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Mineral & Petroleum Resources Development Act (''MPRDA'')

Offshore Petroleum Comments to DMR Portfolio Committee

Prepared by Standard Bank

5 September 2013

Standard Bank

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NOTE : The words she/he may be used to collectively refer to an investor / juristic entity without gender bias

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Standard Bank is pleased to discuss offshore aspects of the MPRDA with the Committee

Overview

- Standard Bank is pleased to present to the Department of Mineral Resources ("**DMR**") Portfolio Committee (''**the Committee**'') on the proposed Mineral and Petroleum Resources Development Act ("**MPRDA**")
- In this presentation, we focus our attention solely on South Africa's developing **deep offshore** Oil & Gas (''**O&G**'') industry and make no comments about the mining elements of the MPRDA or **onshore** shale/CBM
- For clarity, Standard Bank confirms it does not have any equity interest in any prospective O&G license in South Africa, whether conventional or unconventional
- We are seeking to provide our comments from what we see as being in the long-term economic interests of South Africa, which as SA's leading bank we feel it is important to comment upon

Commercial Observations

Key points

We have several commercial/financial concerns with the MPRDA. These exclude other legal/control concerns which we believe others will raise

Section 3 outlines the financial impact of the MPRDA on offshore

If offshore is successful, Section 4 shows its potential economic impact on South Africa

Section 5 outlines a few suggestions on finalising the MPRDA's offshore elements

MPRDA Concerns

- The MPRDA includes a number of provisions which materially affect the offshore industry from a commercial and financial perspective (we leave control/legal issues for others). For example:
  - Changing the State's 10% participation to a lifetime free carry of 10%. This has the effective effect of an increase in exploration/development risk and tax take (from the investor perspective)
  - Changing the BEE element from 10% to 26% is likely to reduce the size and timing of investor cash flows (if we assume the participants will need to be funded by loans funded by the investor. This case is different if the financing is arranged separately)
  - A potential State option to buy incremental equity may also be dilutive depending on the valuation of the purchase price. Moreover, un-clarified beneficiation objectives create cash flow uncertainty
  - In essence, we feel the MPRDA should be an optimisation exercise. Resources are owned by South Africans before and after the MPRDA Bill and should be optimised for their benefit. As drafted, we feel the MPRDA could materially affect the offshore industry
- We see it as being critical to unlock the value of the resource for South Africans by bringing investors (OilCo's) who have the necessary financial resources, technology and skills for this scale of projects
- The proposed changes impact negatively on the viability of exploration and production from the investors (OilCo's) perspective, based on internal analysis that Standard Bank has undertaken (**Section 3**).
- Standard Bank has a concern that the scale of the proposed value transfer for an unproven offshore frontier market with OilCo's revenues still 8-10 years away may lead to investors favouring other markets instead of South Africa and not making the investment
- If this happens, Standard Bank has a concern that South Africa may miss out on the numerous potential benefits that offshore oil may bring South Africa (**Section 4**) which have been calculated by our internal economists and which research note is attached
- Lastly, following the above analysis, we make a suggestion as to how South Africa could tackle the offshore element of the MPRDA (**Section 5**) in order to optimise its chances of success for all South Africans over the forthcoming years

Standard Bank

Commercial Observations

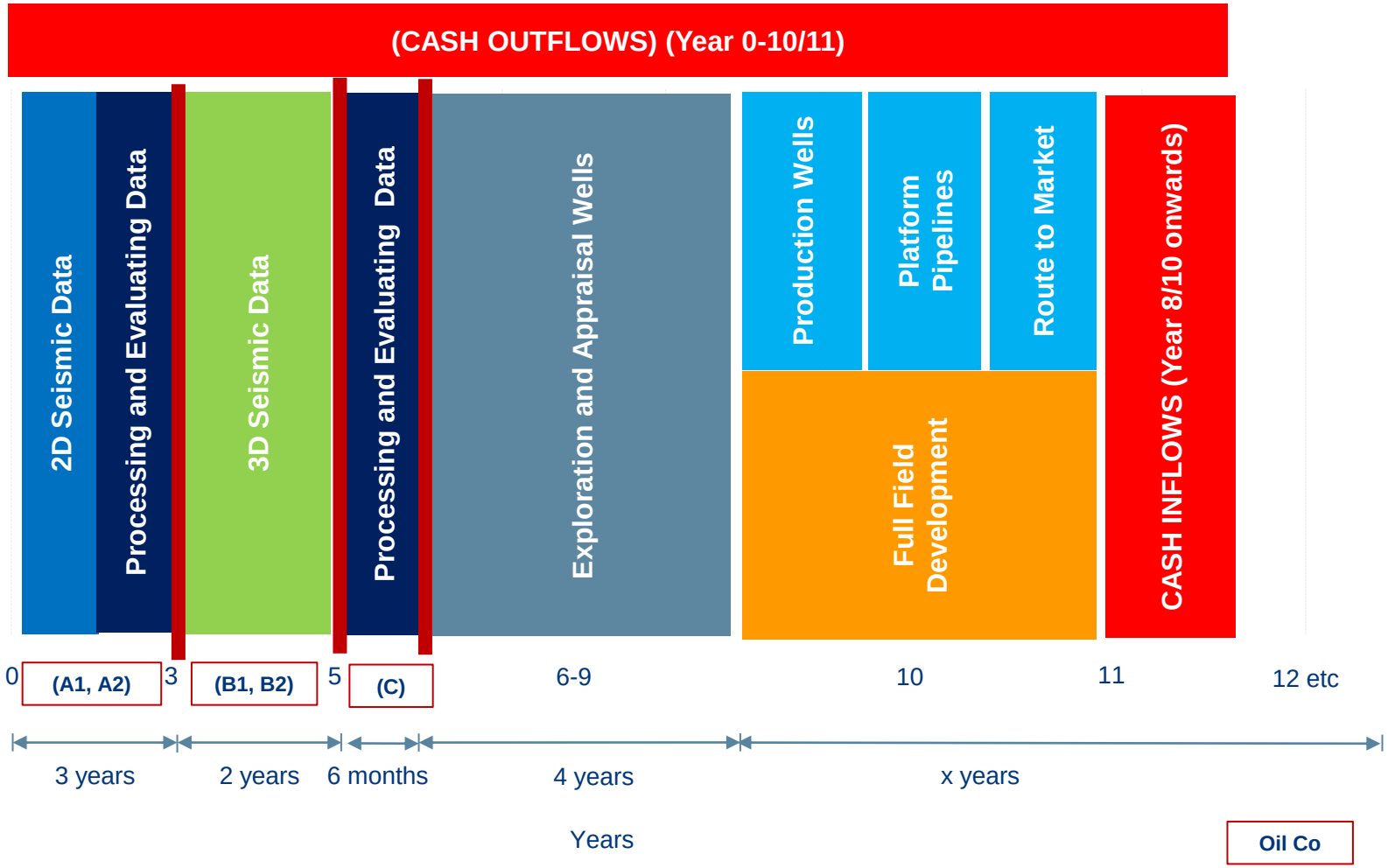
Key points

Understanding the upstream industry timetable is a vital tool for scoping the size of the market opportunity and the appropriate fiscal terms

As a fast benchmark – Mozambique LNG will probably produce first gas in 2019, with the first exploration well drilled in early 2010. Anadarko was awarded the Area 1 licence in 2006

Recall though, Eskom's Medupi was initiated in 2004 (Project Alpha), Unit 1 will come online in 2014 and completion not until 2017-2019 window. Similar?

Appreciating the Upstream Timetable



The longer the timeframe until cash inflows, the more riskier the investment (due to the time value of money) and the more certainty is needed around fiscal terms (to ensure that if the development works, it will be profitable). We show above our understanding of where the SA players are on the timeline

Commercial Observations

Key points

Comparing SA offshore to Mining Projects

Mining projects are typically quick to first cash flows, significantly quicker than offshore

Open cast projects range between 1 – 5 years. Only a pure greenfield, underground project could have a development timeframe near to offshore's present position

From a cost perspective, mining developments are around 10 – 20% of offshore developments

- Open Cast (Coal)
  - 1 – 3 years to first cash flows, if the coal is sold to Eskom
- Open Cast (Others)
  - For example, Manganese (most), Chrome, Iron Ore - 3 – 5 years to first cash flows
  - Delaying factor may be dependence upon infrastructure expenditure
- Underground (Existing Geology/Developments)
  - For example, Gold, Platinum, Manganese (minority)
  - 5- 7 years to first cash flows
- Underground (Greenfield)
  - For example, no previous mine at location, limited prior information on geology - 7-10 years to first cash flows
- Offshore costs significantly more:
  - Standard Bank estimates that offshore developments typically cost a factor of 5 – 10 times more than greenfield mining projects
  - For example, the USD 2 billion offshore exploration cost assumption would more than fund entire West African iron ore projects plus 250kms of railway lines
  - Compared to the offshore sector's major exploration risk, SA's geology is well defined. The main risk pertains to the possibility of a lower quality deposit (poorer grades) being found which, coupled with volatile commodity prices, means cash flows are adversely impacted

