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Additionality of Development Finance Institutions (DFIs) in Upstream Oil and Gas in Africa

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Additionality of Development Finance Institutions (DFIs) in Upstream Oil and Gas in Africa

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Office of the Chief Economist

Abstract

The landscape of oil and gas production in Africa is changing in ways that will increase the demand for upstream development finance and pull on funds from all sources, including development finance institutions (DFIs). A new cohort of countries is coming onstream for the first time, and new players from among the group of indigenous and independent oil and gas firms are carving out strategic niches in the sector around the continent.

Commercial banks are strongly present and maintained interest in financing upstream development through the financial crisis. However, the funding needs of the sector are massive and growing. At the same time, for some countries, the sector holds the potential of significant development gains. Joining the club of oil and gas producers can generate a new stream of revenues that, if well managed, can lead to improvements in national welfare, growth and development.

DFIs face the challenge of engaging in the sector in a way that is both relevant

financially and solidly aligned with the successful realization of development gains among countries on the continent. This paper argues that DFIs should be strategically targeting and selecting positions in transactions where experience indicates they can add value. It takes the position that it is possible to differentiate between opportunities within the development phase of the upstream oil and gas sector in Africa and extract some general criteria to be applied in deal selection and project design.

Core recommendations for DFIs, stemming from the paper, include pursuing transactions linked either to emerging, producer nations or indigenous or independent firms and focusing on improving development outcomes linked to governance and extractive industry transparency, social and environmental standards and benchmarks and local content.

Keywords: Oil and gas, upstream, development finance institutions, additionality, development outcomes, extractive industry, natural resource management, governance, local content

JEL Classification: O13, O16, Q30, Q33, Q38

1. Introduction

The group of African oil producing countries is projected to grow by three by 2011 when Ghana, Niger and Uganda are all expected to be newly onstream. Ghana's offshore Jubilee Field may even be operational and pumping commercial volumes of crude oil by the end of 2010.

This growth is emblematic of a broader trend across the continent which is elevating Africa's profile as an oil and gas producing region (African Development Bank, 2007: 58-63; Valdmanis, 2009). Discoveries of commercially viable offshore and onshore oil and gas deposits are piling up in countries not traditionally associated with oil and gas production. In addition to the three new producers expected in 2011, another cohort of new oil producers is expected to come onstream by 2015 (see Table A2). Companies operating in Kenya, Liberia, Mozambique, Sao Tome and Principe, Sierra Leone, Somalia and Tanzania, for example, are all in the advanced stages of exploration.

The round of recent discoveries and exploration has captured the public eye and attracted heavy media attention. Not only do oil and gas discoveries impact global supply and demand dynamics, but they can have a profound impact on the economies of producer nations. A 2009 report by the African Development Bank (AfDB) and the African Union notes a strong positive correlation between access to commercial energy, primarily in the form of hydrocarbons such as oil and gas, and the "economic status and development of countries (2009: 27)." Put succinctly, energy is indispensable for growth.

This conventional wisdom is reflected in ongoing nationwide debates in countries like Ghana and Uganda on how to maximize recent discoveries of oil and gas. Such debates, played out in the popular media and other fora, point to improvements in transparency and rising levels of public scrutiny and engagement in decisions about national resources. They also highlight the dual challenge for governments of transforming resource revenues into positive development outcomes while managing public expectations about what is realistic in terms of public gains (Amoabin, 2010; Matsiki, 2010). Indeed, the headlines and attention have been disproportionate to the volumes entailed by recent discoveries, and the established leaders in petroleum production on the continent, like Algeria, Angola, Libya and Nigeria, are in no danger of losing their top spots. Projections for 2015 show the emerging group of producers collectively generating just 7 percent of all crude oil produced in Africa (see Table A2). Nevertheless, the landscape for the industry in Africa is changing in important ways, and the new discoveries represent major, once-in-a-generation opportunities for the countries of origin.

The expanding list of producer nations has led to increased demand for project finance in the sector on top of the already robust demand from the more traditional oil and gas producers. Development Finance Institutions (DFIs), notably the AfDB and the International Finance

Corporation (IFC), have a record of participation in the sector (see Tables A3 and A4) and are expected to remain involved both at a strategic level, in supporting regional member countries to maximize extractive industry (EI) opportunities, but also as key funders and sources of technical assistance. The volume and range of demand, however, from both low and middle income countries far outstrips the capacity of DFIs to participate in all transactions (African Development Bank, 2010; World Energy Outlook 2009). Growing demand from the sector and portfolio constraints, thus, force DFIs to take an increasingly critical look at oil and gas operations and apply funds on a selective basis to ensure maximum outcomes and benefits from limited resources.

This paper fits into this context of new discoveries, growing demand for finance and increasing operational selectivity among DFIs and aims to assess the value addition, or additionality, of DFIs in upstream transactions in oil and gas in Africa. The term, *additionality*, itself, is an explicit reference to the AfDB's framework for ex-ante Additionality and Development Outcome Assessment (ADOA) of its private sector operations, an AfDB-piloted program which serves as a decision tool for project selection (African Development Bank, 2009, Revised ADOA Framework). The ADOA framework, developed through the AfDB's Development Research Department, serves to evaluate the additionality of DFIs in transactions, i.e. what DFIs bring or contribute which other purely commercial lenders do not. It also provides a snapshot of expected development outcomes which can then be tracked, monitored and evaluated ex-post (African Development Bank, 2009, Revised ADOA Framework).

As this paper argues, the questions the ADOA framework raises about additionality and development outcomes can inform the process of project selection. And like the ADOA framework, the paper takes an operational focus as it aims to establish certain criteria or characteristics of transactions where DFI financing in the upstream oil and gas sector can have added value and impact. Its recommendations are, thus, intended as tools to facilitate and strengthen the process of early identification of opportunities and country needs in upstream oil and gas in Africa.

The upstream phase of the oil and gas value chain is defined as exploration, development and production, midstream as storage and transportation and downstream as processing and refining. Although there is strong and valid appeal linked to value addition in downstream transactions and a critical development premium placed on adding value in Africa, midstream and downstream activities are not the focus of this paper, which dedicates only a brief boxed discussion in Section 2 to downstream opportunities (see Box 3). Instead, the paper focuses primarily on the development stage of the upstream phase of the sector, arguing that DFIs are

well positioned to add value at that stage at all levels from policy down to transactions¹. For new producer countries, the upstream phase is a key gateway to establishing and consolidating best practices in a nascent industry and laying the foundation for later downstream growth. It is, at the same time, a phase which generates massive revenues, or rents, to new as well as established producers. These revenues, in turn, if well managed, can drive national “growth and development” (African Development Bank, 2007; 181). The generally poor historical performance of resource-rich African countries, however, suggests that smart and focused DFI engagement at this stage could yield major development returns for countries in the region (African Development Bank, 2007: 181).

Drawing from the ADOA format, the paper applies a two step framework for analysis, looking, in the first instance, at financing for development in upstream oil and gas, including best-value-for-money opportunities for DFIs, and, in the second instance, at how DFIs can improve development outcomes through participation in transactions. It treats oil and gas as a single sector, due to the strong parallels in industry characteristics, and builds its arguments from case studies based on ongoing transactions and policy discussions as well as recent DFI experiences.

The paper is organized in five sections, including the introduction. Section 2 provides an overview of the latest developments in the oil and gas sector in Africa, including new countries coming onstream, reserve projections, key players including DFIs, price trends for oil and gas and energy policies of key oil and gas consumer nations. This leads to a brief discussion of revenues accruing to governments from upstream oil and gas production and their impact on developing economies. The section concludes by highlighting the significance of the sector for development in Africa, thus setting the stage for an assessment of how DFIs can add value to transactions.

Section 3 assesses DFI value addition as a source of financing in upstream transactions. It looks at a sampling of recent deals and provides a breakdown of financing to determine the relevance of DFI financing in recent years. Total financing to the sector far out-scales the financing power of DFIs and the challenge for DFIs thus becomes, rather than taking positions everywhere, to identify specific types of transactions where they can have an impact.

Section 4 examines DFI value addition in terms of development outcomes in three additional categories: policy and governance; social and environmental standards; and local content.

