Environmental and Social Review Summary

Block CI-27 Expansion program

This Environmental and Social Review Summary (ESRS) is prepared by MIGA staff and disclosed in advance of the MIGA Board consideration of the proposed issuance of a Contract of Guarantee. Its purpose is to enhance the transparency of MIGA’s activities. This document should not be construed as presuming the outcome of the decision by the MIGA Board of Directors. Board dates are estimates only.

Any documentation which is attached to this ESRS has been prepared by the project sponsor, and authorization has been given for public release. MIGA has reviewed the attached documentation as provided by the applicant, and considers it of adequate quality to be released to the public, but does not endorse the content.

Country: Côte d’Ivoire  
Sector: Power  
Guarantee Holders: SCDM Energie, France; HSBC, United Kingdom  
Project Enterprise: Foxtrot International  
Environmental Category: A  
Date ESRS Disclosed: August 30, 2012  
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Date revised ESRS Disclosed: April 19, 2013  
Status: Due Diligence

A. Project Description

SCDM Enérgete SAS, France (SCDM) has requested MIGA coverage for its existing equity and shareholder loan investment in the construction and operation of oil and gas production on Block CI-27 including facilities situated 18 km offshore from Abidjan, Côte d’Ivoire in the Gulf of Guinea. The project scope includes: an existing operational production platform (Foxtrot Platform); the construction and operation of a green field production platform (Marlin Platform); drilling of 12 wells; existing and new installation of oil and gas pipelines and onshore facilities. Foxtrot International, of which SCDM holds a 40% stake, is the operator of Foxtrot and will be for both platforms. Drilling activities will be undertaken by qualified contractors. Foxtrot International has been engaged in the oil and gas exploration and production sector for more than 10 years in the Gulf of Guinea. It is one of the key stakeholders in the exploitation of hydrocarbon fields of Block CI-27.

Block CI-27 contains a natural gas field that was discovered in 1981 and named “Manta”. In addition to this field, further exploration and research by Foxtrot International led to the discovery of two additional gas fields called, Mahi” in 2005 and “Marlin” in 2007. The Foxtrot Platform was installed in 1999 and has been processing approximately 5,000 bpd of oil and 156 mscf/d of gas. The Foxtrot Platform consists of a 4 legged steel structure in 330 ft of water with well bay, simple gas process, power generation, as well as export and
accommodation facilities. Five development wells were completed on the Foxtrot Platform. Gas is extracted from these five wells. The gas undergoes initial treatment on the platform separating gas from condensate and water. Gas and liquid are exported via pipelines to Abidjan where the production is further processed at the Azito and CIPREL power plant sites. The two pipelines from the platform to shore are 18 km long (landfall near the village of Addah). Both pipelines (12’’ pipeline for gas and 4’ pipeline for condensate) lie in the seabed between the platform and the coast. Two on shore the pipelines (12’’ and 14’’)) are buried about 1m in depth, following along the island of Jacqueville from west to east over 70 km where the gas pipeline separates into two, one to the CIPREL power plant and the other north towards the Azito power plant. At each of the power plants, a gas treatment unit owned and operated by Foxtrot International, is in place for further separation producing condensate and water. The two terminals have the same gas receiving capacity of 2.9 million m$^3$ per day.

The new Marlin Platform project will be developed in two components. The first component consists of the installation of the Marlin production platform (similar to the Foxtrot platform) and the second, involves exploration drilling in the northern part of Block CI-27. The new production platform, located approximately 8 km from the existing Foxtrot Platform, will be constructed with an expected processing capacity of 10,000 bpd (barrel per day) of oil and 156 mscf/d (million standard cubic feet per day) of gas. Associated connection works will also be undertaken. This will include a 4’’ oil pipeline and 14’’ gas pipeline connecting the two platforms, and a 14’’ gas pipeline and a 6’’ liquid pipeline to shore near the village of Addah, at the same landfall site as the existing pipelines for the Foxtrot Platform. For the initial period of operations, only oil will be developed. Once the Marlin platform is installed the oil produced from the Foxtrot Platform will be channeled through the pipeline connecting the two platforms as all oil produced in Block CI-27 will be treated initially on the Marlin platform. The oil will be sent to storage in refinery facilities in Abidjan.

The second component of the Marlin project consists of exploration in the northern part of the Block CI-27 about 6 km from the coast – wells FA-5 and FA-6 will be developed. Once oil production declines, gas will be extracted and transported directly to the coast without passing through the Foxtrot Platform. The gas produced by both the Marlin Platform and Foxtrot Platform will be delivered onshore to the Azito and CIPREL power plants through the existing onshore pipelines for electricity generation.

