermal generation facilities. Table 6.15 contains the general effluent guidelines for the sanitary discharges. The EPC contractor will be responsible for the design of treatment systems to meet the effluent standards listed in Table 3.4. The costs of this equipment are included in the overall cost estimate for the facility and are shown in Tables 8.1 and 8.2 along with a description of the equipment necessary.

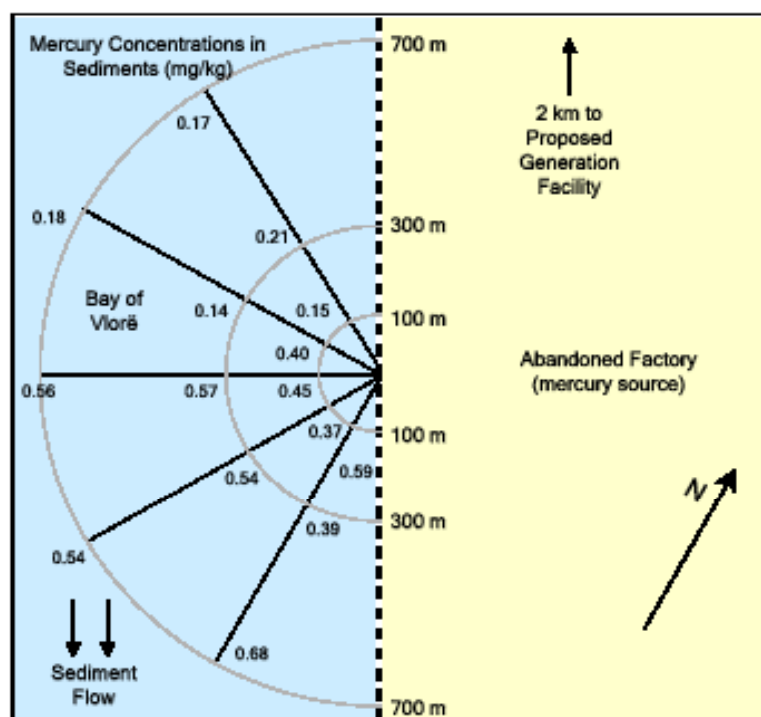
Detailed information such as the type and location of equipment to be protected by an oil water separator will be the responsibility of the EPC contractor. Generally speaking, as stated in the Final EIA, an oil water separator will be installed to protect any source that can result in discharge of oil-contaminated water.

5.4 POTENTIAL MERCURY RELEASE FROM DREDGING ACTIVITY

With respect to mercury-contaminated sediments in the Bay of Vlorë, there is no site-specific data available concerning the seabed in the immediate vicinity of the proposed generation facility. However, mercury contamination is prevalent at an abandoned PVC and soda factory located approximately two km south of the site. The source has been closed since 1992 and is no longer an active source of contamination. Available information on the extent of the mercury and other heavy metal contamination of sediments in the Bay of Vlorë from that closed factory extend 700 m into the bay and are approximately 1,800 to 2,000 m South of the proposed intake and 1,100 to 2,000 m South of the proposed discharge structure. This information is included in Table 5.5 of the Final EIA. The information on mercury concentrations from Table 5.5 of the Final EIA is summarized in the Figure A2 below.

Figure A.2

Available Mercury Sediment Information in the Bay of Vlorë



The concentrations are lower to the north of the abandoned factory as you move toward the proposed Vlorë B site. This is due to the sediment movement in the bay generally flowing to the south, away from the site. Based on this information, it is not anticipated that any dredging material will contain high concentrations of mercury or other heavy metals from the abandoned factory. As a precaution, the construction mitigation plan contains sediment sampling and analysis requirements to ensure that contaminated material is handled properly.

On a related issue, the use of a cooling tower to reduce the seawater use was suggested to possibly reduce the amount of dredging in the bay during construction of the water intake and discharge structures. Using a cooling tower would reduce the water intake and discharge volumes by approximately 80 percent. However, the reduced water demand would still require construction of a water intake and discharge structure in the same location as is planned for a once through cooling system. Approximately the same amount of material will have to be dredged to construct either option; therefore, using a cooling tower will not necessarily minimize the potential pollutant release due to dredging.

In addition, it is not anticipated that the delivery fuel will necessitate the dredging at the existing oil off-loading terminal. Deliveries for the plant will be made with a barge, considerably smaller than the vessels that currently use the Port of Vlorë and the terminal.

5.5 WASTEWATER DISCHARGES

In addition to the clean discharge from the oil water separators, there will be a number of water discharges from the facility. The treated sanitary wastewater (secondary treatment in aerobic or anaerobic package wastewater treatment plant), the treated heat recovery steam generator blowdown (pH adjusted in the neutralization tank), and the reverse osmosis reject will be discharged through the once through cooling water discharge. The reverse osmosis reject is concentrated seawater produced during the desalinization process.

5.6 NATURAL HAZARDS

The EPC contractor will be responsible for design and construction of the facility in such a way as to mitigate the potential impacts on the facility due to earthquakes and flooding. There is sufficient information in the Final EIA to identify this issue to the EPC contractor. In addition, this requirement is included in the EPC bid documents.

6 Analysis of Alternatives

6.1 ALTERNATIVE SITES

Section 7 of the Final EIA contains the criteria used in the site and technology selection process, as reported in the Final Siting Study, issued in October of 2002. The criteria used are as follows:

- Environmental remediation
- Air quality concerns
- Levelized generation cost
- Socio-economic concerns

- Reduction in transmission system losses and voltage profile improvement
- Transmission in availability and proximity
- Fuel availability
- Water and sewer needs
- Transportation
- Property availability

The following presents excerpts from that Final Siting Study, as they relate to the evaluation of the different sites and technologies. The excerpt includes the site-by-site summary of the environmental evaluation and information on the development recommendation for each site.

Site 1 – Durrës

Environmental

The proposed site consists primarily of grassland with flat topography. Currently, the land is utilized for limited agricultural use. The surrounding flood plains will require the final site elevation to be raised two to three meters.