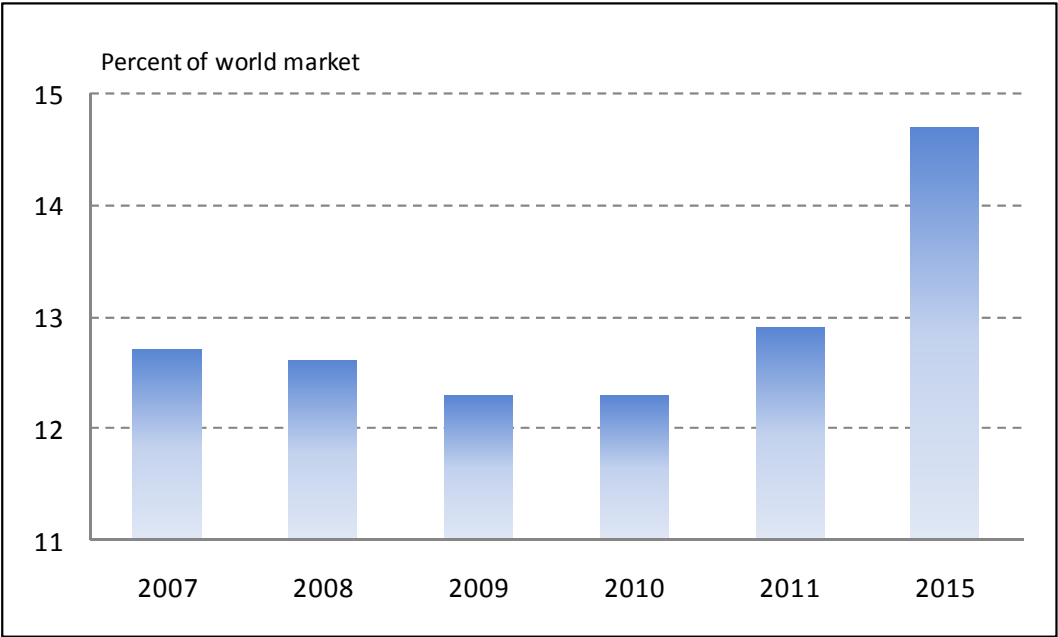
¹ The investment recommendations in this paper are primarily aimed at the development stage of the upstream phase. The policy and governance recommendations discussed in Section 4, however, have equal relevance at the earliest, exploratory stages of the sector. Although exploration in oil and gas is highly speculative and traditionally not a target for DFI and commercial debt financing, the paper argues for DFI additionality in the policy debate at the earliest indication of commercial reserves.

Section 5 concludes with a set of recommendations for maximizing the impact of DFI resources in the upstream oil and gas sector. Core recommendations for DFIs include pursuing transactions linked either to emerging, producer nations or smaller, indigenous and independent firms and focusing on development outcomes linked to governance and EI transparency, social and environmental standards and benchmarks and local content.

2. A Changing Landscape: An Overview of Oil and Gas in Africa

The oil and gas sector in Africa is experiencing a bullish period of widespread exploration and growth. Fifteen countries are currently classified as oil producers with another ten in various stages of advanced exploration, appraisal and development (see Tables A1 and A2). Of this latter group, Ghana, Niger and Uganda are poised to come onstream as soon as 2011 (Q4 2010 in the case of Ghana). With this trend roughly mirrored by similar growth and discoveries in natural gas, including a 2010 announcement of significant natural gas deposits offshore from Mozambique, a new group of countries with little experience with the hydrocarbon industry is poised to charge into production and shake up the traditional map of oil and gas centers around the continent.

Figure 1: Africa’s Share of Global Oil Market



Source: Valdmanis, 2009

Meanwhile, Africa is assuming a larger role in world markets. Oil production in Africa grew faster than any other region in the world in the decade between 1999 and 2008 (McKinsey Quarterly, 2010). In addition to the new producing countries, the more traditional centers of

production on the continent like Algeria, Angola, Libya, Nigeria and the Sudan are expanding production and expected to continue to do so in the years to come (World Energy Outlook 2008). Data indicates that Africa will increase its share of global oil production from 12 to 15 percent by 2015 (see Figure 1). Africa's share of global production of natural gas is also expected to pick up in the coming years as new offshore fields come onstream and pipelines link landlocked fields with coastal terminals. According to the US Energy Information Administration, the "largest projected increase in natural gas production is for the non-OECD region, with the major increments coming from the Middle East (an increase of 16 trillion cubic feet from 2007 to 2035) and Africa (7 trillion cubic feet)" (International Energy Outlook 2010).

Part of this increase in gas production could be generated by capturing the natural gas released during oil production. In Nigeria, natural gas resources, and profits, are literally going up in flames through the practice of gas flaring or burning off of unwanted natural gas. The flaring in Nigeria alone produces more greenhouse-gas emissions than any other single source in Africa south of the Sahara, and it has been speculated that the gas which is lost on an annual basis alone could power the sub region (Quist-Arcton, 2007; Walker, 2009).

At the same time that additional commercially exploitable reserves are discovered, the range of industry and national players on the continent is also growing (see Box 1). While it is estimated that the continent controls more than 20 percent of proven and yet-to-be-developed global crude oil reserves in terms of absolute number of distinct reserves, individual reserves tend to be smaller on average in terms of

reserve volume than, for example, reserves in the Middle East (World Energy Outlook 2008). The bulk of opportunities in Africa are thus small by comparison to other regions and less attractive for reasons of economies of scale to the major multinational oil and gas firms. Companies like BP, ENI, Exxon-Mobil, Shell and Total, while strongly present in Africa overall, have demonstrated a preference for focusing on the big opportunities in established markets like Algeria, Angola, Libya and Nigeria. As a result, recent discoveries of smaller deposits around the continent have opened the door to smaller, more agile, niche players, including juniors and independents as well as indigenous companies in some markets.

Box 1. Attracting Attention from Major Players. In November 2009, Reuters reported that "[Africa's] new finds have already attracted the attention of the world's biggest private and state-owned energy companies - reflecting a sense that a big part of the world's energy future lies beneath African soil and water. Among the biggest discoveries, the Jubilee field off the coast of Ghana has sparked a battle among oil giants from Exxon Mobil to China's CNOOC for a stake put on the auction block by Kosmos."

Source: Valdmanis, 2009

The terms *juniors* and *independents* are industry terms without fixed definitions but commonly understood to refer to smaller oil and gas companies with a clear operational focus on upstream exploration, development and production and little vertical integration with downstream phases (Small Explorers and Producers Association of Canada (SEPAC), 2010; Independent Petroleum Association of America (IPAA), 2010). *Majors*, by comparison, tend to operate fully vertically integrated supply chains from exploration through refining to marketing to the final consumer at the pump and have much higher production volumes measured based on barrels of oil produced per day.

For reference, BP, ExxonMobil and Eni, all majors, produced respectively 2.5, 2.4 and 1 million barrels of crude oil and natural gas liquids per day (bbl/d) in the first quarter of 2010², while independents Anadarko, Tullow and Heritage, announced, respectively, production levels of 234,000, 58,300 and 329 bbl/d for 2009³, reflecting both the variability within the class of juniors and independents as well as the smaller reserve profiles of assets under management.

Some of the more visible multinational juniors and independents involved in recent discoveries and upstream development around the continent include:

- Anadarko Petroleum - a publicly traded US based company and one of the largest independent oil and gas exploration companies in the world with advanced appraisal activities ongoing in deep waters offshore from Sierra Leone and Mozambique;
- Kosmos Energy - a US-based independent oil and gas exploration and production company with significant backing from private equity groups Warburg Pincus and Blackstone and an originating role in exploration and development of the offshore Jubilee field in Ghana;
- Lion Energy - a publicly-traded, Canadian-based independent oil and gas exploration and development company in the advanced stages of exploration of onshore fields in both Kenya and Somalia;
- Heritage Oil - an independent, public-traded UK upstream exploration and production company responsible for pioneering the recent discovery in Uganda;

² BP, Group Results, First Quarter 2010 Results, April 27, 2010; ExxonMobil, News Release, Estimated First Quarter 2010 Results, April 29, 2010; Eni, Press Release, Results for the First Quarter of 2010, April 23 2010.

³ Anadarko figure reflects sales volumes as reported in 2009 Annual Report; Tullow figure reflects barrels of oil equivalent per day (including natural gas production) as reported on Tullow website under Key Performance Indicators for 2009; Heritage figure as reported in 2009 Annual Financial Report.

- Maurel and Prom - an independent oil and gas company headquartered in France and active in Gabon and offshore from Tanzania;
- Petroceltic - a publicly traded Ireland-based oil and gas company with a growing portfolio of natural gas development projects in Algeria and Tunisia; and
- Tullow Oil - a publicly traded UK based company and one of the largest European independent oil and gas exploration and production companies with a core focus on Africa and a leadership role in development of assets in both Ghana and Uganda.

Indigenous companies, or African-owned energy firms, and national oil companies (NOCs), both regional and non-regional, are likewise taking more aggressive positions in all aspects of the upstream market, including oilfield services, as well as moving downstream to higher technology intensive phases of the production chain. Indeed, a recent McKinsey Quarterly Report noted that “indigenous national oil companies have set ambitious goals to become stand-alone, commercially viable domestic, and in some cases international, operating organizations (Roelofsen and Sheng, 2010).” The same might be said of the growing group of indigenous private sector oil and gas companies.

Some with prominent involvement in recent deals include:

- Afren - an African independent oil and gas company with a listing on the London Stock Exchange, operations in both Nigeria and Cote d’Ivoire and an expanding network of indigenous partners;
- Compagnie Tunisienne de Forage (Tunisian Drilling Company) - a government owned contractor, operating in Tunisia only, with expertise in drilling, drill technology and oil and gas field services; and
- Oando - a Nigerian based integrated energy solutions group with discrete company units aimed at all phases of the oil and gas exploration, production, processing and distribution chain, including a growing arm dedicated to oil and gas field services and support industries.

The key DFI players in the upstream oil and gas sector are limited primarily to the AfDB, the African Finance Corporation (AFC) and the IFC. The IFC has the largest portfolio, a global presence and the most established record of the three in the sector (see Box 2 and Table A4). The AFC is a recent entrant which has taken mainly minor equity positions in indigenous oil and gas companies, including a January 2010 equity investment of \$20 million in Seven Energy, an indigenous oil and gas exploration and production firm based in Nigeria. The investment came as part of a \$200 million debt and equity package raised by the company.

Price Outlook

Pricing conditions in recent years have contributed to the expansion of exploration and production.

