



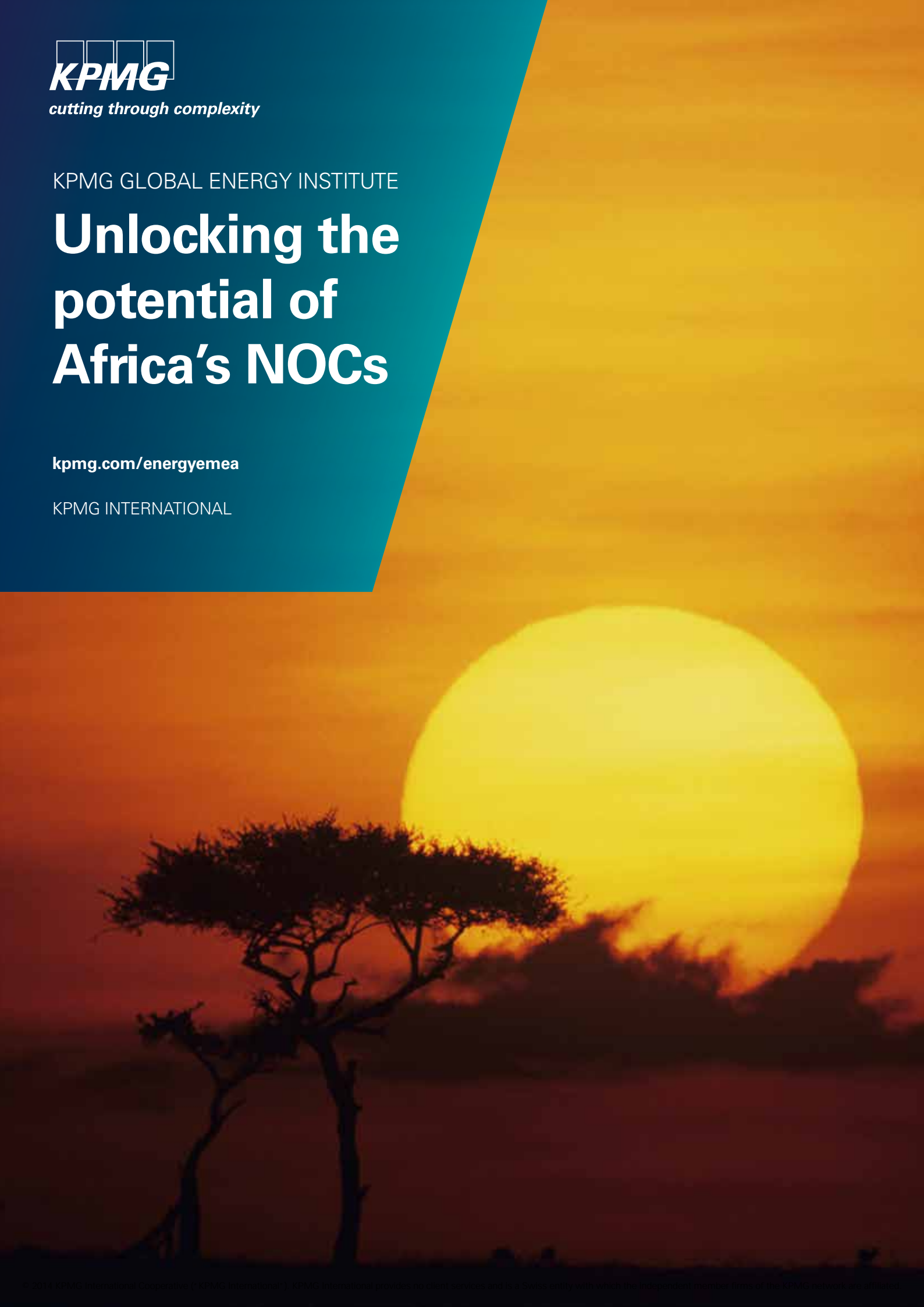
*cutting through complexity*

KPMG GLOBAL ENERGY INSTITUTE

# Unlocking the potential of Africa's NOCs

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# Executive summary



Major oil and gas discoveries have opened new exploration plays in East Africa and offshore West Africa. Equally, ever-expanding energy requirements from domestic markets support the commercialization of these discoveries in Africa. Against this background, African governments want to ensure greater national participation in their upstream petroleum sector. As a result, many are creating national oil companies (NOCs) or restructuring their current NOC to take on greater operational roles and responsibilities.

However, many NOCs in these emerging producer countries are struggling to establish themselves. A key issue they face relates to the lack of clarity around the cost of fulfilling their mandate. Too often they are given an ambitious mandate – in particular, to become an upstream operator, which is not in line with existing geological, financial and human resources. The result is that the NOC's stewardship of oil and gas reserves may be sub-optimal and risks the vision of creating national champions that drive a broader development agenda not being met.

KPMG International conducted a study to investigate the growth strategies and growing-pains of NOCs. The following study focuses on how well NOCs in emerging producer countries in Africa, those which are in pre-exploration, exploration and early development phases, are dealing with the development of technical skills and know-how. The report sheds light on a few key aspects of what governments and NOCs need to know when mandating various new roles to an NOC.

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*Questions addressed: What resources do NOCs require to fulfil their mandate? Is there a mismatch between the roles they are tasked to do and the means they are given to implement it?*

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Becoming an upstream operator is particularly demanding in terms of financial commitments and involves organizational changes to the form and functions that NOCs have traditionally had in Africa. Prior to these discoveries many have been limited to supporting pre-exploration work, data management, licensing, overseeing regulations, fiscal systems and running downstream operations.

Managing recruitment and skills development was also consistently identified as a major challenge in emerging producer countries. Because the petroleum sector is so new to the country there are often not enough qualified and experienced potential employees. Equally, NOCs are frequently constrained by civil service rules, making it difficult to compete with other industries and companies for national talent.