Compared to offshore Oil & Gas developments, SA mining projects are onshore with a significantly shorter development timeframe and a significantly lower capital cost. This factor needs to be borne in mind in considering the offshore industry's perspective upon the source MPRDA legislation

Indicative Financial Modelling

Key points

Based on conversations with the industry, Standard Bank sought to model a discussion MPRDA scenario where SA develops a field of a small scale (150/300 mn bbl) ranging up to a broadly ''Jubilee Field'' (Ghana) sized development (1 bn bbl) at an unspecified offshore location

To do so, requires multiple exploration wells before a field development programme is initiated

Assumptions

- Deep offshore field (eg water depth 750-3000 m)
  - 3 Different scenarios outputs:
    - 150 mn barrels (''bbl'');
    - 300 mn bbl and
    - 1bn bbl of oil, (all gas excluded)
  - 25 year life
- Capital Investment
  - Exploration **$2bn over 7 years for all 3 scenarios**
    - Seismic $500mn
    - 10 well drilling program $1.5bn
  - Field Development
    - **$4bn over 3 years for 150 mn bbl**
    - **$4.25bn over 3 years for 300 mn bbl**
    - **$5bn over 3 years for 1 bn bbl**
- Average Production
  - 16 438 bbl per day ("pd'') for 150 mn bbl
  - 32 877 bbl pd for 300 mn bbl
  - 109 589 bbl pd for 1 bn bbl
- Operating assumptions
  - $100 per bbl; 5% operating cost
- Tax Incentive
  - 100%/50% uplift on exploration/development
- Royalties
  - 0.5 + [earnings before interest and taxes/(gross sales in respect of refined mineral resources x 12.5)] x 100
  - Limited to 5%

Indicative Financial Modelling

Key points

The amended MPRDA envisages OilCo; BEE and The State invest at different times for different risk profiles

From our perspective, this has material implications for required returns

We use NPV to determine the viability of an investment. The NPV should be greater than zero for a positive investment

Return Profile

- The MPRDA envisages major differences in terms of the stage when an individual party invests and the associated risk profile they face

- Broadly speaking:
  - OilCo is required to invest first and to take unfettered Exploration Risk. For this, he will require a commercial return reflective of the Exploration Risk (i.e. The risk that nothing is found or that sub-economic resources are discovered) and the subsequent Field Development Risk
  - Through the intended lifetime free carry, The State does not take any Exploration Risk or Field Development Risk
  - Similarly, the BEE party is not intended to take Exploration Risk. For Field Development Risk, the position depends on whether the BEE party can secure its own funding (at its own risk and cost) or whether it raises funding from a third party (whether from OilCo, DFI or a third party funder)

OILCO • Takes pure Exploration Risk, followed by Field Development Risk	**TIMING** • Starts spending money from Year 0 (hence invests at the earliest point)
The State • Does not take any Exploration or Field Development Risk	**TIMING** • Lifetime free carry under new MPRDA
BEE • Does not take any Exploration Risk • Faces Development Risk only	**TIMING** • Starts spending money from Field Development stage, (e.g. Year 6)

In summary, if an Investor is being asked to take Exploration Risk his required return will be higher than if they are simply taking Development Risk Similarly, due to the time value of money, an investor investing earlier will have a higher return requirement than an investor investing later

Indicative Financial Modelling

Key points

Required economic returns differ for each shareholder based on their different risk profiles

Return Profile Continued.....

- **''The State''**
  - Cash Outflows
    - Post exploration investment and Invests when de-risked by OilCo
    - **Therefore, 5% discount rate selected as net return requirement**
  - Cash Inflows
    - Royalties
    - Tax
    - Return on investment
- **"BEE''**
  - 10% or 26% equity share (Note R537bn corporate BEE raised 1994-2013 for **corporate** deals)
  - Facilitated investment @8.5% cost (SA prime rate) and de-risked upon facilitation
  - **Therefore, 5% discount rate selected as net return requirement**
  - **2 Scenarios where BEE fund their development costs themselves and 12.5% discount rate selected**
- **''OilCo''**
  - Carries exploration risk
  - Funding state and providing BEE facilitation
  - **20% IRR/Discount Rate targeted**

Indicative Financial Modelling – Shareholding Scenarios

Key points

We assume there is a 1 in 10 chance of success during the exploration phase. Or alternatively, there is a 90% failure rate during the exploration phase

From a shareholder perspective, the current MPRDA is the base line for which the new MPRDA should be compared.

We have developed five MPRDA scenarios based upon the provisions

– Scenario 1.1 and 1.3 relates to the Govt Carry

– Scenario 1.2 relates to the different treatment of BEE proposed by the MPRDA

– Scenario 1.4 and 1.5 relates to BEE funding its own share of development cost

		Current MPRDA	Scenario 1.1 (current with 10% Govt Free Carry)	Scenario 1.2 (1.1 with 26% BEE)	Scenario 1.3 (1.1 with 15% Govt Free Carry)	Scenario 1.4 (current with BEE funding itself and a 12.5% discount rate)	Scenario 1.5 (1.2 with BEE funding itself and a 12.5% discount rate)
Exploration	Government	Zero	Zero	Zero	Zero	Zero	Zero
	BEE	10% funded carry	10% funded carry	26% funded carry	10% funded carry	10% funded carry	26% funded carry
	OilCo	100%	100%	100%	100%	100%	100%
Development	Government	10%	Zero	Zero	Zero	10%	Zero
	BEE	10% funded carry	10% funded carry	26% funded carry	10% funded carry	10% self funded	26% self funded
	OilCo	90%	100%	100%	100%	80%	74%
% of Returns	Government	10%	10%	10%	15%	10%	10%
	BEE	10% post loan repayments	10% post loan repayments	26% post loan repayments	10% post loan repayments	10% post loan repayments	26% post loan repayments
	OilCo	80%	80%	64%	75%	80%	64%

Standard Bank

Investment decisions are based on economic outcomes

Key points

The State is economically viable in all cases due to its low/no risk investment and tax and royalty income

150mn bbl

- OilCo is very uneconomic so may not invest

- BEE loans cannot be repaid across field life

300mn bbl

- Although OilCo's economic objectives are not achieved, they may invest

- With a 26% funded carry, BEE is strongly economic

1000mn bbl

- *10% BEE self funded investment is less economic in relation to other scenarios*
- *OilCo's objectives achieved*

Field Size mn bbl		Current	Scenario 1.1	Scenario 1.2	Scenario 1.3	Scenario 1.4	Scenario 1.5
150	SA Inc						
	BEE						
	OilCo						
300	SA Inc						
	BEE						
	OilCo						
1000	SA Inc						
	BEE						
	OilCo						

Legend

Very uneconomic	
Slightly uneconomic	
Economic	
Strongly Economic	

OilCo's are not incentivised to invest in uneconomical or marginal cases
Shareholders mostly lose out as a result with South Africa forgoing investment and the accompanying economic benefits

Indicative Financial Modelling

Key points

In theory, BEE can either fund themselves or receive funding from OilCo or another third party

BEE funding itself is likely to be subject to financial limitations for the risk profile

BEE funding itself result in significant less returns for BEE shareholders

Relationship between Government and BEE objectives and financial outcome

- Under the current structure and possible scenarios there exist a relationship between Government and the BEE funding components given that the OilCo is assumed to fund both components (ultimately, there will be a legal obligation to have a BEE shareholding)
- In the event BEE shareholders raise funding from the OilCo, there are no funding implications for the fiscus (BEE pays back the Oil Co at an assumed [8.5%] rate), although OilCo's returns are impacted
- If BEE funding is not raised from the OilCo, the scale of BEE self-funding is likely to be limited (N.B. BEE deals to date have largely been for going concern corporates
- If BEE funds itself, there are significantly lower returns for BEE. Under the 150 mn bbl output scenario the returns for BEE are negative which will lead to reduced investment appetite from BEE players and reduced funding appetite (the money cannot be repaid).
- Across all scenarios, if BEE self-funds (or raises funds from a third party), OilCo's returns increase (as it does not have to fund BEE).