Oil and gas prices experienced steady upward pressure between 2000 and 2007 (see Figure 2). This was followed by a two year period of high price volatility, roughly corresponding to the period of the financial crisis. In July 2008, oil prices touched an all time high of \$145 per barrel before collapsing to \$30 per barrel by December of the same year. From mid-year 2009, however, prices began to correct, more or less, in line with broad activity in the markets, and, in the year since, have picked up and continued the steady, gradual growth trend line from the early part of the decade. Natural gas prices have followed a similar pattern, tending to mimic the movements in oil.

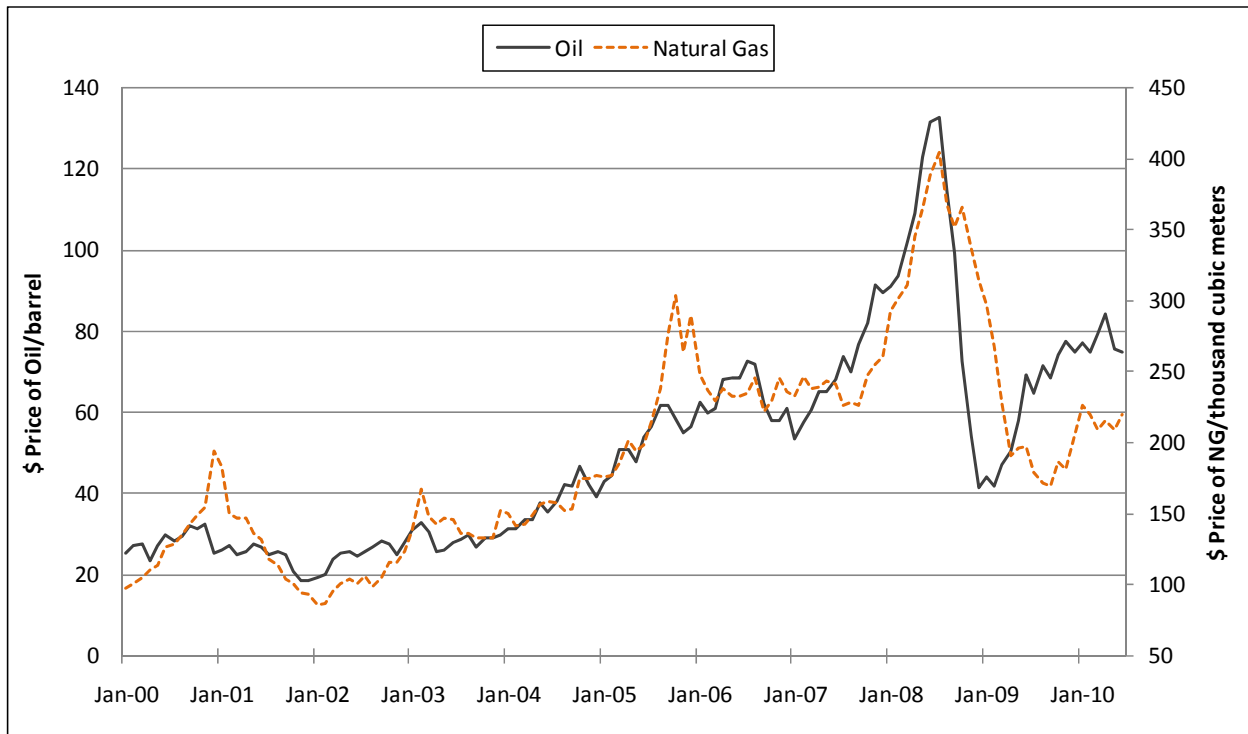
The outlook for oil and gas prices is a continuation of the same steady increase. According to the World Energy Outlook 2009, global supply and demand pressures are expected to sustain oil and gas prices at current levels in the near term and exert general upward pressure in the long term. The US Energy Information Administration's International Energy Outlook 2010 tells the same price story and predicts increasing demand for crude oil as economies recover from recession. Confidence in continued price growth provides comfort to project funders, particularly in oil and gas, where development of proven reserves and the infrastructure to link wells to markets may take three to five years, in some cases, before revenue streams begin.

Box 2. IFC in Oil and Gas. The IFC provides financial products and advisory services to oil and gas clients ranging from small startups to established multinationals in all areas and stages of operations in the sector. For its smaller clients, it provides guidance on establishing corporate governance structures and strong environmental and social practices. “For more established firms it offers strong political, environmental, and social risk management expertise.

The IFC's oil and gas portfolio in recent years indicates a focus on supporting independent, indigenous companies. Lance Crist, the IFC's Global Head for Oil and Gas, described a 2009 transaction with Kuwait Energy to develop oil fields in Egypt as illustrative of efforts to “support a new class of local private oil and gas companies that are expanding regionally and providing valuable jobs and revenues to governments.”

Source: IFC Oil and Gas, 2010

Figure 2: Crude Oil and Natural Gas Prices (Monthly Averages), January 2000 – June 2010



Source: IMF Primary Commodity Prices, 2010

Global Energy Politics

Another factor, that of national strategic energy policies of major oil and gas consumer nations such as the US and China, also adds to the positive outlook for the sector. Both the US and China have made strategic decisions to diversify sources of oil away from the Middle East. This has fueled worldwide expansion of the industry, but the biggest impact has been an increased focus on Africa, where oil and gas are key pieces in the global energy race.

The US African Growth and Opportunity Act (AGOA) legislation places a market incentive on oil from Africa, thus reinforcing the positive price outlook and confidence by funders. Meanwhile, China is ramping up its own presence on the continent with a one third interest in the Lake Albert basin reserve in Uganda, a \$5 billion investment in oil in Niger in 2008 and a possible stake in offshore oil in Ghana, among other places. A 2008 Council on Foreign Relations Backgrounder paper reported that China already receives one third of its oil imports from Africa and is aggressively pursuing “exploration and production deals in smaller, low visibility countries (Hanson, 2008).”

The effect of converging national energy policies by the major oil and gas consumers is to increase the stakes of managing natural resources and place added pressure on the

government agencies responsible for monitoring the oil and gas sector. It also tends to obscure, or steal the headlines, from the potential significant gains from oil and gas to the national economies of producer nations.

Impact of Oil and Gas Revenues

Discoveries in the sector can have transformational implications for host countries. Of the top existing producer countries in Sub-Saharan Africa, for example, seven, Angola, Chad, Congo-Brazzaville, Equatorial Guinea, Gabon, Nigeria and Sudan, derive more than 50 percent of government revenues from taxes on oil and gas production (World Energy Outlook 2008). As such, it is widely accepted that oil and gas revenues, if properly managed, can bring significant, tangible and broad-based development gains to producer countries (African Development Bank, 2007: 142-145).

Conventional wisdom also recognizes that the track record for harnessing oil and gas revenues to benefit the populations of producer countries in Africa has not been characterized by success (African Development Bank, 2007: 181; African Development Bank and the African Union, 2009: 8). According to a 2010 McKinsey report, Algeria, Angola and Nigeria earned a combined \$1 trillion from petroleum exports between 2000 and 2008, but only Algeria has achieved middle income status (Leke et al., 2010).

As Africa's share of global oil and gas production expands in the coming years and new countries on the continent prepare to enter the sector for the first time, there is an imperative, and a once-in-a-generation opportunity for some countries, to absorb lessons learned from around the continent and beyond and *get it right* on development outcomes linked to oil and gas revenues. Oil revenues accruing to the government of Ghana, for example, are expected to amount to the equivalent of 6 to 7 percent of GDP on an annual basis in the first years of production (IMF Survey Magazine, 2010). The International Monetary Fund (IMF) suggests that these revenues, if used wisely, could lead to substantial gains in

Box 3. Downstream Opportunities.

Downstream growth in Africa will be integral to capturing value addition and building energy infrastructure and independence in the coming years. Maximizing downstream potential is a policy challenge for governments and a technical challenge for firms, particularly indigenous firms, and DFIs *should* be present as strategic and financial partners.

The downstream phase represents an opportunity for indigenous firms, in particular, to build a bridge along the value chain to more diversified services and products. For many, this growth may be a natural extension of upstream activities. Oando in Nigeria, for example, demonstrates the possibilities for growth oriented firms to deliver more diversified products and serve broader needs through downstream operations.

DFIs, in turn, can have an impact on the growth of downstream operations through finance but also through technical assistance, assisting African firms to compete and succeed at every stage of the value chain.

infrastructure and competitiveness and even contribute to propelling Ghana into the category of middle income countries by 2020 (IMF Survey Magazine).