The study outlines five key recommendations for government. These include: governments understanding what different NOC roles cost; governments and the NOCs reviewing the state of the resource base; governments approving finance model; governments introducing strong accounting and reporting standards; and government and NOC investing strategically. Clarity on these core issues will allow governments to do a better job of assigning roles to the NOC and planning for future resource needs.

In conducting this study, Valérie Marcel interviewed a selection of African NOCs about the challenges related to fulfilling their mandate. Discussions tackled issues around the various revenue streams available to them and staffing challenges in the new sector.<sup>1</sup> The insights gained from discussions with executives are invaluable, providing important information not found in the public domain about how emerging producers are financed and where they are headed. The direction for the study was guided by the unique discussions and research that emerged from Chatham House's New Petroleum Producers Discussion Group, in which 20 emerging producers reviewed what policy options were most appropriate in the first stages of resource development.<sup>2</sup> The study also draws heavily on the extensive knowledge and analysis of KPMG's Global Oil & Gas Team. Based in 12 strategic locations around the world, the Global Oil & Gas Team advises national governments, NOCs and international oil companies on a wide range of petroleum sector issues.

## How to help ensure state objectives of effective national participation are achieved

This study takes a look at the strategic challenges for governments and NOCs in new and near producers (Ghana, Uganda, and Mozambique), those that have recently made discoveries, (Kenya, Liberia and Tanzania) and countries that are exploring (Namibia and the Seychelles).

Across Africa, governments are creating new NOCs. Natoil in Uganda, for instance, is being set-up to ensure national participation in newly-discovered petroleum resources.

But while a great deal of interest is generated in understanding the roles for new NOCs being set-up, some of the biggest challenges lie with the restructuring of a large number of NOCs created when their countries had little or no upstream activity. TPDC in Tanzania was incorporated in 1969, the Kenya NOC and ENH of Mozambique were created in 1981, Ghana's GNPC in 1983, and NAMCOR of Namibia in 1991. Since the early years of their establishment, the mandate of these NOCs has changed – often several times over. NOCs roles have alternated between upstream and downstream responsibilities depending on the relative importance of the promotion of exploration acreage and security of supply.

The objective for many governments is to now make their NOC an operator, an ambition typically shared by the NOCs. This policy response stems from concerns that international operators choices may not be in the national interest, possibly not investing as much in local human capital and infrastructure development as a NOC operator might. This goal is driven by a desire to emulate successful peers, such as Brazil or Malaysia and also to satisfy domestic expectations of national control over the prized petroleum sector.

Some governments have also taken this chance to separate out responsibilities for the downstream sector from their NOC (the Seychelles and Ghana), while others have maintained their position in downstream (Kenya). Either way, a clear vision for the sector from government is critical, as the challenges for setting up a new NOC operator are significant.

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### Form follows function: Having clear state objectives for the NOC

Governments want a national champion - one which can drive exploration interest, monitor the activities of foreign oil companies, and demonstrate to citizens the capable involvement of nationals in the sector.

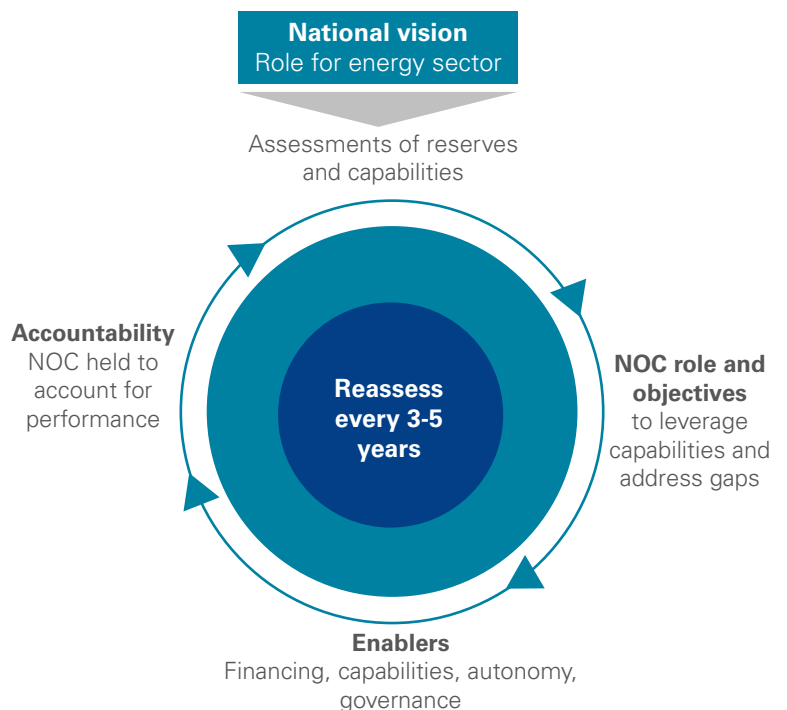
But overly ambitious national priorities sometimes lead government to task the NOC with a role that is above its capabilities, leading to confusing and sometimes conflicting roles in the sector. Without an agreed upon mandate, the NOC lacks support in government to access public funds or third party finance.

In this rush to establish national champions, government may give roles to the NOC without a clear view of the cost and time required to build operator competences. Equally, without a clear statement of the NOC mission and strategy it will be impossible to make staffing decisions, assess what is appropriate technology, evaluate and propose development plans, raise finance, manage large projects, and assess geological and financial risks. In practice if these NOCs struggle to establish themselves because of poor planning and insufficient resources, the goal of operatorship will remain out of reach - much to the dissatisfaction of government and detriment of the industry.