BEE funding itself has a major effect on its returns. If funded by anyone other than OilCo, OilCo's returns increase

Initial Economic Discussion

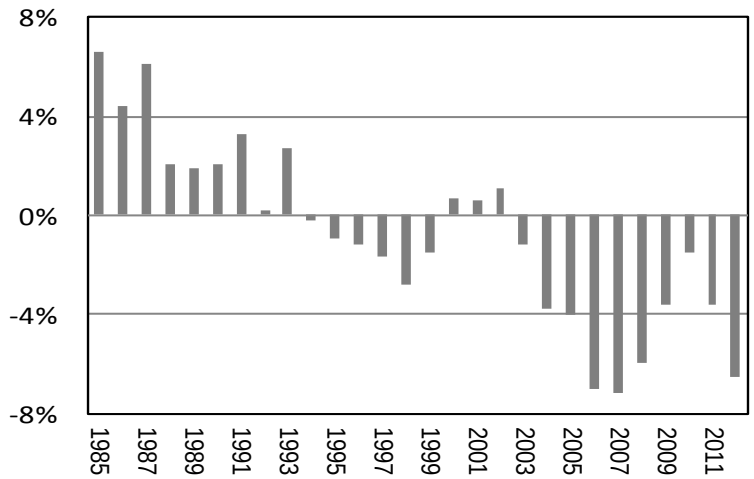
Key points

Wiping out the Current Account deficit would likely lead to a more stable currency

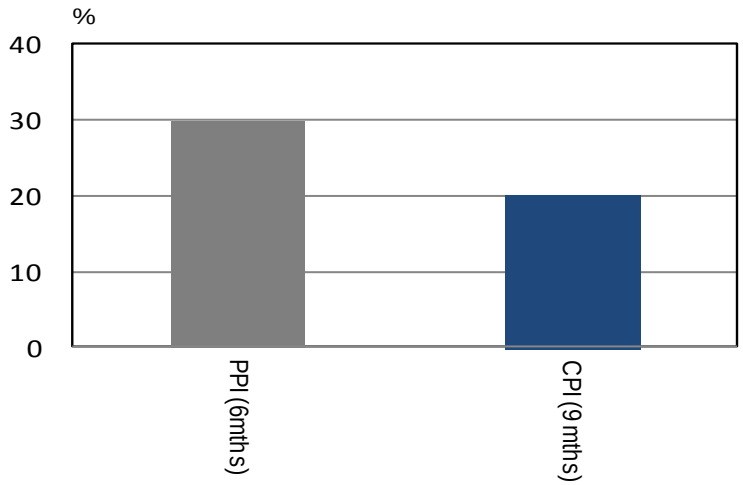
Impact on Current Account

- In this report we consider an example of **total** offshore oilfield developments producing around 450kbd (thousand barrels per day) — a number comparable to other offshore developments in Africa. While the size of such an oilfield is small in the global context, for South Africa there are potentially large implications of producing this much crude oil domestically.
- Should South Africa be able to produce 450kbd domestically, it could potentially wipe out roughly ZAR169bn worth of our merchandise imports(specifically crude oil and refined products), which means that the current account deficit as a percentage of GDP could be reduced to **-0.9%.**
- In addition, a more balanced current account due to reduced reliance on oil imports could see greater stability in current account balances as imports will be less subject to the volatility of global oil prices and currency movements.
- The main advantage of a smaller and possibly more stable current account deficit is a potentially more stable currency.

SA current account as a % of GDP



Exchange rate pass-through into prices



Sources: SARB

Initial Economic Discussion

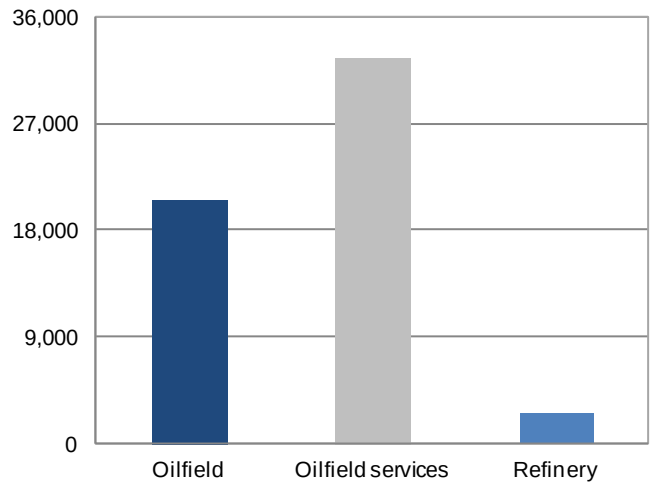
Key points

Developing offshore oil would lead to a domestic oil field services industry, creating wealth and jobs

Investment and Employment

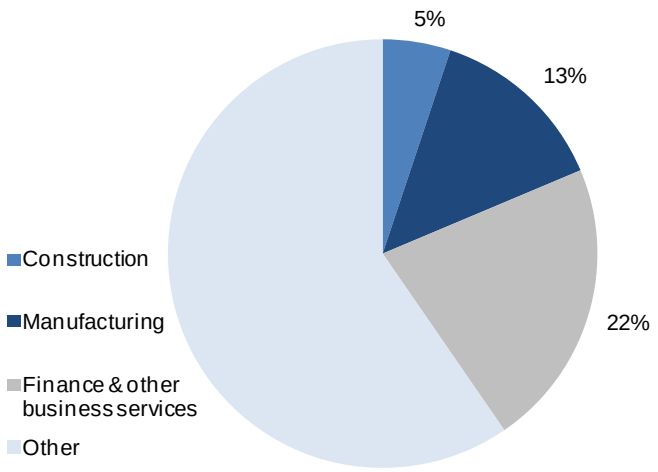
- In order to develop the potential offshore oilfields under discussion in this report, it is estimated that the gross fixed capital formation directly associated with this would approximate ZAR210bn a minimum.
- A large part of that would be financed through foreign direct investment, a further boon to the country's balance of payments.
- In terms of job creation, operating oilfields of the scope currently envisaged, we calculate (using other overseas oil and gas sectors as a benchmark) would require around 20,500 personnel. The exploitation of South Africa's offshore oil prospects would out of necessity entail a significant expansion of the country's oilfield services industry. Using overseas oilfield service industries as a benchmark we calculate that a 450kbd oil production could support an oilfield service industry generating employment opportunities of around 33,000.
- In the development of this industry there is considerable scope for foreign direct investment with roughly ZAR110bn gross fixed capital formation required to develop an oilfield service industry of this size.

Potential job creation in industries directly related to exploitation of the oil resource



Sources: Standard Bank Research

Current contributions to employment of industries that stand to gain from development of a local oil industry



Sources: QLFS; Standard Bank Research

Stakeholder Dimension

Key points

Standard Bank believes a broad range of stakeholders need to be engaged as part of the MPRDA process

We recommend significant disclosure of scenarios and information such that stakeholders can delineate between onshore/offshore and make an informed choice

Overview

- Key stakeholders in the MPRDA debate include but are not limited to:
  - DMR
  - National Treasury
  - DoE
  - DTI
- We consider a missing dimension is financial modelling and the interaction between shareholding, taxation and incentives where we expect National Treasury to play a key role.
- We envisage the industry can help inform National Treasury as to the scale of the wallet they will contribute to the fiscus
- In the next stage, we expect a comparative analysis of relevant precedent / comparator jurisdictions:
  - Within Africa, Standard Bank suggests **Ghana**; **Kenya**; **Morocco**; **Mozambique**; **Namibia** and **Tanzania**;
    - Why? All have or are drilling deep offshore wells for the first time between 2007 - 2014
  - Outside of Africa, we sense a review of Norway/UK (in the 1970s) may be worthwhile as may a review of Qatar (in the 1990s) as this shows how countries' took decisions at similar development levels
- Standard Bank is ready to assist industry and Government in making an informed final decision as to the balance of rewards for SA's citizens from a potential discovery of hydrocarbons

Concluding Remarks

Key points

Thank you for the opportunity to discuss the MPRDA with the Committee

Standard Bank believes that offshore O&G's potential should be unlocked for the benefit of all South Africans

Overview

- Post our work, Standard Bank believes offshore O&G is a real possibility for South Africa. There is investor interest to make the investments which, assuming discoveries, could take 8-10 years to realise (**shorter than Medupi's door to door development and construction timeframe, for example**)
- Initial economic analysis shows an example of how total national production of 450k bpd could have a staggering impact on the SA economy, impacting the current account, boosting the fiscus and creating a new domestic industry and source of major employment
- We present as Standard Bank is concerned that the proposed MPRDA (as relates to offshore) could lead to investors not making the investments, meaning that all South Africans may miss out on its potential
- As shown, the proposed legislation has a materially negative impact on OilCo's single field NPVs, within what is already a high cost, risky industry. We also believe the potential major contribution of the current MPRDA to the fiscus is not fully appreciated (when assessed in NPV terms)
- We make the following commercial conclusions on the MPRDA's offshore element:
  - As shown, massive taxation and royalty payments will be made to Government if investors find offshore O&G, with the key levers being taxation and royalties (not the 10% Government shareholding).
  - We would argue Government should prioritise the collection of such revenues, meaning OilCos should be provided incentives to invest. Government should allow parties who fund exploration risk to make profits commensurate with the risk as that will unlock the cash flow streams for the fiscus.
  - There is a careful balance to be struck between Govt revenues and BEE opportunity. For OilCo, both essentially amount to the ''**Total Tax Take**'' which norms are well-researched for frontier markets
  - Working the details through takes time. We suggest either exempting offshore from the main MPRDA provisions pending further work or for the MPRDA to await finalisation of this detailed work and are happy to help DMR/the Committee as required.

