E&P Africa 2013 Outlook

EUROPEAN OIL E&P

NOMURA
EQUITY RESEARCH

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Sector view: Bullish
Remains

Five exploration plays to watch in 2013

Top picks: Ophir (upgrade to Buy from Reduce) and Africa Oil

We provide an outlook for sub-Saharan Africa in 2013

In the first of a series of regional oil reports, we provide a review of sub-Saharan Africa and the outlook for European E&Ps. Historically, Africa has been a source of transformational exploration upside for the independents and we expect this trend to continue in 2013. We argue the region is one of the few places where independents still offer a genuine 'edge' in accessing and opening up new resource.

Key themes: Exploration, consolidation and country risk

- **Exploration:** We identify five plays to watch in 2013. A combination of 'play-openers' (pre-salt Gabon, offshore Mauritania and offshore Kenya) and 'play-extenders' (onshore Kenya/Ethiopia, Tanzania). Our analysis points to 40 wells (vs 10 in 2012) targeting 14bn boe of resource across these five key plays in 2013. We prefer pre-salt Gabon for impact (pre-drill >1bn boe) and onshore Kenya/Ethiopia for news-flow intensity.
- **Consolidation:** A tail of small cap E&Ps in East Africa (including FAR, Pancontinental, Camac, Vanoil, Taipan & Simba) should lead to further asset or licence consolidation. However, corporate deals may be unlikely until 2014, as exploration campaigns are drilled out.
- **Country risk:** On a more negative tack, Africa Oil Week suggested an increasing appetite for greater government take and participation in exploration and development. We highlight the ongoing inertia in Nigeria with the Petroleum Industry Bill (PIB) and delays to development plans in Uganda. March elections in Kenya may also increase operational risk.

Positioning Africa E&Ps for 2013

Our investment strategy for E&Ps is to either seek 'value' based on production, or back names that offer company-changing upside through the drill bit. In this report we make the following recommendations:

- **We double upgrade Ophir to Buy from Reduce (TP 750p)** as we argue concerns over funding and a lack of near-term catalysts are overdone and investors should position themselves for potentially transformational exploration in pre-salt Gabon and Tanzania. Please refer to our separate report ('Double upgrade to Buy', 18 January).
- **We downgrade Afren to Neutral from Buy (TP 175p)** primarily on valuation, following a c.65% outperformance in 2012 (vs sector) and our more cautious view on Nigeria and production ramp-up in Kurdistan.
- Elsewhere, we **reiterate our Reduce on Tullow (TP 1,350p)** on valuation grounds and our **Buy rating on Africa Oil (TP SEK 95)** which we believe continues to offer unique gearing to funded exploration drilling onshore in Kenya/Ethiopia.

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Note: Share prices as of market close, 16 January 2013

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Summary of rating, target price and earnings changes in this report

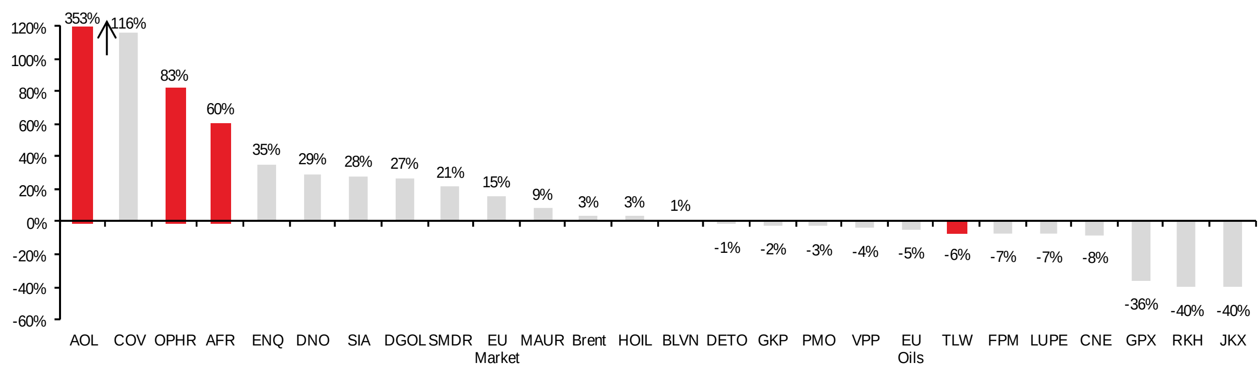
Issuer	Ticker	Rating		Target price			EPS	FY1E		FY2E	
		Old	New		Old	New		Old	New	Old	New
Afren	AFR LN	Buy	**Neutral**	GBX	185	**175**	USD	26.6	**21.8**	15.4	**23.5**
Africa Oil	AOI SS	Buy	Buy	SEK	100.00	**95.00**	USD	-13.3	-13.3	-33.0	**-31.6**
Ophir Energy	OPHR LN	Reduce	**Buy**	GBX	683	**750**	GBX	-34.0	**-26.8**	-18.2	**-18.8**
Tullow Oil	TLW LN	Reduce	Reduce	GBX	1635	**1350**	USD	78.8	**77.8**	84.7	**87.2**

Note: FY1E = first forecast year, FY2E = second forecast year

Source: Nomura estimates

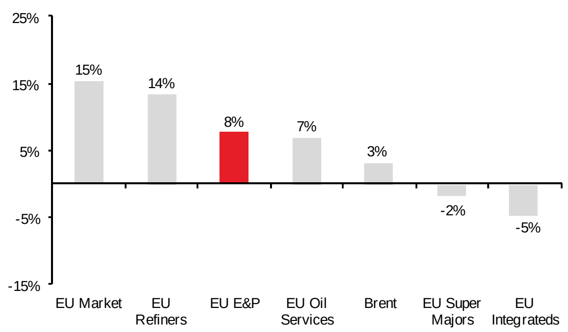
European E&Ps 2012 share price performance and valuation

Fig. 1: Wider EU E&P price performance in 2012



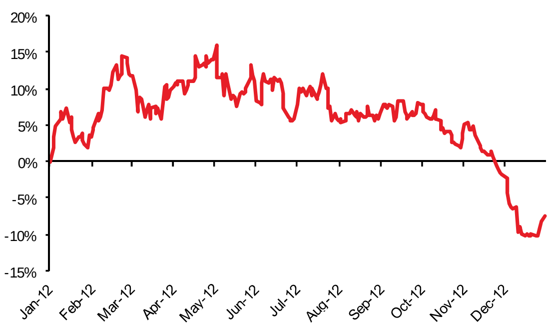
Source: Datastream, Nomura estimates, as of 31 December 2012

Fig. 2: Sub-sector performance in 2012



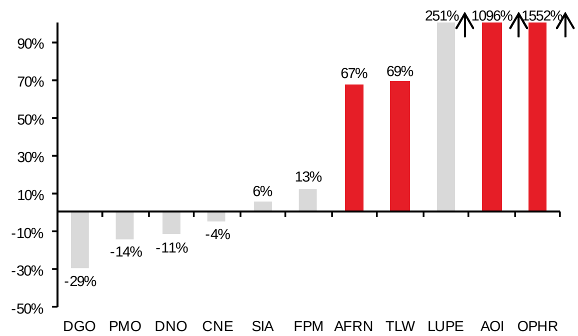
Source: Datastream, Nomura research, as of 31 December 2012

Fig. 3: E&P versus EU market in 2012



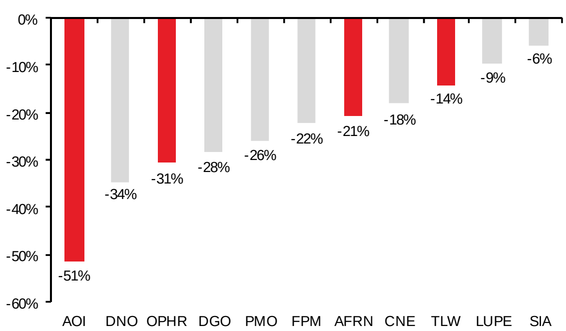
Source: Datastream, Nomura research, as of 31 December 2012

Fig. 4: Premium/(discount) to core NAV



Source: Datastream, Nomura estimates, as of 16 January 2013

Fig. 5: Premium/(discount) to risked NAV



Source: Datastream, Nomura estimates, as of 16 January 2013

Key themes for Africa E&Ps in 2013

Fig. 6: Our three key themes for 2013

Source: Nomura research

Theme 1: Exploration – strong outlook for 2013, 'five plays to watch'

1) We identify 'five plays to watch' in 2013 and detail 40 wells (vs 10 in 2012) that are targeting c.14bn boe of resource and c.USD 50bn of unrisked value. Our top picks are pre-salt Gabon for impact (pre-drill >1bn boe) and onshore Kenya/Ethiopia for newsflow intensity (17 wells in 2013).

2) We highlight 32 stocks with exposure to Africa exploration: In addition to the 11 stocks in our coverage universe we identify 21 uncovered stocks with exposure to our 'five plays to watch', including 10 small-cap E&Ps (market cap < USD 500m).

3) We create a Global Fiscal Terms Index, benchmarking 140 fiscal regimes using a mixture of government data, company guidance, Nomura estimates and Wood Mackenzie. Our analysis points to a wide spread of value by play, primarily driven by contract terms. Terms in pre-salt Gabon screen as very attractive, offering 50% higher value than an equivalent discovery onshore Kenya.

Theme 2: Consolidation – East Africa likely to accelerate

1) East Africa acceleration – We argue that: 1) increased exploration activity y-o-y; 2) a large number of small-cap incumbents; and 3) a lack of access to unlicensed acreage, supports consolidation in East Africa.

2) Kenya appears particularly fragmented – We identify a long tail of small-cap E&Ps both onshore and offshore (including FAR, Pancontinental, Camac, Vanoil, Taipan and Simba) who alone do not possess the capability to monetise resource.

3) Corporate deals may be unlikely until 2014 – We see evidence of buyers being more selective and looking to pursue asset deals at industrial valuations rather than corporate transactions at equity market valuations.

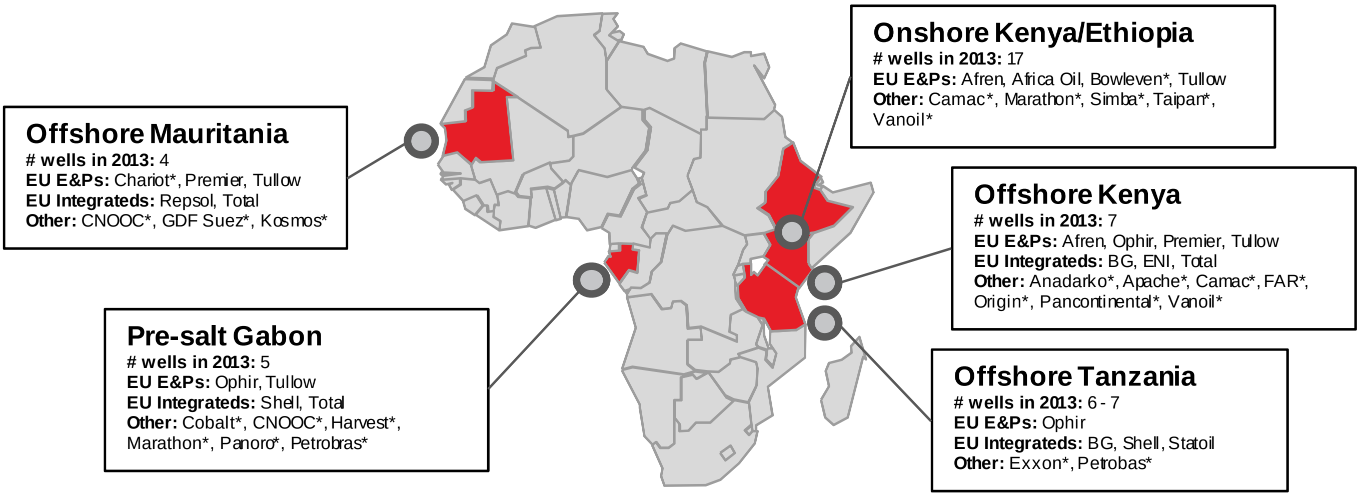
Theme 3: Country risk levels increasing

1) We are more cautious following our trip to Africa Oil Week – We highlight five countries where governments are: 1) actively revisiting oil and gas laws/taxation; 2) seeking to establish and/or increase the role of NOCs; and 3) delaying licensing/development plans.

2) We see potential downside risk in Nigeria and Uganda – Ongoing inertia with the PIB in Nigeria poses further fiscal risk that could see government take rise by 7-8%. In Uganda, tough domestic requirements for the Lake Albert project highlight development risk.

3) Kenyan elections in March may increase operational risk – Past elections have been marked by unrest and violence and the oil sector is likely to be high on the political agenda. Onshore drilling locations are largely away from population centres, but logistics and moving rigs between drill sites could be disrupted.

Fig. 7: We identify five exploration plays in Africa for 2013



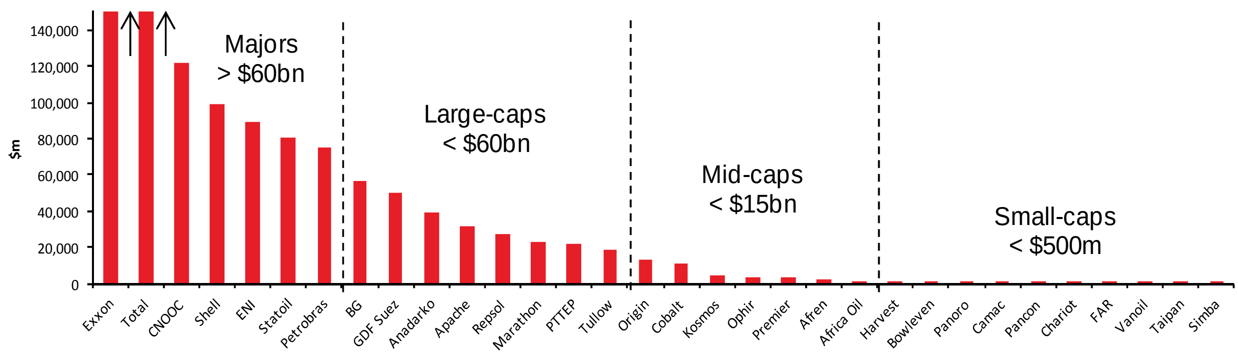
*Stock not under coverage Source: Nomura research

Fig. 8: Africa exploration – 'Five plays to watch' in 2013

Play	Why?	Top pick in our coverage	Majors > $60bn	Large-caps < $60bn	Mid-caps < $15bn	Small-caps < $500m
Pre-salt Gabon Chasing the pre-salt play north (5 wells 2013)	High risk, high impact wells (>1bn boe) could replicate Brazil/Angola pre-salt success.	**Ophir**	Shell, Total, Petrobras*	Tullow, Marathon*	Ophir, Cobalt*	Harvest*, Panoro*
Onshore rift basins Testing the upside case onshore Kenya/Ethiopia (17 wells 2013)	Super-charged 2013 drilling programs will test multiple sub-basins with independent risk profiles in an area larger than the UK North Sea.	**Africa Oil**	-	Tullow, Marathon*	Afren, Africa Oil	Bowleven*, Camac*, Simba*, Taipan*, Vanoil*
Mauritania offshore Looking for another Jubilee (4 wells 2013)	Targeting the deeper Cretaceous turbidite play, analogous to Jubilee in Ghana.	**Tullow**	Total, CNOOC	Tullow, Repsol, GDF Suez	Premier, Kosmos*	Chariot*
Offshore Kenya Oil or gas? (7 wells in 2013)	2013 is a 'make or break' year as the industry looks for its first commercial oil discovery offshore.	**Tullow**	Eni, Total	Tullow, BG, Anadarko*, Apache*, PTTEP*	Afren, Ophir, Premier, Origin*	Camac*, FAR*, Pancontinental*, Vanoil*
Tanzania gas Closing the gap to Mozambique (6-7 wells 2013)	Success in the basin floor fans could unlock significant resource upside and see Tanzania LNG compete more aggressively with Mozambique.	**Ophir**	Exxon*, Shell, Statoil, Petrobras*	BG	Ophir, Afren	-

*Stock not under coverage Source: Nomura research

Fig. 9: We identify 32 listed stocks with exposure to our 'five plays to watch' in 2013



Source: Datastream, Nomura research

Positioning Africa E&Ps for 2013

We revisit investment theses across four Africa-biased E&Ps in our coverage universe, incorporating our key themes for 2013. Our broader investment strategy for E&Ps is to either seek 'value' based on production, or back names that offer 'company-changing' upside through the drill bit. Applying this framework to Africa E&Ps we make the following changes to our recommendations.

Ophir – Double upgrade to Buy

TP raised from 683p to 750p (Buy, TP 750p) – 44% upside potential

1) Leading exposure to pure 'E': In a 'blue-sky' success scenario, 2013 drilling could be worth USD 17bn or c. 500% of the current share price, the highest in our coverage universe. Our downside case acknowledges that E&Ps rarely drill every well in their annual programme. Assuming 1/3 wells are deferred beyond 2013, we estimate Ophir's upside falls to 200%, remaining attractive and ahead of the sector on 110%.

2) Funding concerns overdone – With no internal cash flow, Ophir relies on external financing to fund capex of USD 650m in 2013, versus cash of USD 200m at YE. We argue a breadth of options provide flexibility and EG farm-down offers already received are in excess of 2013 capex requirements and leave Ophir well placed to secure funding.

3) Drilling skewed to H2, but near-term catalysts could unlock value: i) Q1 operational update may provide an upwards revision of pre-drill estimates in Gabon and Tanzania; ii) a successful Jodari flow test in Q1 could reduce Tanzania LNG development risk; iii) success from Total/Cobalt's Mango well in Pre-Salt Gabon (H1) could be supportive.

4) Valuation: Not expensive in the context of exploration upside – A share price fall of c. 19% from 2012 highs of c. 640p (vs SXEP down 5% in the same period) leaves Ophir trading at a 30% discount (vs sector at 25%) to our new risked NAV of 750p/sh. EV/unrisked boe is USD 2.2/boe (vs sector on USD 6.1/boe).

Afren – Downgrade to Neutral

TP lowered from 185p to 175p (Neutral, TP 175p) – 26% upside potential

1) Our downgrade is primarily driven by valuation – With the shares outperforming the SXEP by some 65% in 2012, Afren shares now offer c.26% upside potential (sector average 35%) to our new TP of 175p (lowered from 185p).

2) Production growth to moderate – We expect production growth to moderate in 2013 after a strong bounce-back in volumes in 2012 (+120% y-o-y). Growth in 2013 is likely to be driven by Kurdistan, as opposed to Nigeria, and we see potential downside risk to the ramp-up of volumes from the region.

3) More cautious view on Nigeria – Admittedly, uncertainty around the extent and impact of oil sector reforms contained in the Petroleum Industry Bill (PIB) is not new, but from our time at Africa Oil Week we point to a number of recent developments that make us more cautious on country risk.

4) Exploration attractive, but less compelling than peers – While Afren's drilling programme provides exposure to a number of emerging and thematically attractive plays, such as Kenya, Tanzania and Iraqi-Kurdistan, we would prefer to gain exposure through a basket of Africa Oil, Ophir and DNO respectively. Drilling in Nigeria could surprise with a well in OPL 310, the highest impact well in Afren's 2013 programme.

Tullow – Running fast to meet expectations; reiterate Reduce

TP lowered from 1,683p to 1,350p (Reduce, TP 1,350p) – 14% upside potential

1) Our Reduce is primarily on valuation grounds. Our back-of-the-envelope analysis suggests a 700-900p/sh range on core value, compared with the current share price of 1180p. This implies some USD4bn of exploration is baked into the share price, which we think today appears overly optimistic compared with what is discounted in other E&Ps or European mid-caps like BG Group or Galp. We see more gearing to the drillbit elsewhere in the sector with our key African names being AOI and OPHR.

2) Uganda development overhang: While the value of Uganda has become increasingly less important to the NAV (105p/sh vs group NAV of 1339p/sh), we think sentiment around development in Uganda could get worse before it gets better.

3) A question of timing: We believe the key well results this year from the more meaningful (and valuable) offshore exploration campaigns in French Guiana, Mauritania and Mozambique are unlikely till H2 this year.

4) A more nimble strategy: We would turn more positive if we see management adopt a more aggressive 'shrink to grow' strategy to prove up core value.

Africa Oil – 'Buy the basin not the well'; reiterate Buy

TP lowered from SEK 100 to SEK 95 (Buy, TP SEK 95) – 106% upside potential

1) Geared exposure to one of our preferred 'five plays to watch' – While it is early days with only two wells completed, AOC continues to offer unique gearing in our coverage universe to exploration and appraisal upside onshore Kenya/Ethiopia.

2) Funded high-impact drilling programme – An 11-well multi-rig drilling programme is fully funded following an equity placing in December, and we estimate is targeting 0.3/0.9bn boe (risked/unrisked), offering unrisked upside potential of c.220%.

3) De-risking the basin will take time – Africa Oil's acreage is equivalent in size to the UK North Sea and 10x Tullow's acreage in Uganda. We point to Uganda as an example, in which de-risking was a gradual process, with 50 wells over six years and over this period, discovered resource increased 8x over initial estimates. We argue long-term investors should remain patient as drilling de-risks a basin that potentially holds up to 9-10bn boe.

4) Attractive risk profile – A dual strategy of lower risk E&A around existing discoveries (Ngamia and Twiga) in the Lokichar basin, coupled with higher risk wells in other sub basins, provides an attractive and mutually independent risk profile. We estimate average probability of success (CoS) of 34% for 2013 drilling versus typical industry average of 12-15%.