There is an abandoned chemical waste storage facility located at the southeast foot of the Bishti Palles Cape, approximately 10 km north of the main city center of Durrës and approximately one km from the site. The facility includes three separate buildings that were used for storage of approximately 700 tons of chemicals related to hexachlorocyclohexane (HCH) production and HCH residue. HCH is a pesticide and is persistent in the environment. The storage facility was filled between 1989 and 1990. The United Nations Environment Programme (UNEP) recently conducted detailed site investigations and risk reduction analyses and designated the former storage area (and another former chemical plant and storage area four km south of this location) a “hot spot” posing imminent risks to public health and the environment.

According to UNEP observations, the three storage buildings are overloaded with chemicals that are leaking from corroded steel barrels and torn bags and the buildings contain broken doors and windows. The soil around the storage facility is expected to be contaminated, however the soils at the site have limited contaminant transport capacity and therefore have likely confined current groundwater impacts to about 100 to 200 m downstream of the storage site. The site is drained by the Durrës plain drainage system, which conveys surface water in the flood plain to a pumping station at Porto Romano and then discharges the water to the Adriatic Sea. Soil contamination along the drainage system is believed to be limited to tenths of meters from the channel. Contamination of the primary (deep) aquifer is not expected.

The local population, including a small settlement 300 m from the abandoned facility, has open access to the contamination zone. People reportedly loot the facility for construction materials, and land in the immediate vicinity of the site is cultivated and used for grazing. Children have also been observed playing in the vicinity of the site and eating contaminated agricultural produce. The site may also be contaminating domestic groundwater supplies and fish populations that are caught by local fishermen. A detailed sampling and analysis program to characterize the extent of contamination from the former chemical storage site has not been performed to date.

UNEP's feasibility study for risk reduction measures (June 2001) recommends immediate prohibition of access to the abandoned chemical plant area and prevention of further extraction of groundwater for domestic or agricultural purposes. The report also outlines a clean-up strategy for removing chemical waste and remediating soil and groundwater impacts.

The area immediately surrounding the site area is sparsely populated, and the few homes in the immediate vicinity would likely be purchased as part of the site acquisition. Due to the lack of potential sensitive receptors in the immediate area, noise impacts are not likely to be a concern. However, the presence of a generation facility will have a visual impact to the Gjirii Lalezit area since no other industrial facilities are in the area.

However, Durrës is the second largest city and industrial center in Albania and is the main seaport of the country. The population of Durrës has experienced substantial growth over the last four to five years and currently totals approximately 150,000 inhabitants. The most popular area for new residential development is the hilly area between the city and Porto Romano. This area contains a current population of approximately 30,000 people. The Bishti Palles Cape is less populated and is used for agricultural purposes on a limited basis. Fishing is also an important activity that is practiced by the local population in an area near Porto Romano.

The primary types of industry in Durrës include mechanics, chemicals, electronics, furniture, plastic, and rubber. The city also produces high tonnage ships, train cars, wine, fish, and other consumer products. The main industrial center is on the eastern side of the city, at the Shkozeti quarters.

The chief recreational areas of Durrës are the Beach of Durrës and the Beach of Currilave. According to local authorities, the general area of Cape Bishti Palles and Lalzi Bay is considered one of the highest priority areas for tourist development in central Albania. UNEP (2001) reports that new businesses, including restaurants and beach facilities, are being constructed in the area of Lalzi Bay.

Development Recommendation

The Durrës location is suitable from a construction standpoint, but has no existing infrastructure that would allow it to be preferentially selected over any other site. If the Durrës oil storage depot were to be relocated to this area, the overall ranking of this facility would improve for a distillate oil-fired generation facility.

Site access (poor roads), nearby contaminated facilities, and the proximity of potential environmentally protected areas (Gjirii Lalezit) cause concern with respect to site development. If the area is to be developed for tourism, this might preclude the installation of a power generation facility.

This site is not recommended for further development at this time.

Site 2 – Elbasan

Environmental

The proposed areas within the metallurgical plant consist primarily of open fields, which have been reserved for future development, or areas that were once utilized but have been cleared of existing structures. There are no immediate visual indications that cause concern regarding site contamination or the need for site remediation. The largest open area shows signs of standing water, but is not likely considered a wetland.

Background air quality in Elbasan is significantly impacted by existing industrial facilities, particularly a ferro-chromium smelter and the Elbasan Metallurgical Plant. The Ferro-Chromium Plant of Elbasan is situated in the Vidhasi Field, approximately five km west of the main town. The plant, which was constructed in 1989, is owned by the Albanian Government and is operated by Darfo S.p.A., an Italian company. The nominal design capacity of the smelter is 48,000 tons/year, however annual production has generally fluctuated between 10,000 and 20,000 tons/year during the last ten years.

The ferro-chromium smelting unit consists of three covered-type 9,000 MW Electric Arc Furnaces (EAF), each with a nominal capacity of 16,000 tons. According to a survey conducted by the World Bank in 2001, the plant does not utilize any emission control or treatment technology and pollutants emitted from the plant are considered a serious hazard to human health and the environment. The EAF's are the major source of particulate and organic air emissions, however particulate releases are also generated by raw-material handling and product handling. Site-specific air quality data is not available, however the typical composition of flue gases from this system include: carbon monoxide (CO), carbon dioxide (CO₂), and organic materials. Dust particles in the Ferro-chromium fume typically consist of metals such as aluminum, cadmium, chromium VI, iron, lead, zinc, nickel and copper.

According to the World Bank, the current concessionaire plans to implement various modifications to the smelter to improve plant efficiency and reduce air emissions. The modifications, which include utilization of open furnace technology and installation of a dedusting system, are expected to satisfy typical European air emission standards as well as World Bank air emission levels for particulate from smelters (20 mg/m³). Modifications are also planned to reduce liquid effluents and improve sold waste handling procedures.

The area surrounding the metallurgical plant is one of the heaviest industrial areas in Albania. No sensitive areas are present in the vicinity.

No environmentally protected areas have been identified in the vicinity of the Elbasan industrial area.