Section 1:

Introduction

Standard Bank

Introduction

Key points

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Overview

- Standard Bank is pleased to present to the Department of Mineral Resources ("**DMR**") Portfolio Committee ("**the Committee**") on the proposed Mineral and Petroleum Resources Development Act ("**MPRDA**")
- In this presentation, we focus our attention solely on South Africa's developing **deep offshore** Oil & Gas ("**O&G**") industry and make no comments about the mining elements of the MPRDA or **onshore** shale/CBM
- The assumptions we make are the following:
  - The critical MPRDA provisions affecting the offshore industry are well-known and understood by the Committee. We argue these are the following:
    - 10% free carry (all phases) for the Government (increased from 10% funded shareholding) and an increase in BEE shareholding from 10% to 26% (no clarity on funding, we assume unfunded)
    - As at 5th September 2013, no proposed tax reduction to offset any impact of the above two items; and
    - Unspecified provisions regarding beneficiation which create cash flow uncertainty.
  - The legal and regulatory aspects of the MPRDA will be covered by other presenters
  - We are outlining various commercial and financial scenarios which have been extensively discussed with industry players including the Offshore Petroleum Association of South Africa ("**OPASA**") but which are the sole responsibility of Standard Bank, including financial assumptions and commentary therein
  - In other places, we cite generally available industry data, principally that of Wood Mackenzie ("**WoodMac**") as an underpinning for our comments
- For clarity, Standard Bank confirms it does not have any equity interest in any prospective O&G license in South Africa, whether conventional or unconventional
- We are seeking to provide our comments from what we see as being in the long-term economic interests of South Africa, which as SA's leading bank we feel it is important to comment upon

Section 2:

Commercial Observations

Standard Bank

Commercial Observations

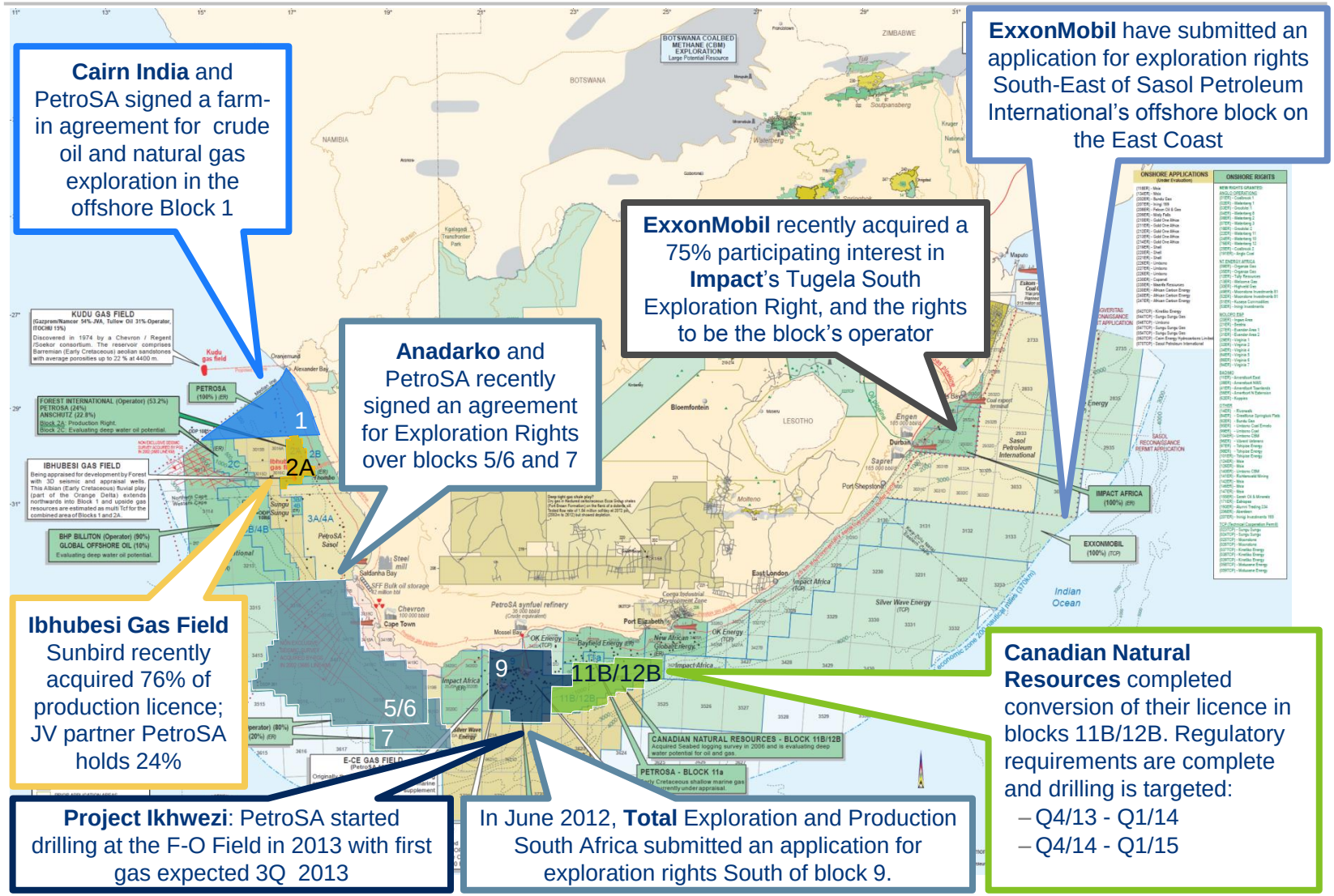
Key points

There is increasing investor interest and activity regarding offshore South African acreage…

...We list the recent events, with existing offshore investors also including Shell and BHP Billiton...

Offshore investors are targeting oil as well as natural gas

Increasing Offshore activity but SA is still pre-exploration (generally)



Cairn India and PetroSA signed a farm-in agreement for crude oil and natural gas exploration in the offshore Block 1

ExxonMobil have submitted an application for exploration rights South-East of Sasol Petroleum International's offshore block on the East Coast

ExxonMobil recently acquired a 75% participating interest in **Impact**'s Tugela South Exploration Right, and the rights to be the block's operator

Anadarko and PetroSA recently signed an agreement for Exploration Rights over blocks 5/6 and 7

Ibhubesi Gas Field
Sunbird recently acquired 76% of production licence; JV partner PetroSA holds 24%

Canadian Natural Resources completed conversion of their licence in blocks 11B/12B. Regulatory requirements are complete and drilling is targeted:
- Q4/13 - Q1/14
- Q4/14 - Q1/15

Project Ikhwezi: PetroSA started drilling at the F-O Field in 2013 with first gas expected 3Q 2013

In June 2012, **Total** Exploration and Production South Africa submitted an application for exploration rights South of block 9.

Standard Bank

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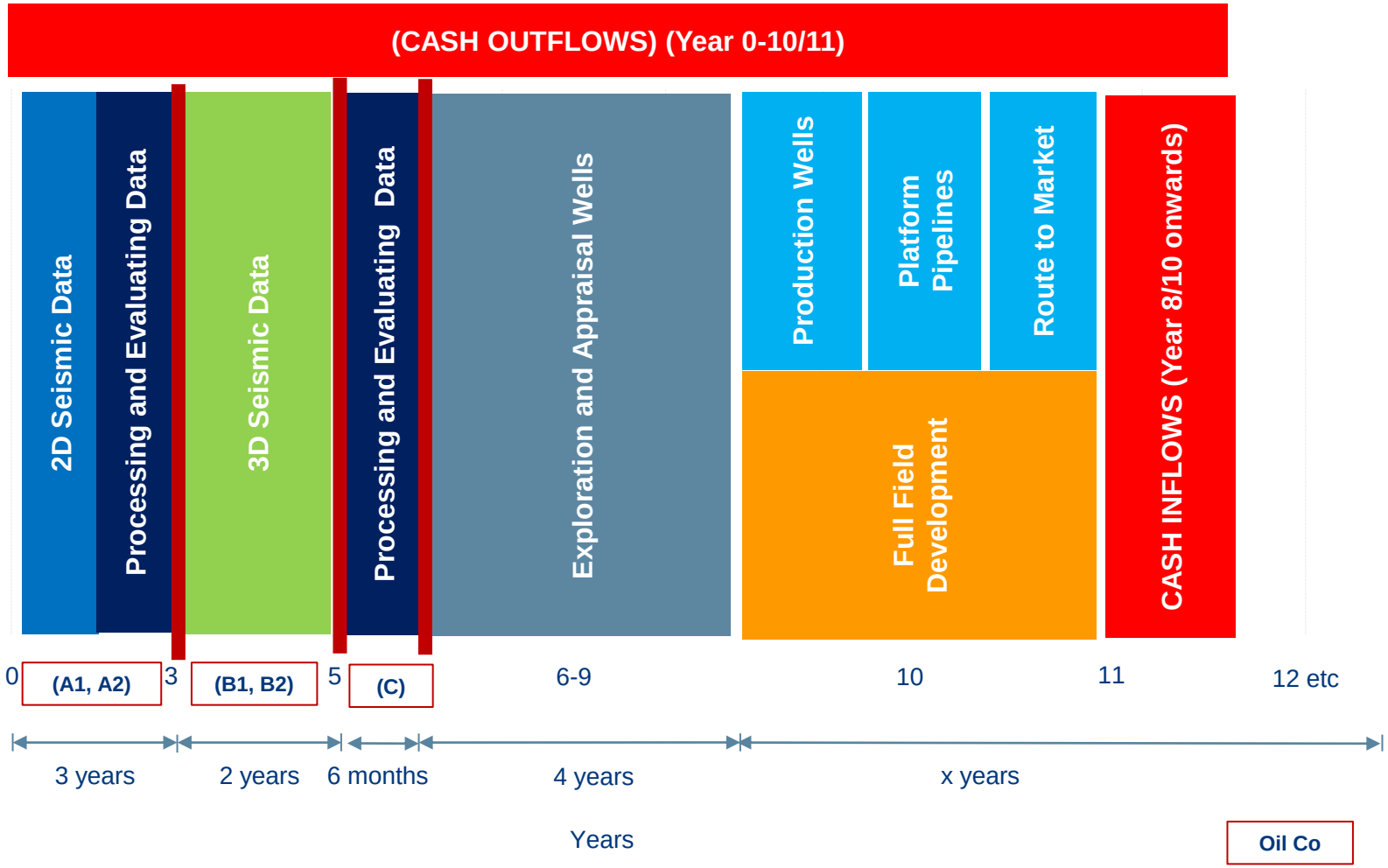
Appreciating the Upstream Timetable