Fig. 10: We identify 40 wells across our 'five plays to watch' in 2013

Well	Block	Operator	Key partners	Prospect size (mmboe)*	Remarks
Pre-salt Gabon 2013 drilling activity					
Mango/Mango South	Diaba	Total (42.5%)	Cobalt (21.25%), Marathon (21.25%), Others (15%)	-	Drilling Q1 2013
North Cluster	Mbeli	Ophir (50%)	Petrobras (50%)	885	Drilling Q3 2013
Padouck	Ntsina	Ophir (50%)	Petrobras (50%)	1,150	Drilling Q3 2013
1 well	DC9/BCD10	Shell (75%)	CNOOC (25%)	-	Drilling Q4 2013
Onshore Kenya and Ethiopia 2013 activity					
Pai Pai	10A	Tullow (50%)	Africa Oil (30%), Afren (20%)	121	Results Feb 2013
Sabisa	South Omo	Tullow (50%)	Africa Oil (30%), Marathon (20%)	68	Results Q1 2013
Etuko (Kamba)	10BB	Tullow (50%)	Africa Oil (50%)	231	Spud Q1 2013
Twiga North	13T	Tullow (50%)	Africa Oil (50%)	112	Spud Q1 2013
Etuko-C	10BB	Tullow (50%)	Africa Oil (50%)	201	Spud Q2 2013
Ekales-S (Kongoni)	13T	Tullow (50%)	Africa Oil (50%)	64	Spud H1 2013
Shimela	South Omo	Tullow (50%)	Africa Oil (30%), Marathon (20%)	71	Spud Q3 2013
Ngamia-1 (Updip)	10BB	Tullow (50%)	Africa Oil (50%)	137	Spud Q3 2013
Class 1_3	South Omo	Tullow (50%)	Africa Oil (30%), Marathon (20%)	87	Spud Q4 2013
Kinyonga	Block 9	Africa Oil (50%)	Marathon (50%)	320	Spud H2 2013
Pundamilia	Block 9	Africa Oil (50%)	Marathon (50%)	402	Spud H2 2013
1 well	Blocks 7/8	New Age (40%)	Afren (30%), Africa Oil (30%)	-	Drilling H2 2013
1 well	2B	Taipan (100%)		-	Drilling H2 2013. Pre-drill farm-out planned
1 well	Block 1	Afren (80%)	Taipan (20%)	-	Potentially Q4 2013
1 well	2A	Simba Energy (100%)		-	Pre-drill farm-out planned
2 wells	3A/3B	Vanoil Energy (100%)		-	-
Seismic	11B	Adamantine (50%)	BowLeven (50%)	-	Airborne geophyisical survey and 2D seismic
Seismic	L19	Rift Energy		-	2D seismic survey in 2H13
Mauritania 2013 drilling activity					
Scorpion	C-7	Dana (36%)	Tullow (21.15%), Petronas, GDF Suez		Spud Q2 2013
1 well	Block C9	Total (90%)	SMH (10%)	-	Drilling 1H 2013
Caracol/Tapendar	C-10	Tullow (59.15%)	Premier (6.23%), Petronas (13.5%), Kufpec (11.12%), SMH (10%)	-	Spud Q3 2013
Addax	C-1	Dana (36%)	Tullow (40%), GDF Suez (26%)	-	Spud Q4 2013
Seismic	Block C19	Chariot (90%)	SMH (10%)	-	Potential drilling end 2013
Offshore Kenya 2013 drilling activity					
Kiboko	L11B	Anadarko (45%)	Total (40%), Cove** (15%)	-	Drilling Q1 2013
Kifaru	L6	FAR (60%)	Pancontinental (40%)	-	Drilling Q2 2013. Pre-drill farm-out planned
Kubwa	L7	Anadarko (45%)	Total (40%), Cove** (15%)	-	
2 wells	L10A	BG Group (40%)	PTTEP (25%), Premier (20%), Pancontinental (15%)	-	Drilling 2 well programme in H2 2013
	L10B	BG Group (45%)	Premier (25%), PTTEP (15%), Pancontinental (15%)	-	
Tai	L8	Apache (50%)	Tullow (15%), Origin (20%), Pancontinental (15%)	c. 200	
1 well	L9	Ophir (60%)	FAR (30%), Vanoil (10%)	c. 300 (oil only)	
Offshore Tanzania 2013 drilling activity					
Tikiti/Maembe	East Pande	Ophir (70%)	RAKgas (30%)	517	Q2 2013. Pre-drill farm-out planned
Kusini	Block 1	BG (60%)	Ophir (40%)	3,122	Mid-2013. First basin floor fan well
Mlinzi	Block 7	Ophir (80%)	Mubadala (20%)	4,263	Q4 2013. Pre-drill farm-out planned
1-2 wells	Blocks 5 & 6	Petrobras (50%)	Shell (50%)	-	Exploration drilling planned
	Block 2	Statoil (65%)	Exxon (35%)	-	Statoil is looking to drill futher south close to Area 1/4 in Mozambique
Seismic	Tanga	Afren (74%)	Petrodel (26%)	-	Post L17/18 - 1H 2013

*Gross, unrisked, mean prospective resource **PTTEP bought Cove, but deal has not yet been approved by the Kenyan government Source: Company data, Nomura estimates

Company pages – Ophir, Afren, Tullow, Africa Oil

Ophir (Buy, TP 750p) – Double upgrade to Buy

Among the E&Ps, Ophir offers unique exposure to high impact deep water exploration offshore east and west Africa, an area typically reserved for the large-caps and majors. Our upgrade may be a quarter early but we argue that concerns over funding and a lack of near-term catalysts are overdone and investors should position themselves for what could be a transformational exploration drilling programme in 2013. While key wells in pre-salt Gabon and Tanzania are largely skewed to 2H, a number of catalysts in 1H could be supportive for the shares, including: 1) a successful flow test on Jodari could reduce Tanzania LNG development risk; 2) Q1 operational update could provide an upwards revision of pre-drill estimates; and 3) read-across from Total/Cobalt's drilling in pre-salt Gabon. Our new TP of 750p (raised from 683p) reflects a remodelling of Tanzania based on a two-train LNG development and updating our exploration programme in line with our positive view on pre-salt Gabon. With the shares falling some 19% since 2012 highs (vs SXEP down 5% in the same period) and now trading at a 31% discount to our new risked NAV of 750p/sh, we double upgrade from Reduce to Buy.

Our upgrade to Buy is based on:

1) Transformational exploration drilling in 2013, the highest exposure in our coverage universe

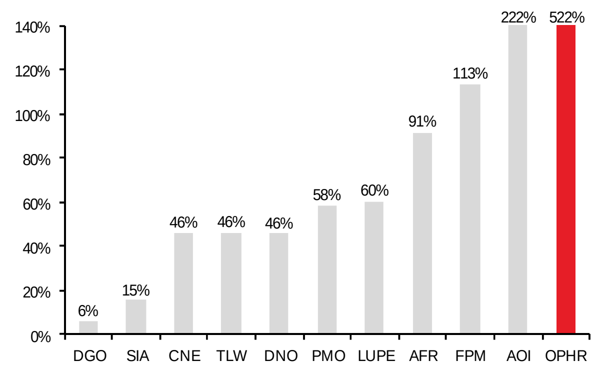
2) Concerns on funding that we believe are overdone, with a number of options providing flexibility and farm-down offers already received.

3) Despite drilling catalysts skewed to 2H, we argue that a number of 1H catalysts could be supportive: 1) Jodari flow test; 2) Q1 operational update; and 3) read-across from Total/Cobalt's drilling in pre-salt Gabon.

Highest geared E&P to exploration in 2013

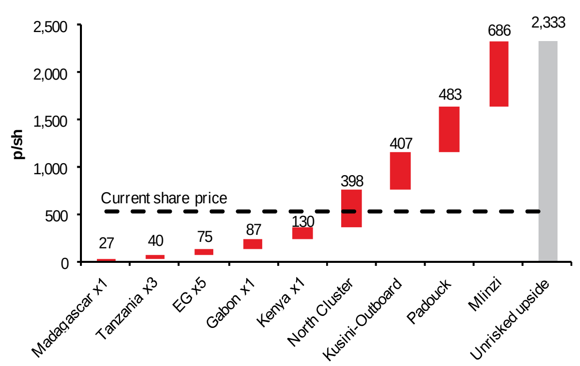
We estimate Ophir are drilling for 0.7/4.5bn boe (risked/unrisked) in 2013, offering unrisked upside of c. 520% to the current share price, the highest in our coverage universe. Our estimates include a conservative view on high equity licenses, assuming a 50% pre-drill farm-down. What we find attractive about the drilling programme is a mixture of large (>1bn boe) prospects across multiple play-types, including two of our preferred plays - Pre-salt Gabon and Tanzania. The introduction of higher value oil plays into drilling that was exclusively gas in 2012 ensures the programme is higher impact but also higher risk with average CoS of 15% in 2013 versus 28% in 2012. Consequently, we don't expect Ophir's 100% success rate of 2012 (from 6 wells) to be repeated, however we argue the upside case remains compelling.

Fig. 11: Ophir screens as the most leveraged E&P to 2013 exploration



Source: Nomura estimates, as of 16 January 2013

Fig. 12: 2013 drilling programme – four high-impact wells to watch



Source: Nomura estimates

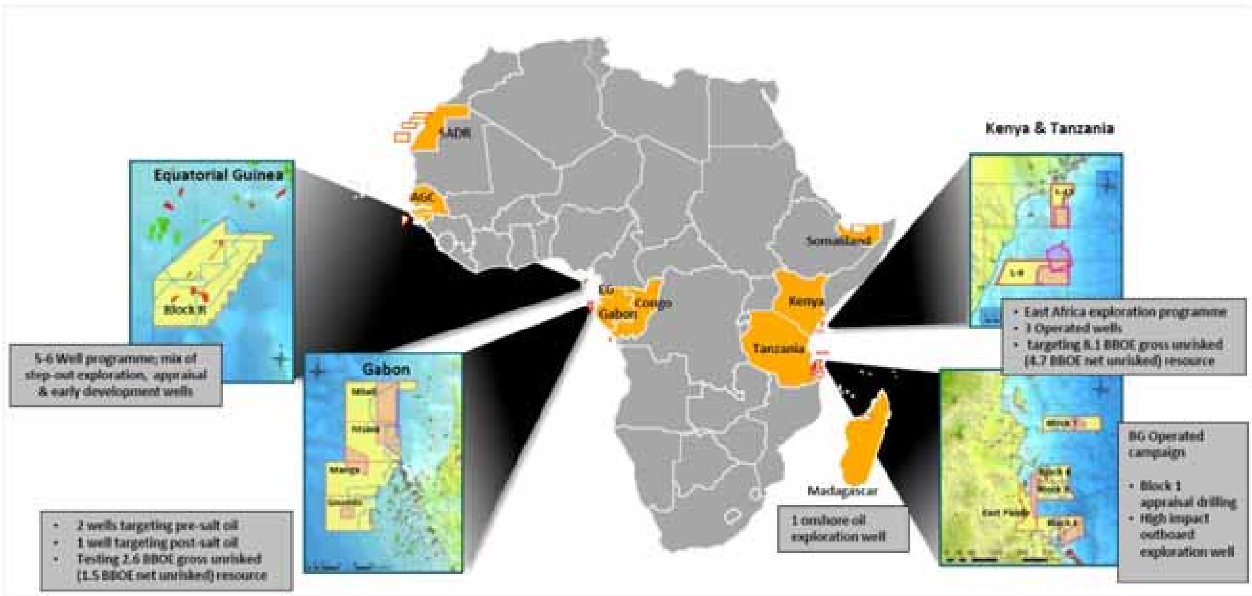
Four high-impact wells to watch in 2013 – each drilling for >75% of current share price

We estimate each well is drilling for >75% of the current share price on an unrisked basis, with CoS between 9-15% versus the industry average of c. 15%. These are high risk wells but even a solitary success could represent meaningful upside to the shares. Four wells to watch:

- **Kusini-Outboard (mid 2013):** Kusini will be BG/Ophir's first test of the basin floor fans and success would prove the play extends North from Mozambique into the outboard area of Block 1 (BG 60%, Ophir 40%). Based on preliminary seismic, Ophir's pre-drill estimates are 19 Tcf (gross) with an 18% CoS (a fully processed dataset expected to be delivered in Q1). We estimate a discovery could be worth 89p/496p (risked/unrisked).

- **Padouck (mid-2013):** The first of two wells Ophir plans to drill in the Gabon pre-salt. Aside from the large pre-drill size, Padouck is significant as: 1) It is Ophir's first exploration well targeting significant oil resource rather than gas; and 2) Ophir is the operator. Partnering Ophir in the Ntsini block are Petrobras who carried Ophir through the seismic and we understand are part-carrying the Gabon pre-salt campaign, which alleviates any funding concerns. Padouck is targeting 1,150mmboe (gross) with a 15% CoS and could be worth 85p/568p (risked/unrisked).
- **North Cluster (Q3 2013):** The second pre-salt well offshore Gabon will be drilled in the adjacent Mbeli block, c. 40km away from Padouck. Probability of success of 9% is likely to be affected positively/negatively on success/failure of Padouck. North Cluster is targeting 885mmboe (gross) and could be worth 39p/437p (risked/unrisked).
- **Mlinzi (Q3/Q4 2013):** Mlinzi in block 7 offshore Tanzania is c. 400km north of Kusini and is targeting the lower slope – a different play type to the basin floor fans targeted in BG-operated Block 1. Ophir has operatorship of block 7 with 80% equity and has indicated a pre-drill farm-down is planned. Our estimates assume a 50% farm-down. Mlinzi is targeting 20 Tcf (gross) with 11% CoS and we estimate could be worth 85p/770p (risked/unrisked).

Fig. 13: 2013 drilling focuses on high-impact deepwater drilling in east and west Africa

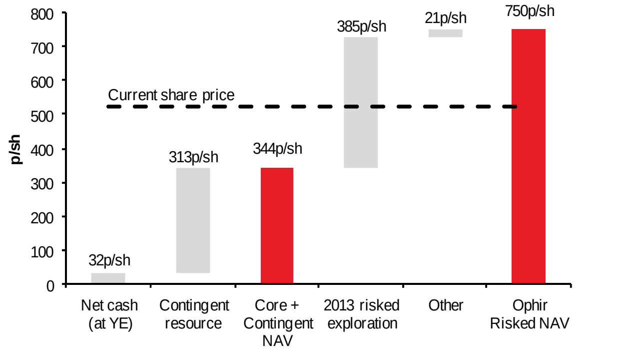


Source: Company data

Risk/reward compelling – Discovered resource offers downside protection

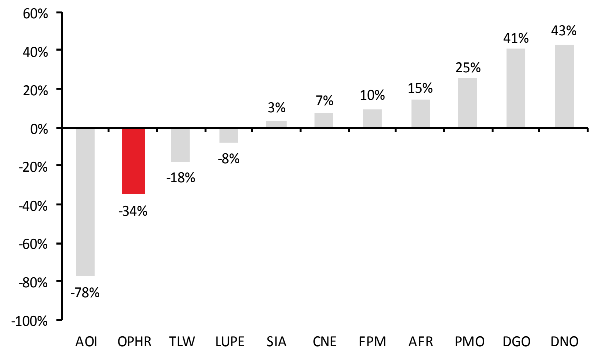
As well as offering sector-leading exposure to pure 'E', Ophir's contingent asset base offers some downside protection. We estimate discovered resource of 13.5-21 Tcf (gross) offshore Tanzania – enough gas to underpin a two-train LNG project – and 3 Tcf (gross) in Equatorial Guinea is worth c.USD 2bn (c.313p/sh). In a failure scenario, where 2013 drilling is unsuccessful, we would expect valuation support at around this level, a c. 34% downside to the current share price. Given the quality of Ophir's portfolio and the industry's appetite for east Africa gas resource, arguably M&A comes into play in this scenario, providing further valuation support.

Fig. 14: Contingent assets provide valuation support



Source: Nomura estimates

Fig. 15: (Downside)/Upside to core + contingent NAV



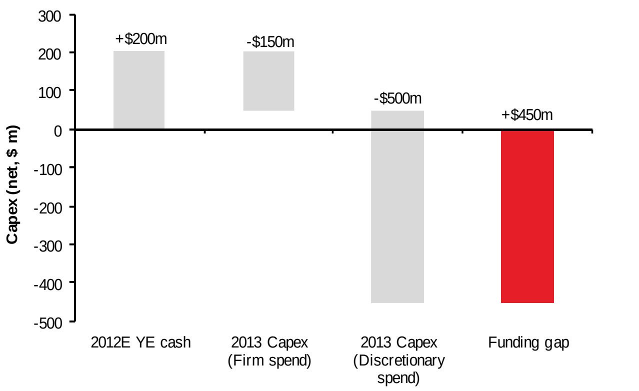
Source: Datastream, Nomura estimates, as of 16 January 2013

Funding concerns overdone: plenty of options, timely execution now required

With no internal cash flow, Ophir relies on external financing to fund capex. With a cash balance of c.USD 200m (2012 YE Nomura estimate), 2013 capex of USD 650m is only c.30% funded, with the shortfall some USD 450m. We argue Ophir is well placed to secure funding with a number of options available:

- **Farm-downs:** A number of farm-down candidates were identified by management at the Capital Markets Day (CMD) in October, including high equity positions in EG, Tanzania (B7, East Pande), Kenya, Gabon post-salt and Madagascar. Farm-outs could be carry rather than cash given the bias to exploration assets. The exception is EG, where discovered resource of 3 Tcf (gross, management estimates) could be reduced prior to development. At the CMD management indicated that offers have been received that are “significantly in excess” of the USD 450m funding requirement. We carry c.USD 600m for EG contingent resource in our NAV.
- **Defer discretionary spend:** On a more negative tack, discretionary spend of USD 500m could be deferred, pushing activity (including exploration drilling) from 2013 into 2014. Please refer to our sensitivity analysis in the next section of this report.
- **Raising equity:** Identified as a possible option by Ophir at the CMD. Flexibility exists on the amount and timing of any potential raise given the other options on the table. A previous placing of c.USD 240m was completed in March 2012 at 495p/sh (c.1% premium). Given the current market cap of USD 3.5bn, a similar amount would represent c.6% equity dilution.

Fig. 16: USD 450m funding gap for 2013 drilling programme



Source: Company data, Nomura estimates

Fig. 17: EG farm-down scenarios

Potential funding scenarios	FY12 cash	Farm-down cash	FY13 capex	Funding surplus/deficit
No farm-down in EG	200	0	650	-450
Farm-down to 40% in EG at fair value	200	307	650	-143
Complete EG farm-down at fair value	200	614	650	164

Source: Company data, Nomura estimates

Deferral of drilling catalysts could disappoint, but depth of exploration portfolio limits downside

Executing on drilling catalysts is core to our investment thesis. Last Friday, Ophir shares sold off as much as c.9% (vs SXEP), largely on concerns that drilling of the high-impact basin floor fans in Tanzania may be delayed after BG/Ophir did not renew the Metro-1 rig contract. Acknowledging that E&Ps rarely drill every well in their 12-month campaigns, we test a downside case assuming 6/15 wells are deferred beyond 2013. In this scenario 'blue-sky' upside for 2013 drilling would decrease from c.2,700p (c.500%) to c.1,100p (c.200%), and while admittedly less compelling, still screens as attractive versus sector average of 110%.

As a sensitivity, we defer 6/15 wells beyond 2013 including:

1) All five wells that Ophir has identified as pre-drill farm-out candidates (Tikiti, Anjohibe, Affanga Deep, Mlinzi, Block L9)

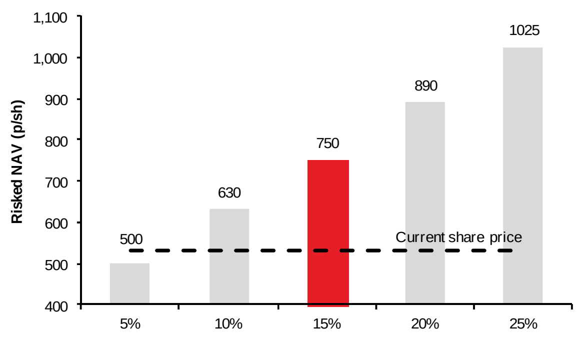
2) Drilling of the high-impact Kusini basin floor fan in Tanzania

Drilling skewed to H2, but a number of catalysts in H1 could unlock value

1) Q1 operational update could provide further de-risking of exploration

Something Ophir alluded to at their CMD, we expect an operational update in Q1 following final delivery of the Stenella 3D (Gabon) and Block 1 3D (Tanzania) seismic data sets. Current guidance is based on 'pre-stack' or preliminary seismic and for five key higher-risk wells, CoS range from 9-18% versus our blended average across the exploration portfolio of 15%. As a rule of thumb, each upwards revision of 1% (av. across the exploration portfolio) would add c. 28p/sh to our risked NAV of 750p/sh.

Fig. 18: Further de-risking of exploration prospects could unlock significant value…



Source: Company data, Nomura estimates

Fig. 19: …risk factors on key wells pending further review of seismic

Well	Country	Interest	Risked net mmboe	CoS	Timing
Tikiti/Maembe	Tanzania	35%**	10	16%***	Q2
Kusini-Outboard	Tanzania	35%*	198	18%***	Q2/Q3
Anjohibe	Madagascar	40%**	12	17%	Q2/Q3
Padouck Deep	Gabon	50%	86	15%***	Q2/Q3
3rd Campaign	EG	80%	77	34%	H2
North Cluster	Gabon	50%	40	9%***	Q3
Affanga Deep /Pachg Liba	Gabon	100%**	23	21%	Q3/Q4
Mlinzi	Tanzania	40%**	188	11%***	Q3/Q4

Source: Company data, Nomura estimates *Government back in rights as per IPO prospectus; **Assumes 50% pre-drill farm-down; ***Preliminary CoS to be refined upon further review of interpreted seismic data

2) Positive flow test could reduce Tanzania development risk

Key to proving Jodari as the LNG 'anchor field' will be reservoir quality and the DST planned for Q1 2013 is likely to be significant. We would expect comparisons to be drawn to Mozambique where Anadarko's wells have flowed at up to 100mmscf/d. While this is the natural analogue, we would caution over a direct comparison of rates, given the significantly larger reservoir in Mozambique. Globally, our analysis points to initial rates of 20-50mmsf/d being enough to support a commercial offshore LNG development, taking recent discoveries in Australia, Israel and Equatorial Guinea as examples.