B. Environmental and Social Categorization

This project is Category A under MIGA’s Policy on Social and Environmental Sustainability and the World Bank Performance Standards. The proposed works to install the Marlin Platform, pipelines and development of drilling operations, the future oil and gas production as well as existing operations on the Foxtrot Platform present potential significant adverse environmental and social impacts which may affect an area broader than the sites and/or facilities given its location near ecologically sensitive areas. The key environmental and social issues include: air quality and emissions, noise, management of drilling wastes and cuttings, oil spills, occupational health and safety, aquatic/benthic life disturbance (marine mammals and turtles), well blowout, community health and safety, accidental ruptures of pipelines, fishing activities, hazardous materials and waste management. These potential
risks and impacts can be managed through mitigation measures and/or well-known procedures and engineering technology.

C. Applicable Standards

While all Performance Standards are applicable to this project, based on current information it is expected that the project will have impacts that must be managed in a manner consistent with the following Performance Standards:

- PS 1: Social and Environmental Assessment and Management Systems
- PS 2: Labor and Working Conditions
- PS 3: Pollution Prevention and Abatement
- PS 4: Community Health, Safety & Security
- PS 5: Land Acquisition and Involuntary Resettlement
- PS 6: Biodiversity Conservation & Sustainable Natural Resource Management

PS 7: Indigenous People is not applicable as no indigenous peoples, as defined by the policy, have been identified in the vicinity of the project area. PS 8: Cultural Heritage is not applicable as no impacts to cultural resources have been identified resulting from on-shore or offshore activities.


D. Key Documents and Scope of MIGA and IDA Review

The following documents were reviewed by MIGA:

- Etude d’Impact environnemental et social projet de pose de pipelines traversant le canal de Vridi, novembre 2012
- Foxtrot Human Resources Strategy and data, Employee handbook and relevant grievance procedures, 2012
- Determination of Oil and Gas Volumes in Place: For the different fields of Block CI-27, Extract from Sproule certification report, Sproule Petroleum Consultants, 2011
- Actions Sociales de Foxtrot et Axes Principaux d’Intervention: Programme social, Sponsoring, DonNote de Service No ADMIN-DG/02-12/2003, décembre 2003
• Le Système de Management HSE (“HSE Management System”), Foxtrot International, novembre 2011
• EHS Organization Structure, Foxtrot International, July 2012
• Charte Santé Sécurité Environnement Qualité (“Health Safety Environment Quality Charter”), Foxtrot International, November 2000
• Foxtrot Human Resources Strategy and Data, Employee Handbook and relevant Grievance Procedures, 2012
• Audit Environnemental (AE) des Plans de Gestion Environnementale et Sociale (PGES) des Puits de Production dans le Bloc CI-27 ainsi que des Réseaux de Pipelines de Transport de Gaz Naturel et d’Hydrocarbures Liqüides de la Plateforme jusqu’aux Terminaux de Vridi Est et d’Azito en passant par Vridi Ako, Nexon Consulting, September 2012
• Rapport d’étude de bruit et qualité de l’air en atmosphère de travail, Rapport Provisoire, SGS Environnement, December 2010

As part of MIGA’s and IDA’s environmental and social due diligence, a World Bank environmental specialist visited the project site in July 2012. The joint MIGA/World Bank mission held discussions with the Foxtrot International management team, the environmental consultants who prepared the project ESIA, the Minister of Environment and members of the core team. MIGA has coordinated its due diligence with the World Bank. A MIGA environmental specialist conducted a site visit in October 2012 to undertake additional meetings with the ESIA preparers working on behalf of Foxtrot International and the environmental auditing firm to discuss the findings of the most recent environmental audit. The mission also visited the CI-27 offshore Foxtrot Platform and met with EHS engineers from Foxtrot and its contractors.

E. Key Issues and Mitigation

PS1: Social and Environmental Assessment and Management Systems

Social and Environmental Assessment:

An environmental and social impact assessment (ESIA) was prepared for the Marlin Platform in 2010 that identified and assessed the impacts related to the construction and operations phases of the Marlin Platform against IFC’s Performance Standards and national regulations. The assessment assigned impact categories to identified impacts based on the consequences of the impact weighed against the probability of the impact occurring. Most of the impacts identified and assessed in the ESIA were assigned a low or medium impact category. In assessing the mitigation measures proposed for the potential impacts, the ESIA emphasizes the medium category impacts and recommended measures that must be applied to reduce the level of these impacts to a lower level. It should be noted that the ESIA concluded that the
consequences of hydrocarbons spills as a medium category impact. Both of the environmental assessments prepared for the Foxtrot expansion operations (2007) and Marlin operations (2010) have been approved by the Ivorian environmental authority and permits have been issued for exploration activities. Environmental and social impact assessments for the future well development, wells FA-5 and FA-6 in the northern part of the Block CI-27 will be prepared, approved and disclosed in line with MIGA’s Policy on Environmental and Social Sustainability.