### Potential state objectives

- Maximizing revenues for the state**
- Maintaining security of supply**
- Assisting with national control of the country's resources**
- Assisting with the implementation of economic development**
- Providing affordable domestic energy**
- Promoting social welfare**
- Developing an oil and gas knowledge center**

### Key considerations for prioritization and development of NOC mission and strategy

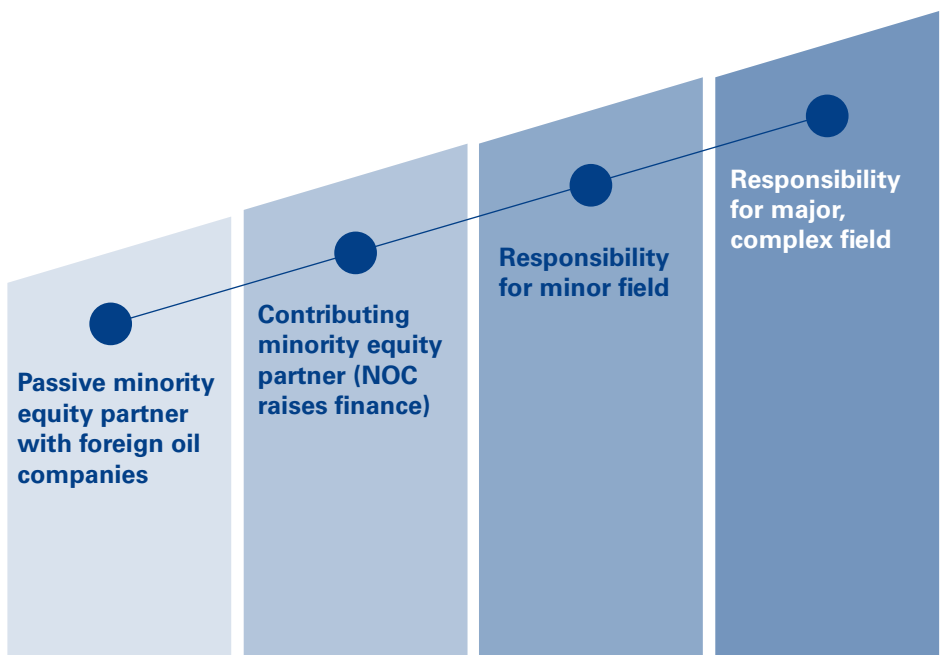


## Maintaining an unwavering strategic focus on people, costs and time in **developing NOC capacity**

This study outlines the range of human resources, costs and time required to build up operational capabilities at four key stages in NOC development. The four different stages illustrated below apply to both new NOCs being set-up and existing NOCs undergoing restructuring.

Reaching each new milestone involves a step-change in capacity that requires investments in time, money and people. This section highlights some of the main challenges at each of the stages.

### **The four key stages of a NOC – from passive investor to responsibility for a major, complex field**



Source: Presentation of Guidelines for Good Governance in Emerging Oil and Gas Producers, Chatham House, 2014.



### Stage 1 – Passive NOC with minority stakes and sometimes a State agency role

There is a wide range of human resource profiles among NOCs with minority stakes just starting out in developing operational capabilities. Some NOCs in the pre-discovery phase have between 2 and 14 technical staff, supported by twice the number of non-technical staff. Others boast larger contingents of technical staff, upwards of 40-50.

The greatest differentiators in scale are the level of exploration activity as well as the NOC's mandate. A NOC's human resource requirements will be greater if it has a state agency role of promotion of acreage or management of geological data, or if their country is experiencing strong exploration interest. This is the case especially in the early stages of developing the resources many NOCs in Africa are tasked with being a steward of the resource base on behalf of the state. Carrying out this role effectively requires dedicated staff and budgets, and governments need to understand the human, technical and financial investment required.

The discoveries made recently in Kenya have significantly increased the administrative burden of regulating the sector. The NOC of Kenya is transferring regulatory responsibilities to the state. The company's Head of Corporate Planning and Strategy, Ken Mugambi Kiumbe, explained, "While we have previously handled some regulatory aspects on behalf of the Government, our focus is on entrenching ourselves on the commercial side. We are already struggling with the limited capacity on the commercial side so we want to focus our limited resources on that."

For the NOC in Kenya this also meant a major change in focus for the company. As Ken Mugambi Kiumbe explained, "The majority of our manpower is in the downstream. We needed to build capability in the upstream. We previously had between 20 and 25 staff that were technical upstream. We have recently engaged a further 34 staff in the upstream division who we have now sent for postgraduate oil and gas courses in the leading universities globally as a key measure to build our capacity for the future."

Managing geological data is a state agency role that many NOCs want to retain because data sales can generate significant revenues during exploration. This role also has the benefit of helping the NOC develop its technical capability and gives



*The majority of our manpower is in the downstream. We needed to build capability in the upstream.*

Ken Mugambi Kiumbe  
Head of Corporate  
Planning & Strategy



it a good understanding of the country's specific geology. At the outset, fulfilling this mandate does require investments in technical capacity and infrastructure. NAMCOR, for instance, invested approximately \$700,000 on the required infrastructure and an additional \$700,000 on the software.

After discoveries are made, NOCs need to increase their technical capabilities. The case of Ghana's GNPC helps to illustrate the human resources required to manage a basin with active exploration and development programs. As the Ministry of Energy's technical and business advisor, GNPC had a staff of 900 in the early 2000s, before discoveries were made. In 2002 it was required to abandon non-petroleum activities, to focus on its core upstream business. Sam Addo Nortey, Principal Auditor for the company and member of the Ghana EITI Steering Committee, explained that this transition caused the company to scale down staff to less than 100. After oil discoveries were made in 2007, however, staff strength doubled to over 250 employees. Similarly, in Liberia, legislation under legislative review would take regulatory and licensing responsibilities away from NOCAL. The company expects to reduce its staff of 146 by three quarters if it only has a commercial function.

