

## REPUBLIC OF GHANA – PROPOSED IFC INVESTMENTS IN KOSMOS & TULLOW:

### BRIEFING ON THE JUBILEE PROJECT

On February 19, 2009, IFC's Board of Directors authorized it to enter into investment agreements to support the development of Ghana's Jubilee field, an offshore oil and gas Project that will help to diversify Ghana's economy and satisfy energy needs.

The Project, located in deep water some 60 kilometers off the coast of Ghana, will produce crude oil, generating foreign exchange income for the country and substituting expenditures for oil imports. It will also boost government revenues against the background of the current global economic downturn that may have negative effects on developing countries for years to come.

In addition to the proposed \$100 million loan to Kosmos Energy and \$115 million loan to Tullow Oil, IFC will assist the companies in enhancing the Project's benefits for local communities.

This briefing supplements the following information publicly disclosed on IFC's website: (i) [Kosmos Summary of Project Information](#), dated December 19, 2008 and [Environmental and Social Review Summary](#), dated December 22, 2008; and (ii) [Tullow Summary of Project Information](#) and [Environmental and Social Review Summary](#), both dated January 16, 2008. These documents, together with the information below, provide details on the Project, the potential impacts and expected benefits, relevant policies and safeguards, and IFC's role. The information below falls in two categories, first environmental and social considerations and second, considerations on governance and transparency.

#### ENVIRONMENTAL AND SOCIAL CONSIDERATIONS

Questions have been raised about the Project's categorization, the timing of IFC's board consideration in relation to the ongoing ESIA being prepared for Ghana's EPA, as well as various specific technical points. These are addressed below.

##### *I. Project Categorization*

*Categorization is risk-based and not industry-based.* IFC's categorization is (i) based on explicit IFC policy, (ii) is risk-based, and (iii) is globally-recognized. IFC's project categorization standards are clearly described in IFC's Board-approved and publicly disclosed Policy on Social and Environmental Sustainability ('IFC's Sustainability Policy'). IFC's environmental categorization looks at actual project risks and is not a decision based on the sector or industry alone, i.e., oil & gas or power projects are not automatically Category A. IFC does not categorize projects based solely on industry because this approach could lead to some projects with major impacts being treated as low risk, and vice versa. IFC definitions of A and B categorizations come from the World Bank's long-standing and standard-setting definitions, currently found in OP 4.01 (paragraph 8). Furthermore, the Equator Principles, adopted by over 70 international commercial banks, follow IFC's approach to classification.

*The footprint of the Project is limited – Category B.* The definition of a category B project is one where the project has limited adverse environmental impacts that are generally site-specific, largely reversible, and readily addressed through mitigation measures. In this context, the following summarizes some of IFC's key assessments with respect to the Project:

(a) Limited onshore facilities are located on the site of the existing Takoradi (Ghana) airport and harbor and consist only of supply bases. Thus, negative social impacts as a result of onshore activities are largely non-existent.

(b) The Project is 63 kilometers offshore and cannot be seen from the land, even at night. This distance puts the Project well out of reach of most artisanal fishermen operating from the coast.

(c) The Project is in 1,000 to 1,700 meters of water, where the ocean floor contains little life and is essentially a layer of mud. There are no critical habitats within the Project area. This assessment is based on: IFC's review of baseline data, including the Environmental Baseline Survey (EBS) on oceanographic or benthic features in the vicinity of the Jubilee Field, as well as scientific databases and available literature on life history, biology and behavior, distribution range, population size, regional presence, preferred habitat, seascape features critical to the survival of the marine mammal species reported as occurring in eastern-central Atlantic, and their migratory routes.

(d) There are currently two wells, and 15 more will be drilled using mobile offshore drilling units (MODU), ships that are anchored or use dynamic positioning, but are not otherwise attached, to the sea floor. Oil and gas will be processed and stored on a floating production, storage and offloading facility (FPSO), which is a converted tanker.

(e) Commercial fishermen (primarily for tuna) do operate in the area. As result of a 500 meter safety zone that must be maintained around the MODUs and FPSO, there is a very small reduction of fishing area compared to the total fishing area (0.785 km<sup>2</sup> vs. 235,349 km<sup>2</sup> of Ghana's Exclusive Economic Zone).