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Commercial Observations

Key points

Why offshore is different?

SA is a frontier market with limited reserves and / or drilling history

- SA is a frontier market
  - Frontier market does not mean sub-investment grade / politically risky (for example). In the O&G industry, it means a jurisdiction where limited drilling has been done hence there is no substantive certainty as to geology, hydrocarbons in place or the costs of extracting the same.
  - There are no reserves only contingent resources, with no delineation of oil and gas resources. Certainly, there is no certainty as to the potential production of hydrocarbons or any costs or revenues associated with the same
  - As shown on the previous slide, it may be 8-10 years before offshore results in production (and revenues)

The offshore industry is materially more expensive than onshore CBM/shale (PetroSA can verify this for FO field)

- Offshore is Expensive
  - Doing the pre-work before an initial exploration well may cost USD 100-200m. Performing the initial exploration well may then cost an additional USD 100-150m. In the industry, it is statistically rare to instantly find success in exploration. A case in point is offshore Namibia where 4 dry holes have been drilled in the last 12 months..
  - In order to scope a potential development, multiple exploration wells are needed which are then followed by multiple appraisal wells (each individually costing USD 150m).
  - Following a field development plan, a full offshore development would then be commissioned. In total, entire field development costs (up to first production) could amount to [**USD 5-7 bn]**

The industry is widely seen as high risk, especially at the pre-exploration stage

- Industry investment calculation is made harder by offshore realities and those of frontier markets
  - Investment timeframes are longer (hence higher time value of money)
  - Costs are higher hence revenues need to be higher to justify the investment (noting the oil price is unknown)
  - Risks are higher as there are no proven hydrocarbon reserves, structure or production history

Building on the previous slide, offshore is inherently high cost and time consuming. Therefore, the potential future revenues need to justify the massive risks of exploration in a frontier market. Therefore, the fiscal terms that impact the potential production of hydrocarbons are crucial (on top of the jurisdiction's inherent risks)

Commercial Observations

Key points

Why offshore is different? Continued.....

South Africa faces several challenges regarding offshore exploration

SA's climate and unknown geology contribute to challenges in gathering seismic data

Location and mobility also poses a problem for offshore exploration

- Industry participants see numerous geological, maritime, engineering and development challenges facing South African offshore. All of them have risk and cost implications including:
  - SA has not been significantly explored before which means the geology is unknown;
  - Very few wells that have previously been drilled have any relevance to the deep water exploration targets
  - Almost all of the current exploration focus on depths greater than 1,000m which is more costly than shallow water and has not previously been drilled
  - SA has a harsh weather environment along the coastal area and these areas are known for their rough seas during the winter periods. Such conditions will make seismic and drilling exploration activities difficult and more expensive
  - The coastline in SA, particularly along the east coast, are known for their strong current due to the presence of the strong and turbulent Agulhas current which flows throughout the year
  - Strong currents make the acquiring of 2D and 3D seismic data more expensive and difficult and significantly increases the cost of drilling operations
  - Narrow environmental windows place severe restrictions on the operational time, particularly for seismic surveys, which adds to delays and increased costs
  - SA's coastal areas, where the resource potentially exist, are presently remote from other centres of activities along the African coastline. This will result in substantial mobilisation fees being charged for vessels and equipment to be moved to potential South African operations

SA offshore faces numerous geological, maritime, engineering and development challenges. We recommend the input of bodies such as PetroSA and PASA and incorporation of learning experiences from developments such as the FO field

Commercial Observations

Key points

Comparing SA offshore to Mining Projects

Mining projects are typically quick to first cash flows, significantly quicker than offshore

Open cast projects range between 1 – 5 years. Only a pure greenfield, underground project could have a development timeframe near to offshore's present position

From a cost perspective, mining developments are around 10 – 20% of offshore developments

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- Underground (Existing Geology/Developments)
  - For example, Gold, Platinum, Manganese (minority)
  - 5- 7 years to first cash flows
- Underground (Greenfield)
  - For example, no previous mine at location, limited prior information on geology - 7-10 years to first cash flows
- Offshore costs significantly more:
  - Standard Bank estimates that offshore developments typically cost a factor of 5 – 10 times more than greenfield mining projects
  - For example, the USD 2 billion offshore exploration cost assumption would more than fund entire West African iron ore projects plus 250kms of railway lines
  - Compared to the offshore sector's major exploration risk, SA's geology is well defined. The main risk pertains to the possibility of a lower quality deposit (poorer grades) being found which, coupled with volatile commodity prices, means cash flows are adversely impacted

Compared to offshore Oil & Gas developments, SA mining projects are onshore with a significantly shorter development timeframe and a significantly lower capital cost. This factor needs to be borne in mind in considering the offshore industry's perspective upon the source MPRDA legislation

Commercial Observations

Key points

Country Benchmarking

- The Bill outlines the following African countries as examples of State participation. Standard Bank argues most are inappropriate shareholding comparisons for the reasons outlined in the table (WoodMac, 2013)

Standard Bank disagrees with certain of the African country points cited in the Bill, for reasons of non-frontier market benchmark

Country	State Owned %	Carry %	Observations
Algeria	51%		Example used from 2006 Licensing Round. Was the most unsuccessful round in country history as it gave investors little incentive. In any case, Algeria is not frontier jurisdiction as it discovered onshore oil/gas in 1956.
Angola	50% (Cabinda/onshore), 20-25% offshore		Proven oil producing geology (since the 1960s/1970s) hence investors willing to accept the offer (as geological risk significantly lower) than a frontier market.
Cote d'ivoire	30%		Oil production started in the 1980s (when State owned % was 40%), hence a more proven geological play
Gabon	15% carry targeted	[15%]	Oil production started in 1965 hence a proven geological play. State holds 25% in the initial producing companies
Ghana	10-15% (can be increased to 25%)	10-15%	Entirely appropriate benchmark. Ghana's first major development – Jubilee – was discovered in 2007 and started production only in late 2010/2011

We see merits in an alternative list of African frontier markets

- In summary, given South Africa is a frontier jurisdiction (limited hydrocarbons history) and has an offshore sector (high cost as shall be demonstrated), we suggest an alternative list comprising **Kenya; Ghana; Morocco; Mozambique; Namibia and Tanzania**. This would give a significantly different perspective as in these examples deep offshore wells have generally only been drilled post [2007] or are yet to be drilled

We argue evaluating the Total Tax Take of African frontier plays may be more appropriate

- Standard Bank is not opposed to a relative benchmarking of South Africa against other frontier jurisdictions. We would support this and argue a critical benchmark should also be the ''**Total Tax Take**'' required by South Africa relative to other frontier jurisdictions (often published by WoodMac).
- Noting the SA specific example of BEE (non-State participation), we would define it as the total sum of net profits or free cash flows that are not distributed to the investor in ''**OilCo**''. We argue focusing on this number may surprise the Committee as to how large the take already is prior to the MPRDA revision (**Section 3**)

Standard Bank

Commercial Observations

Key points

MPRDA Concerns

We have several commercial/financial concerns with the MPRDA. These exclude other legal/control concerns which we believe others will raise

- The MPRDA includes a number of provisions which materially affect the offshore industry from a commercial and financial perspective (we leave control/legal issues for others). For example:
  - Changing the State's 10% participation to a lifetime free carry of 10%. This has the effective effect of an increase in exploration/development risk and tax take (from the investor perspective)
  - Changing the BEE element from 10% to 26% is likely to reduce the size and timing of investor cash flows (if we assume the participants will need to be funded by loans funded by the investor. This case is different if the financing is arranged separately)
  - A potential State option to buy incremental equity may also be dilutive depending on the valuation of the purchase price. Moreover, un-clarified beneficiation objectives create cash flow uncertainty
  - In essence, we feel the MPRDA should be an optimisation exercise. Resources are owned by South Africans before and after the MPRDA Bill and should be optimised for their benefit. As drafted, we feel the MPRDA could materially affect the offshore industry

Section 3 outlines the financial impact of the MPRDA on offshore

- We see it as being critical to unlock the value of the resource for South Africans by bringing investors (OilCo's) who have the necessary financial resources, technology and skills for this scale of projects
- The proposed changes impact negatively on the viability of exploration and production from the investors (OilCo's) perspective, based on internal analysis that Standard Bank has undertaken (**Section 3**).