Development Recommendation

Infrastructure at the existing metallurgical plant provides good support for the installation of a thermal power plant, with the notable exception of fuel. Gas pipelines are not likely to be available in the foreseeable future. As mentioned earlier, the capital expense of a coal-fired generation facility in conjunction with the fuel transportation costs is likely to make a project located at this site cost prohibitive. Furthermore, the background air quality for the region is considered poor, and would likely have an impact on the environmental controls and capital costs for the power facility.

This site is not recommended for further development until the fuel transportation issues are resolved.

Site 3 – Fier

Environmental

The proposed area adjacent to the existing generating plant consists primarily of an open field. Several abandoned district heat steam lines would require demolition. Several transmission lines would require re-routing to clear the site.

The proposed site is located in an industrial area, which includes a thermal power plant, refinery, and fertilizer plant, among others. Concerns regarding sensitive areas are minimal.

No environmentally protected areas have been identified in the vicinity of Fier.

Development Recommendation

From a transmission standpoint, this location is an excellent selection due to a reduction in transmission system losses. Infrastructure at the existing Fier generating plant provides good support for the installation of a thermal power plant, with the notable exception of fuel availability. Gas pipelines are not likely to be available in the foreseeable future. The capital expense associated with the coal and natural gas transportation costs is likely to make these options less desirable than others.

However, this location as a distillate oil-fired combined cycle generation facility, received the second highest ranking of all the facilities.

Site 4 – Korçë

Environmental

The proposed area adjacent to the existing generating plant consists primarily of an open field with some abandoned equipment and several spoil piles. The potential for site contamination is unknown.

The proposed site is located in the industrial area of Korçë, adjacent to the abandoned thermal plant. Concerns regarding sensitive areas are minimal.

No environmentally protected areas have been identified in the immediate vicinity of the site.

Development Recommendation

Korçë is likely to be the first major Albanian city to receive imported gas pipelines if the Prometheus Gas Project goes forward. Fuel transportation issues make coal and oil too difficult and costly. Transportation issues also make major equipment deliveries very challenging.

This site is not recommended for further development until imported natural gas becomes available in the region.

Site 5 – Shëngjin

Environmental

As noted earlier, a final site location was not determined due to poor topography. No immediate environmental issues were prevalent.

Development Recommendation

Due to transmission constraints and the lack of suitable land for a site, this site is not recommended for further development.

Site 6A – Vlorë A

Environmental

The site encompasses a portion of the abandoned chemical plant located near Vlorë. Visible possible contamination and abandoned structures cause significant concern regarding the extent of environmental remediation.

The chemical plant operated between 1978 and 1992, and was then substantially destroyed during civil unrest in 1997. The former plant includes an electrolysis building, a vinyl chloride monomer (VCM) production unit, and a polyvinyl chloride (PVC) production unit. The plant is a source of extensive mercury contamination as well as other chemical waste. The United Nations Environment Programme (UNEP) has recently conducted detailed site investigations and risk reduction analyses, and has designated the area a "hot spot" posing imminent risks to public health and the environment.

According to UNEP, the former chemical plant used excessive quantities of mercury in its chlorine-alkali electrolysis operations and disposed of mercury-contaminated materials in a dumpsite between the plant and the Adriatic Sea. Approximately 65 tons of mercury were reportedly lost in spills during the production period. The plant was constructed without any leachate control measures and all wastewater was discharged into the Bay of Vlorë without treatment. Sampling and analysis performed in 1998 indicated that metallic mercury (Hg) and mercury dichloride (HgCl₂) are the prominent contaminants at the site.

At present, the plant is essentially destroyed and has been stripped of its reusable building materials such as bricks, doors, windows, metal and equipment. The Albanian government has reportedly tried to prohibit people from living on the site, however UNEP reports that much of the construction material stripped from the plant has been reused to construct homes inside and outside of the plant. Approximately 180 families live on and around the site, and children have been observed playing on the contaminated soil. Grazing of domestic animals and growing of vegetables on contaminated sites has also been noted. Moreover, contaminated soil is being collected and distributed to local building contractors.

The government is supplying public drinking water to the families living on the former plant site, however water for domestic animals and irrigation is often supplied by dug groundwater wells. The depth of groundwater at the plant varies between 1.0 and 1.7 meters below ground level (mbgl). The primary groundwater flow direction is west toward the Adriatic Sea, however some groundwater flows east toward the Vlorë lowland beginning about 200 to 300 m east of the site. The relatively high permeability of the local geology facilitates easy transportation of contaminated groundwater to the Adriatic Sea. As such, the local population and tourists, who frequent the beaches of Vlorë during the summer months, are at risk of exposure to the contaminated seawater of Vlorë Bay.

UNEP's feasibility study for risk reduction measures (June 2001) recommends immediate prohibition of access to the abandoned chemical plant area, as well as immediate relocation of families living in and around the contaminated zone. The report also outlines a clean-up strategy for removing chemical waste and remediating soil and groundwater impacts. It is estimated that complete groundwater remediation will require between 5 and 30 years. Future reuse of the site could be affected by whether remedial measures merely isolate the contamination (through demolition and capping) or whether a decision is made to excavate the area and dispose of contaminated soil offsite. Offsite disposal and the creation of a suitable landfill are estimated to cost in excess of \$15 million.

Site 6A is located approximately four km away from the center of the City of Vlorë. Vlorë, with a population of approximately 120,000 inhabitants, is Albania's second largest seaport, as well as an industrial city, an education center, and a tourist destination. Industries located in Vlorë include food, building material, chemicals and glass. Educational facilities include the University of Vlorë, the Naval Officers School, and the School of Aviation. A variety of museums and national monuments exist in Vlorë, and many hotels and recreational areas are situated along its beaches.