**The study found that NOCs in the pre-discovery phase should seek to keep their costs low because the resource base cannot promise future work for the NOC.**

Government funding is the first and last stop for most NOCs in the pre-production phase. Most new NOCs are provided seed funding in their first years. Inevitably, when faced with a cash crunch, NOCs turn again to government funding. For instance, when the Namibian NOC, NAMCOR, faced bankruptcy as a result of a poorly designed gasoline import deal with Glencore in 2010, the government bailed out the company. However, for many NOCs government budget allocations are not perceived as reliable enough for planning purposes. They periodically dry up and public funds are diverted to more pressing development priorities.

*Transition caused the company to scale down staff.*

Sam Addo Nortey  
GNPC

### *Downstream levies and commissions from the import mandate often account for one-third of revenues of African NOCs*

When government funds are insufficient to meet operational costs, NOCs lobby government to earmark new sources of finance or become creative in their own search for revenue streams. It is not uncommon for NOCs to invest outside the petroleum sector. Many African NOCs are also given an import mandate or allowed to charge a levy on the sale of petroleum products, so that they can generate funds outside the government's budget. Downstream levies and commissions from the import mandate often account for one third of revenues of African NOCs without upstream production.

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## *Two-thirds of African NOCs revenue largely come from data sales and payments from operators*

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The remaining two-thirds of their revenue largely come from data sales and payments from operators, such as signature bonuses. There is competition for these revenue streams and the ministry of petroleum or the petroleum administration may fight to take them back, in a bid to access capital to raise their capacity. For instance, the reform bill under review in Liberia proposes to set up a new agency to handle licensing and regulation, funded through the upstream revenue streams NOCAL presently retains, except for sales of geological data.

Naturally, income from data sales and payments from operators is also contingent on the level of exploration interest and the government deciding to hold licensing rounds. Countries with some exploration interest can collect approximately US\$6 million per year from data sales, with hotter exploration plays like Liberia receiving up to US\$10-15 million in the range of US\$18 million.<sup>3</sup> Signature bonuses and bidding round payments are also in that range.

### **Stage 2 – Contributing NOC equity partner post-discovery**

Post discovery, new opportunities appear, but securing the necessary capital can be a challenge. As geological risk declines in these countries, NOCs want to increase their stakes or acquire stakes in new licenses. For example, GNPC won a commercial loan from the World Bank in 2009 to raise its carried interest in Jubilee to 13.75 percent (10 percent carried, 3.64 percent equity participation). When production began this loan was paid back from GNPC's share of oil.

When reserves are commercially proven, NOCs must finance their back in participation. Access to equity markets is obviously improved at this stage – more so when assets are in the production phase – yet the scale of finance needed can be daunting for emerging NOCs.

Again, the example of GNPC in Ghana illustrates the financial and operational step change required in moving from a carried minority partner to a contributing minority partner. GNPC has minority stakes in licenses under exploration and others in the production phase. As a result of its equity share in the field development, GNPC will have invested requirements of over US\$1 billion over the next 10 years. During the peak years of 2014 - 2017, GNPC's investment requirements will average over US\$200 million per year because of the simultaneous development of TEN and Sankofa fields.

In most cases, the petroleum agreements allow GNPC's capital requirements to be financed by oil company partners, in exchange for a reduced share of future petroleum production. However, this only delays, rather than eliminates, GNPC's capital obligations. GNPC must also now pay a share of operating costs corresponding to its carried and additional participating interests in each field. For Jubilee alone, GNPC's share of operating costs is estimated at US\$62 million per year. However, once the new fields are producing, this figure will grow to roughly US\$150 million per year or more. Operating costs plus capital costs average roughly US\$180 million per year over the next 10 years.<sup>4</sup>

In Mozambique, ENH faces similar challenges. While banks have approached the NOC to help arrange financing for its stake in the offshore gas and LNG development,<sup>5</sup> it may prove difficult to raise the scale of capital required. NOC Kenya is considering a combination of means to finance its minority stake in proven fields, including exploring the possibility of shareholder loans, reserve-based lending and partially floated bonds, explained the Head of Corporate Planning & Strategy, Ken Mugambi Kiumbe.

### Stage 3 - NOCs taking on responsibility of operatorship

When countries enter the production phase, NOC operational ambitions grow and so does their staff. For NOCs reaching the milestone of operatorship, one of the major step changes required is in developing technical skills.

An operator with a production of 100,000bd will require approximately 100 technical staff, with the specialisms of geology and geophysics in the exploration phase, drilling and completion engineering in the development phase, and reservoir engineering and production engineering in the production phase. It will also need at least an equal number of non-technical staff, covering human resources requirements such as accounting, finance, marketing, economics, information and communication technology (ICT) specialists, corporate responsibility, human resources, secretarial, etc.<sup>6</sup>



*Current funding of 30 percent from the PRMA inadequate. Like other NOCs in Africa the GNPC has to compete with other government priorities to obtain funding. More radical funding is required to execute the mandate effectively and exhaustively.*

Sam Addo Nortey  
GNPC



GNPC has embarked on an ambitious growth strategy to become a stand-alone operator in 7 years. The company estimates total expenditure for the first eight years between US\$4.5 billion-11.4 billion, depending on how aggressively it pursues growth. The law sets the maximum share of net revenue from participating interests that GNPC can receive at 55 percent, but government practice has been to allocate 30-40 percent of such revenue to GNPC. GNPC's Sam Addo Nortey calls the "current funding of 30 percent from the PRMA<sup>7</sup> inadequate. Like other NOCs in Africa the GNPC has to compete with other government priorities to obtain funding. More radical funding is required to execute the mandate effectively and exhaustively." Retained earnings from petroleum production can meet approximately one quarter to one half of capital requirements (depending on the strategy chosen), which means the company will need to secure finance from international capital markets. GNPC will need government support for this.