Risk surveys for the existing Foxtrot Platform were conducted in 2002 by SCOR, 2003 by AIG Europe and in 2010 by GDF, a partner in the joint venture (JV). An environmental audit for the Foxtrot Platform and onshore facilities was prepared in September 2012. This updated ESRS reflects the information obtained during the secondary environmental and social due diligence site visit and audit findings.

The purpose of the 2012 environmental audit was to assess Foxtrot’s environmental performance/compliance as it relates to its operation of production wells in Block CI-27 and the network of pipelines for the transport of gas and liquid hydrocarbons from the wells to the terminals at Vridi Est and Azito. The audit also reviewed the effectiveness and efficiency of the environmental and social management measures. As per national guidelines, an environmental audit is required every 3 years. The findings of the latest audit confirms that Foxtrot is operating their production wells and network of pipelines in compliance with environmental and social requirements, applicable laws, regulations and conventions ratified by Côte d’Ivoire.

Foxtrot International’s social and environmental assessment of projects takes place within the framework of its Integrated Management System (IMS). Foxtrot International has conducted an analysis to assess the standards for training and other procedures for health and safety of the contractor for the drilling and installation of platforms to ensure that they are compatible with health, safety and environment (HSE) standards. Foxtrot International will require that contractors have an HSE management system in place. As defined by the contracts, the contractors are required to maintain responsibility for HSE compliance, a training program that establishes the minimum training requirements for each position with record of the number of participants and frequency of training undertaken, standard operating procedures and safety procedures, and a plan for emergency response and contingency plans in case of oil pollution. The main results of the analysis, together with the contractor operations, are used to ensure that the contractor will operate according to Foxtrot International’s HSE policies and procedures as well applicable national laws, regulations and conventions consistent with international good practices and the Performance Standards.

Organizational Capacity and Management Program:

Foxtrot International complies with the standards of American Petroleum Institute (API) on operational integrity, safety and environment which are similar to the guidelines on safety and environment established by the International Association of Oil and Gas Producers and the International Association for the Petroleum Industry Environmental Conservation Association. Three international treaties are of particular importance for the project as they
relate to maritime traffic, preventing collisions of vessels, pollution prevention and safety. These conventions are COLREG (1972), MARPOL (1973/1978) and SOLAS (1974), which were developed and managed by the IMO (International Maritime Organization). Côte d'Ivoire is one of 166 member countries of the IMO. Foxtrot is pursuing certification for ISO 14001 Environmental Management Systems and ISO 9001 Quality Management for its operations. The company is committed to undertaking its activities consistent with international good practices and the Performance Standards.

The measures proposed in the management program are based on industry studies and standards, the guidelines of the government and of non-governmental organizations, and on Foxtrot International policies and practices and the ESIA recommendations. Communication practices and procedures between Foxtrot, the contractors and the sub-contractors as well as with regulators, local authorities and communities have been established for current operations and will continue for the new installation, especially for effects relating to fishing in the region, health and safety (including the event of oil spills).

Foxtrot International has an HSE department with three staff. The team includes the HSE supervisor and two environmental and social specialists. The Foxtrot International HSE policy ensures that any changes in design, operations, risk management, project organization and personnel, and legislation are taken into consideration. The Project Management Engineer and HSE supervisor have the overall responsibility for implementing the project according to the HSE plans and manuals. Regular inspections will be conducted on site and monitoring reports will be shared with Project Management and national authorities.

An environmental management plan (EMP) for both construction and operational phases of the Marlin Platform are provided in the ESIA. The main contractor in conjunction with Foxtrot will prepare a detailed EMP for the construction phase prior to the commencement of physical works. While the EMP for the operational phase of the Foxtrot Platform can generally be applied to the operation of the Marlin Platform, an operational phase EMP specific to the risks and impacts identified for the Marlin Platform will be prepared and both construction and operational phase EMPs submitted to MIGA for review. At the end of the exploitation phase of the project, Foxtrot International has committed to preparing decommissioning plans for the rehabilitation or demobilization of the sites. In particular, these plans will address issues related to potential oil spill, waste discharge, sea water quality, sensitive coastal elements, and disturbance of marine biodiversity.