3) Read-across from Gabon pre-salt drilling by Total/Cobalt

Total, together with partners Cobalt and Marathon, intend to drill Gabon's first deepwater offshore pre-salt well in H1 2013 in the Diaba license. Despite being in the South Gabon basin, some 200km away from Ophir's blocks, success could provide regional de-risking of the play and thematically be supportive for Ophir's drilling in H2.

Revisiting our NAV

We have increased our risked NAV to 750p/sh from 683p/sh primarily to reflect: 1) an updated 2013 exploration programme; 2) remodelling Tanzania resource based on a two-train LNG development; and 3) updating for YE cash. Details as follows:

1) Exploration – We update 2013 drilling, with pre-drill volumes largely in line with Ophir's CMD and updated valuations (USD/boe) based on our Tanzania, pre-salt Gabon and offshore Kenya models. We take a conservative view on high equity prospects that have been identified as pre-drill farm out candidates and assume a 50% farm-down. In aggregate, we carry 0.7/4.5bn boe (risked/unrisked) for 2013 exploration, some 30% lower than company guidance of 1.0/6.2 bn boe.

2) Tanzania LNG – We have built a two-train LNG model for Tanzania following commercial volumes being reached in May 2012. We model a 2019 start-up, capex of 17/boe, opex of USD 6/boe and LNG pricing based on a 14.9% s-curve at USD 95/bbl. We assume midstream and LNG facilities offer a utility return equal to cost of capital. Overall, we estimate an IRR of 16% and present value of USD 2.9/boe.

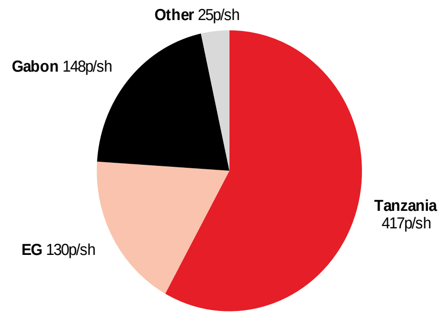
3) Cash balance – We update for estimated YE cash balance of USD 200m, previously USD 454m as at end-1H 2012.

Fig. 20: Changes to our risked NAV
At USD 95/bbl LT oil price assumption

Risked NAV (p/sh)	Old	New	Change	Comments
Producing assets	-	-	-	
Development assets	-	-	-	
Other/Cash	101	32	-69	
Core	**101**	**32**	**-69**	YE 2012 cash balance
Contingent assets	298	313	15	Remodelling on Tanzania LNG
Exploration assets	284	406	121	Updating for 2013 drilling program
Risked NAV	**683**	**750**	**67**	

Source: Nomura estimates

Fig. 21: Geographical distribution of risked NAV (ex cash)
At USD 95/bbl LT oil price assumption



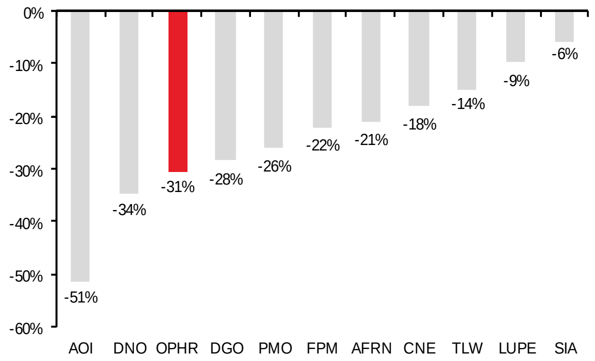
Source: Nomura estimates

Valuation: Not expensive in the context of exploration upside

1) Trading at a modest discount to the sector on risked NAV

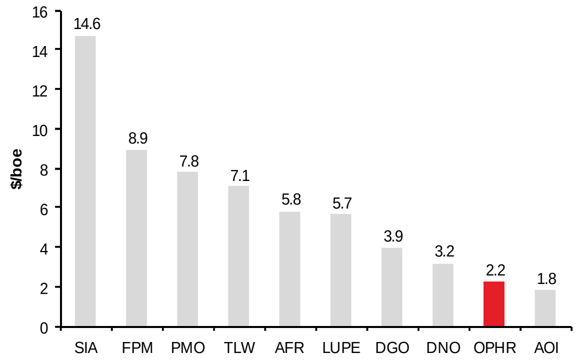
Having fallen a relative c.14% since 2012 highs of 640p/sh, Ophir is trading at a c. 30% discount to our new risked NAV of 750p/sh, versus the sector at c. 25%. Admittedly, the discount doesn't screen as 'cheap' but we argue risked NAV masks the exploration upside potential. An EV/boe of USD2.2/boe, which includes unrisked resource, screens as one of the lowest in our space and we argue attractive, given the quality of Ophir's portfolio.

Fig. 22: Ophir current trading at a c. 5% discount to the sector…



Source: Company data, Nomura estimates; as of 16 January 2013

Fig. 23: … despite offering one of the lowest EV/risked resources in our coverage universe

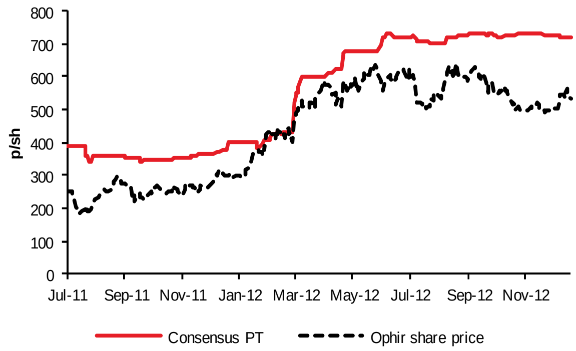


Source: Nomura estimates; as of 16 January 2013

2) Discount to consensus TP the widest for some time

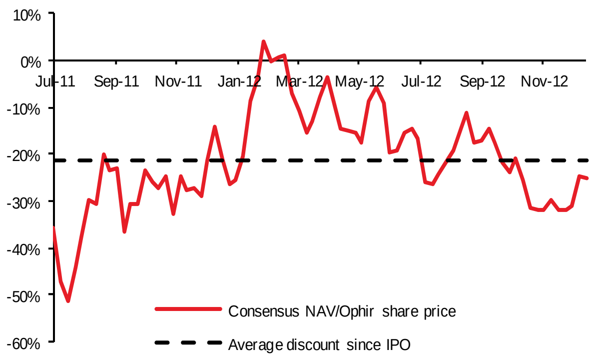
Using Bloomberg data, we argue that a discount to consensus TP of 28% is the widest for some time and approaching similar levels to Ophir's IPO in mid-2011. In the absence of M&A, we think it is unlikely to see a return to the premium valuation seen in Q1 2012 following the Jodari discovery and PTTEP/Shell bids for Cove; however, we argue the current discount appears unwarranted.

Fig. 24: Recent dislocation to consensus NAVs…



Source: Bloomberg; as of 16 January 2013

Fig. 25: … means discount is approaching mid-2011 IPO levels



Source: Bloomberg; as of 11 January 2013

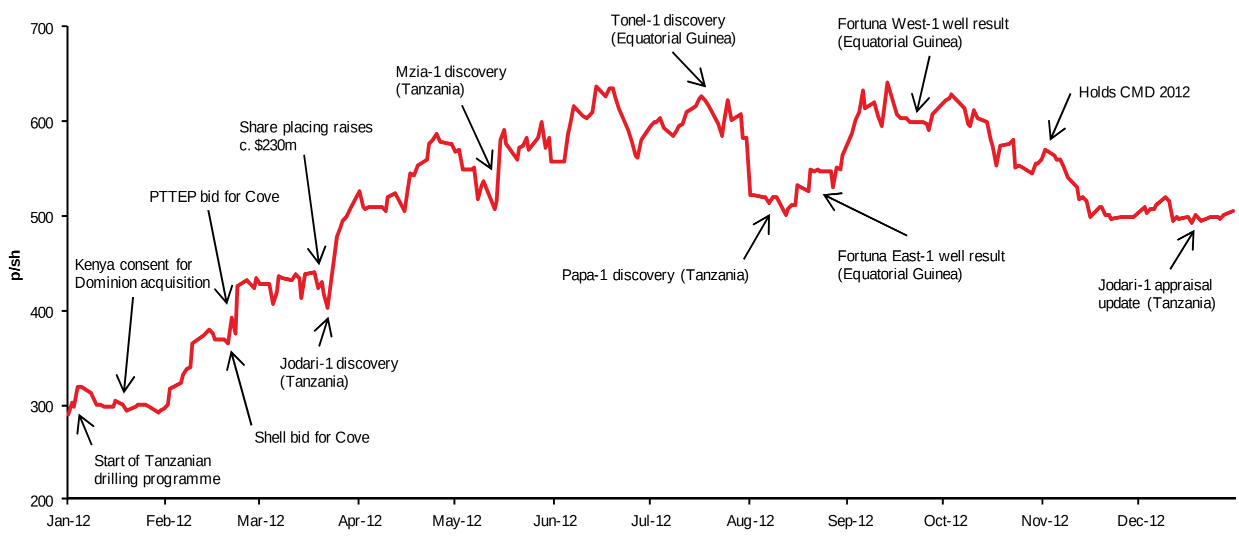
3) How much exploration success is priced in? Stock discounting c. 7% CoS on 2013 drilling

Working back from the current share price of c. 520p (c. USD 3.5bn) and using a valuation of USD 3.3/boe (as per our risked NAV) implies c. 1bn boe of resource is currently being discounted. Stripping out discovered resource - which we estimate at 0.7bn boe - leaves an implied exploration upside of 0.3bn boe or a c. 7% CoS on unrisked resource of 4.5bn boe. We would argue this appears harsh relative to the global industry average of 12-15% and particularly given the quality of Ophir's portfolio and exploration track record.

Catalysts

- **2013 funding /farm-downs:** To close the USD 450m funding gap, a combination of pre-drill farm-downs in high equity (70%+) exploration acreage in Tanzania & Kenya together with a farm-down of discoveries in EG appears most likely. Execution would be supportive and could remove an overhang on the shares.
- **Q1 operational update:** We expect an operational update in Q1 to focus on Gabon and Tanzania with an update on pre-drill resource estimates and CoS after further seismic work. Current guidance is based on preliminary seismic and for the key higher-risk wells, CoS ranges from 9-18% versus our blended average across the exploration portfolio of 15%. As a rule of thumb, each upwards revision of 1% would add c. 28p/sh to our risked NAV of 750p/sh.
- **Jodari appraisal and DST:** Key to proving Jodari as the LNG 'anchor field' will be reservoir quality and the DST planned for Q1 2013 is likely to be significant. After appraisal wells to the north and south, aimed at delineation, the rig returns to the original Jodari discovery to re-enter for the flow test.
- **Gabon pre-salt drilling:** Ophir is not likely to drill until 2H 2013 but could benefit thematically from Total/Cobalt drilling in H1. This will be Gabon's first deepwater pre-salt well and could open the play. For Ophir, the Padouck well is targeting 1.2bn boe (unrisked, gross) and appears the most attractive. We carry 85p/sh (risked) and 568p/sh (unrisked) in our NAV.
- **Tanzania basin floor fans drilling (mid-2013):** An untested play offshore Tanzania, BG/Ophir will look to drill the first basin floor fan structure on BG-operated block 1 in mid-2013. The Kusini prospect is targeting 19 Tcf (unrisked, gross) and we carry 89p/sh (risked) and 496p/sh (unrisked) in our NAV.
- **Mlinzi (Q3/Q4 2013):** Mlinzi in block 7 offshore Tanzania is c. 400km north of Kusini and is targeting the lower slope – a different play type to the basin floor fans targeted in BG-operated Block 1. Ophir has operatorship of block 7 with 80% equity and has indicated a pre-drill farm-down is planned. Our estimates assume a 50% farm-down. Mlinzi is targeting 20 Tcf (gross) with 11% CoS and we estimate could be worth 85p/770p (risked/unrisked).

Fig. 26: Ophir FY 2012 price performance snapshot



Source: Datastream, Nomura research

Fig. 27: Ophir summary NAV

At USD 95/bbl LT oil price assumption

Country	Asset	Interest %	Type	CoS %	Risked net mmboe	Unrisked net mmboe	NPV/boe $/boe	NPV $m	NPV risked p/share	*NPV unrisked p/share*
Producing assets								-	-	-
Development assets								-	-	-
Net (debt)/cash								200	32	*32*
Others								-	-	-
Core								**200**	**32**	***32***
Tanzania	Pweza (Block 4)	34%*	Gas	75%	70	94	2.9	201	32	*42*
Tanzania	Jodari (Block 1)	35%*	Gas	75%	149	198	2.9	426	67	*89*
Tanzania	Chewa M510 (Block 4)	34%*	Gas	75%	25	33	2.9	70	11	*15*
Tanzania	Chewa M505 (Block 4)	34%*	Gas	75%	1	2	2.9	4	1	*1*
Tanzania	Chaza Miocene (Block 1)	35%*	Gas	75%	4	5	2.9	12	2	*2*
Tanzania	Mzia-1 (Block 1)	35%*	Gas	75%	198	264	2.9	567	89	*119*
Tanzania	Papa-1 (Block 3)	34%*	Gas	75%	32	43	2.9	91	14	*19*
Equatorial Guinea	Fortuna 5.5Ma (G1 and G2 channel)	80%	Gas	67%	15	23	2.5	38	6	*9*
Equatorial Guinea	Fortuna 8.2Ma (G4)	80%	Gas	67%	1	2	2.5	4	1	*1*
Equatorial Guinea	Fortuna 10.5Ma (G3)	80%	Gas	67%	7	11	2.5	18	3	*4*
Equatorial Guinea	Fortuna East	80%	Gas	67%	38	57	2.5	94	15	*22*
Equatorial Guinea	Fortuna West	80%	Gas	67%	89	133	2.5	221	35	*52*
Equatorial Guinea	Lykos Shallow	80%	Gas	67%	8	12	2.5	20	3	*5*
Equatorial Guinea	Tonel	80%	Gas	67%	71	107	2.5	177	28	*42*
Equatorial Guinea	Estrella Del Mar -1	80%	Gas	67%	15	22	2.5	37	6	*9*
Equatorial Guinea	Oreja Marina	80%	Gas	67%	2	3	2.5	5	1	*1*
Contingent assets				**72%**	**725**	**1,008**	**2.7**	**1,985**	**313**	***433***
Tanzania	Jodari DST (Block 1)	35%*	Gas	33%	4	12	2.9	11	2	*5*
Tanzania	Mzia Appraisal (Block 1)	35%*	Gas	33%	10	29	2.9	28	4	*13*
Tanzania	Tikiti (East Pande)	35%**	Oil/Gas	16%	10	60	3.5	33	5	*33*
Tanzania	Kusini-Outboard (Block 1)	35%*	Gas	18%	198	1,099	2.9	567	89	*496*
Tanzania	Mlinzi (Block 7)	40%**	Oil	11%	188	1,705	2.9	537	85	*770*
Madagascar	Anjohibe	40%**	Oil	17%	12	70	3.0	36	6	*33*
Gabon	Padouck (Pre-salt)	50%	Oil	15%	86	575	6.3	540	85	*568*
Gabon	North Cluster (Pre salt)	50%	Oil	9%	40	443	6.3	250	39	*437*
Gabon	Affanga Deep/Pachg Liba	50%**	Oil	21%	23	111	6.3	146	23	*110*
Equatorial Guinea	Helius	80%	Gas	75%	22	30	2.5	55	9	*12*
Equatorial Guinea	Delphin South	80%	Gas	52%	18	34	2.5	44	7	*13*
Equatorial Guinea	Tranquilla	80%	Gas	14%	11	79	2.5	28	4	*31*
Equatorial Guinea	Iambe East	80%	Gas	22%	12	56	2.5	31	5	*22*
Equatorial Guinea	Juturna East	80%	Gas	20%	14	71	2.5	35	6	*28*
Kenya	Simba (L-9)	60%***	Oil/Gas	11%	21	193	4.8	102	16	*146*
2013 Exploration				**15%**	**668**	**4,565**	**3.7**	**2,443**	**385**	***2,718***
2013+ Exploration upside				**1%**	**44**	**4,367**	**3.0**	**132**	**21**	**2,077**
Total exploration assets				**8%**	**712**	**8,932**	**3.6**	**2,574**	**406**	***4,795***
Risked NAV					**1,437**	**9,940**	**3.3**	**4,759**	**750**	**5,260**

*Government back in rights as per IPO prospectus **Assumes 50% pre-drill farm-down ***Assumes farm-out to FAR and Vanoil approved by government

Source: Company data, Nomura estimates

Fig. 28: Tanzania gas resource tracker – We carry 6 Tcf (net, risked) out of 135Tcf (gross, unrisked)

Tanzania gas resource estimates	Ophir CMD	Nomura estimates			
	Gross, GIIP, unrisked* (TCF)	Gross, GIIP, unrisked* (TCF)	Net, URR, unrisked** (TCF)	CoS (%)	Net, URR, risked** (TCF)
Discovered					
Tertiary	9	9	2.0	75%	1.5
Upper Cretaceous	4.5 - 12	8	1.8	75%	1.4
Intraslope channel play					
Tertiary upside	29	29	7.7	1%	0.1
Cretaceous upside	21	21	5.7	2%	0.1
Basin floor fan play					
Tertiary Basin Floor Fans upside	22	22	6.6	18%	1.2
Total - Blocks 1, 3 & 4 (BG-operated)	**86 - 93**	**89**	**24**	**18%**	**4.3**
Discovered	0	0	0		0
Block 7	31	31	12.4	9%	1.1
East Pande	15	15	4.8	2%	0.1
Total - Block 7 & East Pande (Ophir-operated)	**46**	**46**	**17**	**7%**	**1.2**
Total	**132 - 139**	**135**	**41**	**13%**	**6**

*Gas initially in place; **Ultimate recoverable resource Source: Company data, Nomura estimates a

Fig. 29: Ophir financial summary, 2011-15E

Operational data	Unit	2011	2012E	2013E	2014E	2015E
Brent	US$/bbl	111	112	105	100	95
Net working interest production	kboe/d	-	-	-	-	-
Income statement	**Unit**	**2011**	**2012E**	**2013E**	**2014E**	**2015E**
Revenue	$m	-	-	-	-	-
COGS	$m	(1)	(1)	(1)	(1)	(1)
Gross profit	$m	(1)	(1)	(1)	(1)	(1)
Administrative expenses	$m	(16)	(15)	(16)	(17)	(17)
Disposals of subsidiaries/Profit on sale of assets	$m	-	-	-	-	-
Other operating income (expenses)	$m	0	(0)	-	-	-
Exploration Cost	$m	(16)	(99)	(60)	(60)	(60)
Operating profit	$m	**(33)**	**(115)**	**(77)**	**(77)**	**(78)**
(Loss)/gain on hedging instuments	$m	-	-	-	-	-
Financials	$m	14	9	2	(1)	(1)
Profit from continuing activities before tax	$m	(19)	(107)	(75)	(78)	(79)
Tax	$m	-	-	-	-	-
Tax Rate	%	-	-	-	-	-
Net Income	$m	(19)	(107)	(75)	(78)	(79)
Clean net income	$m	**(19)**	**(107)**	**(75)**	**(78)**	**(79)**
Basic EPS	c/sh	**(6)**	**(27)**	**(19)**	**(20)**	**(20)**
Clean Basic EPS	c/sh	(6)	(27)	(19)	(20)	(20)
Diluted EPS	c/sh	(6)	(27)	(19)	(20)	(20)
Clean diluted EPS	c/sh	(6)	(27)	(19)	(20)	(20)
Number of shares	m	327	399	399	399	399
Diluted number of shares	m	327	399	399	399	399
Cash flow	**Unit**	**2011**	**2012E**	**2013E**	**2014E**	**2015E**
Profit Before Tax	$m	(19)	(107)	(75)	(78)	(79)
DD&A	$m	1	1	1	1	1
Income Tax Paid	$m	0	0	-	-	-
Other non cash	$m	4	81	59	62	62
Cash earnings	$m	(14)	(24)	(14)	(15)	(16)
Working capital adjustment	$m	3	-	-	-	-
CFO	$m	**(22)**	**(26)**	**(14)**	**(15)**	**(16)**
Capex	$m	(67)	(355)	(650)	(400)	(959)
Interest Received	$m	-	-	-	-	-
Net acquisitions (-) disposals (+) and other	$m	23	(23)	-	(20)	-
CF before financing activities	$m	**(66)**	**(403)**	**(664)**	**(435)**	**(975)**
Issue(+)/Purchase (-) of own shares	$m	-	239	-	-	-
Dividends	$m	-	-	-	-	-
Interest Paid	$m	-	-	-	-	-
Proceeds (+) repayment (-) of debt	$m	-	-	382	435	975
Increase (+) decrease (-) in cash	$m	307	(164)	(282)	-	-
Exchange Diff	$m	(0)	(0)	-	-	-
Net Change in Cash	$m	**307**	**(164)**	**(282)**	**-**	**-**
Balance sheet	**Unit**	**2011**	**2012E**	**2013E**	**2014E**	**2015E**
Inventories	$m	6	13	13	13	13
Trade receivables	$m	9	14	14	14	14
Cash and cash equivalents	$m	397	232	(50)	(50)	(50)
Other current assets	$m	0	15	17	16	15
Current assets	$m	**412**	**274**	**(6)**	**(7)**	**(8)**
Property, plant and equipment	$m	2	217	866	1,265	2,223
Other non current assets (Intangible exploration & evaluation assets)	$m	328	662	602	562	502
Total assets	$m	**742**	**1,153**	**1,462**	**1,820**	**2,717**
		-	-	-	-	-
ST borrowings	$m	-	-	-	-	-
Payables	$m	28	81	81	81	81
Other current	$m	1	1	1	1	1
Current liabilities	$m	**29**	**82**	**82**	**82**	**82**
LT borrowings	$m	-	-	382	818	1,793
Other non current	$m	0	58	58	58	58
Total liabilities	$m	**29**	**139**	**522**	**957**	**1,932**
		-	-	-	-	-
Share capital, share premium and reserves	$m	791	1,212	1,214	1,215	1,216
Retained earnings	$m	(78)	(199)	(274)	(352)	(431)
Minority Interest	$m	-	-	-	-	-
Total shareholders' equity	$m	**713**	**1,014**	**940**	**863**	**785**

Source: Company data, Nomura estimates

Afren (Neutral, TP 175p) – Downgrade to Neutral

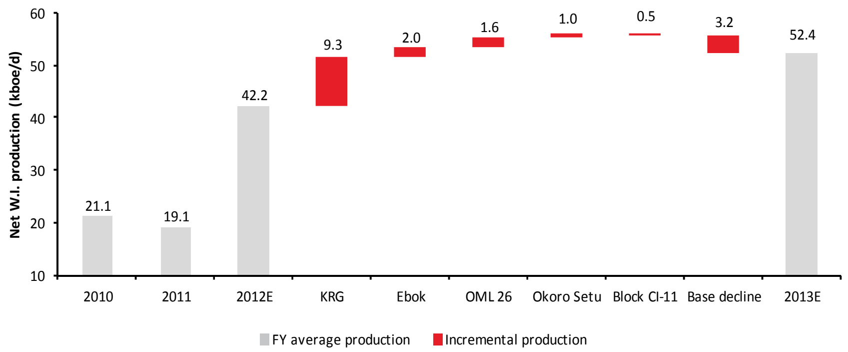
Our downgrade to Neutral from Buy is primarily driven by valuation. With the shares outperforming the sector by c.65% in 2012, Afren now offers 26% upside potential (sector c.35% upside) to our new price target of 175p (lowered from 185p). Delivery of core and contingent NAV remains a major source of potential upside for Afren and progress at developments in Kurdistan and an expanded production hub offshore SE Nigeria are both key in the medium term. Nearer term, we would highlight: 1) production growth in 2013 that is set to moderate as growth switches from Nigeria to Kurdistan, and we see potential downside risk to the ramp-up of volumes from Barda Rash; 2) our more cautious view on Nigeria following our trip to Africa Oil Week; and 3) exploration drilling in 2013 that, despite the introduction of a number of emerging and thematically attractive plays, we argue is less compelling across the group.