#### Stage 4 – NOC responsibility for major complex fields

The ramp-up in commercial and technical skills takes time. It took Statoil 7 years to take on a minor operatorship and 14 years to become a major operator. Over the first 17 years of its history Statoil built up a workforce of 8,000 people, taking eight years before it turned a profit.<sup>8</sup>

In Africa, Sonangol P&P, the upstream subsidiary of Sonangol, took just three years to move from operatorship of very small fields to complex fields in Angola (Block 3). It was supported in the process by external consultants who were seconded in as staff to help build up competences and establish processes quickly. But cementing the operator skills within the company takes time and consultants continue to support it in its operations. It is important to note that Sonangol P&P's strong growth strategy was unimpeded by access to finance, thanks to the parent company's retained earnings from oil sales.



# Five key recommendations to governments and NOCs



National participation in the development of the country's resource base is an important goal throughout Africa. To move beyond a symbolic presence in the upstream and play an effective, meaningful role, national oil companies require a clear mandate and sufficient resources, and the support of government.

This study has identified five key recommendations for governments to maximize the chances of success for newly established NOCs or those undergoing restructuring:

1. Government must understand what different NOC roles cost in their specific national context.
2. Government and the NOC should review the state of the resource base, available capabilities and possible revenue streams, and task the NOC with a role that it has the capability to execute and the state can afford. Any plans to expand the NOC's role should be in line with the development of the resource (with discoveries and production).
3. Government should approve an explicit financing model for the agreed NOC roles, clarifying what revenues the NOC can generate from the downstream and/or upstream business.
4. Government should introduce strong accounting and reporting standards to ensure good governance of the NOC. This increases the government's ability to know what it is spending, and in turn trust in the NOC, and is a pre-requisite for accessing third party finance (equity or debt).
5. Government and NOC should invest strategically in skills development.

## **1. Government must understand what different NOC roles cost in their specific national context**

The resources and time involved in the expansion of the NOC's role can be significant. To make good decisions about the role the NOC should play, governments require a clear understanding of the capital and time needed for it to develop into an effective player in the national petroleum sector.

There is no one-size-fits-all plan for this. The investments required will depend on a country's capacity levels in the following areas:

- Capable state administration and effective legislative framework to regulate the petroleum sector<sup>9</sup>;
- The level of oil sector experience of key personnel;

- Existing or potential relationships with foreign oil companies and service providers;
- Specialized higher education in geosciences, geology, engineering – how many graduates of higher education are there per year in these fields?; and
- Primary and secondary national education.

**In the most conducive national environment, developing solid operator capabilities takes a minimum of 7 years, and 15 plus years otherwise.**

**2. Government and NOC should review the state of the resource base, available capabilities and possible revenue streams, and task the NOC with a role that it has the capability to execute and the state can afford.**

The strategic ambitions of NOCs and the mandate they are given by government must be in line with the potential size of available revenue streams. Governments and NOCs must first assess whether the resource base warrants the investment in developing operational capabilities.

We have reviewed some of the revenue streams available to NOCs in the pre-discovery phase, post-discovery and once in production. Realistically, no revenue stream will be sufficient for an NOC to engage in a growth strategy towards operatorship until there are significant proved discoveries in the country, which increase the value of its minority stakes – and the debt incurred to pay for these minority stakes has been paid off by production revenues.

**The goal of operating in the upstream should be delayed until discoveries promise a reserve lifespan that is longer than the time it would take to develop these capabilities.**

Eddy Belle, PetroSeychelles CEO, explains this point well, “We are not in a growth stage. We must stay lean until we make discoveries. Otherwise, you train people and then they are disheartened because they don’t have enough work to keep them busy.”

Many African countries without discoveries have NOCs which have little to keep them busy, except for overseeing their carried minority stakes. These NOCs must either stay lean, with government and company ambitions well in check, or be assigned a state agency role and allowed to expand.

*Discover more:  
Being the best: Inside the intelligent finance function*



*We must stay lean until we make discoveries.*

Eddy Belle,  
PetroSeychelles CEO



*Discover more: Time for a more holistic approach to talent risk*



The pragmatic view that an NOC can act on behalf of the state for promotion and data management in the early stages of resource development is gaining ground. While historically this was viewed negatively, current thinking recognizes some of the advantages of an NOC taking on a state agency role in countries with low state capacity and without discoveries.<sup>10</sup> In these cases, concentrating responsibilities for overseeing the sector in one body has the advantage of building sector capacity and exerting effective national control over the sector more quickly. NOCs are often able to establish their own hiring procedures, training and benefits packages and meritocratic promotion procedures, which make it easier to attract and retain highly-skilled staff to perform the crucial oversight role.

Also, by concentrating resources and authority within the NOC, the leadership can minimize the number of players who need to be involved with important decisions regarding the sector. This can promote policy coherence and efficiency. However, even with just a state agency role, the NOC's budget and ambition should be kept in line with available resources and expected returns from the sector. In the exploration phase, the NOC will require funds to deepen its competences in geology and geological engineering, but costs should be controlled until discoveries are made.

When discoveries are large enough for the NOC to aspire to an operational role, its regulatory responsibilities should be transferred to a government agency, to avoid a conflict of interest.

### **3. It is critical for governments to approve an explicit financing model for NOCs**

The petroleum sector is capital intensive, especially when countries begin to produce. Petroleum ministry officials and NOC executives have highlighted the difficulty they face in convincing their counterparts in the Ministry of Finance and Treasury to allocate the necessary capital to the NOC because they do not understand its financial requirements.<sup>12</sup> Another common concern relates to expenditure rules governing salaries in state-owned enterprises (SOEs); these negatively affect NAMCOR's ability to compete with the better-established mining sector for qualified technical candidates. TPDC and GNPC's strategic plans are hindered by cumbersome public procurement rules.<sup>13</sup>

Similarly, a challenge specific to NOCs without production revenues is the lack of reliable revenue streams that complicates forward planning. Upstream revenues from data sales and payments from operators will necessarily be cyclical and outside of the control of NOCs – namely in response to exploration interest and the occurrence of a licensing round. Similarly, downstream levies, import mandates and government allocations fluctuate with the political will of government.