Monitoring and Reporting:

Foxtrot’s IMS includes systems for monitoring, auditing, reporting and assessment. Foxtrot International reports on several aspects of the company’s environmental, health and safety performance, as well as on its corporate social responsibility activities. In addition to the monitoring program provided in the ESIA, Foxtrot International and key construction and drilling contractors issue weekly activity reports and monthly reports to Foxtrot International management. These reports contain analysis of project related events, corrective actions and overall statistics on the project. Foxtrot International also produces an annual environmental report that includes information like the quantity of gas burned or used for production.
facilities. The monthly report (including this information) is distributed to the JV partners and government representatives of the Direction Générale des Hydrocarbures (DGH). As per national guidelines, an environmental audit is required every 3 years.

Foxtrot International will recruit an environmental firm to undertake the monitoring program as described in the ESIA, and will submit reports on the monitoring measures. They will seek to ensure that the project maintains and improves its environmental and social performance. An independent Engineer will also assess compliance, effectiveness of mitigation systems and report accordingly to the management team.

Corporate social responsibility/community development activity reports are issued yearly. The reports summarize Foxtrot International’s support and progress towards implementing social development programs in the areas of health, education and sports. The development programs are authorized by the DGH (Government representative) and the implementation of these support projects are undertaken by the relevant DGH services.

**Training:**

Foxtrot International will identify training needs for staff responsible for implementing the Marlin EMP and HSE plans. The project will ensure that all staff understands the basic environmental and social policies. The HSE supervisor for the main contractor will also ensure that its management and their sub-contractors receive environmental induction training on occupational health and safety issues as per the Ivorian legislation and Performance Standards.

The HSE Training policy is being upgraded whose mission is to implement the HSE policy on site, develop HSE awareness, and evaluate/deliver training requirements. Improved HSE training has already been delivered, with various training sessions related to HSE delivered in August 2012 and will continue on an ongoing basis.

**PS2 : Labor and Working conditions**

Foxtrot International’s Human Resources (HR) policy is governed by the National Labor Law, the Inter-professional Collective Convention as well as the Foxtrot International Company Policy and Management Procedures. The HR policy consists of five different categories and described as follows:

**Hiring policy** - All selected candidates undergo medical testing, including the HIV test (on a voluntary basis). Depending on the site the candidates will be working, additional medical tests are performed to ensure the candidate’s health will not be negatively affected by working environment.

**Social policy** – All employees are eligible for financial support where feasible. For example loans from the company with zero interest to provide for personal needs, including school fees and car loans, mortgages negotiated with low interest rates with a local bank. To reinforce social cohesiveness in between workers and management, social activities (family
days out and agents/management evening out) are organized. Additionally, the company provides complimentary retirement insurance benefits for workers.

**Wages policy** – Employees’ wages are highly competitive within the sector. Foxtrot International topped the salary rankings and was positioned above the median on social issues in the last three salary and social surveys prepared by an independent regional auditor, “Muneris.”

**Career development policy** - At hiring, each employee receives a job description that underlines their tasks and goals. Each employee is given set of annual performance objectives to achieve for career development. At the end of the year, all employees participate to an evaluation process to identify strengths and weaknesses, improve performance, define career objectives and identify appropriate training programs.

**Health policy** - All employees are provided with health insurance coverage of themselves and their respective family members. Employees are also covered by life insurance benefits. Medical monitoring is conducted on an annual basis for all employees, which includes medical tests and a follow-up consultation with an occupational physician, as necessary. An annual medical report is issued and a copy is transmitted to the Country Department of Health.

An HR policy consistent with PS 2 that will include additional measures for transparent worker relations, terms of employment, non-discrimination, retrenchment and a grievance mechanism will be developed. The Foxtrot International work force consists of 17 workers for offshore operations of the Foxtrot Platform, 20 on-shore production workers and 34 on-shore management, administrative, technical and support services staff. When the Marlin Platform is operational, an additional 17 offshore workers will be recruited, trained and hired during 2013 and 2014, as well as 10 additional management, administrative and support services staff.

Foxtrot International’s IMS provides the framework for occupational health and safety management and performance which are consistent with MIGA’s Performance Standards, good industry practice and the EHS Guidelines. Foxtrot International has established procedures to ensure the protection of health and safety of their staff, for example:

- Workers are required to wear personal protective equipment (PPE) when performing hazardous tasks (ie steel toed boots, helmets, harnesses security, etc.);
- Workers are required to have the training required by the industry to perform their duties;
- Workers are required to comply with standard operating procedures, which will ensure tasks are performed correctly;
- Workers are required to perform job safety analysis (JSA) before performing tasks in order to identify and correct any potentially dangerous practices;
- “Permit-to-work” system is required at all locations;
- Fire and life safety;
• Certain dedicated workers are trained and nominated to be leaders for all HSE aspects on site, known as the “responsable sécurité et environnement sur site” (RSES)

PS3: Pollution Prevention and Abatement

The main issues identified for current and new Foxtrot operations and generally for offshore oil and gas exploration activities include: atmospheric emissions, discharges of wastewater, solid and liquid waste management, noise and spills.