Production growth in 2013 geared to Kurdistan

We expect production growth to moderate in 2013 after a strong bounce-back in volumes in 2012, which we estimate provided 120% growth y-o-y. Growth in 2013 is likely to be driven by Kurdistan, as opposed to Nigeria, and we see downside risk to the ramp-up of volumes from the region. Admittedly, the risks are largely regional and outside Afren's control, but reported production from Barda Rash at mid-November (8 boe/d gross) appeared well short of guidance (2012 exit rate of 10-15kboe/d gross). As such, we assume a slower ramp-up for Kurdistan and model net W.I. volumes of 9 kboe/d in 2013 (versus guidance of c. 20kboe/d), ramping up to c.60kboe/d in 2017 (versus company guidance of 75kboe/d). We estimate 2013 group production at 52 kboe/d (net W.I.) and expect guidance from Afren with the 21 January trading statement.

Fig. 30: Kurdistan volumes account for c.90% of 2013 volume growth

Nomura base assumption of USD 105/boe for 2013



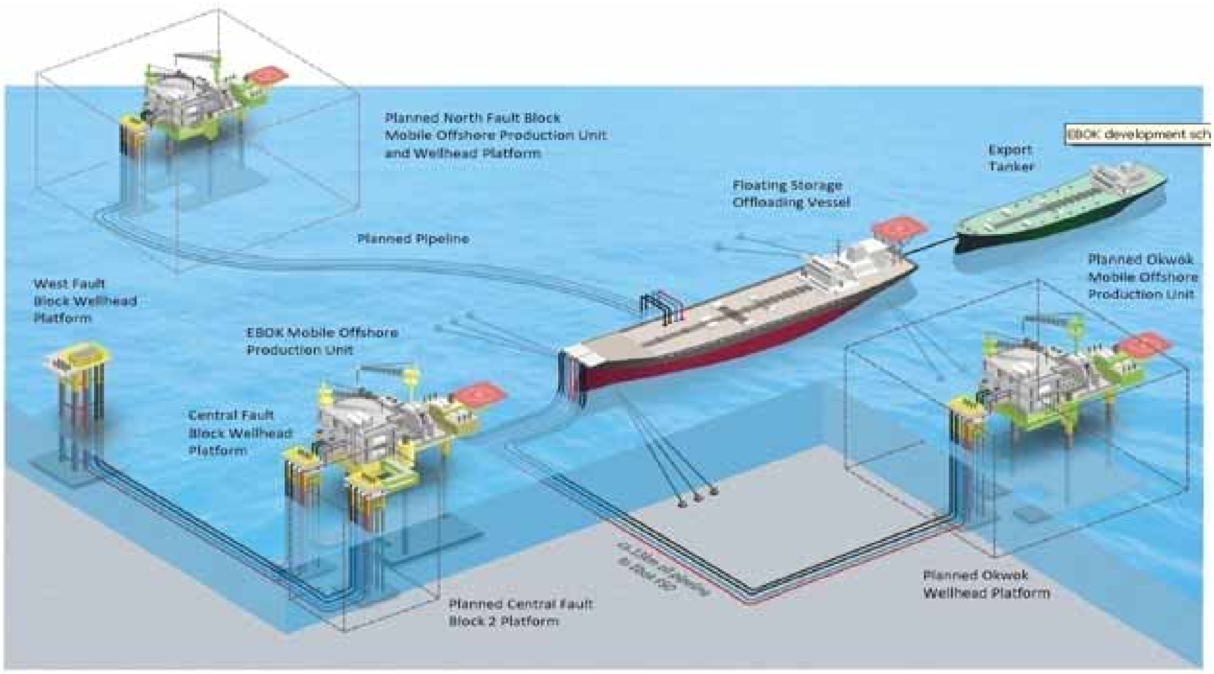
Source: Nomura estimates

A more cautious view on Nigeria

While uncertainty around the extent and impact of oil sector reforms contained in the PIB is not new, we point to a number of recent developments that support our more cautious view:

- During our visit to Africa Oil Week (November 2012) the Nigerian Ministry of Petroleum indicated a new era of "industry transformation" and a desire to utilise all associated gas (currently being flared), risking oil production if necessary.
- The latest draft PIB (July 2012) contained tougher taxation and potentially far-reaching ministerial powers, including the right to set royalties and fees. Indications that the new terms could increase government take by 7-8% (Nigerian Petroleum Minister, FT, 19 November) are also unhelpful, in our view.
- Ability for Afren to leverage its 45% interest in First Hydrocarbon Nigeria (FHN) has largely disappointed and the company is reportedly considering reducing exposure (Africa Oil & Gas Report, 16 October).

Fig. 31: Afren's planned production hub offshore Nigeria

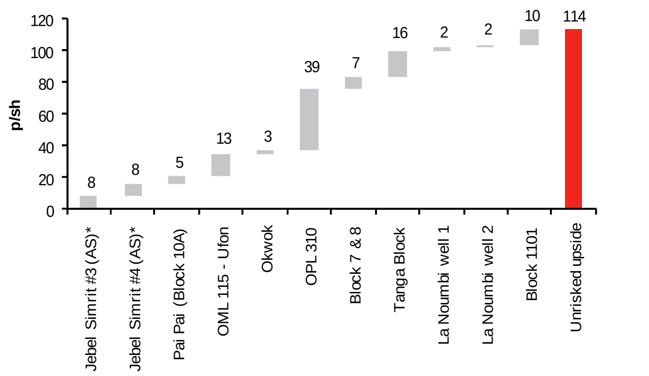


Source: Company data

Exploration upside attractive, but more compelling elsewhere

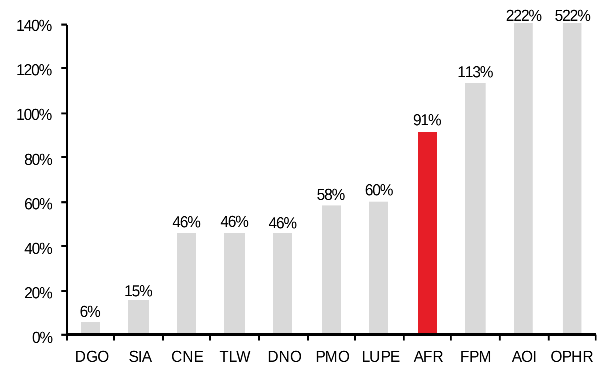
While Afren's drilling programme provides exposure to a number of emerging and thematically attractive plays, such as Kenya, Tanzania and KRG, we argue investors can gain exposure through a basket of Africa Oil, Ophir and DNO respectively. Drilling in Nigeria could surprise with a well in OPL 310, the highest impact well in Afren's 2013 programme. Improving on execution is key, with Afren deferring c.50 of wells planned at the start of 2012 into 2013, including OPL 310.

Fig. 32: Afren 2013 exploration unrisked upside



Source: Nomura estimates

Fig. 33: Unrisked upside across our coverage universe



Source: Nomura estimates, as of 16 January 2013

Changes to our NAV

We decrease our risked NAV to 175p/sh (from 185p/sh) largely owing to: 1) higher risking of Nigeria, reflecting our more cautious view on country risk; 2) a slower ramp-up at Barda Rash in Kurdistan; and 3) an updated exploration programme. We have also rolled forward our model to 2013 and marked to market for oil price in 2012. Our long-term oil price assumption remains USD 95/bbl.

We revise 2013E earnings higher by c. 60%, primarily owing to higher oil price assumption (USD105/bbl vs 95/bbl). Our estimates of USD 263m (adj net income) are 10% below consensus of USD 294m.

Fig. 34: Changes to our Afren risked NAV

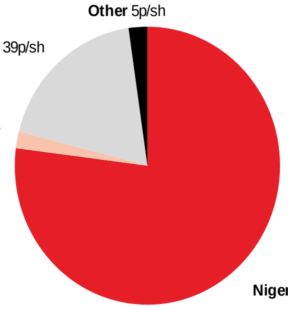
At USD 95/bbl LT oil price assumption

Risked NAV (p/sh)	Old	New	Change	Comments
Producing assets	79	65	-14	Nigeria risking, 2013 roll forward
Development assets	58	48	-10	Nigeria risking, 2013 roll forward
Other/Cash	-41	-31	10	Cash as at H1 2012
Core	**97**	**83**	**-14**	
Contingent assets	67	76	10	Kurdistan 2013 roll forward
Exploration assets	22	16	-6	Updated for 2013 drilling program
Risked NAV	**185**	**175**	**-10**	

Source: Nomura estimates

Fig. 35: Nigeria represents c.77% of our risked NAV

At USD 95/bbl LT oil price assumption

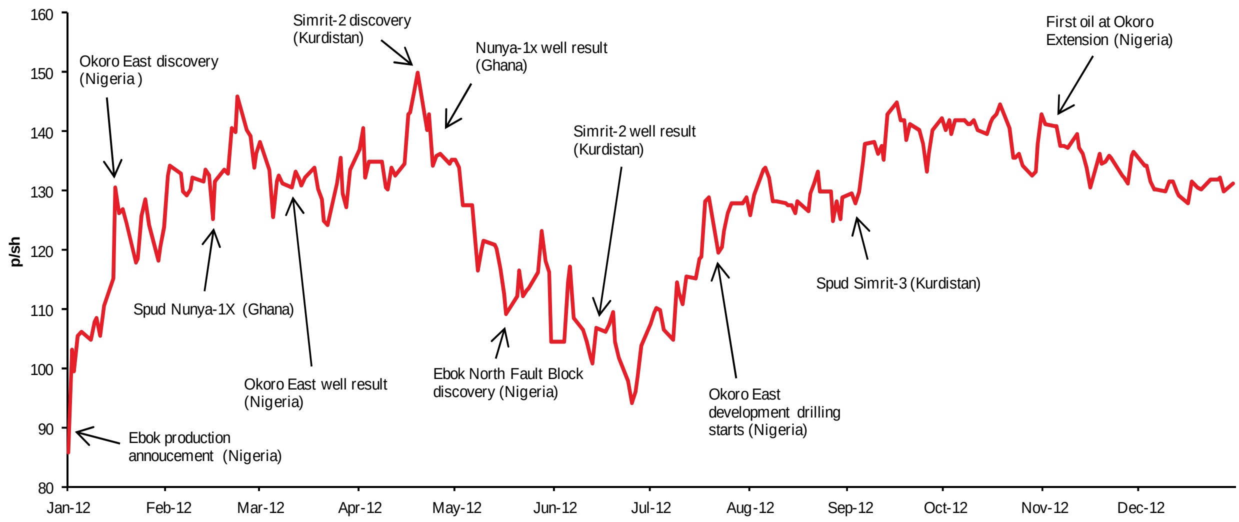


Source: Nomura estimates

Catalysts

- **Trading statement (21 January):** We expect the market to focus on production exit rates for 2012, particularly Ebok (35kboe/d as at November) and Barda Rash in Kurdistan (target 10-15kboe/d gross). We also expect guidance on 2013 production and the planned production hub offshore Nigeria – with new infrastructure planned for Ebok NFB, CFB and Okwok.
- **The Pai Pai exploration well** in Kenya's Block 10A (Afren 20%) will be the first well testing the cretaceous rift play. Both Tullow and Africa Oil have highlighted that Pai Pai is higher-risk than the tertiary play tested at Ngamia and we carry a 20% CoS to reflect this. A key risk is trap integrity, with previous unsuccessful wells, drilled by Conoco and Amoco essentially on breached traps. Pai Pai is targeting 120mmboe (gross) and we estimate could be worth 1p/6p (risked/unrisked) for Afren. Results are expected in early February.
- **Petroleum Industry Bill (PIB) approval:** Press reports (eg, E&P Magazine, November 2012) have indicated the bill could be approved by mid-2013. However, given the long track record of delays we are cautious a lasting resolution will be reached in 2013.
- **OML 115 exploration:** We expect the Ufon-2 exploration well in OML 115 to be drilled after appraisal drilling at Okwok is completed. Ufon-2 is targeting a three-way dip closure and 60mmboe (gross). We carry a 15% CoS and 2p/sh in our risked NAV, with unrisked estimates of 16p/sh.
- **Simrit-3 exploration well:** Afren's follow-up well to Simrit-2 will test the eastern extent of the Simrit anticline, in Kurdistan's Ain Sifni block. The well is targeting Cretaceous, Jurassic and Triassic reservoir intervals. Drilling started in September and we expect results in Q1 2013. We estimate Simrit-3 is targeting 300mmboe (gross) and could be worth 2p/sh (risked) and 10p/sh (unrisked).

Fig. 36: Afren FY 2012 price performance snapshot



Source: Datastream, Nomura research

Fig. 37: Afren summary NAV

At USD 95/bbl LT oil price assumption

Country	Asset	Interest %	Type	CoS %	Risked net mmboe	Unrisked net mmboe	NPV/boe $/boe	NPV $m	NPV risked p/share	*NPV unrisked p/share*
Cote d'Ivoire	Block CI-11	48%	Oil/Gas	100%	2	2	9	16	1	*1*
Nigeria	OML 112 (Okoro Setu)	100%	Oil	100%	18	18	11	185	11	*11*
Nigeria	Ebok	100%	Oil	100%	69	69	13	917	54	*54*
Producing assets					**88**	**88**	**13**	**1,119**	**65**	***65***
Nigeria	OML 26	20%	Oil	85%	7	8	10	69	4	*5*
Nigeria	Ebok upside	100%	Oil	85%	35	41	11	387	23	*27*
Nigeria	Okoro East	50%	Oil	85%	31	37	12	373	22	*26*
Development assets					**73**	**86**	**11**	**829**	**48**	***57***
Net (debt)/cash								(582)	(34)	*(34)*
Others								50	3	*3*
Core					**161**	**174**		**1,416**	**83**	***91***
Nigeria	OML 26 (Upside)	20%	Oil	60%	17	29	10	171	10	*17*
Nigeria	OML 26 - Aboh, Ozoro and Ovo fields	20%	Oil/Gas	60%	17	29	8	142	8	*14*
Nigeria	Okwok (OML67)	63%	Oil	60%	20	33	9	186	11	*18*
Nigeria	Ebok North Fault Block	100%	Oil	60%	15	25	11	162	9	*16*
Cote d'Ivoire	Block CI-01	65%	Oil/Gas	60%	7	12	7	49	3	*5*
KRG	Barda Rash Phase 1	60%	Oil	75%	12	16	3	35	2	*3*
KRG	Barda Rash Phase 2	60%	Oil	50%	13	27	3	38	2	*4*
KRG	Barda Rash Phase 3	60%	Oil	30%	78	259	3	221	13	*43*
KRG	Barda Rash Phase 4	60%	Oil	15%	87	580	3	248	14	*96*
KRG	Ain Sifni - 2C	20%	Oil	25%	2	8	3	6	0	*1*
KRG	Jebel Simrit #2 (AS)*	20%	Oil	25%	15	61	3	44	3	*10*
JDZ	JDZ Block 1 appraisal	4%	Oil	10%	0	4	5	2	0	*1*
JDZ	JDZ Block 1	4%	Oil	10%	0	4	5	2	0	*1*
Contingent assets					**285**	**1,087**	**5**	**1,306**	**76**	***230***
KRG	Jebel Simrit #3 (AS)*	20%	Oil	20%	12	61	3	35	2	*10*
KRG	Jebel Simrit #4 (AS)*	20%	Oil	20%	12	61	3	35	2	*10*
Kenya	Pai Pai (Block 10A)	20%	Oil	20%	5	24	4	20	1	*6*
Nigeria	OML 115 - Ufon	75%	Oil	15%	7	45	6	41	2	*16*
Nigeria	Okwok	63%	Oil	20%	2	11	6	14	1	*4*
Nigeria	OPL 310	70%	Oil/Gas	5%	9	175	4	35	2	*41*
Ethiopia	Block 7 & 8	30%	Oil	5%	2	30	4	6	0	*7*
Tanzania	Tanga Block	74%	Oil/Gas	5%	7	148	2	15	1	*17*
Congo	La Noumbi well 1	14%	Oil	10%	2	18	2	4	0	*2*
Congo	La Noumbi well 2	14%	Oil	10%	2	18	2	4	0	*2*
Madagascar	Block 1101	90%	Oil	5%	5	90	2	9	1	*11*
2013 Exploration				**9%**	**64**	**681**	**3**	**216**	**13**	***126***
2013+ Exploration Upside				**1%**	**13**	**1,076**	**4**	**56**	**3**	***280***
Exploration assets					**77**	**1,757**	**4**	**272**	**16**	***407***
Risked NAV					**523**	**3,018**	**6**	**2,994**	**175**	***728***

Source: Company data, Nomura estimates

Fig. 38: Afren financial summary, 2011-15E

Operational Data		2011	2012E	2013E	2014E	2015E
Brent	US$/bbl	111	112	105	100	95
Net working interest production	kboe/d	19	42	52	60	78
Income statement		**2011**	**2012E**	**2013E**	**2014E**	**2015E**
Revenue	$m	597	1,404	1,413	1,420	1,579
Operating expenses	$m	(294)	(682)	(651)	(662)	(811)
Gross Profit	$m	302	722	762	758	768
Administrative expenses	$m	(27)	(27)	(28)	(30)	(31)
Exploration costs written off	$m	(1)	(31)	(38)	(38)	(38)
Other Operating Income	$m	(6)	(13)	(13)	(13)	(13)
Operating Income	$m	**268**	**651**	**683**	**678**	**686**
Investment revenue	$m	1	0	-	-	-
Finance costs	$m	(57)	(98)	(86)	(93)	(98)
Other gains and losses	$m	10	2	2	2	2
Profit before tax	$m	221	555	599	588	590
Tax	$m	(96)	(312)	(336)	(330)	(331)
Tax Rate	%	43%	56%	56%	56%	56%
Net Income	$m	125	244	263	258	259
Clean net income	$m	**125**	**244**	**263**	**258**	**259**
Basic EPS	c/sh	**12**	**23**	**24**	**24**	**24**
Clean basic EPS	c/sh	12	23	24	24	24
Diluted EPS	c/sh	12	22	23	23	23
Clean diluted EPS	c/sh	12	22	23	23	23
Basic number of shares	m	909	1,075	1,075	1,075	1,075
Diluted number of shares	m	943	1,120	1,120	1,120	1,120
Cash flow		**2011**	**2012E**	**2013E**	**2014E**	**2015E**
Net Income	$m	125	244	263	258	259
DD&A	$m	160	329	345	364	426
Other non cash (inc net tax)	$m	117	362	222	219	220
Cash earnings	$m	403	934	830	841	905
Working capital adjustment	$m	(65)	(133)	(2)	(9)	(15)
CFO	$m	**338**	**801**	**828**	**832**	**889**
Capex	$m	(510)	(500)	(489)	(489)	(400)
Net acquisitions (-) disposals (+) and other	$m	(368)	(207)	-	-	-
CF before financing activities	$m	**(540)**	**94**	**339**	**343**	**489**
Issuance/ Repurchase of Equity Shares	$m	200	2	-	-	-
Interest paid	$m	(50)	(94)	(86)	(93)	(98)
Proceeds (+) repayment (-) of debt	$m	541	58	100	2	-
Increase (+) decrease (-) in cash	$m	150	60	353	252	391
Effect of foreign exchange rate changes	$m	-	1	-	-	-
Net change in cash	$m	**150**	**61**	**353**	**252**	**391**
Balance sheet		**2011**	**2012E**	**2013E**	**2014E**	**2015E**
Inventories	$m	67	96	101	119	149
Receivables	$m	146	213	223	264	331
Cash and cash equivalents	$m	292	353	706	958	1,349
Other current	$m	1	49	135	228	277
Current assets	$m	**505**	**712**	**1,165**	**1,569**	**2,106**
PPE	$m	1,676	1,717	1,861	1,986	1,959
Other non current	$m	749	829	829	829	829
Total assets	$m	**2,931**	**3,257**	**3,854**	**4,384**	**4,894**
ST borrowings	$m	158	202	202	202	202
Payables	$m	317	261	272	323	404
Other current	$m	285	108	108	108	108
Current liabilities	$m	**760**	**570**	**582**	**632**	**714**
LT borrowings	$m	682	725	825	827	827
Other non current	$m	281	502	725	943	1,114
Total liabilities	$m	**1,723**	**1,797**	**2,131**	**2,403**	**2,654**
Share capital, share premium and reserves	$m	1,143	1,147	1,147	1,147	1,147
Retained earnings	$m	65	313	576	834	1,093
Total shareholders' equity	$m	**1,207**	**1,460**	**1,723**	**1,981**	**2,240**

Source: Company data, Nomura estimates

Tullow (Reduce, PT 1,350p) – Running fast to meet expectations

Our long-standing thesis that Tullow offers differentiated medium-term exploration upside is unchanged. However, at present we argue what is priced into the share price and what is carried by many analyst estimates appears overly optimistic. On the latter, we argue there are too many 'contingent' barrels that are risked too generously in NAVs, where there is little or no clarity from management when this value is likely to be unlocked. Contributing to a lesser degree to our negative bias is our cautious view on Uganda and the belief that key well results this year from the more meaningful offshore campaigns in French Guiana, Mauritania and Mozambique are unlikely until H2 13 at the earliest. For those investors wanting exposure to nearer-term E&A newsflow from onshore East Africa (that Tullow is exposed to), we advocate investors buy Africa Oil.