If offshore is got right, Section 4 shows its potential economic impact on South Africa

- Standard Bank has a concern that the scale of the proposed value transfer for an unproven offshore frontier market with OilCo's revenues still 8-10 years away may lead to investors favouring other markets instead of South Africa and not making the investment
- If this happens, Standard Bank has a concern that South Africa may miss out on the numerous potential benefits that offshore oil may bring South Africa (**Section 4**) which have been calculated by our internal economists

Section 5 outlines a few suggestions on finalising the MPRDA's offshore elements

- Lastly, following the above analysis, we make a suggestion as to how South Africa could tackle the offshore element of the MPRDA (**Section 5**) in order to optimise its chances of success for all South Africans over the forthcoming years

Standard Bank

Commercial Observations

Key points

Government appears to seek greater control over upstream O&G through the beneficiation mechanism

Resources from offshore wells could produce:

- *Oil / Associated Gas*
- *Non-Associated gas/Liquids*
- *Non-associated gas*

Each of these provide revenues that are denominated differently

MPRDA Concerns Continued.....

- The MPRDA raises a number of points concerning Beneficiation (which we acknowledge is a national concern). The Minister appears to be seeking greater control over upstream O&G through the beneficiation mechanic. The Minister can specify (at their discretion, which applies to future Ministers):
  - What percentage of output has to be beneficiated and what price has to be charged for such output
- Given the stage of the SA offshore industry, this raises concerns. As a basic point, offshore wells can deliver the following resources:
  - Oil and associated gas (Offshore)
  - Non-associated gas and certain liquids (e.g. Condensates)
  - Non-associated gas (Offshore)
  - Clearly, beneficiation for development purposes could take multiple forms (e.g. Oil sold at a discount to Brent and / or fixed price gas). In effect, the provision creates additional cash flow uncertainty in an already risky environment.
- By implication, this will lead to a Ministerially determined upstream and downstream sector (to a degree). We note the provision does not appear to be independently regulated which may jar with NERSA responsibilities
- We see huge implications for SA's offshore sector. We envisage that this could result in companies not having control over large portions of their route to market, with large elements specified by the Minister (through what process? How valued?)
- Although resources ultimately belong to South Africans, they would be privately funded. This will have massive implications for investor risk and reward perspective and potential appetite to invest/commit funds, noting the scale of the investment requirement.

Section 3:

Indicative Financial Modelling

Standard Bank

Indicative Financial Modelling

Key points

Based on conversations with the industry, Standard Bank sought to model a discussion MPRDA scenario where SA develops a field of a small scale (105/300 mn bbl) ranging up to a broadly ''Jubilee Field'' (Ghana) sized development (1bn bbl) at an unspecified offshore location.

To do so, requires multiple exploration wells before a field development programme is initiated

Assumptions

- Deep offshore field
  - 3 Different scenarios outputs:
    - 150 mn barrels (''bbl'');
    - 300 mn bbl and
    - 1bn bbl of oil, (all gas excluded)
  - 25 year life
- Capital Investment
  - Exploration **$2bn over 7 years for all 3 scenarios**
    - Seismic $500mn
    - 10 well drilling program $1.5bn
  - Field Development
    - **$4bn over 3 years for 150 mn bbl**
    - **$4.25bn over 3 years for 300 mn bbl**
    - **$5bn over 3 years for 1 bn bbl**
- Average Production
  - 16 438 bbl per day (''pd'') for 150 mn bbl
  - 32 877 bbl pd for 300 mn bbl
  - 109 589 bbl pd for 1 bn bbl
- Operating assumptions
  - $100 per bbl; 5% operating cost
- Tax Incentive
  - 100%/50% uplift on exploration/development
- Royalties
  - 0.5 + [earnings before interest and taxes/(gross sales in respect of refined mineral resources x 12.5)] x 100
  - Limited to 5%

Indicative Financial Modelling

Key points

The amended MPRDA envisages OilCo; BEE and The State invest at different times for different risk profiles

From our perspective, this has material implications for required returns

We use NPV to determine the viability of an investment. The NPV should be greater than zero for a positive investment

Return Profile

- The MPRDA envisages major differences in terms of the stage when an individual party invests and the associated risk profile they face

- Broadly speaking:
  - OilCo is required to invest first and to take unfettered Exploration Risk. For this, he will require a commercial return reflective of the Exploration Risk (i.e. The risk that nothing is found or that sub-economic resources are discovered) and the subsequent Field Development Risk
  - Through the intended lifetime free carry, The State does not take any Exploration Risk or Field Development Risk
  - Similarly, the BEE party is not intended to take Exploration Risk. For Field Development Risk, the position depends on whether the BEE party can secure its own funding (at its own risk and cost) or whether it raises funding from a third party (whether from OilCo, DFI or a third party funder)

OILCO • Takes pure Exploration Risk, followed by Field Development Risk	**TIMING** • Starts spending money from Year 0 (hence invests at the earliest point)
The State • Does not take any Exploration or Field Development Risk	**TIMING** • Lifetime free carry under new MPRDA
BEE • Does not take any Exploration Risk • Faces Development Risk only	**TIMING** • Starts spending money from Field Development stage, (e.g. Year 6)

In summary, if an Investor is being asked to take Exploration Risk his required return will be higher than if they are simply taking Development Risk Similarly, due to the time value of money, an investor investing earlier will have a higher return requirement than an investor investing later

Indicative Financial Modelling

Key points

Required economic returns differ for each shareholder based on their different risk profiles

Return Profile Continued.....

- **''The State''**
  - Cash Outflows
    - Post exploration investment and Invests when de-risked by OilCo
    - **Therefore, 5% discount rate selected as net return requirement**
  - Cash Inflows
    - Royalties
    - Tax
    - Return on investment
- **"BEE''**
  - 10% or 26% equity share (Note R537bn corporate BEE raised 1994-2013 for **corporate** deals)
  - Facilitated investment @8.5% cost (SA prime rate) and de-risked upon facilitation
  - **Therefore, 5% discount rate selected as net return requirement**
  - **2 Scenarios where BEE fund their development costs themselves and 12.5% discount rate selected**
- **''OilCo''**
  - Carries exploration risk
  - Funding state and providing BEE facilitation
  - **20% IRR/Discount Rate targeted**

Indicative Financial Modelling – Shareholding Scenarios

Key points

We assume there is a 1 in 10 chance of success during the exploration phase. Or alternatively, there is a 90% failure rate during the exploration phase

From a shareholder perspective, the current MPRDA is the base line for which the new MPRDA should be compared.

We have developed three MPRDA scenarios based upon the provisions – Scenario 1.1 and 1.3 relates to the Govt Carry

– Scenario 1.2 relates to the different treatment of BEE proposed by the MPRDA

		Current MPRDA	Scenario 1.1 (current with 10% Govt Free Carry)	Scenario 1.2 (1.1 with 26% BEE)	Scenario 1.3 (1.1 with 15% Govt Free Carry)	Scenario 1.4 (current with BEE funding itself and a 12.5% discount rate)	Scenario 1.5 (1.2 with BEE funding itself and a 12.5% discount rate)
Exploration	Government	Zero	Zero	Zero	Zero	Zero	Zero
	BEE	10% funded carry	10% funded carry	26% funded carry	10% funded carry	10% funded carry	26% funded carry
	OilCo	100%	100%	100%	100%	100%	100%
Development	Government	10%	Zero	Zero	Zero	10%	Zero
	BEE	10% funded carry	10% funded carry	26% funded carry	10% funded carry	10% self funded	26% self funded
	OilCo	90%	100%	100%	100%	80%	74%
% of Returns	Government	10%	10%	10%	15%	10%	10%
	BEE	10% post loan repayments	10% post loan repayments	26% post loan repayments	10% post loan repayments	10% post loan repayments	26% post loan repayments
	OilCo	80%	80%	64%	75%	80%	64%