The Narta Lagoon area is located approximately four km northwest of Vlorë, and approximately 2.5 km north of Site 6A. The lagoon area covers 10,000 hectares and is composed of forests, wetlands, sand

dunes, beaches, and agricultural land. The Narta Lagoon itself is approximately 42 km² with a depth between 0.5 and 1.2 m. According to a recent Global Environment Facility (GEF) study, the Narta Lagoon is undergoing rapid degradation because marine and fresh water input is being reduced as a result of sedimentation of channels that allow the lagoon to communicate with the sea. The area is important ecologically because it contains a wide variety of habitat types and supports a number of globally threatened species. The area is not currently protected under Albanian law, however the National Strategy of Biodiversity (NSB) has recently proposed that the lagoon be designated a Protected Landscape Area (Category V) under Albania's pending Law on Protected Areas.

Llogara National Park, Karaburuni Peninsula, Sazani Island, the Rreza Kanalit mountain range, Orikumi Lagoon, and Dukati Valley are all environmentally sensitive areas that are located within the Southwest Albanian region as well.

Development Recommendation

Due to extensive soil contamination and the need for environmental remediation, the greenfield site identified as Site 6B, with similar fuel availability issues, is preferred to Site 6A.

Site 6B – Vlorë B

Environmental

No visual indications exist that cause concern regarding site contamination or the need for site remediation.

Site 6B is located approximately six km northwest of the Port of Vlorë. As mentioned earlier, Vlorë, with a population of approximately 120,000 inhabitants, is Albania's second largest seaport, as well as an industrial city, an education center, and a tourist destination. See the discussion on Site 6A for further information.

No environmentally protected areas have been identified in the vicinity of Vlorë. However, the Narta Lagoon area is located approximately one km to the North of Site 6B. The lagoon area covers 10,000 hectares and is composed of forests, wetlands, sand dunes, beaches, and agricultural land. The Narta Lagoon itself is approximately 42 km² with a depth between 0.5 and 1.2 m. According to a recent Global Environment Facility (GEF) study, the Narta Lagoon is undergoing rapid degradation because marine and fresh water input is being reduced as a result of sedimentation of channels that allow the lagoon to communicate with the sea. The area is important ecologically because it contains a wide variety of habitat types and supports a number of globally threatened species. The area is not currently protected under Albanian law, however the National Strategy of Biodiversity (NSB) has recently proposed that the lagoon be designated a Protected Landscape Area (Category V) under Albania's pending Law on Protected Areas, which is expected to receive final governmental approval shortly.

Llogara National Park, Karaburuni Peninsula, Sazani Island, the Rreza Kanalit mountain range, Orikumi Lagoon, and Dukati Valley are all environmentally sensitive areas that are located within the Southwest Albanian region as well.

Development Recommendation

Site 6B is located in close proximity to existing fuel supply infrastructure, and the greenfield location will minimize site preparation costs. From a transmission standpoint, the installation of generating capacity in this region will substantially improve overall system losses.

The proximity of the site to the Narta Lagoon is a concern. Currently, the lagoon is not a protected area, but protection is proposed under a pending law. It is unclear what effects the pending law will have on the development costs of the project. However, we currently do not believe that the Narta Lagoon provides a fatal flaw.

Site 6B has received the highest ranking of all the proposed site locations. This location, as a distillate-fired combined cycle power plant, is recommended for further evaluation with the Plant Feasibility Study.

The Albanian Ministry of Environment agreed with the choice of the Vlorë B site as the best site for a new thermal power plant in Albania.

The Final Feasibility Study and Final EIA subsequently reconfirmed that the Vlorë B site was the best alternative site from a technical, economic, financial, and environmental perspective.

6.2 COOLING TOWER CONSIDERATION

There are no regulations that prohibit the use of once through cooling for a plant such as the proposed Vlorë power generation facility. In addition, the Final EIA documents an acceptable level of environmental impact resulting from the use of once through cooling. The thermal impacts are well below the 3 °C allowed by international guidelines and the chemical discharges are in compliance with the residual chlorine discharge limits. In addition, the EPC contractor will perform a siting study to determine the most appropriate exact location and the best time to construct the intake and outfall structures. The EPC Contractor will also conduct subsequent confirmatory modeling to assess the thermal impact and make adjustments to the discharge diffuser design if necessary. This requirement will be highlighted in the EPC bid documents.

The Final Siting Study, issued in October 2002, and the Final Feasibility Study, also issued in October 2002, includes information on the alternative cooling systems for the proposed facility. Those studies conclude that for coastal locations, once-through condenser cooling utilizing seawater is the most cost effective option, and provides for the best plant performance due to the lower cooling water temperature available. Section 7 of the Final EIA includes a reference to these earlier studies.

However, as part of the feasibility study process, the cooling tower option was discussed with the World Bank. Two types of cooling towers are potentially available to the Project, and were analyzed. These types include the freshwater and saltwater cooling towers, which are described further below.

Freshwater cooling tower - A freshwater cooling tower would add approximately \$3 million to the cost of the project. Depending on the size of the selected unit, the plant would require 800 to 1,200 gpm of freshwater. Due to the intermittent nature of the Vlorë water supply, this option was not considered a viable option.

Saltwater cooling tower - A saltwater cooling tower would add approximately \$8.5 million to \$10 million to the cost of the project. The higher cost is attributable to the increased size of the tower and advanced corrosion-resistant materials. Plant efficiency and output are somewhat reduced due to the auxiliary power losses associated with the cooling tower fans and higher condenser backpressure associated with the circulating water system. Seawater cooling towers are generally limited to 1.1 to 1.2 cycles of concentration. The cooling tower would reduce total volume of cooling water required by the plant. However at 1.1 to 1.2 cycles, a significant flow of makeup water to the circulating water system is still required (approx. 6,000 gpm). A cooling tower will reduce the thermal discharge of the

plant, but will discharge more concentrated brine to the sea. This option was eliminated due to the significant costs.

7 Environmental Management Plan (EMP)

Some of the comments received had to do with the inclusion of additional information in the tables associated with the EMP in the Final EIA. To ensure continuity with the Final EIA, we have included a reprint of Tables 8.1, 8.2, 8.3, and 8.4 with the inclusion of this information.