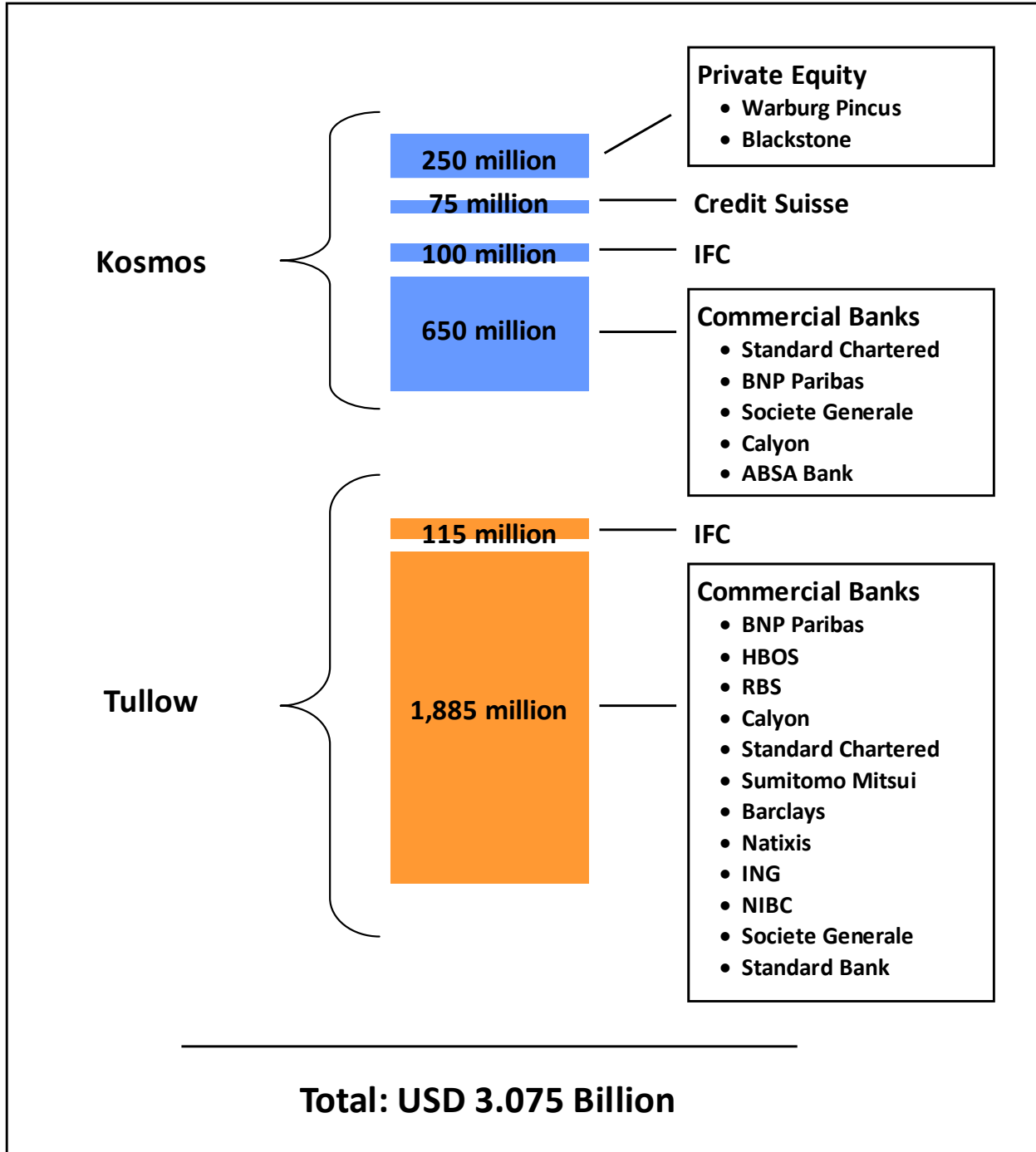
Getting it right in oil and gas, and more broadly in natural resource management, is a cross-cutting challenge. As a 2007 report by the AfDB argued, “in Africa, the environment, economic growth and governance are inextricably linked and are the essential elements of rural development and poverty reduction (143).” From economic and financial governance and EI transparency to private sector development, energy independence and infrastructure, the implications of the oil and gas challenge touch all areas of the economy at every stage of the value chain (see Box 3), and DFIs, as a group, are well positioned to work with countries, governments, NOCs, civil society, communities and the private sector in addressing this challenge.

3. Financial Additionality

At the transaction level, the most tangible contribution of DFIs is financing. Thus, the first level of analysis aims to assess the additionality of DFI financing in upstream oil and gas. How are DFIs contributing to financing of upstream development in the oil and gas sector and where does experience indicate DFIs can have the greatest impact?

A survey of recent deals (see Table A5) in the upstream oil and gas sector points to a mixed picture. DFIs are present in some deals but absent from others. The changing landscape on the continent means that bankable upstream projects are queuing up across the continent and that the sector has a massive absorptive capacity for project finance. On the other side of the equation, non-regional NOCs (e.g. China’s CNPC and CNOOC, Malaysia’s Petronas, Russia’s Gazprom, and others) are queuing up to participate in the financing. Despite the overall decline of available credit during the financial crisis, commercial banks, too, demonstrated an appetite to fund development of oil and gas sector projects in both middle and low income countries throughout the financial crisis. Commercial bank financing of the Jubilee project in Ghana, for example, amounted to more than \$2.5 billion in 2009 alone at the height of the crisis (see Figure 3) and Total Gabon raised a \$600 million eight year corporate loan for development of the Anguille Field in 2008 from a purely commercial syndicate of eight lending banks (Thomson Reuters, 2010). Of those two transactions, only Jubilee included DFI participation (see Figure 3).

Figure 3: Jubilee Financing Breakdown for 2009



Source: Multiple (Thomson Reuters, IFC, Credit Suisse, Kosmos Energy), 2010

Four additional recent upstream transactions which illustrate the diversity of deal structures include:

- A July 2009 \$265 million loan financed entirely by Nigerian commercial banks as supplementary upstream financing for ExxonMobil and the Nigerian National Petroleum Corporation (NNPC)⁴;
- A July 2009 \$80 million loan, including a \$35 million tranche from the IFC, to Kuwait Energy Company, a private, independent company, for development of oil and gas assets in Egypt and Yemen;
- A March 2010 post-crisis \$450 million debt facility to Afren, borrowed against proven reserves and raised from purely commercial sources for oil field development in Nigeria; and
- An April 2010 post-crisis issue of common stock worth \$142 million by Nigerian firm Oando on both the Lagos and Johannesburg stock exchanges to finance development of upstream assets (Mayowa, 2010).

The sheer size and absorptive capacity of the sector accounts for the diversity of transactions and participants. From a \$3 billion offshore development (Jubilee) in a low income country (Ghana) involving fourteen commercial banks, two private equity funds and a DFI (IFC) to a \$265 million syndicated loan by eight Nigerian banks to supplement a joint venture between a supermajor (ExxonMobil) and a regional NOC (NNPC) to an \$80 million loan, including a large tranche from the IFC, for an non-regional independent (Kuwait Energy) operating in a middle income country (Egypt) to a common share issue by an indigenous Nigerian energy firm (Oando) on local markets, the market is both diverse and highly segmented. Table A5, based primarily on data from Thomson Reuters, provides a more comprehensive overview of recent deals and reinforces the picture of a market with space for an array of products and actors.

Financing Demand

Recent cases demonstrate that both majors and independents have the capacity to raise upstream development capital from purely commercial, and, in some cases, African only, sources. However, it is less evident that commercial banks have the appetite or the capacity to finance and absorb the full load of demand and risk across the continent.

⁴ United Bank for Africa (UBA) led a consortium of Nigerian banks which included Africa Plc, Oceanic Bank, Standard Chartered Bank, Skye Bank, Zenith Bank, Bank PHB, Access Bank and Union Bank.

The International Energy Agency's World Energy Outlook 2009 noted that "the financial crisis has made it all the more uncertain whether the full energy investment needed in the longer term to meet growing energy needs can be mobilized." In the aftermath of the financial crisis, it is safe to say that, though the outlook may have improved, the projected demand for energy financing remains substantial and daunting. The World Energy Outlook 2009 projected demand for energy investment to reach a cumulative \$26 trillion through 2030 – equal to \$1.1 trillion per year (or 1.4 percent of global GDP). The report went on to observe that "over half of all energy investment worldwide is needed in non-OECD countries, where demand and production are projected to increase fastest." With Africa's share of global oil production increasing, the continent will absorb a good portion of that global energy investment.

A survey of development in the sector (see Table A5) in recent years underlines the volume of capital expenditure required to bring a reserve to production. Looking just at the major headline discoveries of the last few years, development of the offshore Jubilee field required more than \$2.5 billion in commercial financing and over \$3 billion altogether, including DFI and private equity financing, in 2009 alone (see Figure 3). Development of the Lake Albert basin in Uganda is less advanced than the Jubilee project but early projections estimate that Tullow, Total and the China National Offshore Oil Corporation (CNOOC) will together inject at least \$5 billion on the way to bringing the fields to production (Dow Jones Report, 2010). In a transaction with considerably less transparency, another national Chinese oil company, the China National Petroleum Corporation (CNPC), committed \$5 billion in 2008 to develop the 324,000 barrel Agadem reserve in Niger in hopes that the reserve's upside potential would be confirmed (Burgis, 2010).

At \$3 to \$5 billion each, the price tag for development of reserves around the continent mounts up quickly. Considering the growing queue of probable and proven opportunities, including additional blocks offshore from Ghana (the Tweneboa Field currently in late-stage appraisal by Anadarko, Kosmos and Tullow is estimated to contain 1.4 million barrels of oil), the Venus block offshore from Sierra Leone, gas deposits in the Rovuma Basin offshore from Mozambique, not to mention ongoing development in Algeria, Angola, Libya, Nigeria and elsewhere, the future financing needs are massive. Crowding out or displacing of commercial investors by DFIs does not appear to be a realistic concern. Indeed, financing from DFIs is likely to be just a small part of the whole. A more relevant risk for DFIs is that DFI funds will get lost in the bigger picture of massive funding flows buoying the sector and development priorities overlooked. The challenge for DFIs, thus, becomes, as opposed to trying to be present everywhere, to invest selectively and strategically for maximum impact and best development outcomes.