(f) Once the drilling phase is over, only the FPSO will be present. This extremely limited social impact on fishermen is therefore mostly short-term.

(g) Noise generation from drilling operations is expected to be short term and sound pressure levels are known to be generally below the thresholds for avoidance reaction by potential marine sensitive receptors, such as most marine mammals, turtles and fish, at short distance from the source, and well below sound pressure levels that could cause injury. Noise during production operations will be mainly associated with vessel engines and propellers, similar to noise sources associated with shipping traffic in the region.

(h) Thus, all potential environmental impacts associated with normal operations are reversible and localized.

(i) The only potentially significant impact is associated with an unlikely, accidental major oil spill. IFC has reviewed the technological measures in place and found that they will minimize the risk of an oil spill. In the unlikely event that an oil spill should occur, it is likely to be small (1,000 barrels or less) and can be addressed almost immediately with equipment and trained personnel based in Ghana. In the remote event of a major spill, an immediate response can be effected utilizing locally staged equipment. Additionally, OSR -- the UK-based global leader in spill response -- can mobilize Tier III (the response level for a major spill) equipment on-site within 16 hours. Given the distance from the shore and the existing water currents, this mobilization time will be sufficient to address such a spill. The Project companies have mapped the ecologically sensitive areas along the Ghana coast to ensure special protection in the remote chance of a spill reaching shore. An oil spill trajectory model simulation will be available well before first oil and commencement of operations at the FPSO to better inform the oil spill response plan during production (a drilling phase oil spill contingency plan is already in place), when the risk of a spill can be higher.

Offshore oil projects are not necessarily category A projects. It should be noted that there are no major onshore facilities resulting in potentially significant social impacts, such as displacement, land acquisition, etc; there are no critical habitats and sensitive areas such as mangroves or coral reefs; there is no pipeline to the shore; the Project is beyond the reach of most artisanal

fishermen; it is in 1,000+ meters where many of the issues facing shallower water developments are not applicable. In the absence of factors such as these, combined with the assessment summarized above, IFC is satisfied that the Project has limited adverse environmental impacts that are generally site-specific, largely reversible, and readily addressed through mitigation measures, and thus has classified this as a B. Three of the four other offshore oil & gas projects committed by IFC in recent years have also been category B.

## II. Timing of EIA Completion

*IFC engages with clients at different project development stages*, and this is recognized in IFC's Sustainability Policy. IFC's responsibility, when it engages in a project at a particular stage, is (i) to ensure that the environmental assessment appropriate for the stage has been carried out, and (ii) to have determined that the client, following a time-bound action plan, can achieve compliance with IFC's Performance Standards and the appropriate Guidelines. When IFC is reassured on these two points, IFC presents a project for approval by the Board of Executive Directors.

*Early engagement is an advantage*. Our experience is that IFC can better influence project outcomes and add more value with an early stage engagement. A key advantage of engaging early is that IFC, as a committed lender, then has greater influence over ongoing environmental assessment and the design of mitigation measures for later phases. To ensure that the borrower will achieve compliance with the Performance Standards, it is a standard condition in IFC's investment agreements that the client remains in compliance with the relevant action plan(s). In this case, time-bound action plans were developed along with IFC's Environmental and Social Review Summary (ESRS) and have been publicly disclosed.

*IFC's environmental and social disclosure was based on a detailed assessment of impacts*. IFC reviewed the available documentation and determined that it was appropriate at this stage of project development. This documentation included the Environmental and Social Evaluation Report for Lenders ("ESER"), prepared by a reputable international consultant with extensive experience in environmental assessment for the offshore oil industry, which undertook an extensive review of the information on the Project alternatives and baseline conditions. These assessments of the potential environmental impacts, based on specific baseline data, allowed IFC to assess the risks of the Project. Additional safeguards were included in the Action Plan to help enhance the mitigation measures. Although a detailed Environmental Baseline Survey (EBS) had been undertaken at the time of IFC's initial due diligence, it was not yet ready for review at the time of ESRS disclosure. IFC subsequently reviewed the EBS and has found that it confirms the baseline presented in the ESER.