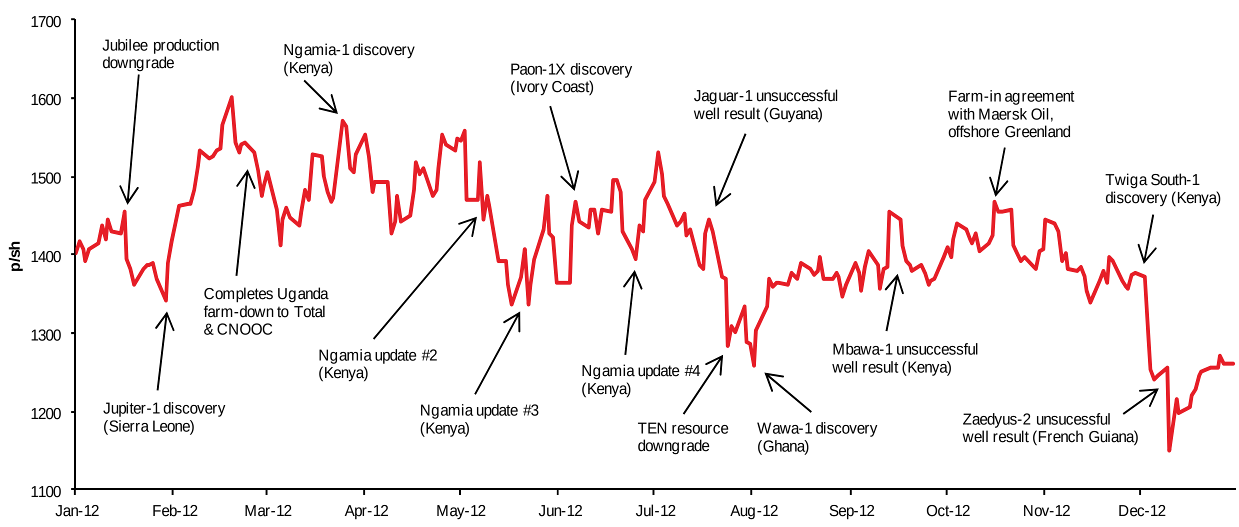
In the near-term, we argue E&P investors looking for 'value' should buy a basket of Dragon, Premier Oil and Cairn, all of which trade below core NAV. At the other end of the investment spectrum, we advocate investors with more risk appetite and seeking exposure to company changing wells/programmes would be better off considering a basket of small-cap names including Ophir, and Africa Oil.

Tullow shares have essentially traded sideways in the last three years. In some ways, management are now victims of their own success. Discoveries undoubtedly need to be bigger to move the needle, while increased development activity has drained company resources (both human and financial) to some degree. With no natural peers in Europe, and increasingly investors more cautious to pay for growth (and the risks), it may mean that Tullow needs to redefine itself more clearly. We advocate a 'shrink to grow' strategy may not necessarily be a bad thing to not only 'prove up' value but also allow the company to re-gear itself to exploration.

2012 largely worked out as we thought

Our concerns over the past 12 months have essentially been two-fold. Firstly, consensus NAVs were carrying overly optimistic estimates on existing discoveries and there may be a transition from P10 estimates to P50 as Tullow moved E&A barrels into the development phase. Secondly, transformational offshore exploration success was unlikely through 2012, while we argued investors could gain more leverage to the onshore East Africa play through Africa Oil. On the former, we were proved right with consensus estimates on the resource base for the TEN development falling (P50 to 360mb from 400mb), and while there was notably success with Ngamia and Twiga discoveries in the Lochchar basin, there was an absence of positives in West Africa and the Atlantic Margin.

Fig. 39: Tullow FY 2012 price performance snapshot

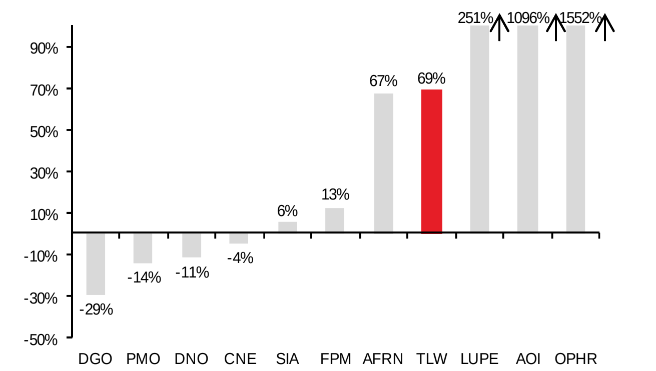


Source: Datastream, Nomura research

Exploration model not broken…but scale matters now

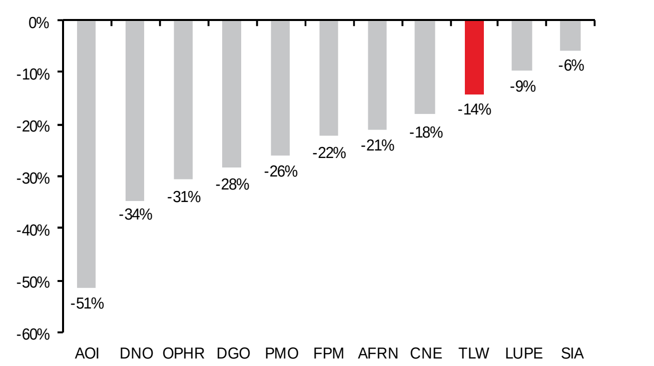
After basin opening wells in 2011 and 2012 (Zaedyus in French Guiana and Ngamia in Kenya), it is difficult to argue that Tullow's exploration model led by Angus McCoss is broken. With over 300 leads and prospects in its exploration inventory and a now visible profile of internally-generated cash flow, there is a case to be made that there will always be something around the corner on this front. These numbers are backed up by a 74-87% E&A drilling success rate in each year since 2008, a number significantly higher than the global industry average that is closer to 12-15% for exploration. But the problem is the base effect – there is an obvious argument to say that in order to keep growth investors reassured that a premium P/E multiple is justified, Tullow simply needs to keep making 'elephant' discoveries.

Fig. 40: Premium/(discount) to core NAV



Source: Datastream, Nomura estimates, as of 16 January 2013

Fig. 41: Premium/(discount) to risked NAV



Source: Datastream, Nomura estimates, as of 16 January 2013

So what's in the price? USD 4bn of future success

We show a back-of-the-envelope exercise to calculate a core valuation for Tullow and then to back out what exploration upside is discounted into the shares. We attempt to look at buckets of defined barrels from a P50 basis and exclude some of the smaller discoveries made by Tullow or what we discussed above as some optimistic contingent resources. One of the criticisms from the bears when valuing E&P stocks is that NAVs are 'puffed' up with barrels that ultimately will not come to market. Our back-of-the-envelope analysis assumes:

- P- mean gross estimates for Jubilee (700mb) and TEN (360mb), leaving out other existing discoveries (for example, at Teak) where there are no firm development plans.
- In Uganda, we assume the implied transaction price to Total/CNOOC and a gross resource of 1.2bn bbls.
- Elsewhere, for the Dutch/UK gas business which is up for sale, we estimate a value of c. USD665m, while for the producing assets in the rest of Africa (ie Cote d'Ivoire, EG, Gabon and Mauritania) we assume an aggregate valuation of USD 1.5bn.
- Assuming a net debt estimate of USD 1bn for year-end 2012, leaves us with a back of the envelope 'core' valuation of USD 9.9bn (685p/sh) vs the current market cap of USD 17.1bn (1,180p/sh).
- Now also adding in upside for Jubilee on the premise that big fields get bigger and arguing that that the Zaedyus discovery in French Guiana can be developed on a standalone basis (we assume a base case of 300mb is sufficient) would add c. USD 2.95bn (204p/sh).
- We therefore conclude a credible range for a core valuation is between c. USD 10bn and USD 13bn (691-899 p/sh).

Admittedly, this analysis is pretty blunt. Nonetheless, it implies the market is discounting some USD 4.2bn of future exploration success in the current share price.

We take this analysis one step further and compare this with the 12 month E&A campaign. On an unrisked basis, we think the drilling program this year could add c. USD 7bn of value. This methodology implies that Tullow shares are discounting on a value adjusted basis a CoS of c.60%. As we mentioned earlier, the depth of Tullow's E&A portfolio relative to its size is second to none in Europe. Nonetheless, this analysis suggests that the current share price points to Tullow maintaining very high levels of success, something we are not prepared to advocate today.

Previous bull cases have centred around a share price at GBP 20/share. This scenario implies c. USD 12bn of value creation. Rough calculations suggest Tullow would need to find onshore east Africa some 3bn bbls (gross, assuming 50% share and NPV of USD 4.2/boe) and c. 2.0bn bbls gross either for the offshore plays (Mauritania, Mozambique, French Guinea), assuming say an average 30% interest and a NPV of USD 10/boe.

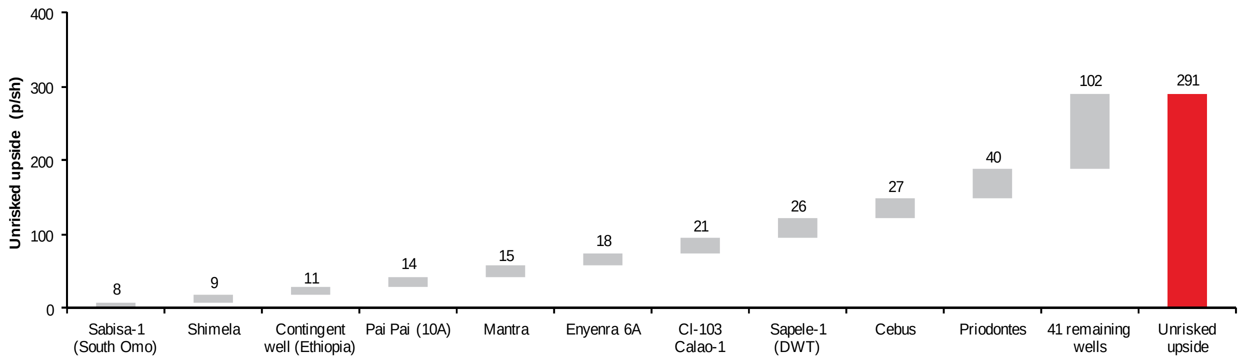
Fig. 42: Tullow 'back-of-the-envelope ' NAV calculation*

Country	Prospect/Field	Gross resources	Interest	Net resources	NPV/boe ($/boe)	NPV ($m)	NPV (p/sh)
Ghana	Jubilee (1, 1a and 1b)	700	35%	248	20	4,967	343
Ghana	TEN	360	50%	180	12	2,158	149
Uganda	Lake Albert	1,200	33%	400	4	1,598	111
UK	Various	45	46%	20	8	164	11
Netherland	Various	50	100%	50	10	500	35
Cote d'Ivoire	Espoir	40	21%	9	25	213	15
Equatorial Guinea	Cieba and Okume	200	14%	29	20	570	39
Gabon	Gabon various	120	15%	17	18	313	22
Mauritania	Mauritania various	150	19%	29	15	428	30
Producing and development		**2,865**		**981**		**10,911**	**754**
Net debt						-1,000	-69
Core		**2,865**		**981**		**9,911**	**685**
Ghana	Jubilee upside	300	35%	106	20	2,129	147
French Guiana	Zaedyus	300	28%	83	10	825	57
Contingent		**600**		**189**		**2,954**	**204**
NAV ex exploration		**3,465**		**1,170**		**12,865**	**889**
Kenya	Various	1,000	50%	500	4.2	2,100	145
French Guiana	5 wells	1,500	28%	413	10	4,125	285
Mauritania	Various	200	20%	40	5	200	14
Cote d'Ivoire	Calao-1	150	45%	68	5	338	23
Gabon	Kiarsseny	60	53%	32	5	158	11
Exploration		**2,910**		**1,052**		**6,921**	**478**
NAV		**6,375**		**2,222**		**19,786**	**1,368**
Current Market Cap						**17,068**	**1,180**
Exploration value discounting in current share price						**4,202**	**291**
Exploration upside						**2,718**	**188**
Exploration upside to current share price						**16%**	
Implied risk factor for exploration campaign						**61%**	

Source: Nomura estimates, as of 16 January 2013

Fig. 43: Tullow 2013 exploration campaign

Top 10 wells



Source: Company data, Nomura estimates

Uganda – lower value but a risk on sentiment around strategy

Arguably, largely in the price but the feedback from the Africa Oil conference last November suggests no let up from the Uganda government in terms of a desire for local production and downstream facilities. Tullow's larger farm-in partner Total now talks about a start-up in 2017 with production plateau rate of 200-230kboe/d only likely to be reached in 2020. We remain comfortable our value assumption of USD4/boe is not overly pessimistic.

Undoubtedly, Uganda is a small part of the value proposition at Tullow. Nonetheless, there is a risk that country specific issues prove a drag on sentiment reminding investors of the risk of development and the reality that Tullow's capital may better deployed elsewhere in the portfolio.

Shrink to grow?

Our E&P valuations are largely based on a conventional 10% discount rate. Where we think the biggest variance versus what the industry may pay is not our assumption on the oil price (presently USD95/bbl long-term) but rather the cost of capital a potential buyer may use when reviewing the value of the asset.

We argue that if Tullow, or any other oil company for that matter, believes strongly enough that any particular part of its asset base is substantially undervalued by the market compared to what it believes the industry would pay, then it should prove it.

In the case of Tullow, the argument gets stronger in that if management believes (and Aidan Heavey has said so) the company's expertise is more in the field of exploration rather than necessarily development or production it may make more sense to reduce exposure to some of its existing hubs. In fairness, Tullow has already demonstrated appetite to do this as it did with Uganda, the real question now being whether it should have sold all of it (rather than just two-thirds to Total and CNOOC) or more recently with the announcement of the sale of its UK and Dutch gas business. Similarly, we expect management are considering reducing exposure to TEN (current interest 50%).

We welcome the progress. However, until Tullow starts to consistently deliver cash back to shareholders through an 'explore, appraise, monetise' cash cycle, investors are unlikely to give management further benefit of the doubt on the value of barrels already discovered and in the development pipeline, in our opinion.

Fig. 44: Tullow NAV at USD 95/bbl

Country	Asset	Interest %	Type	CoS %	Risked net mmboe	Unrisked net mmboe	NPV $/boe	NPV $m	NPV risked p/share	*NPV unrisked p/share*
UK	CMS Area	46%	Gas	100%	15	15	8.5	125	9	*9*
Cote d'Ivoire	Espoir	21%	Oil	100%	7	7	32.3	223	15	*15*
Equatorial Guinea	Cieba and Okume	14%	Oil	100%	26	26	22.4	583	40	*40*
Gabon	Gabon various	15%	Oil	100%	13	13	19.3	259	18	*18*
Mauritania	Mauritania various	19%	Oil	100%	28	28	20.6	572	40	*40*
Bangladesh	Bangora	30%	Gas	100%	11	11	3.1	33	2	*2*
Congo (Brazzaville)	M'Boundi	11%	Oil	100%	10	10	8.0	79	5	*5*
Ghana	Jubilee Phase 1 and 1a	35.48%	Oil	100%	155	155	23.1	3,585	248	*248*
Netherlands	Nuon acquisition	100%	Oil/Gas	100%	28	28	10.0	280	19	*19*
Producing assets					**292**	**292**	**19.6**	**5,740**	**397**	***397***
Uganda	Lake Albert	33%	Oil	85%	309	363	4.1	1,256	87	*102*
Ghana	Jubilee Phase 1B	35.48%	Oil	100%	93	93	19.1	1,789	124	*124*
Ghana	TEN	49.95%	Oil/Gas	85%	153	180	14.9	2,282	158	*186*
Netherlands	Epidote	100%	Oil	85%	20	24	10.0	201	14	*16*
Development assets					**575**	**660**	**9.6**	**5,528**	**382**	***428***
Net (debt)/cash as at FY 12-end								(1,000)	(69)	*(69)*
Cash for Spring Energy								(200)	(14)	*(14)*
Core					**867**	**952**		**10,068**	**696**	***742***
Ghana	Mahogany East (southeast Jubilee)	37%	Oil	67%	19	29	19.1	372	26	*39*
Ghana	Teak	26%	Oil/Gas	50%	26	53	19.1	505	35	*70*
Ghana	Banda Deep / Cenomanian	26%	Oil	50%	7	13	8.0	53	4	*7*
Ghana	Akasa-1 (Dahoma Updip)	26%	Oil	50%	13	25	8.0	100	7	*14*
Ghana	Jubilee Upside	35%	Oil	70%	75	106	14.4	1,071	74	*106*
French Guiana	Zaedyus	28%	Oil	85%	70	83	10.0	701	48	*57*
Kenya	Ngamia-1 (Block 10BB)	50%	Oil	70%	18	26	4.2	75	5	*7*
Kenya	Twiga South (13T)	50%	Oil	70%	21	30	4.2	87	6	*9*
Mauritania	Faucon (Block 1)	38%	Oil	15%	2	15	5.0	11	1	*5*
Mauritania	Pelican (Block 7)	16%	Oil	15%	1	6	5.0	5	0	*2*
Mauritania	Aigrette (Block 7)	16%	Oil	15%	0	3	5.0	2	0	*1*
Mauritania	Tiof (Block 4B)	19%	Oil	15%	1	8	5.0	6	0	*3*
Mauritania	Banda (PSC B)	22%	Gas	15%	10	66	5.0	49	3	*23*
Mauritania	PSA A & B and Block 7 #1	20%	Oil	15%	5	33	5.0	25	2	*12*
Sierra Leone	Venus-B (SL-07)	20%	Oil	33%	17	50	7.5	125	9	*26*
Sierra Leone	Mercury (SL7)	20%	Oil	33%	13	40	7.5	100	7	*21*
Sierra Leone	Jupiter (SL 7)	20%	Oil	33%	17	50	7.5	125	9	*26*
Namibia	Kudu	70%	Gas	33%	17	51	3.2	54	4	*11*
Tanzania	Likondi-1 (Likondi prospect)	50%	Oil	67%	17	25	2.0	33	2	*3*
Pakistan	Shekhan-1 (Kohat)	40%	Gas	67%	13	20	2.0	27	2	*3*
UK	Katy (formerly Harrison)	23%	Oil	67%	6	9	8.0	48	3	*5*
UK	Cameron (44/19b)	23%	Gas	67%	3	4	8.0	20	1	*2*
Gabon	OMOC-N-1 (Onal license)	8%	Oil	67%	2	2	19.3	29	2	*3*
Gabon	Maroc Nord 6	8%	Oil	67%	3	4	19.3	48	3	*5*
Cote d'Ivoire	Paon-1 (CI-103)	45%	Oil	20%	45	225	5.0	225	16	*78*
Norway	Spring Energy		Oil/Gas	33%	8	24	8.0	64	4	*13*
Appraisal assets					**427**	**999**	**9.3**	**3,961**	**274**	***550***
Ghana	Sapele-1 (DWT)	50%	Oil	32%	12	37	14.9	179	12	*39*
Ghana	Enyenra 6A	50%	Oil	32%	8	25	14.9	119	8	*26*
French Guiana	Priodontes	28%	Oil	30%	25	83	10.0	248	17	*57*
French Guiana	Cebus	28%	Oil	30%	17	55	10.0	165	11	*38*
Kenya	Pai Pai (10A)	50%	Oil	20%	12	61	4.2	51	4	*18*
Kenya	Etuko (Kamba (10BB))	50%	Oil	50%	15	30	4.2	63	4	*9*
Kenya	Ekales-S (Kongoni (13T))	50%	Oil	39%	12	32	4.2	53	4	*9*
Kenya	Twiga North (13T)	50%	Oil	50%	15	30	4.2	63	4	*9*
Kenya	Ngamia -1 (Updip) (10BB)	50%	Oil	70%	48	69	4.2	202	14	*20*
Kenya	Ngamia Appraisal (10BB)	50%	Oil	62%	16	25	4.2	65	5	*7*
Kenya	Etuko-C (10BB)	50%	Oil	50%	15	30	4.2	63	4	*9*
Kenya	Twiga Appraisal	50%	Oil	70%	26	38	4.2	111	8	*11*
Ethiopia	Sabisa-1 (South Omo)	50%	Oil	17%	6	34	4.2	24	2	*10*
Ethiopia	Shimela	50%	Oil	15%	5	36	4.2	22	2	*10*
Ethiopia	Contingent well	50%	Oil	15%	7	44	4.2	28	2	*13*
Mozambique	Cachalote	50%	Oil	15%	3	17	5.0	13	1	*6*
Mozambique	Buzio	50%	Oil	15%	3	17	5.0	13	1	*6*
Mauritania	Scorpion (C-7)	36%	Oil	10%	1	12	5.0	6	0	*4*
Mauritania	Carol/Tapendar (C-10)	80%	Oil	10%	3	26	5.0	13	1	*9*
Mauritania	Addax (C-1)	40%	Oil	10%	1	13	5.0	7	0	*5*
Cote d'Ivoire	CI-103 Calao-1	45%	Oil	10%	7	68	5.0	34	2	*23*
Gabon	Perroquet (Kiarsseny)	50%	Oil	25%	2	8	5.0	9	1	*3*
Gabon	Assewe West (DE-7)	24%	Oil	25%	3	12	5.0	15	1	*4*
Gabon	Crabbe (Kiarsseny)	50%	Oil	25%	2	8	5.0	9	1	*3*
Uganda	EA-1A - Ondyek	33%	Oil	50%	3	7	4.1	14	1	*2*
Uganda	EA-1A - Ngiri C	33%	Oil	50%	3	7	4.1	14	1	*2*
Uganda	EA-1A - Jobi F Horiz	33%	Oil	50%	3	7	4.1	14	1	*2*
Uganda	EA-1A - Gunya B	33%	Oil	50%	2	5	4.1	10	1	*1*
Uganda	EA-1A - Mpto D	33%	Oil	50%	6	12	4.1	24	2	*3*
Uganda	EA-1A - Ngiri H	33%	Oil	50%	3	7	4.1	14	1	*2*
Uganda	EA-1A - Jobi East 1	33%	Oil	50%	3	6	4.1	12	1	*2*
Uganda	EA-1A - Gunya E	33%	Oil	50%	2	3	4.1	7	0	*1*
Uganda	EA-1A - Mpyo M	33%	Oil	50%	6	12	4.1	24	2	*3*
Uganda	EA-1A - Jobi East F	33%	Oil	50%	3	6	4.1	12	1	*2*
Uganda	EA-1A - Jobi East G Horiz	33%	Oil	50%	3	6	4.1	12	1	*2*
Uganda	EA-1A - Gunya C	33%	Oil	50%	2	5	4.1	10	1	*1*
Uganda	EA-1A - Jobi East 3	33%	Oil	50%	3	6	4.1	12	1	*2*
Uganda	EA-1A - Mpyo L	33%	Oil	50%	6	12	4.1	24	2	*3*
Uganda	EA-1A - Mpyo F	33%	Oil	50%	6	12	4.1	24	2	*3*
Uganda	EA-1A - Mpyo H	33%	Oil	50%	6	12	4.1	24	2	*3*
Uganda	EA-1A - Jobi East 4	33%	Oil	50%	3	6	4.1	12	1	*2*
Norway	Wisting Central	20%	Oil/Gas	45%	7	14	5.0	33	2	*5*
Norway	Butch SW	15%	Oil/Gas	29%	2	7	5.0	10	1	*2*
Norway	Butch E	15%	Oil/Gas	34%	4	12	5.0	21	1	*4*
Norway	Wisting Main	20%	Oil/Gas	16%	4	22	5.0	18	1	*8*
Norway	Carlsberg	40%	Oil/Gas	20%	2	8	5.0	8	1	*3*
Norway	Augunshaug	40%	Oil/Gas	20%	2	8	5.0	8	1	*3*
Norway	Mantra	80%	Oil/Gas	35%	24	69	5.0	120	8	*24*
Norway	Mjosa	10%	Oil/Gas	35%	1	2	5.0	4	0	*1*
Norway	Matrosen	10%	Oil/Gas	35%	1	2	5.0	4	0	*1*
Norway	Ra	20%	Oil/Gas	35%	1	4	5.0	7	0	*1*
Exploration assets 2013				**34%**	**373**	**1,085**	**5.6**	**2,071**	**143**	***434***
Exploration assets 2013+				**6%**	**673**	**11,725**	**4.8**	**3,259**	**225**	***3,712***
Total exploration assets					**1,046**	**12,810**	**5.1**	**5,330**	**369**	***4,146***
Risked NAV					**2,340**	**14,761**	**8.3**	**19,360**	**1,339**	***5,438***