This suggests pursuing transactions which are comparatively less attractive to commercial funders but which have strong potential for development impact. In other words, DFIs should

aim to identify niche segments within the upstream market which balance higher risk, which might discourage purely commercial investors, with higher development returns.

This paper argues that there are two such market segments, or investment tracks. It recommends targeting and selecting transactions that fall in one or both tracks, both of which closely reflect the changing landscape in the upstream oil and gas sector in Africa. The tracks are:

- Transactions in untested and emerging producer countries (e.g. Ghana, Uganda, and Sierra Leone, etc.); and
- Transactions featuring smaller, independent, notably indigenous firms operating in emerging or established producer countries.

In both cases, higher risk is associated with uncertainty about the market or the sponsor rather than the underlying asset which would have been proven and confirmed during exploration. And in both cases, the strategy essentially positions DFIs as first movers, financing growth and catalyzing development returns in unproven markets or untested sponsors.

Figure 4 illustrates this framework for project selection. DFI additionality in transactions in emerging producer countries is represented by check marks along the highlighted row or track labeled, “Emerging Producers.” Likewise, DFI additionality linked to indigenous and independent firms is represented by check marks in the highlighted column labeled, “Indigenous and Independent Firms.” Opportunities falling outside of both tracks are indicated by a cross suggesting less additionality and development impact from DFI financing.

Figure 4: Recommended Upstream Oil and Gas Investment Tracks

	Majors/Non-regional NOCs	Indigenous and Independent Firms	Regional NOCs
Established Producers	X	✓	X
Emerging Producers	✓	✓	✓

Taken together, the two tracks provide a framework or taxonomy for differentiating and selecting from among the pool of potential projects in upstream oil and gas in Africa. This taxonomy is intended as a tool to allow DFIs to take proactive positions and move early in response to new opportunities as well as the needs of countries in the region. Indeed, as a strategy, it tends to fall in line with the IFC’s approach as illustrated by several of the deals

above and in Table A4. For DFIs, adhering to this strategy would entail ensuring, as a condition for moving forward with project evaluation, that potential projects fall in one or both investment tracks. However, it is also understood that DFIs may have additionality outside the two suggested investment tracks when market or exogenous events or other unique circumstances cause investor appetite in the sector to drop.

Contrary, perhaps, to expectations, experience indicates that the middle income producers in North Africa are precisely where smaller operators face the highest barriers to entry. Comparatively less transparent arrangements with governments and more sophisticated and dominant NOCs place smaller, independents at a decided disadvantage. In the context of efforts by Petroceltic, for example, to appraise and develop a promising gas field in south-eastern Algeria, the Middle East Economic Survey reported that “delays in Algeria are almost inevitable,” due to the lack of transparency on approval processes within the country’s regulatory agencies and can be sufficient to sink a small operator (2009).

This strategic approach to project selection, illustrated by the framework in Figure 4, has an additional advantage in that it positions DFIs for long term involvement in the sector, building on upstream transactions as bridges to establishing brand recognition and launching an integrated portfolio with presence in later downstream phases. Getting in early, notably in emerging producer countries, positions DFIs to play the role of first mover at every stage of the value chain as domestic oil and gas industries grow and diversify.

Transactions within the recommended investment tracks are likely to take a variety of forms according to market conditions, deal participants and a range of features unique and individual to each project. Indeed, as DFIs expand their oil and gas practices, their own range of financing products and forms of participation will likely evolve. The taxonomy for project selection described above thus provides the broad contours for a strategy which, in practice, will take different shapes at the transaction level.

Nevertheless, a number of specific variations and themes with strong additionality can be imagined. Concentrating on regional integration, for example, might lead to South-South technology and human capacity transfer by linking NOCs in established producers such as Angola or Libya with NOCs or indigenous firms in emerging producers. Another alternative, discussed further in Box 8, involves working directly with regional NOCs in emerging producers and providing technical assistance for deal development and financial structuring in addition to project loans. This type of assistance might also be extended to indigenous firms. Another mode of participation might explore ways of extending DFI private sector resources by delivering a blend of sovereign and non-sovereign financing where public-private partnership opportunities arise, notably in transactions involving NOCs.

Other types of financial products from DFIs, beyond generic debt or equity solutions, may bring further financial additionality. Bond guarantees to indigenous firms breaking into the industry coupled with technical assistance on currency hedging is one example. Another highly relevant example of a less conventional product is the AfDB's Partial Risk Guarantee (PRG) facility and its use with low income countries. The interface between government and private industry in the oil and gas sector tends to be large compared to other sectors. Revenue transfers, for a start, are massive, and private sector companies in exploration and production are literally obliged to work in partnership with NOCs. A 2007 report by the AfDB described the intersection of natural resources, revenues and policy and government as the "nature-wealth-power framework (144)." Thus, transactions are inherently exposed to policy and governance changes and government risk is a given. This relationship between government and industry is discussed in greater length in the next section, but the PRG facility is one way to mobilize additional commercial funders particularly in countries without an oil and gas history or with smaller, independent sponsors without an established relationship with host governments.

4. Development Additionality

The previous section made a case for DFI financing in specific segments of upstream development of the oil and gas sector. Beyond the financial element of DFI participation, however, a second level of analysis looks at development outcomes linked to transactions and the value of a DFI presence in ensuring high quality results for host countries and communities. This section assesses DFI value addition under three broad categories: policy and governance; social and environmental standards; and local content.

Policy and Governance

This category looks broadly at the ways in which policy and governance impact the oil and gas sector, places DFIs at the center of the nature-wealth-power framework and links DFI additionality with:

- EI related policy and knowledge contributions;
- Multi disciplinary expertise, including fiscal and economic governance, to be leveraged around every transaction; and
- Political risk mitigation.

The discussion also suggests areas where the AfDB may have unique advantages over other DFIs.

As noted earlier, oil and gas discoveries can have a transformational impact on the national economy through the sheer volume of revenues accruing to governments (World Energy Outlook, 2008). Results have shown, however, that the transformation can be negative as well as positive. On the one hand, oil and gas revenues can have a decidedly deleterious effect on national economies notably by distorting incentives to develop non-resource tax revenues or invest in other sectors to diversify the production and export base (Ndikumana and Abderrahim, 2009). On the other hand, well managed revenues can have a catalytic effect and contribute to broad-based gains in national welfare. The direction a country takes is very much determined by decisions at all levels from the policy and legislative framework down to the immediate and practical considerations embedded in individual transactions.

At a policy level, DFIs have the convening power and the knowledge base to bring together stakeholders early and often in discussion of the impact of oil and gas revenues and appropriate national policy frameworks. For DFIs, the earliest hint of oil and gas discoveries at the exploration stage, in non-producing countries in particular, should trigger coordinated outreach with governments to initiate a policy dialogue. The value of such consultation during the very nascent stages of policy development is self evident and can feed into prudent use of oil and gas revenues as well as effective management of public expectations in the national debate.

The AfDB, in particular, has performed this role on several occasions. In 2008, it worked closely with the Government of Uganda to co-sponsor an event aimed at consultation and knowledge sharing in the oil and gas sector (see Box 4). More recently, it sponsored a delegation from Mozambique on a fact finding mission to Ghana and Liberia in June 2010 to learn from and share country experiences related to implementation of the Extractive Industry Transparency Initiative (EITI).

The relevance of this knowledge contribution is particularly strong for oil and gas. Discussion of the “oil curse” and policy measures to counteract it is an evolving debate. DFI research departments may potentially have more visibility on the debate than individual countries and be in a position to ensure that new and innovative concepts such as direct cash distributions to the population, as argued in a recent Center for Global Development Working Paper (Moss and Young, 2009), reach the discussions in emerging producer countries.

Box 4. Oil Revenue Seminar. In July 2008, shortly after the prospect of commercial oil became a reality for Uganda, the Bank partnered with the Government of Uganda to co-convene a two-day National Seminar on Managing Oil Revenue in Uganda. The event provided a forum for broad-based discussion of proposed oil and gas legislation and the sharing of country experiences on the impact of oil on national economies.

Source: AfDB, 2009, *Managing Oil Revenue in Uganda: A Policy Note*

The AfDB's engagement on EI issues more broadly has also been extensive. Its contributions have ranged from developing knowledge products on resource management, sustainable development and EI governance in Africa to mobilizing political will around effective natural resource management in global fora (African Development Bank, 2007: 84-85). In 2010, the AfDB committed to host the African Legal Support Facility (ALSF) designed to assist regional countries in reviewing existing legislation, including frameworks on natural resource management, preparing EI laws and negotiating sound EI contracts (African Development Bank, 2007: 84-85). The need for this input is great. As Ndikumana and Abderrahim observe, "harnessing natural resources for revenue generation is highly *government intensive* and requires a high level of human capital sophistication that is typically lacking in many African countries (2009). Negotiations are often characterized by asymmetrical information that favors international companies at the expense of regional countries. Once again, with regard to policy and negotiations, the emphasis for DFIs should be a coordinated presence early and often promoting sound and competitive royalty and production sharing agreements.

At the same time, the reality of business and government is that policy development at the macro level and transactions at the micro level are often moving forward in parallel. Indeed, policy discussions are very much predicated on the discovery of a reserve. In Ghana, for example, development of the Jubilee field had already begun and deals been signed while the government was still in the process of drafting its Ghana Petroleum Regulatory Authority bill and putting a legislative and regulatory framework in place to govern the oil and gas sector (IFC, Proposed Investments in Kosmos and Tullow, 2009).