*Drilling phase environmental permits are already in place*. The Project has already submitted environmental assessments of the drilling phase to the Ghana Environmental Protection Agency (EPA), as required to obtain drilling permits. The Project is in the process of preparing the *production phase* EIA for the Ghana EPA. The completion of this EIA is part of the action plan for the Project and will be a requirement under IFC's investment agreement. IFC has worked with the Partners with respect to the Terms of Reference for the production phase EIA and the Scoping Study (which already provides the proposed EIA methodology, a summary of the stakeholder consultation process and the identification of the key issues by the EIA team and raised by stakeholders) to ensure that it will meet IFC and Ghana requirements. The production phase EIA will be completed over one year in advance of the start of production.

## III. Selected Technical Matters

In addition to the broader themes above, the following sections address some more detailed, technical aspects of the Project.

*Single-hulled FPSO.* Most FPSOs in use today globally, and the FPSO proposed for the Jubilee field, are converted single hull oil tankers. IFC looked carefully at the risks involved in the use of the single hull converted tanker for the construction of the FPSO and, in view of this analysis, determined that use of a single hull FPSO is appropriate for the Project. In accordance with industry practice, the FPSO will be designed for the site-specific worst environmental conditions that could be experienced at the Jubilee Field in a return period of 100 years. The weather conditions in the Gulf of Guinea are relatively benign and model tests have shown the predicted vessel motions to be less than those of similar FPSO systems elsewhere in the world. The operator will have in place all necessary best practice safety measures to minimize risks. In fact, the Project employs American Bureau of Shipping (ABS) as its hull verification agent which has oversight over the hull conversion to ensure guidelines are met and that the conversion is suited to the Ghanaian sea conditions for up to 20 years without need to re-enter dry-dock. In addition, the Project is using Bureau Veritas (BV) to verify the FPSO contractor's approach to hull conversion integrity. The Project is putting in place the capability to do the required hull inspection in situ externally, and will also have access to hull tanks internally.

There are a number of considerations in selecting the appropriate production, storage and offloading mechanism including applicable legal and regulatory requirements, industry practice, operability, water depth, location relative to coast, environmental risk, capital cost, contractor strengths, sustainability, etc. The considerations that help manage environmental risk of an FPSO include, among others, safety, spill risk, maintenance and inspection, explosion risk, and longevity. Single hull tankers (as distinct from FPSOs) have a higher risk of spill from collision and grounding while the use of a double hull will reduce that risk if the impact speed is within a certain range. The grounding risk is not relevant for FPSOs, particularly at the water depths of this Project. In managing spill risks from a collision, the hull configuration is only one of many mitigation measures available and double hull will only reduce the spill risk marginally when compared to a turret-moored single hull FPSO. Turret mooring (instead of spread-mooring), crew competence, collision avoidance and warning systems, double jeopardy tugs, independent vetting agency for tankers, exclusion zones, weather/sea limits of operation, fenders, and corrosion prevention/inspection and a number of other important mechanisms will be employed in this Project to mitigate the spill risk from a collision. Notwithstanding the reduced spill risk from a collision, the double hull configuration has disadvantages as well: it is more prone to thermally accelerated tank bottom corrosion, the risk of explosion is greater, it is difficult to inspect, and vessel stability and motion management is difficult due to elevated center of gravity and requires careful planning during loading and offloading. Double hull is more of an appropriate choice in colder climates or when handling viscous crude, both of which do not apply in this Project.

It is important to distinguish between the phasing out, under MARPOL (an international maritime convention), of single-hulled tankers for *transportation* and the use of single hull FPSOs that are *stationary*. The phasing out of single-hulled vessels for transportation is due to the risk of spills as a result of collision or grounding, which are particularly high when vessels enter and exit harbors and approach coastlines. However, by its nature, an FPSO is anchored offshore (in this case 60 km offshore in deepwater), so risks of collision or grounding are far smaller. The International Maritime Organization (IMO) has recognized this in MARPOL 73/78 in Regulation 13 Unified Interpretations of Annex 1 Sec 4.6 "when an oil tanker is used as a floating storage unit (FSU) or a floating production storage and offloading facility (FPSO) which is used solely for the storage or storage and production of oil and is moored on a fixed location except in

extreme environmental or emergency conditions, such a unit is not required to comply with the provision of regulations 13 to 13G.” The "Guideline for Application of MARPOL Annex I Requirements to FPSOs and FSUs" prepared by IMO Marine Environmental Protection Committee (MEPC), Circ. 406, have also specified that the requirements for double-hulled tankers in Regulation 13G of Annex I (now Regulation 20 of Annex II) are "Not applicable" to converted tanker FPSOs. Therefore the use of converted single-hull tanker FPSOs is compliant with MARPOL requirements. Further, the FPSO will be ABS-classed and follow applicable ABS rules and guidelines.