Another problem typical in the pre-production phase is that when revenues do not allow NOCs to pursue their growth strategy, they create new revenue streams, sometimes to the detriment of other organizations or companies. For instance, when NOCs become active in industrial areas outside their core business (in view



of generating revenues), they take potential business away from the private sector or responsibilities from the public sector. In other cases, NOCs lobby government to receive more payments from operators.

To enable NOCs to be competitive, governments must approve an explicit and enabling financing model for NOCs. This will clarify revenues the NOC can generate from the downstream and/or upstream business. These must be sufficient to finance the agreed upon NOC role. With an explicit financing model that establishes revenue streams for the medium-term, NOCs should map out a human resource strategy for building competences in line with what they've been tasked to do.

#### 4. Introducing strong accounting and reporting standards improves the governance of the NOC

As the capacity of the NOC grows, however, there is a risk that the state does not develop the capacity to hold it to account for its performance. NOCs must maintain financial and operational accounts that the state can understand and access in a timely way. And the state administration must invest in developing its auditing capacity. It is crucial that strong accountability processes are in place and state capacity to oversee the NOC grows in line with the sector. The value of having an effective agent to oversee the sector declines when nobody is able to hold it accountable.

#### 5. Government and NOC should invest strategically in skills development

Having identified their recruitment needs, almost all the NOC executives surveyed for this study identified skills shortages as a key factor holding back their growth strategy and one of their biggest challenges. As Ken Mugambi Kiumbe from NOC Kenya explained, "We don't have the capacity to do all that we want to do. We are building our upstream capacity, but also need to build our capability to structure financing. We need to strengthen our legal function to effectively negotiate complex contractual agreements." NAMCOR's CEO, Obeth Kandjoze, explained that the company had doubled its staff in one year, as part of its strategy of developing operator capabilities. However, the national talent pool is small and the NOC struggles to compete with the more established mining sector for technical staff.

Training too is a high priority for the NOC executives interviewed. Many have significant training budgets:

- NOCAL's manpower training budget for 2013-2014 was US\$8 million, for a staff of 146.<sup>15</sup> This amounts to US\$54,794 per employee and 28 percent of the company's total expenditure.
- TPDC allocated US\$2.49 million to training for staff of approximately 110.<sup>16</sup>
- GNPC plans to spend US\$34 million per year to develop its capacity.<sup>17</sup>



*National talent pool is small and the NOC struggles to compete.*

Obeth Kandjoze  
Namcor's CEO



While a share of this training budget is paid for by operator payments, the scale of this spending still stands in contrast to other more established operator NOCs. Ecopetrol, the national oil company of Colombia, for example, is an established operator and spent US\$14.67 million for the development of 6,774 employees in 2012, which amounts to \$2,166 per employee.<sup>18</sup>

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### *Untargeted, scattered, uncoordinated*

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One African NOC executive acknowledged that most training was “untargeted, scattered, uncoordinated”. The training was not directed by the company’s strategy but haphazard and driven by employee wishes. A problem many NOC executives discussed in interviews was that the skills acquired abroad were not utilized by the company when the employees returned to work.<sup>19</sup>

Large financial investments can easily be wasted and deliver few tangible results if companies are unable to:

- 1) Identify skill gaps in the company
- 2) Select training programs that fill specific gaps
- 3) Understand and test the employee/executive’s acquired skills
- 4) Utilize the skills in the employee/executive’s job

It’s also important to draw on the expertise that partners can offer. NOCs that have joined other private groups in partnership have benefited from the mixing of business cultures, as well as knowledge and skills transfer. A key lesson learned in GNPC was that the company’s active role in the Joint Development Committee Meetings was an important opportunity for learning from oil company partners.

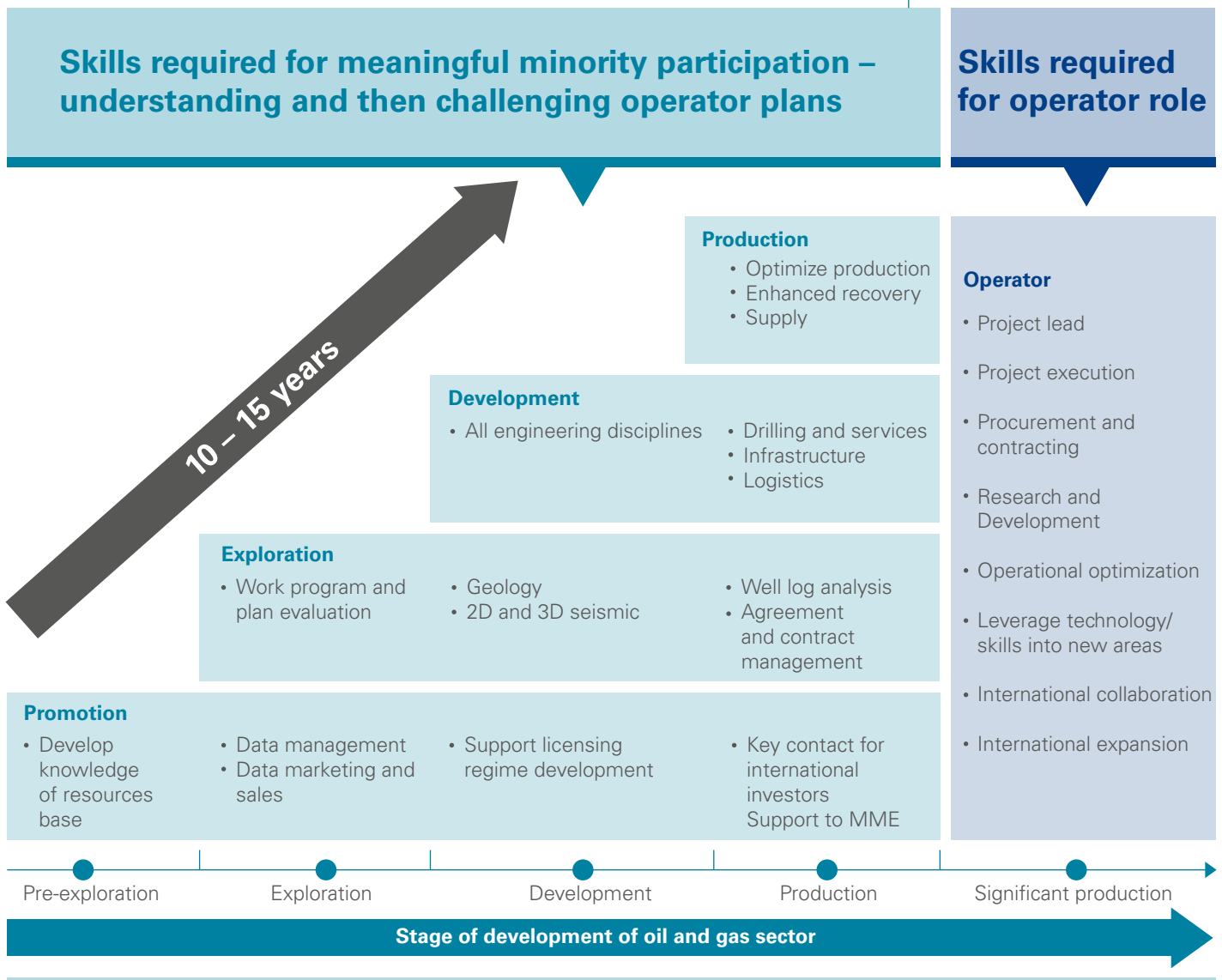
Another effective strategy is to second NOC employees into the IOC teams on various assets in all stages including exploration. NOC employees should watch the IOCs process data, plan seismic programs, etc. They should aim to have people at all levels working side-by-side with the foreign oil company partners at every stage of the process.