Air quality: The main sources of atmospheric emissions (continuous or intermittent) due to offshore activities are combustion sources from the production of electricity and heat, and from the use of compressors, pumps, boilers, turbines, flaring and discharge of hydrocarbons, and fugitive emissions. The main pollutants coming from these sources are nitrogen oxides, sulfur oxides, carbon monoxide and particulate matter. Other air pollutants include volatile organic compounds (ethane, benzene, toluene, ethylbenzene and xylene), glycols and polycyclic aromatic hydrocarbons.

Potential impacts to ambient air quality will be limited to the immediate vicinity of the emissions sources. These emissions are expected to comply with local standards and regulations and the World Bank Group Environmental Health and Safety Guidelines.

Regular monitoring of the main pollutants for the entire facility will be conducted to verify compliance with emission limits. The supply vessels will generate air emissions during continuous operations in the project area, and occasionally shuttling between the port and the project area. Air emissions from supply vessel operations will have a barely measurable, dispersed, short-term and reversible impact on air quality.

Greenhouse Gas Emissions: The production of electricity and heat on the offshore facilities are estimated to emit 36,000 tons of carbon dioxide equivalent (tCO2e) annually which is below the threshold for annual greenhouse gas emissions quantification and monitoring. All associated gas will be compressed and re-injected in the main gas stream or used as fuel gas on the offshore facilities. Flaring will be limited for safety reasons to emergency situations. No methane is expected to be released to the atmosphere under normal operations.

Drilling Muds and Cuttings Management: Cuttings and muds generated during drilling are: water-based muds, brines, cements and mixing water, and mineral oil-based muds. The components of the drilling fluids will be selected so that the discharges of mud or cuttings have a minimal impact on the environment. Foxtrot International and its partners undertake to use the highest performing fluids in terms of environmental protection and recycle and re-use them throughout each drilling campaign. Key factors include biodegradation, and reducing the toxicity for fish, sediment regenerators, algae and zooplankton. Low-toxicity oil will be used and the drill and cuttings will be drained and sieved using a process intended to recover the maximum amount of mineral oil prior to discharge into the ocean, resulting in residual oil content below levels authorized in the North Sea by the OSPAR Convention or by the U.S. Environmental Protection Agency. Impacts related to the mud coating the drill cuttings are
expected to be similar to discharges from rivers during storm events. Sandy, calcareous and clayey cuttings coming from the subsoil, which constitute the largest share of discharges into the ocean (500 to 600 m³ per well drilled), will be deposited on the mud bottom of the ocean floor and are considered to have negligible impact on the marine environment. Monitoring of the drilling phase for Foxtrot operations was conducted by divers deployed by the company to verify adequate dispersion of cuttings. The practice of diver led surveys has been utilized for the 4 wells that have already been drilled by the company and the same methodology will be used for the new platform. The results of the diver led surveys have confirmed that the cuttings are dispersed by the subsea currents in accordance with local regulations. Divers did not report any accumulation of cuttings at the sites.

_Water quality:_ The discharge of ground food waste and treated wastewater effluent into the ocean is expected for offshore activities, in accordance with the standards of the MARPOL convention and World Bank Group Environmental Health and Safety Guidelines. The treated wastewater effluent will be composed of sanitary wastewater treated by a biological treatment plant, and hydrocarbon contaminated water used in machine and process areas which is separated from other aqueous waste streams and directed into an oily-water treatment system. The impact of these discharges is considered low, as the effluent is expected to rapidly disperse in the open ocean environment. Water consumption, and therefore the production of wastewater, will be minimized through conservation measures. No ballast water is on the platforms, and only marginal volumes are on the supply vessels. Regular monitoring of discharges of the main pollutants will be conducted to verify compliance.

_Waste:_ The offshore activities will produce non-hazardous combustible solid waste (paper, wood, cardboard), non-hazardous non-combustible solid waste (metallic waste), hazardous solid waste (paint cans, empty chemical containers), and hazardous liquid waste (oily waste, paints and solvents). These wastes will be segregated, stored in a dumpster and transferred from the platform to supply vessels for transport to onshore treatment and disposal facilities. Trash compactor and temporary waste storage facilities are planned for the Marlin Platform.