Management of Drilling Waste. The Project is in compliance with IFC guidelines for the management of drilling waste. Specifically, the Project has demonstrated that disposal into the ocean, with minimization of oil retention on cuttings, is the best alternative. There are three technical options for the management of drill cuttings: re-injection, onshore disposal and sea disposal.

These are summarized as follows:

- (1) Re-injection: The development of the Jubilee field does not allow re-injection of the cuttings because of the combination of the geological structure of the field and the deepwater environment. Due to the location of the oil reservoir relative to the seabed, the wells will be spread over a large area in deep water, which requires the use of the mobile drilling units that move to numerous drilling locations. This spread-out nature of the field is not conducive to cuttings re-injection as it does not allow the use of a single re-injection well for several producing wells.
- (2) Onshore Disposal: Lifting the cuttings, shipping them to shore, unloading, and disposal on land would involve more environmental impacts than the sea disposal, in addition to raising undoubtedly higher operational safety concerns. Ghana does not, at present, have onshore waste facilities that can handle these cuttings, and the development of one will take some years and major coordination among government, traditional authorities, local residents and oil companies.
- (3) The Project has implemented best practice for disposal of cuttings at sea, and all mobile drilling units have onboard treatment systems to reduce oil retention. Discharge outlets will be at a depth of 15 meters below sea level in order to reduce impacts on most marine life, which occupies the surface layer of the ocean. The use of low toxicity oil-based drilling fluids and the rapid dispersion of drilling discharges, due to significant water depth and currents, will cause limited or no measurable impact to the seabed and soft bottom fauna. The oil retention level in cuttings from current drilling operations is below 5%. This level is permitted by IFC's guidelines if a full and detailed justification is provided as part of the site-specific environmental assessment. This justification has been provided in the ESER. In the case of this Project, onshore disposal or re-injection both present increased environmental and safety risks, so the Project's design is appropriate given the above-described measures to minimize oil retention and toxicity and that the dispersion of the cuttings will have limited or no measurable impacts.

Management of Produced Water. The management of produced water (water that is produced along with the oil and gas extracted from the reservoir) during production operations will be conducted in line with international standards as well as IFC guidelines. It may also be possible to re-inject the produced water into the reservoir, but this will require more information about the characteristics of the reservoir itself.

Specifically, the produced water treatment system under design will include, at a minimum, three stages for oil removal (water skim vessel, hydrocyclones, and polishing dissolved gas flotation units). The system is also designed to recycle the water with oil content back to the production system for further treatment to meet the requirements for discharge into the sea. The design for the produced water treatment system and the FPSO's contractual specifications are to allow oil content of 20 parts per million, a level significantly below limits recommended by internationally recognized standards (such as OSPAR, OGP, North Sea UK, US EPA) and IFC guidelines.

## **GOVERNANCE AND TRANSPARENCY**

*Governance and Institutional Capacity:* Ghana is one of the most democratic and transparent countries in Sub-Saharan Africa. While regulations and oversight can continue to be improved, Ghana has shown that lessons learned from its mining experience make it well-prepared for additional revenues from oil and gas development compared to its peers in the region. Ghana has made substantial strides in improving its democratic governance and transparency and is currently one of the best performing countries on governance indicators in Africa:

(a) Ghana has witnessed two peaceful transitions of power in elections that have been widely observed as fair.

(b) On the World Bank's Country Policy and Institutional Assessment (CPIA), Ghana ranks 5th among IDA countries.

(c) The World Bank Group's "Doing Business 2009" report ranks the country 6th in Sub-Saharan Africa among 46 countries (3rd on protecting investors and 5th on enforcing contracts).

(d) According to the 2008 Transparency International Corruption Perception Index (CPI), Ghana is ranked 67<sup>th</sup> out of 180 countries, and is 6<sup>th</sup> in Sub-Saharan Africa. The country has been improving on the corruption perception ground, having gained 3 positions in the past 2 years.