To invest strategically in human and technical development, emerging producers need a clear view of what capabilities they have and what skills will be called on at each stage of development of the resource. But several executives interviewed for this study noted the difficulty of ramping up the right skills at the right pace in uncertain environments. Obeth Kandjoze, CEO of NAMCOR, commented, “We ought to know exactly how many technical staff we need.”

It is a complex exercise to determine the skills needed for each stage of development of the resource (exploration, development, and production), for the type of geology (offshore versus onshore) and for each role the NOC is tasked with (to oversee or monitor operations by foreign oil companies or to manage geological data, for example). It will also be effected by the type of reserves, the level of interest from foreign oil companies and number of active work programs, existing human capacity, and also available financing.

**So, as the resource base develops, NOCs must conduct careful manpower planning to map out the skills needed for each phase of the development of the resources.** As the figure below illustrates, the call on specific human resources varies considerably over time.

National aspirations would see NOCs in emerging producing countries play a strong role in the upstream sector, overseeing foreign operators and eventually competing with them; they would be expected to drive the development of local supply chains and help develop national capabilities. Looking to the NOC to play a meaningful and effective role in the upstream is achievable. But what such a role entails in practice has to be carefully assessed - so as to reveal what capacity is required and how much it will cost to develop it - and then reassessed again over time, as the resource base develops. Unlocking the potential of African NOCs will require a clear mandate and sufficient resources, and the support of government.



# Appendix 1

## Profile of selected emerging African NOCs

NOC	Policy or Regulatory role	Commercial/ Operational role	Current Activities	Stage of upstream development	Number of Employees
<b>ENH, Mozambique</b>	No (separate regulator INP)	Medium to long-term goal. Holds minority carried stakes.	Upstream	Development of significant gas finds	111 employees
<b>GNPC, Ghana</b>	Previously advisor to the Minister of Energy and informal regulatory role. Regulatory responsibilities now handled by a new independent regulator (Petroleum Commission).	Plans to be standalone operator in 7 years and a world class operator in 15 years.	Upstream	Ghana's total oil production in 2013 was 99,190bd <sup>20</sup>	253 employees at the end of 2013
<b>NAMCOR, Namibia</b>	Yes. Data management and petroleum storage	Majority stake in Kudu gas field, for which seeks farm in partners. Company strategy to develop operator capabilities.	Upstream, storage, retail, import	Development plan for Kudu gas field. Exploration	99 employees (50 percent technical).
<b>Natoil, Uganda</b>	No (separate regulator)	Long-term focus of strategy	Upstream	Near production of significant oil finds	To be established
<b>NOCAL, Liberia</b>	Yes. Regulator and concessionaire. New bill under legislative review would remove these roles.	Not at present	Upstream	Potential commercial oil discovery	146 employees
<b>NOC Kenya</b>	Yes. Has played regulatory role; but wants to relinquish these roles - apart from data sales, to focus on commercial role.	Operates exploration block (Block 14-T). No immediate plans to operate other fields in which they hold a minority stake. But has future plans to grow operatorship.	Integrated company with strong downstream activities.	Working on development plans for discoveries made in 2012 (to prove final commerciality).	250 employees; 20 percent are technical upstream.
<b>PetroSeychelles, The Republic of Seychelles</b>	Regulator and concessionaire	Not at present	Upstream	Exploration	11 employees; 2 are technical upstream

# Appendix 2

## How NOCs finance their activities

### GNPC, Ghana

**Government:** Initial capitalization

**Upstream:** Retained earnings from crude oil sales (via the PRMA)

**Third party finance:** Loans and equity finance

**Diversified business:** Gold mining and cocoa farming (1990s) and Drilling and rigging services (1990s), Telecommunications (1990 to date)