Investment decisions are based on economic outcomes

Key points

The State is economically viable in all cases due to its low/no risk investment and tax and royalty income

150mn bbl

- OilCo is very uneconomic so may not invest

- BEE loans cannot be repaid across field life

300mn bbl

- Although OilCo's economic objectives are not achieved, they may invest

- With a 26% funded carry, BEE is strongly economic

1000mn bbl

- *10% BEE self funded investment is less economic in relation to other scenarios*
- *OilCo's objectives achieved*

Field Size mn bbl		Current	Scenario 1.1	Scenario 1.2	Scenario 1.3	Scenario 1.4	Scenario 1.5
150	SA Inc						
	BEE						
	OilCo						
300	SA Inc						
	BEE						
	OilCo						
1000	SA Inc						
	BEE						
	OilCo						

Legend

Very uneconomic	
Slightly uneconomic	
Economic	
Strongly Economic	

OilCo's are not incentivised to invest in uneconomical or marginal cases
Shareholders mostly lose out as a result with South Africa forgoing investment and the accompanying economic benefits

Indicative Financial Modelling

Key points

In theory, BEE can either fund themselves or receive funding from OilCo or another third party

BEE funding itself is likely to be subject to financial limitations for the risk profile

BEE funding itself result in significant less returns for BEE shareholders

Relationship between Government and BEE objectives and financial outcome

- Under the current structure and possible scenarios there exist a relationship between Government and the BEE funding components given that the OilCo is assumed to fund both components (ultimately, there will be a legal obligation to have a BEE shareholding)
- In the event BEE shareholders raise funding from the OilCo, there are no funding implications for the fiscus (BEE pays back the Oil Co at an assumed [8.5%] rate), although OilCo's returns are impacted
- If BEE funding is not raised from the OilCo, the scale of BEE self-funding is likely to be limited (N.B. BEE deals to date have largely been for going concern corporates
- If BEE funds itself, there are significantly lower returns for BEE. Under the 150 mn bbl output scenario the returns for BEE are negative which will lead to reduced investment appetite from BEE players and reduced funding appetite (the money cannot be repaid).
- Across all scenarios, if BEE self-funds (or raises funds from a third party), OilCo's returns increase (as it does not have to fund BEE).

BEE funding itself has a major effect on its returns. If funded by anyone other than OilCo, OilCo's returns increase

Section 4:

Initial Economic Discussion

Standard Bank

Initial Economic Discussion

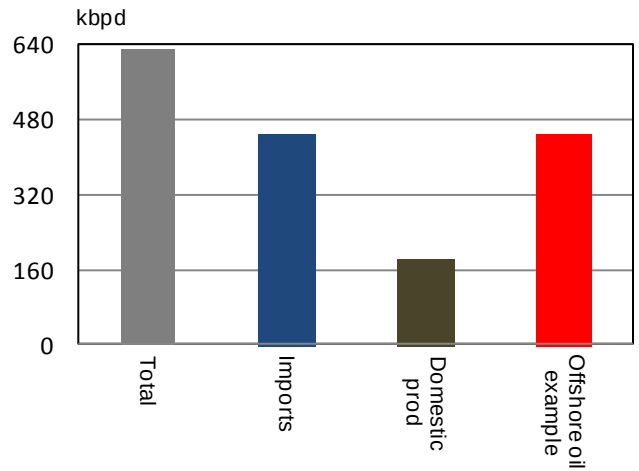
Key points

Domestic oil production could have a material impact upon the current account

South Africa's Oil Demand

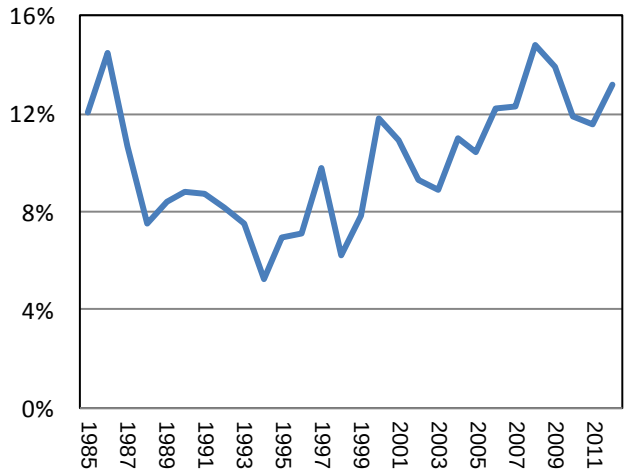
- Growing interest from international oil and gas firms looking to explore South Africa's potential offshore crude oil and natural gas resources.
- In this report we consider an example of **total** offshore oilfield developments producing around 450kbd (thousand barrels per day)—a number comparable to other offshore developments in Africa. While the size of such an oilfield is small in the global context, for South Africa there are potentially large implications of producing this much crude oil domestically.
- South Africa consumes roughly 630kbd of petroleum, of which 180kbd is produced domestically. This implies that the country needs to import around 450kbd of crude oil and refined products to meet domestic petroleum demand
- Crude oil and refined petroleum products are the single biggest component of merchandise imports, constituting roughly 15-20% of South Africa's total merchandise imports .

SA petroleum product demand and supply



Sources: IMF; Standard Bank Research; StatsSA; DMR

SA crude oil imports as % of total imports



Sources: IMF; Standard Bank Research

Standard Bank

Initial Economic Discussion

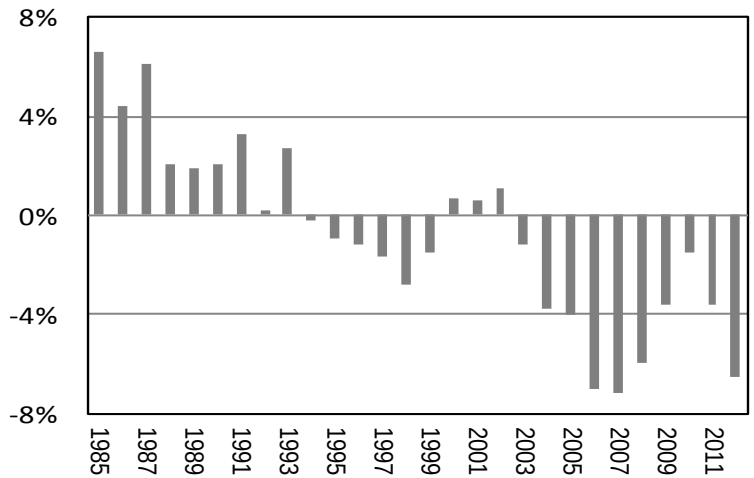
Key points

Wiping out the Current Account deficit would likely lead to a more stable currency

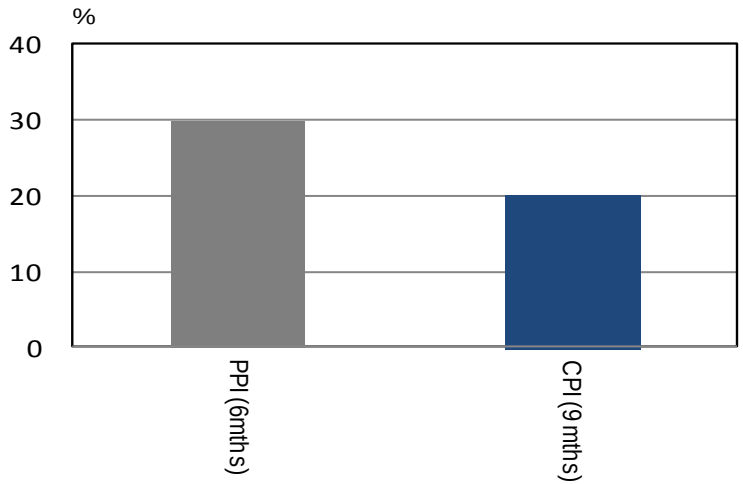
Impact on Current Account

- In this report we consider an example of **total** offshore oilfield developments producing around 450kbd (thousand barrels per day) — a number comparable to other offshore developments in Africa. While the size of such an oilfield is small in the global context, for South Africa there are potentially large implications of producing this much crude oil domestically.
- Should South Africa be able to produce 450kbd domestically, it could potentially wipe out roughly ZAR169bn worth of our merchandise imports(specifically crude oil and refined products), which means that the current account deficit as a percentage of GDP could be reduced to **-0.9%.**
- In addition, a more balanced current account due to reduced reliance on oil imports could see greater stability in current account balances as imports will be less subject to the volatility of global oil prices and currency movements.
- The main advantage of a smaller and possibly more stable current account deficit is a potentially more stable currency.