(e) Ghana was the first country to submit to the NEPAD African Peer Review Mechanism process, and is an early signatory to EITI for mining revenues. The country is also in the middle of an active debate about the use of revenues and is well supported by advice from donors and others in this respect.

At the same time, IFC acknowledges that the potential emergence of a large oil and gas sector does pose new political, regulatory, and governance challenges for the country. These risks will have to be carefully managed, and the World Bank Group and a number of other donors are actively engaged in supporting the country in this process.

As a country currently producing about 6,000 barrels of oil per day ("bopd"), Ghana has in place a basic legal and regulatory structure for the oil and gas sector. However, the Jubilee discovery promises to be a precursor to the potential establishment of a significant oil basin offshore Ghana as this initial discovery attracts further investor interest, and as the potential of Ghana's offshore blocks is further established. In its preparation for a larger oil sector, Ghana is taking a number of concrete steps toward improved governance, including preparation of the draft Ghana Petroleum Regulatory Authority ("GPRA") bill (which was submitted to Parliament prior to the recent election and is expected to be re-submitted in the coming months by the new government), expansion of EITI beyond mining to cover oil and gas, and consideration of other mechanisms such as stabilization and heritage funds to help manage potential larger revenues from the oil and gas sector. While there is room for improvement in the draft GPRA (the donor community has recommended various enhancements) it nonetheless represents an important step forward in the reform process.

The new government, while still in its early days, recognizes the importance of the oil and gas sector to Ghana's future. IFC's Ghana country manager has met with the new Minister of

Finance and Minister of Energy (who were officially sworn into their respective offices on February 13, 2009) and both have confirmed their intentions to build upon the work of the prior government in their commitment to transparency, good governance and the establishment of a strong regulatory framework. Early interactions between the new government and the World Bank Group and other donors further indicate that the incoming administration is placing an important focus on oil sector governance.

In addition, Ghana has to date actively sought and received assistance on various facets of its regulatory and sectoral development from such Development Partners as Norway (NORAD), the UK (DFID & BHC), Germany (GTZ), Canada (CIDA), the Netherlands, International Monetary Fund, the World Bank and others. These have included, among others, supporting the review of the proposed Plan of Development for the Jubilee field. The World Bank has been helping in EITI implementation (including through support for an oil and gas-specific scoping paper) and through the Natural Resources Environmental Governance Project. Ghana also undertook a national dialogue and a series of regional consultations in the first half of 2008 to allow discussion with stakeholders and other segments of society regarding the implications of its new-found resource.

*Transparency:* The Project will generate substantial revenues for Ghana's government, allowing it to strengthen the country's development agenda. Therefore, transparency of payments and revenues as well as transparency of contractual obligations to the extent possible are important. As condition for any investment, IFC will require Kosmos and Tullow to publicly disclose all payments to the government, and the key information on the petroleum contracts which is of public interest is already in the public domain. GNPC, the government-owned partner in the Project, has disclosed the relevant details of the transactions/fiscal terms, as well as the proposed manner of developing the oil fields. Furthermore, the contracts are based on a model contract available on GNPC's website which is aimed at ensuring uniformity in the documents and facilitating both negotiation and evaluation. IFC has reviewed both the model contract and the actual executed petroleum agreements, and is satisfied with their conformity and that clauses of public interest have been disclosed. Moreover, the Project's executed petroleum agreements have been ratified by parliament and as such are accessible to the public. Going forward, the draft GPRA bill contains disclosure requirements which should further improve transparency.

Despite these encouraging developments, the challenges remain significant and it will take some time for the government to fully establish a track record on key reform measures. The question facing IFC is whether the risks posed above outweigh the possible benefits of engagement. By engaging, IFC has already enhanced the prospects for improved development – through, among other things, the companies' adoption of IFC's Performance Standards on Social and Environmental Sustainability and their agreement to Action Plans which exceed the measures they would otherwise have taken to mitigate Environmental & Social risks, through their commitment to public disclosure of payments to the government, and through the work IFC is commencing with them to undertake a strategic assessment of the needs among local communities and to help formulate a community development plan to manage public expectations and enhance local benefits. It is IFC's view, on balance, that Ghana's fundamental building blocks for good governance are in place and that our engagement at this point will improve implementation of this and future oil and gas projects in Ghana.