GNPC has been able to fund some of its expansion through retained earnings. Jubilee ramped up to an average daily production rate of 80,000 bd in 2011. Currently, GNPC receives (by virtue of the Petroleum Revenue Management Act) a portion of the revenue from participating interests, equal to its share of capital and operating costs plus a portion of the net revenue after deducting such costs. Between 2013 and 2017, these revenues will provide GNPC with an average of US\$150 million per year. When new fields come into production, this figure will grow to over US\$400 million per year. The PRMA is set to last for 15.5 years starting from 2011. This additional cash allocation is meant to capitalize GNPC so it can engage in new exploration and production ventures.<sup>21</sup>

### NAMCOR, Namibia

#### Government funding

**Downstream:** Import mandate: on and off; Downstream levy: on and off

**Upstream:** Data sales; Signature bonus on license farm in; Retained earnings

**Third party finance:** Loan and equity markets

Public funds have supported the company throughout its history. At various times, the Namibian government allowed a levy on a liter of gasoline to allow NAMCOR to raise finance to cover operational costs. NAMCOR could not retain the levy for long, as a result of competition within the government administration for the revenues. NAMCOR also benefitted from an import mandate of 50 percent of Namibia's fuel requirements. The company took a commission on the fuel imported by foreign oil companies, but lost the mandate after its ballooning debt forced the government to bail it out in 2010.

The company is focusing increasingly on upstream revenues. Data sales generated US\$7 million last year, according to Obeth Kandjoze, CEO, NAMCOR. The company won the approval from government to take on licenses at no cost, which it in turn promotes in view of finding partners to farm in. It retains the signature bonus. These payments amounted to US\$7-9 million last year.

## Natoil, Uganda

**Government:** Initial capitalisation

The government intends to finance Natoil initially. It will allocate a budget in the range of US\$5.2 to 7.8 million over the first five years of the company's establishment.<sup>22</sup> Natoil will also hold rights to acquire up to 15 percent stake in oil fields being developed by Tullow Oil, Total and CNOOC. It will also manage a state participation in the refinery and pipeline under development. Stakes will be carried to production and recovered from the licensees' cost oil.<sup>23</sup> With significant proved reserves, Ugandan licenses offer Natoil a greater chance of self-finance from retained earnings in the medium-term.

## NOCAL, Liberia

**Government funding**

**Upstream:** Data sales; Bidding round payments; Signature payments by operators; and Farm in transaction fees

The company's main revenue stream has been data sales, which amounts to approximately half of its revenues. Other upstream revenues fluctuate. If the bill currently under review passes, the company will lose all upstream revenues, except for data sales.

## NOC Kenya

**Government funding**

**Downstream:** Retail and distribution; Import mandate: on and off

**Upstream:** Data sales

**Third party finance:** Equity markets; Oil company partners loans

At various times, NOC Kenya relied on an import mandate and government funding. But the downstream business has since grown into the main revenue generator for the company.<sup>24</sup>

NOC Kenya wishes to relinquish its role as the concessionaire and regulator, but hopes to retain its responsibility for and revenues from the data center. However, in relation to revenues generated from its downstream activities, the upstream data sales "are really insignificant," says Ken Mugambi Kiumbe, the company's Head of Strategic Planning.

NOC Kenya has been able to meet its financial requirements in recent years with a mix of commercial debt and partnership arrangements.

## PetroSeychelles, The Republic of Seychelles

**Upstream:** Payments from operators (surface rent, petroleum fund); Data sales; Government finance will be available only when necessary.

## TPDC, Tanzania

**Government:** Annual allocation

**Upstream:** Retained earnings; Payments from operators (training fee)

**Third party finance:** Loans and equity finance.

Source of corporate funding has been through annual parliamentary budgetary allocations and the 50 percent of gas sales. Funding is "inconsistent."<sup>25</sup>

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# Endnotes

1. Valérie Marcel interviewed the following people: Obeth Mbui Kandjoze, Managing Director, Namcor, Namibia; Ken Mugambi Kiumbe, Head of Corporate Planning and Strategy, National Oil Corporation of Kenya; Eddy Belle, CEO, Petroseseychelles; Sam Addo Nortey, Chief Audit Officer, GNPC, Ghana; Off-the-record discussions with an executive at a leading oil services company and several NOCs.
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3. NOCAL, 2012/2013 Budget Performance (2013). [http://www.nocal.com.lr/about-nocal/budgets\\_annual\\_reports](http://www.nocal.com.lr/about-nocal/budgets_annual_reports) [Accessed 24 October 2014]
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5. <http://www.bloomberg.com/news/2013-11-11/mozambique-seeks-bigger-stake-in-anadarko-eni-gas-fields.html>
6. Schlumberger Business Consulting, Oil and Gas Human Resource Benchmark 2013.
7. Under the terms of the Petroleum Revenue Management Act (PRMA), all petroleum revenue is deposited into a consolidated Petroleum Holding Fund. The PRMA allocates a portion of the revenue coming from participating interests to GNPC. This allocation consists of GNPC's participating equity share of capital and operating costs, plus a portion of the net revenue after deducting such costs (World Bank, 2013).
8. "Guidelines for Good Governance in Emerging Oil and Gas Producers," Chatham House, September 2013. <http://www.chathamhouse.org/publications/papers/view/194059>
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10. This was a recommendation of Chatham House's project New Petroleum Producers Discussion Group. It is also the recommendation of KPMG's Global NOC Team in certain country circumstances.
11. New Petroleum Producers Discussion Group, Chatham House, 12-13 May 2014, London.
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17. New Petroleum Producers Discussion Group, Chatham House, 12-13 May 2014, London.
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22. According to a confidential plan, the total estimated budget, including salaries for the first five years are Shs13 billion (US\$5.2 million), Shs16 billion (US\$6.4 million), Shs19.6 billion (US\$7.8 million), Shs19.2 billion (US\$7.7 million) and Shs19.5 billion (US\$7.8 million), respectively. Available at: <http://www.monitor.co.ug/News/National/Oil-company-boss-to-earn-Shs51m-monthly/-/688334/1925528/-/item/1/-/xjfnek/-/index.html> (Accessed 7 July 2014).
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# Biographies



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