SA current account as a % of GDP



Exchange rate pass-through into prices



Sources: SARB

Initial Economic Discussion

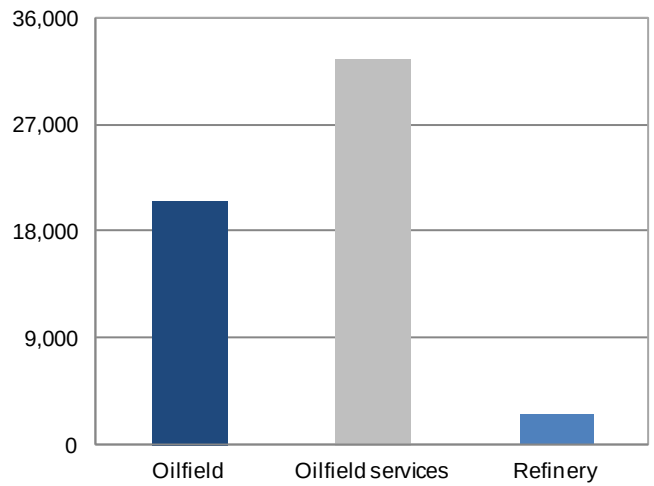
Key points

Developing offshore oil would lead to a domestic oil field services industry, creating wealth and jobs

Investment and Employment

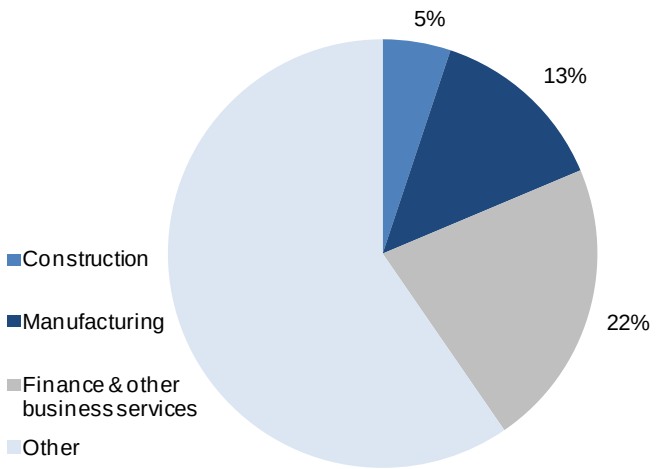
- In order to develop the potential offshore oilfields under discussion in this report, it is estimated that the gross fixed capital formation directly associated with this would approximate ZAR210bn a minimum.
- A large part of that would be financed through foreign direct investment, a further boon to the country's balance of payments.
- In terms of job creation, operating oilfields of the scope currently envisaged, we calculate (using other overseas oil and gas sectors as a benchmark) would require around 20,500 personnel. The exploitation of South Africa's offshore oil prospects would out of necessity entail a significant expansion of the country's oilfield services industry. Using overseas oilfield service industries as a benchmark we calculate that a 450kbd oil production could support an oilfield service industry generating employment opportunities of around 33,000.
- In the development of this industry there is considerable scope for foreign direct investment with roughly ZAR110bn gross fixed capital formation required to develop an oilfield service industry of this size.

Potential job creation in industries directly related to exploitation of the oil resource



Sources: Standard Bank Research

Current contributions to employment of industries that stand to gain from development of a local oil industry



Sources: QLFS; Standard Bank Research

Initial Economic Discussion

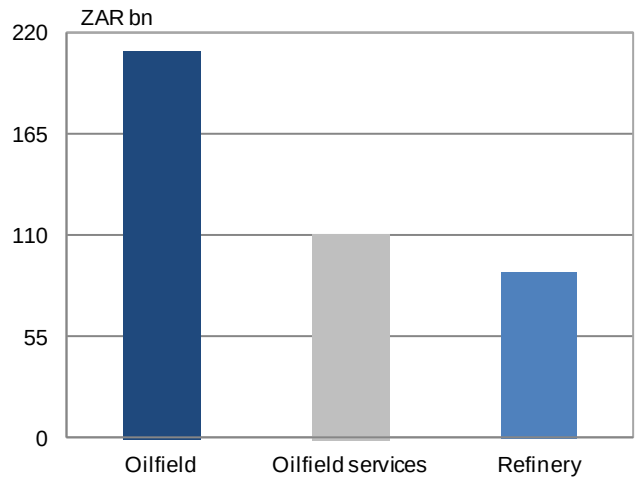
Key points

Developing domestic O&G may impact upon a potential new refinery for SA

Investment and Employment

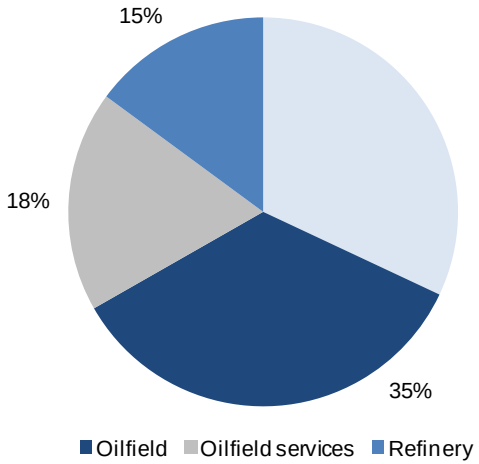
- There would be considerable benefits to existing domestic industries to the extent that the oil industry requires their respective services - chief among these industries would be manufacturing, construction and financial services.
- Increased demand for these services would invariable necessitate greater employment in these industries, as well as greater revenues and increased tax receipts for government (in the form of both corporate and value added taxes).
- Current refining capacity would be sufficient to process this new production. However, there is a growing need for refined products (the country currently imports around 80kbd of refined products) and current plans to expand refining capacity (most notably the Mthombo project) might be viewed with less scepticism (some have voiced concerns over its commercial viability) by the development of local crude oil resources.
- It is expected that the Mthombo refinery project would require around ZAR90bn in investment and provide around 10,000 jobs during the construction phase (3-4 years) and around 2,500 permanent jobs.

Potential investment (gross fixed capital formation)



Sources: Standard Bank Research

Potential investment as a percentage of 2012 GFCF



Sources: Standard Bank Research; SARB

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Section 5:

Concluding Remarks

Standard Bank

Stakeholder Dimension

Key points

Standard Bank believes a broad range of stakeholders need to be engaged as part of the MPRDA process

We recommend significant disclosure of scenarios and information such that stakeholders can delineate between onshore/offshore and make an informed choice

Overview

- Key stakeholders in the MPRDA debate include but are not limited to:
  - DMR
  - National Treasury
  - DoE
  - DTI
- We consider a missing dimension is financial modelling and the interaction between shareholding, taxation and incentives where we expect National Treasury to play a key role.
- We envisage the industry can help inform National Treasury as to the scale of the wallet they will contribute to the fiscus
- In the next stage, we expect a comparative analysis of relevant precedent / comparator jurisdictions:
  - Within Africa, Standard Bank suggests **Ghana**; **Kenya**; **Morocco**; **Mozambique**; **Namibia** and **Tanzania**;
    - Why? All have or are drilling deep offshore wells for the first time between 2007 - 2014
  - Outside of Africa, we sense a review of Norway/UK (in the 1970s) may be worthwhile as may a review of Qatar (in the 1990s) as this shows how countries' took decisions at similar development levels
- Standard Bank is ready to assist industry and Government in making an informed final decision as to the balance of rewards for SA's citizens from a potential discovery of hydrocarbons

Concluding Remarks

Key points

Thank you for the opportunity to discuss the MPRDA with the Committee

Standard Bank believes that offshore O&G's potential should be unlocked for the benefit of all South Africans

Overview

- Post our work, Standard Bank believes offshore O&G is a real possibility for South Africa. There is investor interest to make the investments which, assuming discoveries, could take 8-10 years to realise (**shorter than Medupi's door to door development and construction timeframe, for example**)
- Initial economic analysis shows an example total national production of 450k bpd could have a staggering impact on the SA economy, impacting the current account, boosting the fiscus and creating a new domestic industry and source of major employment
- We present as Standard Bank is concerned that the proposed MPRDA (as relates to offshore) could lead to investors not making the investments, meaning that all South Africans may miss out on its potential
- As shown, the proposed legislation has a materially negative impact on OilCo's single field NPVs, within what is already a high cost, risky industry. We also believe the potential major contribution of the current MPRDA to the fiscus is not fully appreciated (when assessed in NPV terms)
- We make the following commercial conclusions on the MPRDA's offshore element:
  - As shown, massive taxation and royalty payments will be made to Government if investors find offshore O&G, with the key levers being taxation and royalties (not the 10% Government shareholding).
  - We would argue Government should prioritise the collection of such revenues, meaning OilCos should be provided incentives to invest. Government should allow parties who fund exploration risk to make profits commensurate with the risk as that will unlock the cash flow streams for the fiscus.
  - There is a careful balance to be struck between Govt revenues and BEE opportunity. For OilCo, both essentially amount to the ''**Total Tax Take**'' which norms are well-researched for frontier markets
  - Working the details through takes time. We suggest either exempting offshore from the main MPRDA provisions pending further work or for the MPRDA to await finalisation of this detailed work and are happy to help DMR/the Committee as required.

Appendices

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Appendix I:

Standard Bank Group Economics Research Note

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