Source: Company data, Nomura estimates

Fig. 45: Tullow financial summary, 2011-15E

Operational Data		2011	2012E	2013E	2014E	2015E
Brent	US$/bbl	111	112	105	100	95
Net working interest production	kboe/d	78	79	87	103	113
Income statement		**2011**	**2012E**	**2013E**	**2014E**	**2015E**
Revenue	$m	2,304	2,351	2,757	3,022	3,241
COGS	$m	(931)	(1,039)	(1,060)	(1,304)	(1,489)
Gross profit	$m	1,373	1,311	1,698	1,718	1,753
Administrative expenses	$m	(123)	(191)	(200)	(210)	(221)
Disposals of subsidiaries/Profit on sale of assets	$m	2	702	-	-	-
Other operating income	$m	-	-	-	-	-
Exploration Cost	$m	(121)	(670)	(100)	(100)	(180)
Operating profit	$m	**1,132**	**1,152**	**1,397**	**1,408**	**1,352**
(Loss)/gain on hedging instuments	$m	27	20	-	-	-
Financials	$m	(86)	(51)	(56)	(76)	(93)
Profit from continuing activities before tax	$m	1,073	1,121	1,342	1,332	1,259
Tax	$m	(384)	(370)	(505)	(501)	(504)
Tax Rate after Exp. costs add back	%	32%	21%	35%	35%	35%
Net Income	$m	689	751	837	831	755
Minority Interests	$m	(40)	(41)	(41)	(41)	(41)
Clean net income	$m	**647**	**710**	**796**	**790**	**714**
Basic EPS	c/sh	**73**	**78**	**88**	**87**	**79**
Clean Basic EPS	c/sh	72	78	88	87	79
Diluted EPS	c/sh	72	78	87	87	78
Clean diluted EPS	c/sh	72	78	87	87	78
Number of shares	mn	896	906	906	906	906
Diluted number of shares	mn	902	913	913	913	913
Cash flow		**2011**	**2012E**	**2013E**	**2014E**	**2015E**
Profit Before Tax	$m	1,073	1,121	1,342	1,332	1,259
DD&A	$m	534	605	558	680	770
Income Tax Paid	$m	(172)	(313)	(505)	(501)	(504)
Other non cash	$m	226	50	186	206	303
Cash earnings	$m	1,661	1,464	1,581	1,717	1,828
Working capital adjustment	$m	71	273	127	103	101
CFO	$m	**1,731**	**1,737**	**1,708**	**1,820**	**1,929**
Capex	$m	(204)	(1,898)	(2,000)	(2,000)	(2,000)
Interest Received	$m	14	1	0	0	0
Net acquisitions (-) disposals (+) and other	$m	(1,852)	2,196	-	-	-
CF before financing activities	$m	**(310)**	**2,037**	**(292)**	**(180)**	**(71)**
Issue(+)/Purchase (-) of own shares	$m	62	15	-	-	-
Dividends	$m	(114)	(152)	(72)	(72)	(72)
Interest Paid	$m	(210)	(77)	(56)	(76)	(93)
Proceeds (+) repayment (-) of debt	$m	542	(2,050)	358	328	193
Increase (+) decrease (-) in cash	$m	(31)	(226)	(63)	-	(43)
Exchange Diff	$m	0	(18)	-	-	-
Net Change in Cash	$m	**(31)**	**(244)**	**(63)**	**-**	**(43)**
Balance sheet		**2011**	**2012E**	**2013E**	**2014E**	**2015E**
Inventories	$m	226	161	191	209	250
Trade receivables	$m	272	322	381	419	501
Cash and cash equivalents	$m	307	63	0	0	(43)
Other current assets	$m	367	570	570	570	570
Current assets	$m	**1,172**	**1,115**	**1,142**	**1,199**	**1,278**
Property, plant and equipment	$m	3,658	4,312	5,754	7,074	8,304
Other non current assets (Intangible exploration & evaluation assets)	$m	5,804	3,908	3,808	3,708	3,528
Total assets	$m	**10,634**	**9,335**	**10,704**	**11,980**	**13,110**
ST borrowings	$m	218	-	-	-	-
Payables	$m	1,119	1,158	1,374	1,533	1,757
Other current	$m	196	256	256	256	256
Current liabilities	$m	**1,533**	**1,414**	**1,630**	**1,789**	**2,013**
LT borrowings	$m	2,858	1,046	1,403	1,732	1,924
Other non current	$m	1,477	1,461	1,461	1,461	1,461
Total liabilities	$m	**5,868**	**3,921**	**4,494**	**4,982**	**5,398**
Share capital, share premium and reserves	$m	1,249	1,283	1,314	1,344	1,375
Retained earnings	$m	3,441	4,035	4,799	5,558	6,241
Minority Interest	$m	76	96	96	96	96
Total shareholders' equity	$m	**4,766**	**5,415**	**6,209**	**6,998**	**7,712**

Source: Company data, Nomura estimates

Africa Oil (Buy, TP SEK 95) – Buy the basin not the well

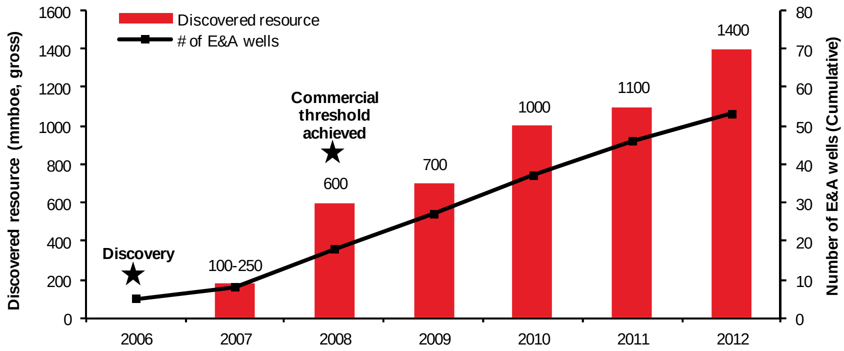
While it is early days with only two wells completed, AOC continues to offer unique gearing in our coverage universe to exploration and appraisal upside in East Africa. In 2013, a dual strategy of lower risk E&A around existing discoveries, coupled with higher risk wells in other sub basins, should provide sustained newsflow. An 11-well programme is fully funded following an equity placing in December and we modestly change our price target to SEK 95 (from SEK 100) to reflect this. De-risking a frontier basin comparable in size to the North Sea will take time but we argue an upside case of 9-10bn boe for the east African play could be transformational for the shares, which we estimate are discounting c.700mmboe on a gross basis. Success in the northern 'string of pearls' could be such a catalyst with the Sabisa well results likely in early Q2. With a funded multi-rig drilling campaign across independent geological plays, we maintain that the long-term risk reward appears attractive. Reiterate Buy.

De-risking the basin will take time

In an area 10 times bigger than Tullow's Uganda acreage, de-risking the basin is likely to be a gradual process. Using Uganda as a proxy, we note that it took two years and c.20 wells to discover commercial levels of resource at Lake Albert and three years to find the sweet spot – the 300mmboe Buffalo-Giraffe field. Drilling results were mixed with net pay varying significantly from 3m to 47m. Discovered resource is now 1.4bn boe, an increase of 8x over initial estimates. A similar timeline is possible for Kenya and for longer-term investors, we think it is important to put short-term drilling results and data points (including net pay) in the context of the upside potential of the wider basin.

Fig. 46: Uganda as an example – a gradual process with 50 wells over six years

Ex prospective resource, includes EOR volumes



Source: Company data, Nomura estimates

Stock discounting a 30-50% probability that Kenya/Ethiopia will be another Uganda…

Working back from the current share price and assuming USD 4.2/boe (as per our Kenyan field model), we estimate the shares are discounting c.700mmboe on a gross basis. Drawing a comparison to Tullow's 1.4-2bn boe resource estimates for Lake Albert in Uganda implies Africa Oil shares are discounting a 30-50% probability of a similar size resource base onshore Kenya/Ethiopia, an area that is 10x bigger than Tullow's Uganda acreage.

…or a 33% implied probability of success for 2013 drilling

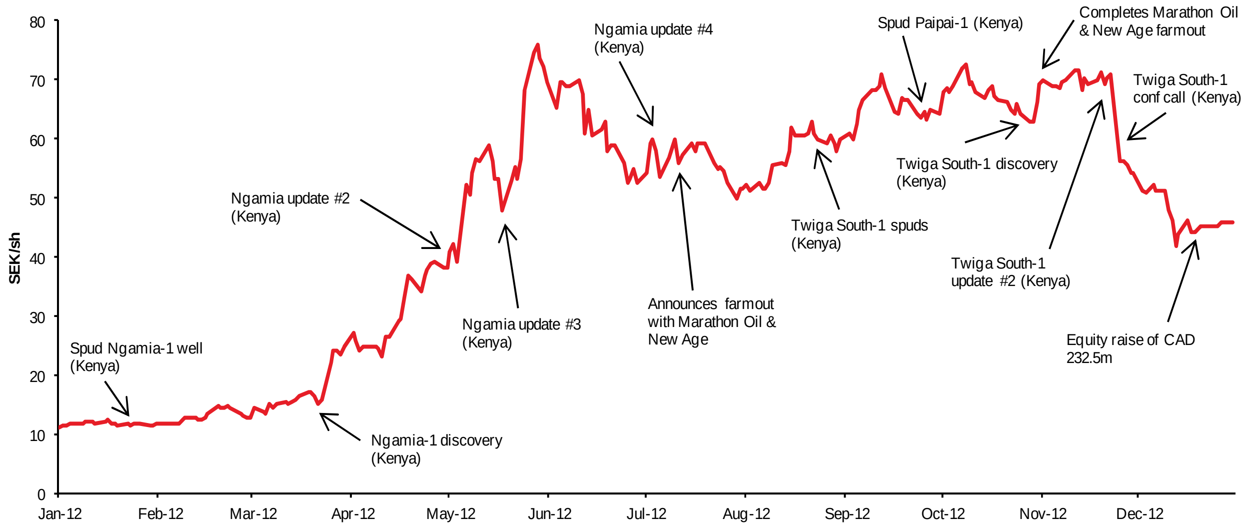
Adjusting the 700mmboe (gross) currently being discounted for the Ngamia and Twiga discoveries, which we estimate at 110mmboe (gross), implies investors are paying up in advance for 590mmboe (gross) of exploration upside potential. On 2013 drilling alone, this implies an embedded CoS of 33% on our estimates of 1.8bn boe (unrisked, gross).

However, we would highlight that: 1) we carry a conservative estimate for discovered resource (in line with the CPR), which could be higher at 240mmboe, assuming Ngamia came in at AOI's P10 estimates; and 2) we exclude any wider basin upside, which Tullow has indicated could be up to 9-10bn boe. Adjusting for both, the upside case could see implied CoS for exploration of the wider basin at c.5% versus a typical 12-15% global industry average.

Catalysts

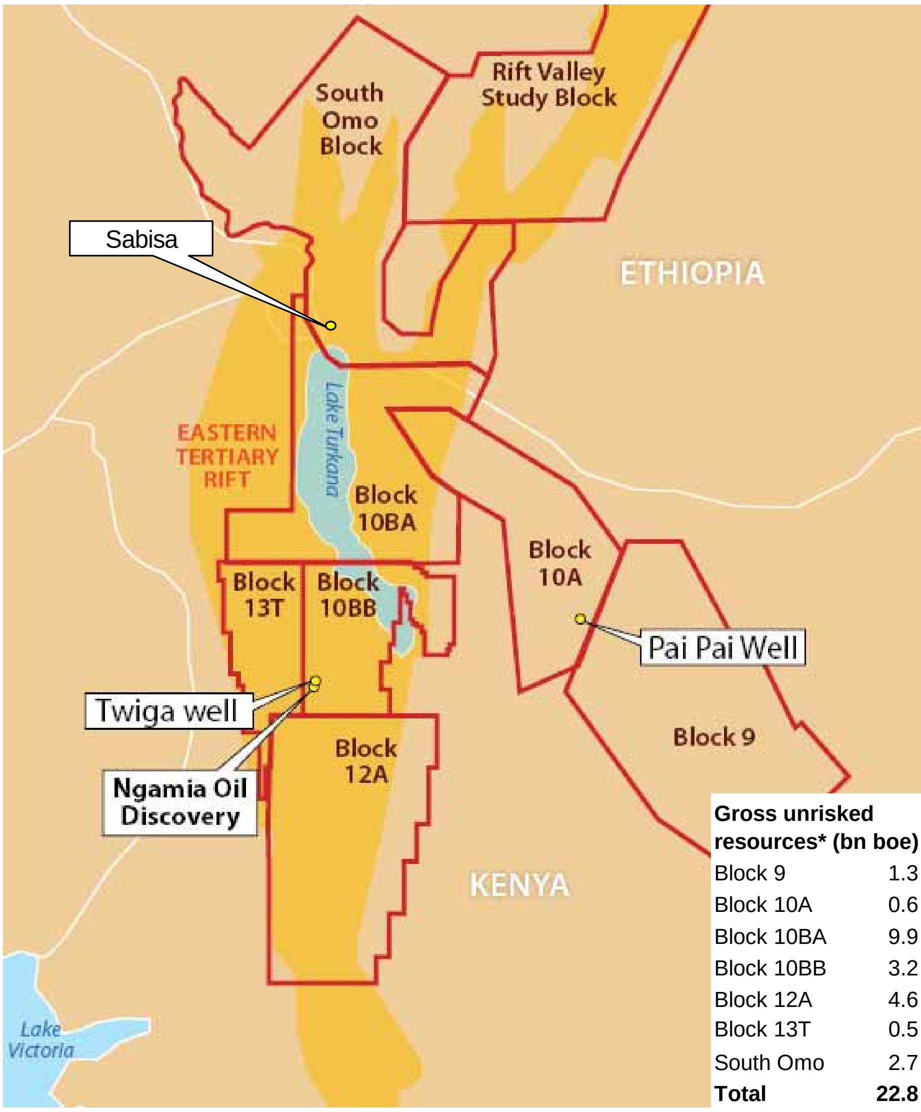
- **Twiga South flow test:** Key to reducing development risk in the South Lokichar basin will be the flow test on Twiga South. Five interval tests are planned with three in the Upper Lokhone sands. Guidance is that flow rates are not expected to be > 500kb/d per interval.
- **Pai Pai in Block 10A** is AOC's first well testing the cretaceous rift play. Both Tullow and AOC have highlighted that Pai Pai is higher-risk than the tertiary play tested at Ngamia and we carry a 20% CoS to reflect this. Pai Pai is targeting 120mmboe (gross) and we carry SEK 0.8/sh (risked) and SEK 4.1/sh (unrisked) in our NAV. Results are expected in early February.
- **Sabisa is in Ethiopia's South Omo block**, one of the 'golden blocks' of the tertiary rift, along with block 10BA. Sabisa will be the first well to test whether the tertiary rift trend that yielded the Ngamia discovery extends to the north of Lake Turkana. Success could open up the northern 'string of pearls' and effectively 'book-end' the tertiary rift play. Sabisa is targeting c.70mmboe (gross) and we carry SEK 0.4/sh (risked) SEK 2.3/sh (unrisked). Results are likely in early Q2 2013.
- **Kenyan elections:** Presidential elections in March are likely to provide noise that could be unhelpful to onshore operations. Past elections have been marked by unrest and violence. Drilling locations are largely away from population centres but logistics and moving rigs between drill sites could be disrupted. With the profile of the oil sector relatively high, domestic resources are likely to be high on the political agenda and could potentially be seen as an easy target to gain public support.