TABLE A.5 (REVISED TABLE 8.1 FROM FINAL EIA)

CONSTRUCTION PHASE MITIGATION

Activity	Potential Effects	Mitigation Plan	Responsibility	Approximate Cost Impact*
Site Work – Clearing and Grading	Loss of Trees	There are few trees that are potentially affected by the Site work. No trees will be cut that do not interfere with the site work. The wood that is cleared will be made available to local residents.	EPC Contractor	\$5,000
Site Work – Clearing and Grading	Interference with Natural Site Drainage – Soil Erosion	Final site grade will facilitate drainage and avoid flooding and pooling. A site drainage plan will be developed that protects against erosion. Protecting stockpiles through the use of silt fencing and reduced slope angles will also minimize soil erosion during construction.	EPC Contractor	\$40,000
Site Work – Clearing and Grading	Noise from Equipment	Construction equipment shall meet the applicable standard in EU Directive 2000/14/EC of May 2000. This Directive applies to the manufacturer of the noise emitting equipment. Work involving nuisance noise will be minimized during locally recognized days of rest and at night. All equipment will be maintained in good working order. Construction activities that generate significant noise levels will be limited to reasonable daytime hours. These conditions will be specified in the bidding documents.	EPC Contractor	Minor
Site Access Upgrades - Roadwork	Dust and Noise from Equipment	Watering of disturbed site areas on an as needed basis will minimize dust. No equipment noise will exceed the applicable standard in EU Directive 2000/14/EC of May 2000. This Directive applies to the manufacturer of the noise emitting equipment. Work involving nuisance noise will be minimized during locally recognized days of rest and at night. All equipment will be maintained in good working order. Construction activities that generate significant noise levels will be limited to reasonable daytime hours. These conditions will be specified in the bidding documents.	EPC Contractor	\$5,000

Dewatering	Sediment and Oil and Grease loading to Nearby Waterways	Where site excavations requiring dewatering, the excess water will be visually inspected for oil contamination prior to discharge to the site drainage system. Oil contaminated water will require treatment prior to disposal. Water potentially contaminated with oil will be routed to the onsite water oil/water separator (OWS). Package OWS typically remove oil below the manufacturers guarantee of 10 ppm.	EPC Contractor	\$7,500
Borrow Site	Conflicts with Present Land Use	Borrow area will avoid agricultural areas.	EPC Contractor	Minor
Borrow Site	Disturbance to Local Community	All permits and approvals will be obtained from the appropriate authority prior to operating a borrow site.	EPC Contractor	\$2,000
Borrow Site	Unightly Area Finished with Borrow Activity	Borrow areas will be reworked to blend into the surroundings. Revegetation will be performed using local plants. All slopes and working faces will be returned to a stable condition.	EPC Contractor	\$4,000
Disposal of Excavated Material if Necessary	Interference to Natural Drainage	The amount of material to be disposed of will be minimized by borrowing only as much as is needed.	EPC Contractor	Minor
Disposal of Excavated Material if Necessary	Disturbance to Land	Local authorities should approve the disposal site. It will not interfere with local land use. Vegetation will be performed using local plants. All slopes at a borrow disposal site will be graded to a stable condition.	EPC Contractor	\$2,000
Transmission Interconnection	Disturbance to Land	The amount of land used for the transmission interconnection will be minimized. No agricultural lands will be disturbed by the transmission line. Private land acquisition will follow the procedures that are based on Albanian Law No. 8561, dated 12/22/99; Government Decree No. 126, dated 3/23/00; Government Decree No. 127, dated 3/23/03; Government Decree No. 138, dated 3/23/03; Government Decree No. 147, dated 3/31/00.	EPC Contractor	Minor
Provision of Potable Water	Reduced Water Supply to Area Residence	The water supply for use in construction of the generation facility must be monitored to ensure that it does not adversely affect other water uses in the area.	EPC Contractor	\$5,000
Handling and Storage of Fuels and Hazardous Materials	Potential Health and Safety Concerns	All employees will undergo health and safety training. Those dealing with hazardous materials will receive specific training in handling the materials. There will be no ash generated from the oil combustion. Hazardous waste generated will primarily be from waster lubricants and rags from clean-up and maintenance activity.	EPC Contractor	\$12,000

Handling and Storage of Fuels and Hazardous Materials	Soil and Water Contamination from Spills	Fuel storage tanks will have secondary containment with sufficient volume to contain a spill from the largest tank in the containment structure. The containment area will have a means of removing accumulated water. Drains will be routed through the site oil/water separator. A spill and emergency response plan will be developed and put in place prior to commencement of construction. This plan must be acceptable to KESH and the World Bank.	EPC Contractor	\$30,000
Aggregate Source	Reduced Local Resources	No new sources will be developed. Existing quarries will be utilized.	EPC Contractor	Minor
Batch Plant – Concrete and Asphalt	Noise, Dust, and Potential Runoff Concerns	Storm water runoff will be directed to the site drainage system. Noise will be controlled to an acceptable level. Dust bags will be installed as necessary. The EPC specification will require that the batch plant owner/operator must hold valid operating permits.	EPC Contractor	\$2,000
Construction Work Force	Influx of Workers Creating Pressure on Housing and Other Resources	Influx of workers is not expected to exceed 350 to 500 individuals. Workers will be housed in Vlorë and bussed to the Site. A first aid station will be provided for workers onsite.	EPC Contractor	\$10,000
Delivery of Equipment and Materials	Increased Traffic and Dust	Upgrade of the main access road to plant will have positive effect on local traffic. Dust from the road will be minimized with water during construction and by providing paved surface. Trucks will be tarped when carrying load. Road speeds will be controlled to reduce the potential for accidents.	EPC Contractor	\$200,000
Solid Waste Disposal	Potential Health Concerns	Solid waste will be stored in a special area and disposed of using a licensed contractor.	EPC Contractor	\$20,000
Liquid Waste Disposal	Potential Water Contamination	A packaged sewage treatment facility will be provided for the site. No direct discharge of untreated liquid waste will be allowed.	EPC Contractor	\$95,000