_Emergency Preparedness and Response:_ The project will have plans in place to manage risks associated with possible accidents during drilling and production. The ESIA has assessed the risk of accident causing oil spill, which is the main concern for these operations, as low or unlikely. See the discussion below of each type of risk identified, assessed and mitigation.

The fuel oil used during the production operations, which is supplied from the supply vessel in tanks lifted by crane and pumped and stored in the platform production, is limited to emergency generators and crane engines. During drilling operations, fuel oil is used in larger quantities and transferred by pumps and hoses from the supply-boats to the rig storage tanks. Mitigation measures to reduce/manage these risks are proposed in plans and standard operating procedures. The supply vessels are also equipped with dispersant storage and distribution pumps and ramps.

The drilling rig is equipped with a blow-out preventer (BOP) system to be used in the event of an uncontrolled upwelling from the well. This equipment complies with API and
International Drilling Contractor Association standards. All drilling staff has valid drilling permits and certificates issued by an independent third-party certification company and the drilling rig to be used for the Marlin platform is expected to have similar prevention measures. The Foxtrot Platform production wells are equipped with standard subsea safety control valves and well heads in a “Christmas tree” arrangement following API oil and gas standards.

Foxtrot International and its subcontractors have a number of mechanisms in place to avoid or minimize the risks associated with an oil spill and other accidents. These mechanisms include: HSE Management systems and associated policies and procedures and emergency response plans. Platform and support vessels will be equipped with safety equipment and compulsory intervention mechanisms to handle possible emergencies. The main concern is to ensure that equipment and response capabilities are designed to handle hydrocarbon spills. Foxtrot International uses the standard system of preparedness and response for the oil and gas sector at several levels to ensure that appropriate resources are quickly mobilized.

Foxtrot International is a member of the Oil Spill Response Association, which provides expertise and regional resources in case of pollution (24/7 and 365 days a year). In addition, Foxtrot International can request the assistance of the Centre Ivoirien antipollution (CIAPOL) of the Ministry of Environment, Water and Forests in the case of an oil spill. CIAPOL operates nine ships in case of pollution in coastal lagoons and coastal areas. These ships are equipped with containment barriers, skimmers, pumps and storage barge bags. In addition, the operators of the Ivorian Refining Company (SIR) and the Abidjan Terminal are equipped with containment booms and skimmers. Management responsibilities are generally shared as part of a collaborative approach to managing pollution risks. For more significant impacts that affect people and natural resources beyond the capacity of local, regional and national levels, separate best practice and internationally recognized procedures are in place. These include:

- Dispersants and application equipment;
- Burning equipment on site;
- Containment barriers and mooring equipment;
- Mechanical recovery systems / skimming;
- Temporary storage and intermediate pumps;
- Command, control and communications equipment;
- Cleaning of beaches and other supplies support.

During operations daily maintenance inspections of the equipment will be made and equipment will be maintained. Procedures related to refueling, pipeline management, waste management will be implemented to ensure protection of the environment. Additionally, the ESIA documents indicate that tides in the project area having a south-south/westerly direction with an average amplitude of 1.3m and waves that form with at an average interval between 7 and 11 seconds. This tidal behavior indicates that in the case of non-contained and sustained oil spill, the tendency would be for the spill to move in the opposite direction of land, thereby minimizing risks to coastal areas.

PS4: Community Health, Safety & Security
Based on the Foxtrot Platform experience and assessment of the future Marlin Platform activities, it is not expected that the combined operations will have significant impacts on community settlements located onshore. Small fishing operations are carried out in the lagoons and near the coast; however, there are industrial fishing operations and commercial vessels in the vicinity of the project area. Fishing vessels operating in this zone could potentially hit the platform and drilling rig if they have not been informed and are redirected. Fishermen in this zone tow nets and long lines in addition to other methods used. Crossing the operating zones could damage fishing boats as a result of contact caused by the offshore activities and could entail damage to the nets or long lines. In terms of on-shore risks, the village community of Addah may be potentially impacted given that it is at the center of the pipelines groupings.

The project location has been designated an oil and gas exploration and production zone. As a result the local community is familiar with the common safety rules regarding this type of activity. Regular information meetings are held with local communities on health and safety risks to coastal communities are related to oil spills. The following types of safety measures are in place to manage safety issues:

- Restricting access to the project site;
- Program maintenance and monitoring integrity of the site;
- Risk management program;
- List of rules or codes of practice; and
- Pipelines management and safety.

Onshore and offshore pipelines and structures are verified for mechanical, dimensional and corrosion damage/integrity. Several levels of inspection exist, from basic visual inspection to non-destructive test (NDT) inspection methods. All pipelines are regularly inspected internally with “intelligent pigs” to monitor geometry and potential internal/external damage. Pressure in pipelines is subject to continuous monitoring and deviations from normal parameters are detected. The Marlin project will construct additional pipelines that will ensure greater flexibility for inspection purposes.