Fig. 47: Africa Oil FY 2012 price performance snapshot



Source: Datastream, Nomura research

Fig. 48: Africa Oil's onshore Kenya/Ethiopia acreage



Gross unrisked resources* (bn boe)	
Block 9	1.3
Block 10A	0.6
Block 10BA	9.9
Block 10BB	3.2
Block 12A	4.6
Block 13T	0.5
South Omo	2.7
Total	**22.8**

*CPR August 2012 Source: Company data, Nomura estimates

Fig. 49: Africa Oil summary NAV (SEK)

At USD 95/bbl LT oil price assumption

Country	Asset	Interest %	Type	CoS %	Risked net mmboe	Unrisked net mmboe	NPV $/boe	NPV $m	NPV risked SEK/share	*NPV unrisked SEK/share*
Producing assets					-	-		-	-	-
Development assets					-	-		-	-	-
Net (debt)/cash								131	4	*4*
Others								12	0	*0*
Core					**-**	**-**		**143**	**3.9**	***4***
Kenya	Ngamia-1 (10BB)	50%	Oil	70%	18	26	4	75	2.0	3
Kenya	Twiga South (13T)	50%	Oil	70%	21	30	4	87	2.4	3
Ethiopia	Block 7/8	35%	Oil/gas	33%	18	54	4	75	2.0	6
Contingent assets				**52%**	**56**	**109**	**4**	**238**	**6.4**	***12***
Kenya	Pai Pai (10A)	30%	Oil	20%	7	36	4	31	0.8	*4*
Ethiopia	Sabisa-1 (South Omo)	30%	Oil	17%	3	20	4	15	0.4	*2*
Kenya	Kinyonga (9)	50%	Oil	19%	30	160	4	128	3.5	*18*
Kenya	Pundamilia (9)	50%	Oil	12%	24	201	4	102	2.7	*23*
Kenya	Ngamia appraisal (10BB)	50%	Oil	70%	18	25	4	74	2.0	*3*
Kenya	Ngamia-1 (Updip) (10BB)	50%	Oil	62%	42	69	4	179	4.8	*8*
Kenya	Etuko-C (10BB)	50%	Oil	50%	50	101	4	212	5.7	*11*
Kenya	Etuko (formerly Kamba) (10BB)	50%	Oil	50%	58	116	4	243	6.6	*13*
Kenya	Twiga North (13T)	50%	Oil	50%	28	56	4	118	3.2	*6*
Kenya	Ekales-S (formerly Kongoni) (13T)	50%	Oil	39%	12	32	4	53	1.4	*4*
Kenya	Twiga appraisal (13T)	50%	Oil	70%	26	38	4	111	3.0	*4*
Ethiopia	Shimela (South Omo)	30%	Oil	15%	3	21	4	13	0.4	*2*
Ethiopia	Class 1_3 (South Omo)	30%	Oil	15%	4	26	4	17	0.4	*3*
Exploration potential in 2013				**34%**	**307**	**900**		**1,294**	**35.0**	***103***
Kenya	Other Block 9 upside	50%	Oil	5%	14	283	4	60	1.6	*32*
Kenya	Other Block 10A upside	30%	Oil	5%	7	140	4	30	0.8	*16*
Kenya	Other Block 10BB upside	50%	Oil	15%	192	1,282	4	810	21.9	*146*
Kenya	Other Block 13T upside	50%	Oil	15%	18	119	4	75	2.0	*14*
Kenya	Block 10BA	50%	Oil	5%	124	2,471	4	521	14.1	*282*
Kenya	Block 12A	20%	Oil	5%	46	916	4	193	5.2	*104*
Ethiopia	Other South Omo upside	30%	Oil	5%	37	742	4	156	4.2	*85*
Exploration potential in 2013+				**7%**	**438**	**5,952**		**1,845**	**49.9**	***679***
Total exploration assets				**11%**	**745**	**6,853**	**4**	**3,139**	**84.9**	***781***
Risked NAV				**12%**	**801**	**6,962**	**4**	**3,520**	**95.2**	***798***

Source: Nomura estimates

Fig. 50: Africa Oil summary NAV (CAD)

At USD 95/bbl LT oil price assumption

Country	Asset	Interest %	Type	CoS %	Risked net mmboe	Unrisked net mmboe	NPV $/boe	NPV $m	NPV risked CAD/share	*NPV unrisked CAD/share*
Producing assets					-	-		-	-	-
Development assets					-	-		-	-	-
Net (debt)/cash								131	0.5	*1*
Others								12	0.0	*0*
Core					**-**	**-**		**143**	**0.6**	***1***
Kenya	Ngamia-1 (10BB)	50%	Oil	70%	18	26	4	75	0.3	0
Kenya	Twiga South (13T)	50%	Oil	70%	21	30	4	87	0.4	1
Ethiopia	Block 7/8	35%	Oil/gas	33%	18	54	4	75	0.3	1
Contingent assets					**56**	**109**	**4**	**238**	**1.0**	***2***
Kenya	Pai Pai (10A)	30%	Oil	20%	7	36	4	31	0.1	*1*
Ethiopia	Sabisa-1 (South Omo)	30%	Oil	17%	3	20	4	15	0.1	*0*
Kenya	Kinyonga (9)	50%	Oil	19%	30	160	4	128	0.5	*3*
Kenya	Pundamilia (9)	50%	Oil	12%	24	201	4	102	0.4	*3*
Kenya	Ngamia appraisal (10BB)	50%	Oil	70%	18	25	4	74	0.3	*0*
Kenya	Ngamia-1 (Updip) (10BB)	50%	Oil	62%	42	69	4	179	0.7	*1*
Kenya	Etuko-C (10BB)	50%	Oil	50%	50	101	4	212	0.9	*2*
Kenya	Etuko (formerly Kamba) (10BB)	50%	Oil	50%	58	116	4	243	1.0	*2*
Kenya	Twiga North (13T)	50%	Oil	50%	28	56	4	118	0.5	*1*
Kenya	Ekales-S (formerly Kongoni) (13T)	50%	Oil	39%	12	32	4	53	0.2	*1*
Kenya	Twiga appraisal (13T)	50%	Oil	70%	26	38	4	111	0.4	*1*
Ethiopia	Shimela (South Omo)	30%	Oil	15%	3	21	4	13	0.1	*0*
Ethiopia	Class 1_3 (South Omo)	30%	Oil	15%	4	26	4	17	0.1	*0*
Exploration potential in 2013					**307**	**900**		**1,294**	**5.3**	***15***
Kenya	Other Block 9 upside	50%	Oil	5%	14	283	4	60	0.2	*5*
Kenya	Other Block 10A upside	30%	Oil	5%	7	140	4	30	0.1	*2*
Kenya	Other Block 10BB upside	50%	Oil	15%	192	1,282	4	810	3.3	*22*
Kenya	Other Block 13T upside	50%	Oil	15%	18	119	4	75	0.3	*2*
Kenya	Block 10BA	50%	Oil	5%	124	2,471	4	521	2.1	*42*
Kenya	Block 12A	20%	Oil	5%	46	916	4	193	0.8	*16*
Ethiopia	Other South Omo upside	30%	Oil	5%	37	742	4	156	0.6	*13*
Exploration potential in 2013+					**438**	**5,952**		**1,845**	**7.5**	***102***
Total exploration assets					**745**	**6,853**	**4**	**3,139**	**12.8**	***117***
Risked NAV					**801**	**6,962**	**4.2**	**3,520**	**14.3**	***120***

Source: Nomura estimates

Fig. 51: Africa Oil financial summary, 2011-15E

Operational Data	**Unit**	**2011**	**2012E**	**2013E**	**2014E**	**2015E**
Brent	US$/bbl	111	112	105	100	95
Net working interest production	kboe/d	-	-	-	-	-
Income statement	**Unit**	**2011**	**2012E**	**2013E**	**2014E**	**2015E**
Sales	$m	-	-	-	-	-
COGS	$m	(0)	(0)	(0)	(0)	(0)
Gross profit	$m	(0)	(0)	(0)	(0)	(0)
Admin	$m	(11)	(16)	(17)	(18)	(19)
Other Operating Income	$m	-	-	-	-	-
Exploration cost	$m	-	(27)	(65)	(40)	(40)
Operating profit	$m	**(11)**	**(43)**	**(82)**	**(58)**	**(59)**
Financials	$m	(4)	3	4	(22)	(78)
Profit before tax	$m	(9)	(54)	(78)	(81)	(138)
Tax	$m	-	-	-	-	-
Tax Rate	%	-	-	-	-	-
Net Income	$m	(11)	(47)	(78)	(81)	(138)
Clean net income	$m	**(7)**	**(45)**	**(78)**	**(81)**	**(138)**
Basic EPS	c/sh					
Clean EPS	c/sh	1	(14)	(32)	(32)	(56)
Diluted EPS	c/sh	(0)	(14)	(32)	(32)	(56)
Clean diluted EPS	c/sh	1	(13)	(32)	(32)	(56)
Number of shares	m	193	217	248	248	248
Diluted number of shares	m	194	222	248	248	248
Cash flow	**Unit**	**2011**	**2012E**	**2013E**	**2014E**	**2015E**
PBT	$m	(9)	(54)	(78)	(81)	(138)
DD&A	$m	0	0	0	0	0
Income Tax	$m	-	-	-	-	-
Other non cash (inc net tax)	$m	2	47	61	62	118
Cash earnings	$m	(7)	(7)	(17)	(18)	(19)
Working capital adjustment	$m	0	(1)	-	-	-
CFO	$m	**(7)**	**(8)**	**(17)**	**(18)**	**(19)**
Capex	$m	0	120	260	160	160
Net acquisitions (-) disposals (+) and other	$m	39	12	-	-	-
CF before financing activities	$m	**32**	**(116)**	**(277)**	**(178)**	**(179)**
Issuance/ Repurchase of Equity Shares	$m	3	258	-	-	-
Interest Paid	$m	-	1	4	(22)	(78)
Proceeds (+) repayment (-) of debt	$m	1	1	69	201	258
Translation difference	$m	(3)	(0)	-	-	-
Increase (+) decrease (-) in cash	$m	**0**	**144**	**(205)**	**-**	**-**
Balance sheet	**Unit**	**2011**	**2012E**	**2013E**	**2014E**	**2015E**
Inventories	$m	-	-	-	-	-
Receivables	$m	3	3	3	3	3
Cash	$m	112	253	49	49	49
Other current	$m	-	-	-	-	-
Current assets	$m	**115**	**256**	**51**	**51**	**51**
PPE	$m	0	0	0	(0)	(0)
Other non current	$m	189	278	473	593	713
Total assets	$m	**304**	**534**	**524**	**644**	**764**
ST borrowings	$m	2	-	-	-	-
Payables	$m	24	32	32	32	32
Other current	$m	-	-	-	-	-
Current liabilities	$m	**25**	**32**	**32**	**32**	**32**
LT borrowings	$m	3	18	86	287	544
Other non current	$m	189	278	473	593	713
Total liabilities	$m	**28**	**49**	**118**	**318**	**576**
Share capital, share premium and reserves	$m	276	517	517	517	517
Revenue Reserves	$m	-	(33)	(111)	(192)	(329)
Total shareholders' equity	$m	**276**	**485**	**406**	**326**	**188**

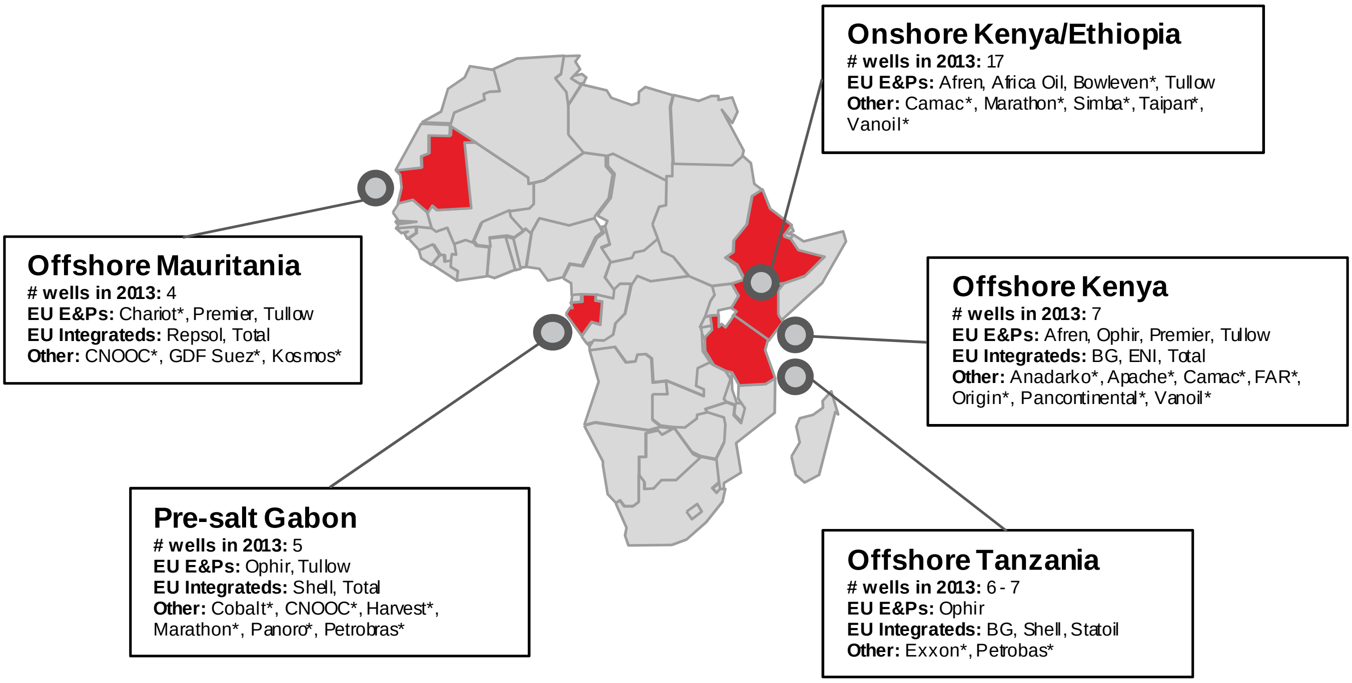
Source: Company data, Nomura estimates

Themes for 2013: Exploration, consolidation and country risk

Theme 1: Exploration – Strong outlook for 2013, five plays to watch

We highlight a strong outlook for exploration in Africa in 2013. We identify five plays that we believe offer material upside over the next 12 months and highlight 40 wells in 2013 (vs 10 in 2012) that we estimate are targeting c.14bn boe of prospective resource. We break down the five plays into: 1) 'play-openers', regions with little or no exploration to date – pre-salt Gabon, offshore Mauritania, offshore Kenya; and 2) 'play-extenders', where frontier discoveries have already been made but the upside case will be tested in 2013 – onshore Kenya/Ethiopia and offshore Tanzania. For each play we identify a number of small, mid-cap and integrated oils that could benefit directly or indirectly from exploration success. We particularly like pre-salt Gabon for impact (pre-drill >1bn boe) and onshore Kenya/Ethiopia for newsflow intensity (17 wells in 2013). Our preferred names for gaining exposure to these two plays are Ophir (Gabon) and Africa Oil (Kenya/Ethiopia).

Fig. 52: We identify five exploration plays in Africa for 2013



Source: Nomura research

Three potential play openers…

Frontier plays that have seen little or no drilling activity to date and have the potential to be company-changing in a success case. Please refer to the individual country sections for details on the following:

• Pre-salt Gabon – Chasing the pre-salt play north

• Mauritania offshore – Looking for another Jubilee

• Offshore Kenya – Oil or gas?

…and two play extenders

Regions where frontier discoveries have already been made but are still to test the upside case in 2013. We highlight:

• Onshore rift basins – Testing the upside case onshore Kenya/Ethiopia

• Tanzania gas – Closing the gap to Mozambique

Exploration = Volume x value x risk

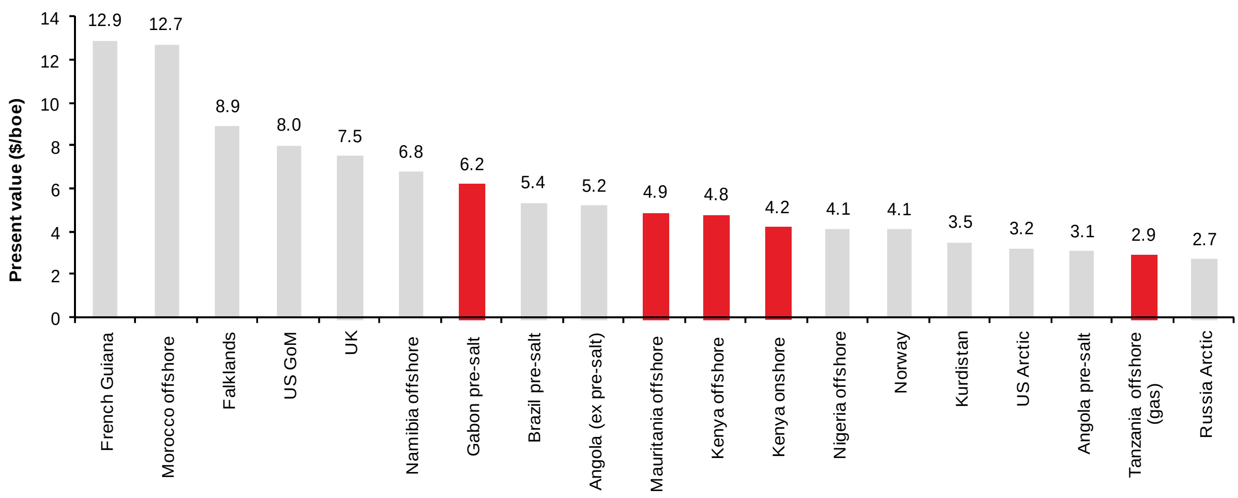
Alongside identifying plays that offer material volume upside we look at value, an area that we think is crucial but is typically under-appreciated by the market. We run scoping economics across 140 fiscal regimes, putting our five Africa plays in a global context. Our analysis points to a wide spread of value, predominantly driven by contract terms, and out of our 'five plays to watch' we think terms in the Gabon pre-salt screen as particularly attractive.

Creating a Global Fiscal Terms Index

We have created what we consider to be typical threshold developments for oil (500mmbbls) and gas (10Tcf, ie, two trains of LNG) and run scoping economics at a long-term oil price of USD 95/bbl. We base contract terms, which are often confidential, on a mixture of Nomura estimates, host government data, company guidance and Wood Mackenzie. Our analysis applies to a barrel discovered in 2013. We use government take, defined as the state's share of pre-tax NPV, as a proxy to compare each fiscal regime, with a lower number considered more attractive. We split the results into quintiles and conclude that, despite our five African plays initially screening at the mid- to high-end of the range for government take (3rd-5th quintiles), there is still relative value, with oil plays offering > USD 4/boe for a barrel discovered in 2013.

Fig. 53: Africa exploration vs global emerging exploration plays and major production hubs

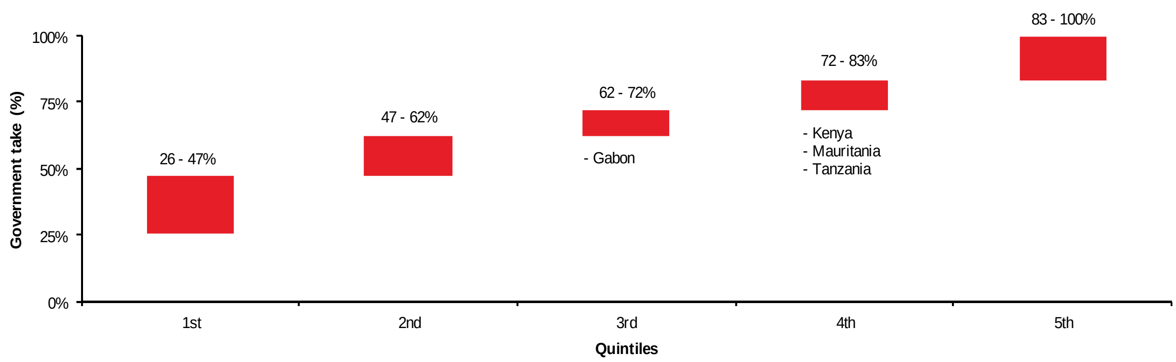
At USD 95/boe oil price



Source: Wood Mackenzie, Nomura estimates

Fig. 54: Africa exploration vs global fiscal terms index

Government take = state's share of pre-tax NPV at USD 95/bbl; a lower number is preferred



Source: Wood Mackenzie, Nomura estimates

Fig. 55: Africa 2013 drilling activity

									2012	2013			
Country	**Play**	**Oil/ Gas**	**Operator**	**Key Partner(s)**	**Well(s)**	**Block/License**	**Basin**	**Activity**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
Kenya	Offshore Transform margin	Oil/ Gas	Apache	Tullow, Pancontinental, Origin	Tai	L8	Lamu Basin	Drilling		■			
			Anadarko	Total	2 wells - Kubwa, Kiboko	L7/L11B	Lamu Basin	Drilling		■	■		
			FAR	Pancontinental	Kifaru	L6	Lamu Basin	Drilling			■		
			BG	Premier	1 well	L10A/L10B	Lamu Basin	Drilling					■
			Ophir	FAR, Vanoil	1 well	L9	Lamu & Tanzania Central Basin	Drilling					■
Gabon	Offshore pre-salt	Oil	Harvest	Panoro Energy	Tortue	Dussafu block	South Gabon Basin	Drilling	■	■			
			Total	Cobalt	1 well	Diaba block	South Gabon Basin	Drilling		■			
			Tullow	Addax	2 wells	Kiarsseny	North Gabon Basin	Drilling		■			
			Ophir	Petrobras	2 wells	Mbeli/Ntsina blocks	North Gabon Basin	Drilling				■	■
			Shell	CNOOC	1 well	DC9/BCD10	South Gabon Basin	Drilling					■
Kenya/Ethiopia	East African Rift basins	Oil	Tullow	Africa Oil, Afren	Pai Pai	Block 10A	Cretaceous Rift Basin	Drilling	■	■			
			Tullow	Africa Oil	Sabisa	South Omo	Tertiary Rift Basin	Drilling		■			
			Vanoil		2 wells	3A/3B	Anza Basin	Drilling		■			
			Tullow	Africa Oil	Up to 5 wells	Block 10BB/13T	Tertiary Rift Basin	Drilling		■	■	■	■
			Tullow	Africa Oil	Kinyonga	Block 9	Cretaceous Rift Basin	Drilling			■	■	
			Afren	Taipan	1 well	Block 1	Mandera Basin	Drilling					■
Mauritania	Central Atlantic margin	Oil	Tullow	Premier Oil + others	3 wells	Various	Senegal-Bove Basin	Drilling		■	■	■	
			Total	SMH	1 well	Block C9	Senegal-Bove Basin	Drilling		■	■		
			Chariot	SMH	Seismic only	Block C19	Senegal-Bove Basin	Seismic					
Tanzania	Intraslope Channel & Basin Floor Fan	Gas	Statoil	Exxon	1-2 wells (Mronge)	Block 2	Rufiji Basin	Seismic/Drilling	■	■			
			Petrobras	Shell	1-2 wells	Blocks 5 & 6	Rufiji & Rovuma Basin	Drilling			■	■	
			BG	Ophir	Kusini (Basin Floor Fan)	Block 1, 3 & 4	Rufiji & Rovuma Basin	Drilling			■	■	■
			Ophir	RAKGas/Mubadala	Tikiti/Maembe/Mlinzi	East Pande/Block 7	Rufiji & Rovuma Basin	Drilling			■	■	■
Angola	Offshore pre-salt	Oil	Cobalt		4-6 wells	Block 9, 20 & 21	North Kwanza Basin	Drilling/Testing		■	■	■	■
			Statoil		Seismic only	Various	Kwanza Basin	Seismic/Drilling					■
Cote d'Ivoire, Ghana, Sierre Leone, Liberia	West Africa Transform margin	Oil	Tullow	Anadarko	Okure & Sapele	Deepwater Tano	Tano Basin, Ghana	Drilling	■				
			Tullow	Anadarko	Calao	CI-103	Cote d'ivoire	Drilling			■	■	
			Anadarko	Mitsubishi Corporation	1 well	Block 10	Liberia	Drilling			■	■	
Mozambique	Tertiary Basin Floor Fan	Oil/ Gas	Anadarko		Black Pearl, Barracuda & Linguado	Area 1	Rovuma Basin	Drilling/Testing		■	■	■	■
			Statoil	Tullow	1 well	Area 2 & 5	Rovuma Basin	Drilling			■	■	
			Eni		Appraisal wells	Area 4	Rovuma Basin	Drilling			■	■	■
Namibia	Sub salt	Oil	HRT		4 wells	PEL 22, 23, 24 & 28	Orange Basin	Drilling		■	■	■	■
			Chariot		1 well	Southern blocks	Orange Basin	Drilling				■	

Source: Company data, Nomura estimates

Pre-salt Gabon – Chasing the pre-salt play north

As one of the last untested deepwater plays offshore Africa, Gabon pre-salt should see a step change in activity in 2013 with five wells planned, including the industry's first deepwater pre-salt well in H1 2013, operated by Total. The pre-salt is a high risk frontier play, but with multi-billion barrel potential supported by recent success further south in the Angola pre-salt, success could open up a major new basin. Attractive fiscal terms mean that value, as well as volume, could be significant and we estimate a barrel could be worth over USD 6/boe. Of the European E&Ps, we believe Ophir is best placed with a 2-3 well campaign in 2013.