Intake and Outfall Construction	Disturbance of Aquatic Resources	Main mitigation is in siting the exact location of the intake and outfall. Construction wastes will not be disposed of in the bay. Intake design will follow the USEPA Draft Guidance for Evaluating Adverse Impact of Cooling Water Structures on the Aquatic Environment and the European Commission IPPC reference Document on the Best Available Techniques for Industrial Cooling Systems. Dredged materials and water will be monitored for mercury. Dredged materials and water found to have a mercury content above the guidance found in Evaluation of Dredged Material Proposed for Ocean Disposal (USEPA 503/8-91/001) will be segregated and disposed of in a secure hazardous waste landfill. Liquid wastes will be sent for offsite treatment.	EPC Contractor	\$200,000
Intake and Outfall Construction	Interference to Coastal Fishing	Construction period will be scheduled to minimize impact on fisherman.	EPC Contractor	Minor
Intake and Outfall Construction	Interference to Navigation	All barges and buoys will be clearly marked and illuminated at night. Proper authorization will be obtained prior to commencement of offshore work.	EPC Contractor	\$20,000
Intake and Outfall Construction	Sediment Release	Intake and outfall will be constructed with the intent to minimize the release of sediments to the bay.	EPC Contractor	\$50,000
Final Site	Aesthetics	Topsoil will be graded and planted as appropriate.	EPC Contractor	\$5,000

Note: EPC contractor will be required to do all of the items identified as their responsibility through the EPC contract. These items will be specified in the EPC tender documents.

TABLE A.6 (REVISED TABLE 8.2 FROM FINAL EIA)

OPERATION PHASE MITIGATION

Activity	Potential Effects	Mitigation Plan	Responsibility	Approximate Cost Impact*
Distillate Fuel Oil Combustion	Air emissions of NO _x , SO ₂ , CO, particulate matter, and volatile organic compounds that can adversely affect human health and the environment.	The combustion turbines will employ state of the art control technology for all pollutants. NO _x will be controlled using water injection. SO ₂ will be controlled by firing only low sulfur (<0.1% by wt.), distillate fuel oil. Employing good combustion control will control CO, particulate matter, and volatile organic compounds. The plant will feature stack heights that conform to good engineering practice (GEP) stack height to facilitate dispersion of emitted gasses. The stack height will be 47 m from grade.	EPC Contractor / KESH	\$1,000,000
Equipment Operation	Noise from Equipment	The combustion turbines will be enclosed in an acoustic enclosure to ensure that noise does not exceed 85 dB(A) at 1 m. Workers in close proximity to this equipment will be required to use hearing	EPC Contractor / KESH	\$180,000

		protection. Offsite noise will not exceed 70 dB(A). There is no residential housing in the area of the site.		
Cooling Water Intake	Entrainment of larval fish, shellfish, and other marine fauna.	Final location to be made to minimize impact on aquatic environment. Bar screen intake screens will be utilized. Final screening with traveling water screens at cooling water pump suction will be employed. An inlet velocity less than 1 m/s will be used to minimize entrainment.	EPC Contractor	For Location see Table 8.1
Cooling Water Intake	Impingement of adult and juvenile fish and shellfish.	See Above		
Cooling Water Discharge	Thermal effects on marine fauna.	Thermal discharge modeling demonstrates that the thermal impact from the discharge is less than or equal to 3 °C after mixing zone. This ensures that there is minimal impact from the discharge. The discharge will be designed to minimize or eliminate re-suspension of sediment in the vicinity of the outfall. If the impacts are found to be greater than predicted after operation begins, modifications to the diffuser operation can be made to increase mixing and reduce impacts accordingly.	KESH	Minor
Cooling Water Discharge	Chemical effects on aquatic ecosystem	Cooling water will be treated with sodium hypochlorite to eliminate fouling. Residual chlorine in the effluent will meet World Bank guidelines (0.2 mg/liter)	KESH	Minor
Fresh Water Supply	Reduce water supply to the local community.	The plant will supply its own service water supply from the Adriatic Sea through a membrane desalination system.	EPC Contractor / KESH	\$1,000,000
Sewage Treatment	Discharge of nutrients and other contaminants to waterways	A sewage treatment facility will be provided at the plant and discharge of treated effluent will be combined with the cooling water discharge. The sewage treatment plant will provide secondary treatment either through aerobic or anaerobic treatment.	EPC Contractor / KESH	See Table 8.1
Local Community Services	Stress on the local infrastructure	The infrastructure of the city of Vlorë will be able to accommodate the amount of new residence of new workers in the plant even if all workers come from outside the city. However, it is anticipated that many of these workers will be from the Vlorë area.	KESH	Minor

Handling and Storage of Fuels and Hazardous Materials	Delivery of fuel oil could result in a spill that would impact the aquatic and coastal environment	A spill response plan and necessary response equipment will be provided. This plan must be acceptable to KESH and the financing institutions. It is anticipated that as many as 30 deliveries will be made per year by a barge with minimum capacity of 3,260 m ³ . Monitoring and enforcement of sea conditions under which a vessel may make deliveries will be part of the plant procedures and implemented through the delivery contract.	KESH	\$50,000
Handling and Storage of Fuels and Hazardous Materials	Pipeline between the terminal and the site could rupture and impact the aquatic and coastal environment	The pipeline will be regularly inspected and maintained. An inspection and maintenance program will be developed as part of the plant operating procedures.	KESH	\$15,000
Handling and Storage of Fuels and Hazardous Materials	Oil storage tanks could fail and result in adverse impacts on the soil and groundwater resources	Oil storage tanks will include secondary containment of sufficient size to contain 110% of the contents of the largest tank. A means of removing rainwater will be included. Drains will be routed through the plant oil/water separator.	EPC Contractor / KESH	See Table 8.1
Hazardous Waste	Ground water pollution. Health and safety risk.	Small amounts are anticipated. Waste will be handled in accordance with Albanian regulations and sent to a dedicated facility properly equipped for receiving these materials.	KESH	Minor
Transmission of Power	Disturbance to Land	Clearing for transmission lines will be minimized. Lines will be routed to minimize the impact on residential areas. The electromagnetic field (EMF) emitted by the line will be checked.	KESH	Minor
Aesthetics	Aesthetically displeasing appearance may affect the tourist appeal of the coast.	Some disruption is unavoidable. The plant will be shielded by trees and set back from the ocean. Comprehensive landscaping will be used to enhance the appearance of the generation facility.	KESH	\$40,000

Note: EPC contractor will be required to do all of the items identified as their responsibility through the EPC contract. These items will be specified in the EPC tender documents.