To restrict access to areas of construction/production activity, a safety zone of 500 m will be established around each site to protect public health and safety. To this end, members of the coastal communities and the Coast Guard will receive advance information about security protocols. A communications protocol has already been established with local communities. Foxtrot International coordinates with the port authorities, the Coast Guard, CIAPOL, ANDE and all other agencies to ensure safety. Foxtrot International will have one or more support vessels in the area to ensure compliance of the security zone. Maritime communications standards will be undertaken with ships passing through the area where appropriate. Any vessel involved in these programs will comply with the rules of the convention on the International Regulations for Preventing Collisions at Sea (COLREGS), established by the IMO.
Foxtrot International has in place an operating Emergency Plan to ensure safe, rapid and effective response to any incidents that may arise due to project activities. Emergency response activities are designed to directly respond to all emergencies and their consequences to establish command and control of the incident, the safety of stakeholders, implement action plans and facilitate communications. Emergencies covered in the Emergency Plan include:

- Accidental spills (oil spills, chemical spills, etc.)
- Fire or explosion (well, installation, etc.)
- Personnel (injury, death, missing person, etc.)
- Evacuations (medical reasons from a remote site, etc.)
- Natural disasters (hurricanes, earthquakes, etc.)
- Transport - personal and equipment (aircraft crash, collision of ships, etc.)
- Safety (kidnapping / extortion, piracy, etc.)
- Media / public relations (could be the result of one incident above)
- Loss of material goods
- Impacts on public (environmental impacts, injury, damage to public property or private, etc.)

Response procedures and checklists for emergency situations mentioned above are included in the Emergency Plan. Foxtrot International also has in place emergency communication protocols, resources vulnerable training procedures, and practices in case of oil spill. Foxtrot International has a designated communications officer to communicate with the different stakeholders including government agencies, support organizations, local communities and the media.

The gas treatment unit (Foxtrot plant that separates small amounts of liquid before being fed into the turbines) adjacent to the Azito Power Plant is approximately 700 m from the communities of Béago and Azito. Noise measurements taken at the Azito treatment facility indicate noise levels emanating from both the power plant and treatment facility are expected to exceed World Bank Group EHS guidelines for residential noise levels for the nearby community. Foxtrot International will take steps to ensure that noise is minimized at the gas treatment plant and will conduct regular monitoring.

For all onshore and offshore facilities, Foxtrot has retained the services of security contractors to protect its personnel and equipment. All security personnel have undertaken necessary screening and training in accordance with industry practices and standards.

PS5: Land Acquisition and Involuntary Resettlement

Land Acquisition and Involuntary Resettlement did not initially apply to the project, as the project site is located 18 km offshore and on-shore civil works were expected to be limited and not involve land take. However, subsequent to Board approval of the MIGA project, the Bank Group task teams received new information that some temporary land acquisition (totaling 13,340 square meters) from one affected household was necessary to accommodate the construction of a pipeline coming onshore. Following exchanges with Foxtrot, the
affected household received compensation consistent with the requirements of PS 5. This is documented in the ESIA.

No other land acquisition and involuntary resettlement issues are expected in the project, but the ESIA outlines an ongoing consultation process with local communities to ensure that such issues will be addressed, if and when they arise during project implementation. If further land acquisition is needed, the guarantee holder is required to comply with PS5 requirements.

PS6: Biodiversity Conservation & Sustainable Natural Resource Management

The Block CI-27 project area covers a marine area whose waters are deeper than 108m for the Marlin Platform and 30 m for exploration drilling. While there is no presence of coral reefs in the area of operations according to the “Environmental Profile of Côte d’Ivoire” developed within the “Framework Agreement Europe Aid/119860/C/SV/Multi” 2006, there are 327 aquatic species of flora and 152 species of saltwater fish and 166 species of freshwater fish present.

The ESIA for the Marlin Platform presents baseline information on fish species, benthic communities, marine mammals, sea turtles, and marine and coastal birds, and identifies risks and impacts on the biological components and the vulnerability of the biodiversity and natural resources present in the project area as a result of offshore activities. Based on data collected by the national Direction Départemental des Ressources Animales et HalieutiqUTES (2007), IUCN and FAO, in their migration, whales move in the waters near the project area in addition to manatees, dolphins and sea turtles forage and settle near the coast, just outside the CI-27 block. Mangrove forests, two classified protected forests and a national park, Assagny National Park are located along the coast, less than 50 km from the project area. Another national park, Ehotilés Islands is located 120 km north east of the project area. Residents of the rural communities along the coast fish from small boats in coastal waters and lagoons, they are also active in mariculture. Impacts related to the construction and operation of the project to these resources were assessed in the ESIA were assigned a low impact category.