A DFI presence at both policy and transaction levels, from the very earliest days of exploration and development, can help to establish a critical flow of information and positive feedback loop between policy and transactions, each feeding into and improving the other, such that policy decisions are informed by practical challenges at transaction level and vice versa (see Box 5). The IFC case in Box 5 illustrates the value addition of DFI presence in upstream transactions: the IFC was present to ensure compliance on the corporate side with international norms and standards and effectively support governments' efforts to ensure transparency of revenues.

Box 5. Revenue Transparency. When the IFC approved a total of \$215 million in loans to Kosmos Energy and Tullow Oil in February 2009 to support the development of Ghana's Jubilee offshore oil and gas field, it required commitments from both companies to disclose all payments to government. At the same time, the Government of Ghana was developing draft legislation (Ghana Petroleum Regulatory Authority bill) containing disclosure requirements. The two events taking place in parallel illustrate the close link between transactions and policy and how each can influence and inform the other.

Source: IFC, Proposed Investments in Kosmos and Tullow, 2009

This aspect of insisting on and supporting the interests of regional member countries, even if participation is linked to an invitation from a private sector investor, highlights a further aspect of value addition of DFIs. The range of facilities and instruments which DFIs can deploy, from capacity building and technical assistance to research, from policy support to financing and sector expertise, not to mention extensive existing relationships on the ground, position DFIs to engage in transactions as *honest brokers* or *total partners*, straddling the interface between private industry, communities and government. Assembling robust inter-departmental project appraisal and investment teams that collectively leverage strengths and relationships from across disciplines and institutional complexes thus serves all stakeholders at a very practical, solutions-oriented and hands-on level.

It can also be argued that the AfDB's unique status on the continent of Africa as "Africa's Bank" may enhance its capacity, relative to other DFIs, to play the role of the total partner, to literally represent all sides. The AfDB is uniquely positioned to simultaneously finance transactions through its private sector window and provide focused guidance to governments without being accused of complicity or double dealing. Indeed, project sponsors and commercial clients of the AfDB may be targeting this dual role when they seek financing.

In the context of oil and gas, this dual role has critical relevance. The volume of revenues flowing to governments raises the stakes and the tensions. Despite the overall optimism around the Jubilee project, for example, confrontations have threatened the timeline and continuity of operations. In February 2010, Reuters reported that "Ghana is at loggerheads with Exxon Mobil over its proposed purchase of a \$4 billion stake in the offshore Jubilee oilfield from Kosmos Energy. Jubilee, with up to 1.8 billion barrels, is due to start pumping in Q4 2010. Ghana National Petroleum Corp (GNPC) wants the stake and has threatened to block Exxon's deal, raising questions over the integrity of contracts (Johnson, 2010)." Meanwhile, in Uganda, the proposed sale of Heritage Oil's stake in Uganda's Lake Albert basin region to Tullow Oil has been delayed for nearly six months due to a dispute between Heritage Oil and the Ugandan Government over payment of capital gains tax (Johnson and Wallis, 2010).

In cases such as this, DFIs are well positioned to provide a vital moderating influence throughout negotiations and the life of transactions. DFI participation can have a positive signaling and confidence building effect. Open transparent transactions and revenue flows to governments improve trust and foster a stronger spirit of partnership on both the public and the private sides of the deal. These gains, in turn, can lead to an atmosphere of reduced political risk. An effective moderating role and a seat at the table, however, are predicated on a funding presence in the transaction.

Social and Environmental Standards

Closely linked to efforts by DFIs to support governments in ensuring corporate compliance with norms and standards related to revenue transparency are similar efforts related to social and environmental standards. The recent massive oil spill following the April 2010 explosion on a BP deep water drilling rig in the Gulf of Mexico illustrates only too well the environmental and social risks inherent to the industry and the essential function of constant vigilance, even in the most sophisticated markets.

In low capacity and under-funded settings, in both low and middle income countries, the challenges are even more apparent. Implementing and enforcing rigorous oversight of the oil and gas industry will require more political will, funding and human capacity than perhaps many countries in Africa are able to marshal. To reinforce the point, a recent Center for Global Development blog emphasized the “lax oversight and enforcement” that characterizes the oil and gas sector in Africa (Moss, 2010).

The risks the sector poses to the environment and to livelihoods and health in surrounding communities are fully felt and documented in regions in Africa where the oil and gas industry is present, notably the Niger Delta region in Nigeria where widespread environmental degradation combined with social upheaval, disaffection and violence illustrate the worst side of the industry. Indeed, the recent heavy media attention given to the spill in the Gulf of Mexico

contrasts starkly with the relative silence around comparable spills in Africa. A May 2010 article in the Guardian Observer noted, for example, that “according to Nigerian federal government figures, there were more than 7000 spills between 1970 and 2000, and there are 2000 official major spillage sites” (Vidal, 2010).

Significant social and environmental risks combined with low institutional financial and human capacity to adequately monitor the industry point to a key area of additionality. While by no means a panacea to the risks and ravages of the sector, a DFI presence in transactions adds an additional element of rigor to social and environmental standards, checks and compliance mechanisms.

Box 6. Oil Spills in Nigeria. The Guardian Observer reported in May 2010 that “more oil is spilled from the [Niger] delta’s network of terminals, pipes, pumping stations and oil platforms every year than has been lost in the Gulf of Mexico,” noting that a 2006 report calculated that up to 1.5 million tons of oil – 50 times the volume spilled by the Exxon Valdez tanker off the coast of Alaska in 1989 – has been spilled in the delta over the past half century.

Source: Vidal, 2010

Both the AfDB and the IFC already have a record of value addition through elevating social and environmental standards in the oil and gas sector. The AfDB's \$150 million corporate loan to the Hasdrubal Oil and Gas Project in Tunisia in 2010 introduced a strengthened Environmental and Social Management System which the AfDB will monitor over the life of the loan. This will yield annual environmental and social reports and raise the quality of oversight in place.

In the same way, the IFC's 2009 loan package to Tullow Oil for development of the Jubilee field insisted on compliance with both the host country's laws and regulations and the IFC's own environment and social performance standards (IFC, Tullow Oil Environment and Social Review Summary, 2009) As part of the financing agreement, Tullow further committed to conduct an assessment of its existing social and environmental safeguards and to introduce measures to improve its practices and standards where a gap appeared with Ghanaian and/or IFC requirements. This becomes even more essential in light of recent accusations against Tullow by Uganda's state run environment authority of "taking inadequate steps to safeguard the environment around drilling sites (Biryabarema, 2010)."

This additionality applies equally to countries with an emerging oil and gas sector, where DFI presence can contribute to a benchmarking of the industry in its nascent stages, as well as more established producers, such as Nigeria, where, despite a more sophisticated oil and gas industry, social and environmental safeguards remain vastly inadequate.

Local Content

Promoting local content is a third key area of DFI value addition. Local content describes the contributions or value addition by indigenous companies through manufacturing or service provision linked to activities in a particular sector, in this case oil and gas (Klueh, 2007). It ranges from catering to environmental services to diving and rig maintenance and constitutes a universe of support industries and services feeding into upstream and downstream aspects of oil and gas production. It is seen as a key, strategic opportunity for increasing local economic activity and developing diversified economies and has major implications for job creation, local capacity and business competitiveness in Africa.

Traditionally, however, capturing linkages in the oil and gas sector has proved more "challenging compared to other productive activities, given the organization of the respective industries and the technological complexity of operations (Klueh, 2007)." Consequently, the realm of oil and gas sector support services tends to be highly consolidated around a few large multinational players, mainly American, that bar entry of local competitors (Klueh, 2007). Unique industry needs, including sophisticated technologies for deep water assets and highly skilled labor, have traditionally excluded indigenous suppliers and service providers from all

aspects of value addition except “non-core oil and gas activities (e.g., insurance, catering) (Klueh, 2007).”

A 2004 study demonstrated that the US is by far the leading supplier of goods and services to the industry, accounting for nearly 50 percent of all global oil and gas service companies (Klueh, 2007). By comparison, the same study revealed that companies in Africa accounted for barely 1 percent.

A 2002 breakdown of the market for support services in Nigeria revealed that of the \$2.8 billion of expenditures on business related to upstream activities, alone, foreign firms captured \$2.4 billion or 85 percent (Klueh, 2007). Table 1 presents this breakdown in terms of absolute numbers and total value of contracts in various oil and gas support industries, distinguishing between Nigerian and foreign-owned companies. The numbers appear dated but the breakdown provides an accurate illustration of the full range of support industries and opportunities linked to the oil and gas sector. More recent data suggests the ratio may be improving slightly, with Nigerian content in the oil and gas sector amounting to 40 percent, but most skilled and white collar jobs are still reported to remain with foreign workers (Onuah, 2010).

Table 1: Contracts in Upstream Oil and Gas in Nigeria in 2002

Type of Contract	Nigerian Owned	Foreign Owned	Total
Consultancy	14	0	14
Drilling and Well Completion	22	38	60
Environmental Services	7	3	10
Exploration	2	14	16
Other	0	3	3
Gas Development	0	3	3
Hotel and Catering	10	5	15
ICT	16	5	21
Procurement	73	13	86
Production Facility Maintenance	48	30	78
Projects/Construction	19	35	54
Transportation	45	42	87
Total Number of Contracts	256	191	447
Contract Value (\$ billions)	0.4	2.4	2.8
Contract Value (%)	14.3	85.7	100

Source: Klueh, 2007

The landscape is changing, however, as governments in Africa are increasingly recognizing the potential of the oil and gas sector beyond mere rents and royalties and exploring and developing policy frameworks to promote local content. Ghana, for example, announced a somewhat ambitious goal of local firms controlling 90% of the service and supply market by 2020 (Asiamah, 2010).