TABLE A.7 (REVISED TABLE 8.3 FROM FINAL EIA)

MONITORING PLAN FOR CONSTRUCTION

Activity	Monitored Parameters	Responsibility
Site Work – Clearing and Grading	The practice of sharing the wood that is cleared with the local residents will be monitored.	EPC Contactor
Site Work – Clearing and Grading	Protecting stockpiles through the use of silt fencing and reduced slope angles to minimize soil erosion during construction will be monitored to ensure that the practice conforms to site drainage plan.	EPC Contractor

Site Work – Clearing and Grading	See detail provided Section 8.3.2 of the Final EIA on Air Quality and Site Drainage.	EPC Contractor
Site Access Upgrades – Roadwork	See detail provided Section 8.3.2 of the Final EIA on Air Quality.	EPC Contractor
Dewatering	Maintain a record of visual inspection of excess water from dewatering activity.	EPC Contractor
Borrow Site	Monitor and document that borrow areas avoid agricultural areas.	EPC Contractor
Borrow Site	Obtain and maintain applicable permits.	EPC Contractor
Borrow Site	Document final condition of borrow areas to ensure that they have been reworked to blend into the surroundings and are safe.	EPC Contractor
Disposal of Excavated Material if Necessary	Monitor and document the use of borrow material.	EPC Contractor
Disposal of Excavated Material if Necessary	Obtain and maintain applicable permits. Document final condition of borrow areas to ensure that they have been reworked to blend into the surroundings and are safe.	EPC Contractor
Transmission Interconnection	Document the amount of land used for the transmission interconnection and that no agricultural lands are disturbed.	EPC Contractor
Provision of Potable Water	Monitor water supply to ensure that it does not adversely affect other water uses in the area.	EPC Contractor
Handling and Storage of Fuels and Hazardous Materials	Document health and safety training.	EPC Contractor
Handling and Storage of Fuels and Hazardous Materials	Spill Response Plan	EPC Contractor
Aggregate Source	Records will be kept on quarries utilized	EPC Contractor
Batch Plant – Concrete and Asphalt	Noise will be monitored once, at both day and night, for an eight-hour period at the perimeter of the site during the peak of construction activity. In addition, spot monitoring of various pieces of construction equipment will take place to ensure that noise emissions are not excessive. The site construction manager will maintain records of any noise complaints received during the construction process. Visible inspection of dust emissions will be performed daily with records of results.	EPC Contractor
Construction Work Force	A first aid station will be provided for workers onsite.	EPC Contractor
Delivery of Equipment and Materials	Visible inspection of dust from road construction will be ongoing and application of water will be employed to suppress dust during periods of high dust generation. Road speeds will be clearly posted.	EPC Contractor
Solid Waste Disposal	Contact for proper disposal of solid waste will be kept onsite. Records on the date of disposal and the amount and type of solid waste disposed will be maintained.	EPC Contractor

Liquid Waste Disposal and Sewage Treatment	Monitoring of the appropriate operational parameters will be performed as per the manufacturer's requirements. Oil water separators will be equipped with an oil level indicator and inspected daily. Sewage treatment may include portable facilities. If so, the containment levels will be monitored daily and the contents disposed of properly when full level is reached. If the sewage treatment consists of the packaged treatment facility that will ultimately be placed into service for the facility, then the appropriate parameters such as airflow, temperature, and discharge biological oxygen demand (BOD) should be monitored.	EPC Contractor
Intake and Outfall Construction	Documentation on the siting study performed to locate the intake and discharge will be maintained onsite.	EPC Contractor
Intake and Outfall Construction	Documentation on the siting study performed to locate the intake and discharge will be including a construction schedule and information on historic fishing activity. A copy of this report will be maintained onsite.	EPC Contractor
Intake and Outfall Construction	Documentation of construction authorization will be maintained onsite	EPC Contractor
Intake and Outfall Construction	The construction technique and means of minimizing sediment releases will be documented and a copy maintained onsite. Monitoring of mercury in sediments will be carried out if excavating and dredging are performed as part of the intake and outfall construction.	EPC Contractor
Final Site	A plan for final grading and landscaping of the site will be developed and maintained onsite.	EPC Contractor

Note: EPC contractor will be required to do all of the items identified as their responsibility through the EPC contract. These items will be specified in the EPC tender documents.

TABLE A.8 (REVISED TABLE 8.4 FROM THE FINAL EIA)

MONITORING PLAN FOR OPERATION

Activity	Monitored Parameters	Responsible Party
Distillate Fuel Oil Combustion	Fuel Sulfur content will be monitored to ensure that it is less than or equal to 0.1% by weight. Sampling and analysis will be performed on each delivery received. An initial performance test will be performed to confirm the emissions from the plant do not exceed the amounts listed in this report. The stack will include continuous monitoring of NOx and opacity emissions.	KESH
Equipment Operation	Baseline noise monitoring will be conducted prior to operation of the plant, both at the plant and at predefined receptor locations. Then, offsite, far field noise monitoring will be performed at those locations once during operation of the facility to confirm that the operation conforms to 70 dB(A)	KESH