Noise and vibration impacts will affect fish in and directly adjacent the project area, however significant numbers of fish are expected to disperse away from the catchment area of offshore activities and fish mortality is expected to be low. Direct exposure to marine streamers or to tail buoys, or a direct impact resulting from marine activities could affect an individual marine mammal or sea turtle swimming close to the surface in the immediate vicinity of the devices, could result in injury or fatality. However, marine mammals are more likely than turtles to avoid these devices. The risk of fatality to more than one sea turtle is considered medium and a sea turtle mitigation program will be implemented and monitored.

Vessels operating in the project area present risks for fuel spills and collisions with marine mammals. The impact of potential fuel spills is expected to be localized to a small number of species as the fuel released would rise to the surface to disperse and evaporate in ambient conditions. Plankton communities in the immediate vicinity of the spill would likely be more affected, however the potential impact of this risk is considered reversible. Manatees and
turtles, whose reactions and movements are slower than other marine species are considered vulnerable to impact from collisions with vessel hulls and propellers, however the impact is rarely fatal to the individual. These impacts are considered unlikely and the impact is considered localized and reversible.

Small routine discharges of ground food waste and treated wastewater effluent are compliant with the standards of the MARPOL convention. These discharges are not expected to have a significant effect on the pelagic or planktonic habitat.

An oil spill during supply operations could cause ecological harm in marine waters around the supply zone and, if serious, could spread to the sensitive coastal elements (such as mangroves, coastal lagoons and beaches). However offshore supply operations will be carried out exclusively in the acquisition and clearance zones, at least 40 km away from the nearest sensitive area. As described in PS3 and PS 4, oil spill emergency plans have been developed and will be implemented. Similarly, the accidental rupture of pipelines presents significant risks to the marine and coastal environment. These risks and impacts are expected to be mitigated by pipelines management and safety and spill response measures described in PS3 and PS 4. Additionally, tidal movement is expected to follow a south-south/west direction in the project area, indicating a tendency for potential non-contained and sustained oil spills to move in the opposite direction of land, thereby minimizing risks to coastal areas.

As part of the environmental auditing exercise and to confirm existing environmental management practices, Foxtrot International will retain a qualified marine biologist with regional experience to undertake a desk review of the current data to assess population and distribution of the national and international protected species in the project area of influence. This will include, but not limited to: i) turtle nesting areas; ii) nationally and internationally recognized protected areas, iii) migratory routes including seasonality and species.

F. Environmental Permitting Process and Community Engagement

The national EIA regulation (1998) requires that an EIA is prepared for this type of project. The national environmental protection agency (ANDE) validated the Terms of Reference (ToR) for the ESIA and approved the 2010 ESIA of the installation of the Marlin Platform and exploration wells and issued the environmental/exploitation permit. ANDE also approved the earlier ESIA of 2007 and 2009 of other Foxtrot exploration and development works including the installation of onshore gas pipelines and the Foxtrot Platform. The 2012 Foxtrot Platform audit will be presented to ANDE for validation.

As part of the preparation for the onshore gas pipeline ESIA prepared in 2009, Foxtrot International held extensive consultations with the public and communities. A follow-up to this was the establishment of a community committee for the development and monitoring of community micro-projects. Through the work of this committee, Foxtrot has supported more than USD $ 1 million for micro-projects (provision of classroom blocks, teachers’ quarters, provision of pipe-borne water, fishing equipment, health centers/maternities, etc.) in 40 communities in the coastal areas. Foxtrot has maintained a register of complaints and actions taken to address the complaints during construction/operation phases.
G. Availability of Documentation

The above listed documentation is available electronically as PDF attachments to this ESRS at MIGA (http://www.miga.org), the World Bank InfoShop (http://www.worldbank.org/infoshop), and at Foxtrot offices in Abidjan, Côte d’Ivoire).

- Etude d’Impact Environnemental et Social Projet de Pose de Pipelines Traversant le Canal de Vridi, Novembre 2012
  - Annexe 1 - Chartre version française
  - Annexe 3 - Arrêtés 167 et 181 portant création, composition et attributions du comité Ad’hoc
  - Annexe 4 - Etat des accidents de travail de Foxtrot International
  - Annexe 5 - Hiérarchisation, mesures préventives et évaluation des risques

These documents are also available locally at the Abidjan offices of Foxtrot International, the Vridi Est project site and the offices of ANDE (National Environmental Agency).