Nigeria, meanwhile, established specific and detailed targets for local content as part of its 2010 Petroleum Industry Bill (PIB), a landmark effort to overhaul, revive and improve the efficiency of the Nigerian oil and gas sector (Offshore Technology, 2010). Signed in April, 2010 by Acting President Goodluck Jonathan, the PIB “seeks to address the compelling need to have indigenous participation in the industry (Onuah, 2010).”

This is a major boon to Nigerian energy services providers, such as Oando, which reported more than \$150 million of oilfield services contracts in 2007 and announced plans to take advantage of the “renewed local content drive in Nigeria (Oando website, 2010).”

In an innovative twist, the legislation is also likely to translate into strong outcomes for the financial sector as well as it “requires multinational firms to keep at least 10 percent of their profits in local accounts (Onuah, 2010).” This is an effort to harness profits from the oil and gas sector as an engine for financial sector development. Supplying banks with more capital, in turn, may improve the lending environment for businesses operating outside the oil and gas sector and constrained by limited access to capital. Thus the local content bill promotes local content, production and entrepreneurship both inside and outside the oil and gas sector and aims to use the oil and gas sector as a driver of broad-based growth.

Building such measures into the legislation is a policy innovation that should also cause other countries to take notice. Indeed, DFIs should be in the lead on promulgating this policy innovation among regional member countries. More generally, DFIs are equally positioned to

Box 7. Local Content in Nigeria: A Policy Model. In 2002, expenditures in Nigeria for services and suppliers to the upstream oil and gas sector totaled \$2.8 billion. Of that, foreign firms captured \$2.4 billion or 85 percent.

In 2010, although estimates suggested that Nigerian content in the oil and gas sector had climbed to 40 percent, the government moved to implement more rigorous local content mandates as part of a complete overhaul of the legislation governing the oil and gas sector.

The Petroleum Industry Bill (PIB), signed into law by Acting President Goodluck Jonathan in April, 2010, “lists in minute detail the number of materials, employees and services that must come from Nigeria.” From stipulating that 65 percent of divers for offshore facilities must be Nigerian to 60 percent of steel ropes be made by local firms to 10 percent of profits by multinationals be held in local accounts, the legislation marks a major shift in policy toward increased indigenous participation and ownership of the industry.

Source: Klueh, 2007; Onuah 2010

be in the vanguard on policy design, driving innovations rather than merely disseminating them. Leonce Ndikumana, Director of the Development Research Department at the AfDB, has suggested that policy makers might consider expanding on the Nigerian model by introducing tax incentives for multinational firms to deposit even higher proportions of profits in long term savings accounts, thereby supplying local banks with long term lending capital and converting oil and gas profits into development of other sectors (Ndikumana (2010) email, 29 July).

DFI value addition at the policy level might also focus on ensuring that local content policy initiatives move at a reasoned and realistic pace, stimulating local content while remaining internationally competitive and attractive to foreign investment. The industry response to the PIB, perhaps not surprisingly, has been largely unenthusiastic (Igbikiowubo et al., 2010). Indeed, the Regional Executive Vice President for Shell suggested that the PIB would force the industry to place \$50 billion in planned upstream investments on hold (Igbikiowubo et al., 2010). In essence, the industry response highlights the fact that targets for local content participation are only effective in so much as they are realistic. A challenge for Nigeria and other countries who take this approach, going forward, will be to mobilize the local resources to meet the new quotas without discouraging foreign investors or undermining the continuity of industry operations (Onuah, 2010).

At the transaction level, DFIs can add value by working with local providers through technical assistance packages linked to transactions to ensure that, indeed, local providers are able to fill the mandate and deliver quality products. The AfDB's Fund for African Private Sector Assistance (FAPA), for example, is frequently deployed in parallel to financing commitments to deliver technical assistance and build capacity in ways that strengthen and accelerate the development of the private sector.

As DFIs explore opportunities in oil and gas, a core objective should be to work from within transactions to foster the growth of world class, "homegrown" support industries and services around the oil and gas sector. Building a world class industry, of course, is a lengthy and gradual process of developing human and technical capacity and climbing the value chain. For many

Box 8. Deal Preparation Assistance to Regional NOCs. A niche area of DFI additionality, linked to capacity building and technical assistance, is in transactions led by NOCs, notably in emerging producers. DFIs are in a position to contribute technical assistance to counteract asymmetries in information, deal preparation skills and human capacity between regional NOCs and their multinational or non-regional NOC partners. NOCs will have a default role in every transaction in the oil and gas sector. Adding value by raising the capacity of regional NOCs to structure and implement deals in the sector is a critical part of DFI contributions to the growth of a world class indigenous oil and gas industry.

companies, it may mean starting with the non-core services such as IT solutions and catering, building up essential business skills and knowledge of the sector and transitioning over time into core services. There is no established formula but technical assistance from DFIs integrated into financing packages is a key factor of additionality.

Local content development also provides a bridge to downstream stages of the sector. In practice, as noted in Box 3, stepping downstream in the value chain may be a natural process of growth as indigenous firms develop more diversified services and products. Companies like Oando demonstrate the potential of an integrated suite of service offerings tailored to every stage of the value chain. This is the model for the multinationals that currently dominate the oil and gas service and support sector and can be applied to developing a group of world class African providers as well.

5. Conclusion and Recommendations

The landscape of oil and gas production in Africa is changing. The biggest producer nations on the continent will continue to dominate (see Tables A1 and A2), but recent and potential discoveries promise to bring a new group of countries onstream in the coming years. This will increase the demand for upstream development finance and pull on funds from all sources, including DFIs.

As a result of the sheer volume of financing required by the sector as well as the joint realities of limited resources and portfolio constraints, DFIs are likely to remain a small piece of the big picture in oil and gas. Indeed, the sector is both vast and highly segmented. Producer nations range from established middle income countries like Algeria and Tunisia to low income emerging producers like Ghana and Uganda. Private players range from supermajors, like BP and ExxonMobil, to smaller indigenous firms private equity funded startups and independents. Regional NOCs range from Sonatrach in Algeria, the largest company in Africa and the 12th largest oil company in the world (Sonatrach website, 2010) to the nascent National Oil Company of Liberia, where offshore oil has yet to be proven.

To avoid getting lost in bigger picture financing flows, DFIs must select and take positions in transactions where they can have an impact. This calls for a proactive and critical approach to deal selection, and by extension, foregoing some opportunities and pursuing others.

This paper takes the position that it is possible to differentiate between opportunities within the upstream oil and gas industry and extract some general criteria to be applied in deal selection. The analysis in Section 3 on Financial Additionality, illustrated in Figure 4, yields two such criteria which define optimal investment tracks for maximizing the impact of DFI funding resources. One track argues for investing in projects in emerging producer countries. The other argues for investing in projects sponsored by indigenous or independent firms.

Emerging Producers – New and emerging producers are changing the oil and gas landscape in Africa, and DFIs can have a profound impact in transactions in this group of countries. Although successful in attracting commercial financing, transactions in these countries carry relatively more risk and uncertainty and are comparatively less attractive to commercial funders than transactions in more established producers around the continent. As noted earlier, the size and life of newly discovered reserves in the emerging producers is also comparatively smaller. DFIs should, therefore, proactively target and pursue positions in transactions in upstream projects in countries with nascent and untested hydrocarbon sectors.

At a practical level, this means dedicating staff resources to monitoring developments in the sector, building visibility and brand recognition within the industry as well as with relevant ministries and NOCs. It means occupying a strategic position at the center of the oil and gas “nature-wealth-power” framework (African Development Bank, 2007: 144), cultivating relationships and, literally, putting *boots on the ground* to build trust and source prospective deals in the early phases of discoveries when governments and companies are first establishing working partnerships.

Indigenous Firms and Independents – A second key segment of the oil and gas market in Africa is defined by small, agile, growth-oriented indigenous and independent firms. In many cases, these are the firms responsible for pioneering new discoveries. They have demonstrated a willingness to take on more risk than the majors, and their discoveries, as in the case of Ghana, can change the outlook for a country and lead to massive revenues to governments. DFIs should promote this segment of the industry by targeting transactions sponsored by “home-grown” firms as well as independents. This approach will contribute to catalyzing the growth of a world class indigenous oil and gas industry, positioning indigenous firms to step downstream in the value chain as well, and help to ensure that funding reaches the smaller players pioneering markets that are comparatively less attractive to commercial banks.

These criteria are intended to serve as loose operational guidelines under business-as-usual conditions (i.e. not in times of financial crisis or otherwise when unique conditions create unique needs) for actively monitoring developments in the upstream sector, targeting opportunities early and pursuing transactions that maximize the additionality of DFIs. For DFIs, implementing these criteria would entail ensuring, as a condition for moving forward, that potential projects fall in one or both investment tracks. At the same time, DFIs might enhance collaboration and complementarities in the sector by jointly building on the knowledge base generated by the AfDB’s ADOA program.