	<p>limit.</p> <p>Workers in close proximity to the turbines or other noise emitting equipment will wear hearing protection in accordance with a written health and safety plan. A copy of the health and safety plan will be maintained onsite.</p>	
Cooling Water Intake	Documentation will be maintained onsite concerning the final design of the water intake including the inlet velocity.	KESH
Cooling Water Intake	See above	KESH
Cooling Water Discharge	The condenser discharge temperature will be monitored to ensure the operation of the facility meets the maximum temperature discharge described in this report. Quarterly monitoring of the temperature at the discharge will be performed to confirm the maximum discharge temperature used in this analysis. In addition, pH and residual chlorine levels will be monitored on a continuous basis. Suspended solids and oil and grease will be measured semiannually.	KESH
Fresh Water Supply	The use of water from the desalinization plant will be confirmed through maintaining the pertinent plant design documents onsite.	KESH
Sewage Treatment	Monitoring of the appropriate operational parameters will be performed as per the manufacturer's requirements. If the sewage treatment consists of the packaged aerobic treatment system then the airflow, temperature, and discharge biological oxygen demand (BOD) should be monitored at a minimum. If the system consists of an anaerobic treatment process, then process temperature, and discharge biological oxygen demand (BOD) should be monitored at a minimum. All associated valves, pumps, blowers, and filters will be visually inspected weekly.	KESH
Local Community Services	Maintain record on complaints concerning stress on the local community services created by the plant operation.	KESH
Handling and Storage of Fuels and Hazardous Materials	Maintain records to demonstrate adherence to the spill response plan.	KESH
Handling and Storage of Fuels and Hazardous Materials	Maintain record of pipeline inspections. Inspections should include daily inspections of visible fittings, valves, and joints. Annually pressure testing of the line must be performed to verify the pipeline integrity.	KESH

Handling and Storage of Fuels and Hazardous Materials	Maintain the pertinent design information onsite. Records on the date of discharge, approximate quantity of discharge, and final disposition of the discharge. Oil water separators must be equipped with an oil level indicator and inspected regularly. Daily inspections of the levels in the oil water separators must be performed. Weekly inspections of the proper function of the oil level indicator must be performed.	KESH
Transmission of Power	The electric and magnetic field (voltage and magnetic gradients close to an energized transmission line) emitted by the interconnection line will be monitored once at four locations along the line. Measurement must take place when the line is fully energized. The location of the measurements will be at the plant switchyard, at the terminating substation and two places in between to be determined by KESH.	KESH
Aesthetics	The property maintenance records will be maintained onsite.	KESH

7.1 OIL SPILL PREVENTION & RESPONSE PLAN

The investment cost for an oil spill prevention and response plan is included in the overall cost estimate of the Project. In addition, an estimate of the specific cost for the spill response equipment necessary for the facility is given in Table 8.2 of the Final EIA. The equipment necessary to fulfill the spill response requirements is part of the EPC contract.

7.2 HANDLING OF HAZARDOUS AND SOLID WASTE

As shown in the EMP of the Final EIA, hazardous and solid waste from construction and operation of the facility will be handled properly. Each of these waste streams will have a designated accumulation area for storing onsite prior to proper disposal. There will be no sea disposal of any of these wastes. The following are examples of the types of solid and hazardous wastes that may be generated:

7.2.1 During Construction

Hazardous Waste

- Spent lubricants
- Contaminated maintenance rags
- Contaminated soil or dredging materials

Solid Waste

- Construction waste
- Scrap materials
- Domestic solid waste

7.2.2 During Operation

Hazardous Waste

- Spent lubricants
- Contaminated maintenance rags

Solid Waste

- Scrap maintenance materials
- Domestic solid waste

7.3 OIL WATER SEPARATOR

All potential sources of oily waste will be routed through a centralized oil/water separator or individual units placed at or near the source. These sources include, but are not limited to, the following:

- Secondary containment of fuel oil storage
- Storage of lubricants
- Transformers
- Sumps in the turbine enclosure

7.4 TRANSMISSION

The transmission route to the substation has not been finalized. As stated in the Final EIA, the transmission interconnection will require an approximately seven km line from the planned Vlorë facility switchyard to the planned Babica substation. If the Babica substation is not constructed in time, the interconnection will be to the Vlorë substation, which is located 4.5 km away. The typical right of way width for a 230 kV transmission line is between 40 m and 60 m. There are no ecologically sensitive areas or areas of cultural interest along either route. In addition, it is not anticipated that there will be housing relocations as a result of either transmission interconnection. An environmental assessment of the transmission line will be performed when the final transmission line route is set.

7.5 ADDITIONAL PLANS AND STUDIES

There are a number of additional plans and studies recommended throughout the EIA, many of which include the collection of site specific data. The plans required are to establish operational and response procedures. The studies are intended to both verify some findings in the Final EIA and generate useful information for design and execution of the project. The additional plans and studies are as follows:

- Oil spill response, recovery, and mitigation plan
- Emergency response plan
- Site drainage and grading plan
- Community impact action plan (only if deemed necessary)

- Health and safety plan
- Noise and vibration plan including baseline monitoring
- Waste management plan
- Simplified employee health and safety manual
- Environmental assessment of the final transmission line
- Ambient air monitoring including meteorological data, sulfur dioxide, oxides of nitrogen, and particulate matter
- Cooling water intake and discharge structure location study including fish studies, seabed flora and fauna, sea temperature monitoring, sediment sampling and analysis for mercury contamination in areas of potential dredging

8 Public Consultation

As documented in Appendix E of the Final EIA and Section 2.4 of this Addendum, the public was well engaged in a dialogue concerning the project early on in the EIA process. Public announcements were thorough, transparent, and well distributed. The National Agency for Energy (NAE) coordinated this process closely with the Ministry of Industry and Energy, KESH, Ministry of Environment, Regional Agency of Environment for Vlorë, Ministry of Territory and Tourism, UNDP Project for the Narta Lagoon, the Municipality of Vlorë, District of Vlorë, Prefecture of Vlorë, citizens of Vlorë, Vlorë University students and faculty, local and national television stations, more than 20 non-governmental organizations (NGO's), and others associated with social and environmental issues. The meetings were well attended by a varied group of people, and the Public provided input on any major concern or issue. The Public was able to provide concerns or issues either in general or with respect to specific effects of the proposed plant. These meetings were covered by Albanian television stations and broadcast through a segment on the nightly news. Comments were received and incorporated further into the EIA process.