Within these two tracks, DFIs operating in Africa have a record of adding value in three key areas. These are the areas of core strength where DFIs should continue to focus on adding value in future transactions. They are covered in Section 4 on Development Additionality and are as follows:

Policy and Governance – DFIs should be building on a track record of working with governments to foster healthy policy debate around the oil and gas sector. At the policy level, DFIs should be working in concert to maximize knowledge transfer and other complementarities and engaging with new and emerging producers early and often to assist countries in establishing a smart, realistic and enforceable policy and regulatory environment for growth of the sector. Likewise, DFIs, the AfDB in particular, should be actively playing the role of total partners by leveraging tools, notably in governance, EI policy and legal support, and relationships to provide honest broker services, particularly in the early phases of negotiation. DFIs should also strive to bolster and reinforce policy level guidance and presence at the negotiating table with financial participation in transactions to ensure that input reaches all stakeholders at an operational, solutions-oriented and hands-on level.

Social and Environmental Standards – Both the AfDB and the IFC have a record of additionality in social and environmental standards applied to projects in the oil and gas sector. This is an area of core strength for DFIs, and, in light of the environmental record of the industry, is strongly needed both in countries with an emerging oil and gas sector where DFI should contribute to a benchmarking of the industry in its nascent stages, as well as more established and middle income producers, where the more mature oil and gas sectors still perform poorly in social and environmental categories.

Local Content – Capturing a greater share of the service and support industry linked to oil and gas is a growing priority for both regional governments and indigenous firms. Moreover, a broader interpretation of local content looks at how to engage the oil and gas sector as an engine for growth in non resource sectors as well and aims at establishing incentives to encourage reinvestment by multinationals firms of a portion of the profits from oil and gas production in the financial sectors of producer countries. This approach, as pioneered in Nigeria, could be instrumental in supplying capital and long term finance for economic diversification, innovation and expansion of the production base outside the natural resource value chain (Ndikumana and Abderrahim, 2009).

At the policy level, DFIs should be adding value by sharing legislative lessons and models among regional member countries but also by leading on designing workable and realistic policy suggestions designed to promote local content as well as to harness a portion of the profits from the oil and gas sector for diversification of the local economy.

DFIs should also be complementing project finance with technical assistance packages. This is a way of working from within transactions to foster the growth of world class, “homegrown” support industries and services around the oil and gas sector and represents a core element of local content value addition for DFIs. This contributes to job creation, enhanced local capacity and skills and improves business competitiveness in Africa.

Table A1: Crude oil reserves and production by established producers

Established Oil Producers	Crude Oil Reserves (billion barrels)	2008 (crude oil production, million barrels per day)	2015 (projected production, million barrels per day)
Algeria	12.2	2.2	2.6
Angola	9.0	2.0	2.4
Cameroon	0.2	0.1	0.08 ¹
Chad	1.5	0.1	0.1
Congo (Brazzaville)	1.6	0.2	0.3
DRC	0.2	0.02	0.02 ¹
Cote d'Ivoire	0.1	0.06	0.6
Egypt	3.7	0.6	0.5 ¹
Equatorial Guinea	1.1	0.4	0.4
Gabon	2.0	0.25	0.2
Libya	43.6	1.9	1.7
Mauritania	0.1	0.01	0.01
Nigeria	36.2	2.2	2.8
Sudan	5.0	0.5	0.5
Tunisia	0.4	0.1	0.1 ¹
Total	116.90	10.64	12.30

Sources: US EIA (International Energy Outlook 2010) unless otherwise noted; ¹ Reuters estimates

Table A2: Estimated crude oil reserves and production by emerging producers

Emerging and Potential Oil Producers	Estimated Crude Oil Reserves (billion barrels)	2008 (crude oil production, million barrels per day)	2015 (projected production, million barrels per day)
Ghana	3.2 ¹	-	0.2
Kenya	1.5 ²	-	No estimate avail.
Liberia	No estimate avail.	-	0.2
Mozambique	3.0 ³	-	No estimate avail.
Niger	0.3 ⁴	-	0.02
Sao Tome and Principe	1.0 ⁵	-	No estimate avail.
Sierra Leone	No estimate avail.	-	0.2
Somalia	4.0 ²	-	No estimate avail.
Tanzania	No estimate avail.	-	0.1
Uganda	2.0 ⁶	-	0.13
Total	15.00	-	0.85
Total (Tables A1 and A2)	131.90	-	13.15

Sources: Reuters estimates unless otherwise noted; ¹ Credit Suisse; ² Lion Energy; ³ allAfrica.com; ⁴ Financial Times; ⁵ multiple sources estimate 1 billion plus barrel reserves; ⁶ Tullow Oil

Table A3: AfDB Portfolio Snapshot

Date	Country	Name	Phase	Description	Investment (\$ millions)	Total Cost (\$ millions)
3/10	Egypt	ERC	Downstream	Construction of facility to produce Euro V diesel and high octane gasoline	200 (debt) 25 (sub loan)	3,600
3/10	Tunisia	Hasdrubal	Upstream/ Downstream	Construction of offshore production and onshore processing facilities	150 (corporate loan)	1300
2003	Mozambique/ South Africa	Sasol Natural Gas	Upstream/ Midstream/ Downstream	Development and Temane and Pande gas fields and construction of processing and infrastructure facilities	80 (debt)	977
2002	Nigeria	Nigeria LNG	Downstream	Expansion of LNG plant	100 (debt)	2120

Source: AfDB Private Sector Portfolio Management Division, 2010

Table A4: IFC Portfolio Snapshot

Date	Country	Name	Phase	Description	Investment (\$ millions)	Total Cost (\$ millions)
5/10	Egypt	ERC	Downstream	Construction of facility to produce Euro V diesel and high octane gasoline	100 (equity)	3,600
4/10	Ghana	Jubilee FPSO	Upstream	Floating Production, Storage and Offloading (FPSO) facility	50 (debt) 519 (B loan) 60 (equity)	875
12/09	Nigeria	Linetrade LPG	Midstream	Greenfield Liquefied Petroleum Gas terminal and associated infrastructure	10 (equity)	80
7/09	Egypt	Kuwait Energy	Upstream	Exploration and development of oil fields	35 (debt)	80
2/09	Ghana	Tullow Oil	Upstream	Development of Jubilee Field	115 (debt)	2000
2/09	Ghana	Kosmos Energy	Upstream	Development of Jubilee Field	100 (debt)	1075
12/08	Tunisia	Topic	Upstream	Exploration and development of oil assets by independent indigenous company	30 (debt/eq)	63
7/06	Nigeria	Eleme Petrochemicals	Downstream	Return Eleme to profitability	75 (debt) 80 (B loan)	385
4/06	Egypt	Rally	Upstream	Development of Issaran Field	25 (debt/eq)	90
6/05	Gabon	VAALCO Gabon	Upstream	Development of Etame Field	35 (debt)	239
4/05	Nigeria	Afren	Upstream	Financing for indigenous exploration and production company	1 (equity)	5.7

Source: IFC Oil and Gas, 2010

Table A5: Upstream Loan Transactions (2007 – 2010)

Date	Country	Sponsor	Description	Value (\$ millions)	DFI Participation
4/10	Ghana	MODEC	Floating Production, Storage and Offtaking (FPSO) for Jubilee Field	875	Y (IFC)
3/10	Nigeria	Afren	Development of offshore oil fields Ebok, Okwok and OML 115	450	N
3/10 ^{1,2}	Egypt	ERC	Construction of facility to produce Euro V diesel and high octane gasoline	3600	Y (AfDB and IFC)
3/10 ¹	Tunisia	ETAP	Construction of offshore and onshore production and processing facilities	1300	Y (AfDB)
1/10	Uganda	Tullow	Payment guarantee for pre-emption of Heritage Oil interest in licenses in Uganda	1550	N
12/09	Ghana	Kosmos Energy	Development of Jubilee Field	75	N
11/09	Nigeria	Afren	developing wells in south-east Nigeria and the Ivory Coast	175	N
7/09	Nigeria	Bumi Armada	FPSO facility for operation in Nigeria's first indigenous deepwater discovery	190	N
7/09	Ghana	Kosmos Energy	Development of Jubilee Field	750	Y (IFC)
7/09 ²	Egypt	Kuwait Energy	Development of oil fields	80	Y (IFC)
4/09	Nigeria	Afren	Development of oil field	127	N
3/09	Ghana	Tullow Oil	Development of Jubilee Field	2000	Y (IFC)
2/09	Gabon	Maurel & Prom	Development and production of oil at the Onal Field	500	N
12/08 ²	Tunisia	Topic	Development of oil fields	63	Y (IFC)
9/08	Angola	Mitsui OSK Lines Ltd	construction of the four LNG ships needed for the Angola LNG scheme	800	N
5/08	Nigeria	Addax Petroleum	Refinancing and expansion of Okwori exploration	450	N
4/08	Angola	SBM Offshore, Vernon Angolan	FPSO	510	N
11/07	Angola	SBM Offshore	FPSO	294	N
10/07	DRC	Burren Energy	Oil and gas exploration and production	500	N
9/07	Egypt	Rally Energy	Development of the Issaran heavy crude oil field	600	Y (IFC)
5/07	Nigeria	Afren	Development of the Okoro and Setu oil fields	200	N
4/07	Nigeria	Addax Petroleum	Refinancing and expansion of Okwori exploration	1600	N

Source: Thomson Reuters unless otherwise indicated; ¹ AfDB; ² IFC

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