Fig. 56: Breakdown by listed participants

Group	Participants
European E&Ps	Ophir, Tullow
European Integrateds	Eni, Shell, Total
Other	Cobalt, CNOOC, Harvest, Marathon, Panoro, Petrobas

Source: Company data, Nomura research

Replicating Brazil and Angola's pre-salt success

Both Ophir and Total, through respective partners Petrobras and Cobalt, are hopeful that success in Brazil and Angola can be replicated offshore Gabon. Ophir, in particular, points to the knowledge gained from Petrobras' pre-salt Barra discovery in Brazil's Sergipe Alagoas basin. Geologically, pre-salt Gabon is thought to possess similar source rocks to the Brazil and Angola pre-salts, although sandstone reservoirs are expected rather than the carbonates further south in Angola. Past success in Gabon's onshore and near shore pre-salt is supportive and demonstrates the potential scale of the deepwater – the Rabi-Kounga pre-salt onshore discovery is Gabon's largest field at >900mmboe. Salt layers offshore Gabon are typically thinner than in Brazil which, while of benefit to drilling time, and therefore cost, raises question marks over its sealing ability, something that Total's first well will look to test.

Fig. 57: Gabon offshore acreage

Source: Company data

Fig. 58: Regional map of west Africa

Source: Wood Mackenzie

All eyes on Total and Cobalt's first well

Total, together with partners Cobalt and Marathon, intends to drill Gabon's first deepwater offshore pre-salt well in H1 2013 in the Diaba licence. Cobalt has indicated a number of large structures that will be targeted, with Mango or Mango South appearing the most likely. Ophir, which is planning to drill 2-3 wells in H2 2013, could benefit thematically in a success case. Harvest and Panoro's shallow water pre-salt discovery, announced in January, is thematically supportive albeit on a smaller scale (c. 60mmboe) to the c. 1bn boe pre-drill that Ophir is targeting.

Fig. 59: Offshore pre-salt Gabon: 5 wells in 2013

Well	Block	Operator	Key partners	Prospect size (mmboe)*	Remarks
2013 drilling activity					
Mango/Mango South	Diaba	Total (42.5%)	Cobalt (21.25%), Marathon (21.25%), Others (15%)	-	Drilling Q1 2013
North Cluster	Mbeli	Ophir (50%)	Petrobras (50%)	885	Drilling Q3 2013
Padouck	Ntsina	Ophir (50%)	Petrobras (50%)	1,150	Drilling Q3 2013
1 well	DC9/BCD10	Shell (75%)	CNOOC (25%)	-	Drilling Q4 2013
Ongoing & relevant historic activity					
Tortue	Dussafu	Harvest (66.67%)	Panoro Energy (33.33%)	-	c. 50m net pay (4 Jan 2013)
Padouck-1	Ntsina	Arco		-	Conventional post-salt well, oil shows (1997/98)
Rabi-Kounga	Onshore	Shell		940	Onshore pre-salt discovery (1989)
Maruba-2	Diaba	Elf		-	Near-shore pre-salt discovery (1982)
Other notable licence holders					
Anadarko (Agali), ENI (D3 & D4)				-	

*Gross, unrisked, mean prospective resource

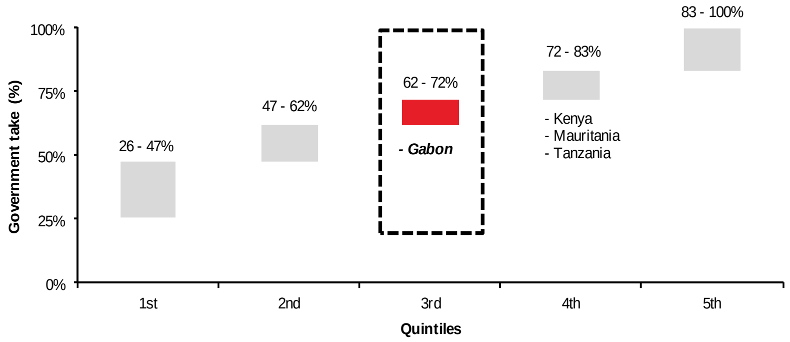
Source: Company data, Nomura estimates

Attractive fiscal terms imply USD 6.2/boe

Terms for the deep water screen as relatively attractive, with government take in the third quintile of our Global Fiscal Terms Index. This level of government take is more consistent with a frontier country rather than a mature producer such as Gabon, but in part reflects the frontier nature of the deep water. Unlike the pre-salt licences in Angola, Gabon terms were largely signed prior to success in the Brazilian pre-salt and escaped the subsequent tightening of terms. Contracts are production sharing contracts (PSC) in structure with profit sharing typically linked to production on a tiering system that is favourable for large discoveries. Our field model suggests that a barrel discovered in 2013 with a time to market of six years could be worth USD 6.2/boe.

Fig. 60: Pre-salt Gabon vs Global Fiscal Terms Index

Government take = state's share of pre-tax NPV at USD 95/bbl; a lower number is preferred



Source: Wood Mackenzie, Nomura estimates

Fig. 61: Fiscal terms and development assumptions

Term	Assumptions
Contract type	PSC (Production based)
Taxation	-
Royalty	sliding scale
State participation	10%
Gross resource	500mmboe
Capex	$18/boe
Opex	$8/boe
PV	$6.2/boe

Source: Wood Mackenzie, Nomura estimates

Onshore rift basins – Testing the upside case onshore Kenya/Ethiopia

Despite the high profile success of Tullow and Africa Oil's basin opening Ngamia discovery, we think onshore East Africa has far from run its course. With only a handful of wells across an area larger than the UK North Sea, it remains early days. In 2013, a significant step-up in activity should see c.17 wells drilled across multiple play-types and sub-basins. While exploration continues around Tullow and Africa Oil's discoveries in the Lokichar basin, we think new sub-basin openers are likely to be more meaningful catalysts for equity investors and identify three independent plays that will be tested in 2013. Both Tullow and Afren offer exposure to the onshore, but Africa Oil remains our preferred name for leveraged exposure across all three plays.

Fig. 62: Breakdown by listed participants

Group	Particpants
European E&Ps	Afren, Africa Oil, BowLeven, Tullow
Other	Camac, Marathon, Simba, Taipan, Vanoil

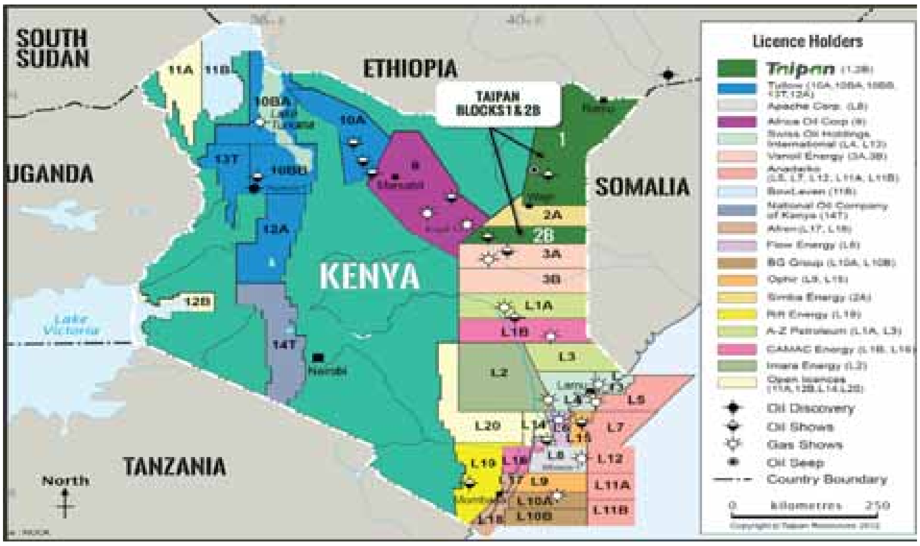
Source: Company data, Nomura research

New sub-basin openers a major driver of value

Tullow and Africa Oil's Ngamia and Twiga discoveries proved the tertiary rift play south of Lake Turkana. Achieving commercial volumes rather than play-opening exploration is the next step and we expect opening the multiple other sub-basins will be a larger driver for equity prices. We identify three independent plays that should be tested in 2013:

- **Northern tertiary rift (TLW, AOI):** Potentially the highest impact play with unrisked estimates of 12.6bn boe across blocks 10BA and South Omo. An unexplored region, success would 'book end' the tertiary play either side of Lake Turkana.
- **Cretaceous rift (TLW, AOI, AFRE):** An independent play to the tertiary, some 5-6 wells have been drilled historically, all unsuccessful, with oil shows on breached traps. Unrisked estimates for blocks 9 and 10A are c.1.9bn boe.
- **Ogaden basin: (AOI, AFRE):** Unrisked estimates for Afren's block 1 are c.700mmboe. On the Ethiopian side, Africa Oil's blocks 7/8 are supported by the El Kuran discovery, which found oil in the Jurassic in block 8.

Fig. 63: Onshore Kenya acreage



Source: Company data, Nomura estimates

Active drilling programme testing multiple, independent plays

We expect consistent newsflow from what is the most active 2013 drilling campaign of our key plays. The high number of wells (we estimate 17) is in part down to the faster pace of onshore drilling. We identify key wells in each of the three independent plays:

- **Northern tertiary rift (TLW, AOI):** The Sabisa well in Ethiopia's South Omo block could open up the Tertiary Rift Trend some 300km north of Ngamia. The well is targeting 200mmboe (unrisked, gross) and we believe could be worth SEK 0.4/2.3 (risked/unrisked) for AOI and 2p/10p (risked/unrisked) for Tullow. Results are expected early Q2 2013.
- **Cretaceous rift (TLW, AOI, AFRE):** Pai Pai in block 10A is drilling ahead and results are expected in early Feb. The well is targeting 121 mmboe (gross) and could be worth SEK 0.8/4.0 (risked/unrisked) for AOI, 3p/17p (risked/unrisked) for Tullow and 1p/6p (risked/unrisked) for Afren.
- **Ogaden basin: (AOI, AFRE):** We expect activity to be an H2 2013 event with Afren/Taipan to drill a well in Block 1 and New Age to target blocks 7/8 with one well.

Fig. 64: Onshore Kenya and Ethiopia – 2013 drilling activity

Well	Block	Operator	Key partners	Prospect size (mmboe)*	Remarks
2013 activity					
Pai Pai	10A	Tullow (50%)	Africa Oil (30%), Afren (20%)	121	Results Feb 2013
Sabisa	South Omo	Tullow (50%)	Africa Oil (30%), Marathon (20%)	68	Results Q1 2013
Etuko (Kamba)	10BB	Tullow (50%)	Africa Oil (50%)	231	Spud Q1 2013
Twiga North	13T	Tullow (50%)	Africa Oil (50%)	112	Spud Q1 2013
Etuko-C	10BB	Tullow (50%)	Africa Oil (50%)	201	Spud Q2 2013
Ekales-S (Kongoni)	13T	Tullow (50%)	Africa Oil (50%)	64	Spud H1 2013
Shimela	South Omo	Tullow (50%)	Africa Oil (30%), Marathon (20%)	71	Spud Q3 2013
Ngamia-1 (Updip)	10BB	Tullow (50%)	Africa Oil (50%)	137	Spud Q3 2013
Class 1_3	South Omo	Tullow (50%)	Africa Oil (30%), Marathon (20%)	87	Spud Q4 2013
Kinyonga	Block 9	Africa Oil (50%)	Marathon (50%)	320	Spud H2 2013
Pundamilia	Block 9	Africa Oil (50%)	Marathon (50%)	402	Spud H2 2013
1 well	Blocks 7/8	New Age (40%)	Afren (30%), Africa Oil (30%)	-	Drilling H2 2013
1 well	2B	Taipan (100%)		-	Drilling H2 2013. Pre-drill farm-out planned
1 well	Block 1	Afren (80%)	Taipan (20%)	-	Potentially Q4 2013
1 well	2A	Simba Energy (100%)		-	Pre-drill farm-out planned
2 wells	3A/3B	Vanoil Energy (100%)		-	-
Seismic	11B	Adamantine (50%)	BowLeven (50%)	-	Airborne geophyisical survey and 2D seismic
Seismic	L19	Rift Energy		-	2D seismic survey in 2H13
Ongoing & relevant historic activity					
Twiga South	13T	Tullow (50%)	Africa Oil (50%)	-	c. 30m net pay
Pai Pai	10A	Tullow (50%)	Africa Oil (30%), Afren (20%)	121	Results Q1 2013
Ngamia-1	10BB	Tullow (50%)	Africa Oil (50%)	-	First discovery, >100m net pay
Other notable license holders					
A-Z Petroleum (L1A, L3), CAMAC Energy (L1B)				-	

*Gross, unrisked, mean prospective resource

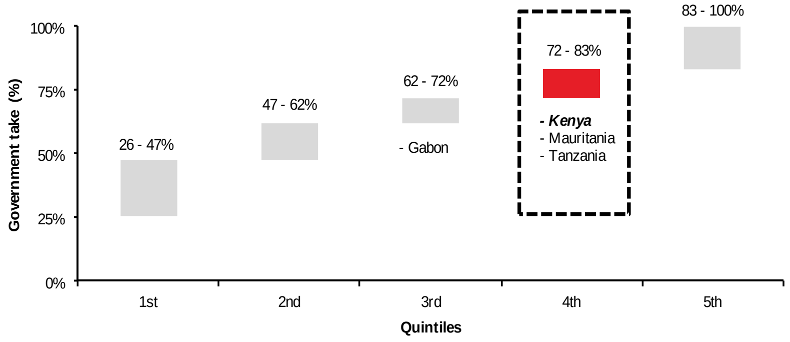
Source: Company data, Nomura estimates

Fiscal terms more demanding than the offshore

Terms screen towards the higher end of our Global Fiscal Terms Index (fourth quartile, 72-83%) and are marginally tougher than the offshore. This is reflective of the higher levels of risk capital required in deepwater exploration and a typical trend globally. The tighter terms are offset by the lower breakeven of onshore projects. Our estimates for a Kenyan onshore barrel, which are based on a 500mmboe development with costs in line with Tullow's Lake Albert project in Uganda, are USD 4.2/boe, assuming first oil in 2018.

Fig. 65: Onshore Kenya vs Global Fiscal Terms Index

Government take = state's share of pre-tax NPV at USD 95/bbl; a lower number is preferred



Source: Wood Mackenzie, Nomura estimates

Fig. 66: Fiscal terms and development assumptions

Term	Assumptions
Contract type	PSC (Production based)
Taxation	Additional profits tax
Royalty	-
State participation	15%
Gross resource	500mmboe
Capex	$7/boe
Opex	$6/boe
PV	$4.2/boe

Source: Wood Mackenzie, Nomura estimates

Mauritania offshore – Looking for another Jubilee

It is still early days with exploration primarily aimed at targeting light oil in the deeper cretaceous horizons that are thought to be similar to Ghana. Tullow and Kosmos were instrumental in proving this play in 2007 and what we find encouraging, aside from both companies being present, is the high levels of equity held by Tullow (21-90%) and Kosmos (90%). Super-major Total is also indicating confidence in the play with a 90% interest in block C9. In recent years the government has improved contract terms and with the deepwater still largely unlicensed, success in 2013 could see an acreage grab to a similar extent as was seen in the Kenyan offshore this year. Total, Kosmos and Chariot signed licences in 2012, but Tullow is the most advanced with a three-well programme expected in 2013.

Fig. 67: Breakdown by participants

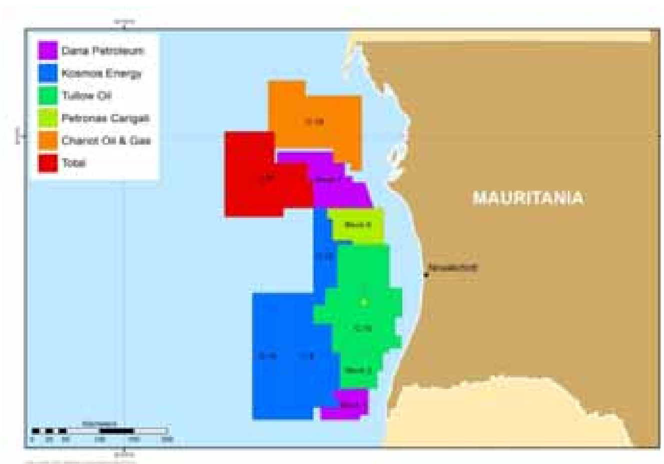
Group	Particpants
European E&Ps	Chariot, Premier, Tullow
European Integrateds	Repsol, Total
Other	CNOOC, GDF Suez, Kosmos

Source: Company data, Nomura research

Testing deeper cretaceous plays for another Jubilee

Previous discoveries in Mauritania have focused on the Miocene – including the now producing Chinguetti oil field – and the next phase of exploration is geared towards oil plays in the deeper cretaceous horizons. There is a mix of play-types but testing cretaceous turbidites appears the most attractive given the success in Ghana (Jubilee) and out of the 80 prospects identified by Tullow, 41 are targeting this play. Kosmos, which holds acreage adjacent to Tullow, also points to testing stratigraphic traps in the cretaceous. With a number of light oil and gas discoveries offshore over the past 10 years, source is evident and the key risk is likely to be the hydrocarbon phase with Tullow's recent Cormoran well discovering gas (rather than oil) in late cretaceous turbidites.

Fig. 68: Mauritania offshore acreage



Source: Company data

Fig. 69: Regional map of north-west Africa

Source: Wood Mackenzie

Tullow drilling three wells in 2013

The first wells and potential basin openers will be drilled by Tullow in H1 2013. We estimate wells are targeting prospect sizes of 50-100mmboe (P50, gross) and expect the first well to be in the north of the basin. In our view, Tullow is likely to aim to drill follow-up wells in the centre and southern extent of its acreage to book-end the play. Activity for Total, Chariot and Kosmos in 2013 appears largely geared to seismic acquisition and interpretation.

Fig. 70: Offshore Mauritania – 2013 drilling activity

Well	Block	Operator	Key partners	Prospect size (mmboe)*	Remarks
2013 drilling activity					
Scorpion	C-7	Dana (36%)	Tullow (21.15%), Petronas, GDF Suez		Spud Q2 2013
1 well	Block C9	Total (90%)	SMH (10%)	-	Drilling 1H 2013
Caracol/Tapendar	C-10	Tullow (59.15%)	Premier (6.23%), Petronas (13.5%)	-	Spud Q3 2013
Addax	C-1	Dana (36%)	Tullow (40%), GDF Suez (26%)	-	Spud Q4 2013
Seismic	Block C19	Chariot (90%)	SMH (10%)	-	Potential drilling end 2013
Ongoing & relevant historic activity					
Cormoran	Block 7	Dana Petroleum (36%)	GDF SUEZ (27.85%), Tullow (21.15%), Petronas (15%)	-	Gas discovered in late cretaceous turbidites (2011)
Other notable licence holders					
Kosmos Energy (C8, C12 & C13)				-	

*Gross, unrisked, mean prospective resource

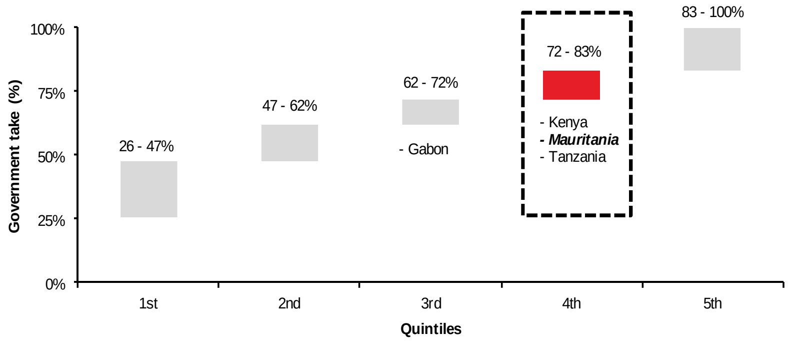
Source: Company data, Nomura research

Fiscal terms uncertain, but we estimate USD 4.9/boe

Licensing has been active recently, with Total, Kosmos and Chariot all picking up blocks in 2012. Terms have been adjusted as part of the new petroleum law in 2010, with the profit-sharing mechanism now linked to profitability rather than production. Disclosure is limited but assuming a typical r-factor PSC, we estimate government take is at the lower end of the fourth quintile (72-83%). A significant number of unlicensed blocks remain further outboard, which leaves headroom for new entrants. Our field model suggests a barrel discovered in 2013 with a time to market of six years could be worth USD 4.9/boe.

Fig. 71: Mauritania vs Global Fiscal Terms Index

Government take = state's share of pre-tax NPV at USD 95/bbl; a lower number is preferred



Source: Wood Mackenzie, Nomura estimates

Fig. 72: Fiscal terms and development assumptions

Term	Assumptions
Contract type	PSC (r-factor based)
Income tax	27% income tax
Royalty	-
State participation	10%
Gross resource	500mmboe
Capex	$18/boe
Opex	$8/boe
PV	$4.9/boe

Source: Wood Mackenzie, Nomura estimates

Offshore Kenya – Oil or gas?

After 18 months of prolific gas discoveries offshore East Africa, the gas potential of the region is arguably well understood. By contrast, exploration targeting liquids is in its infancy and, with the industry yet to find commercial volumes of oil offshore, we would view a significant liquids discovery offshore Kenya as significant. Gas discoveries, on the other hand, are likely to be taken as disappointing unless significant volumes are found. Following aggressive acreage acquisitions in 2012, seven wells are set to be drilled over the next 12 months. After the relative disappointment of Apache's Mbawa gas discovery, well results from Apache's follow-up well and Anadarko's first well, both in Q1 2013, are likely to set the tone for campaigns later in the year by the European E&Ps.

Fig. 73: Breakdown by listed participants

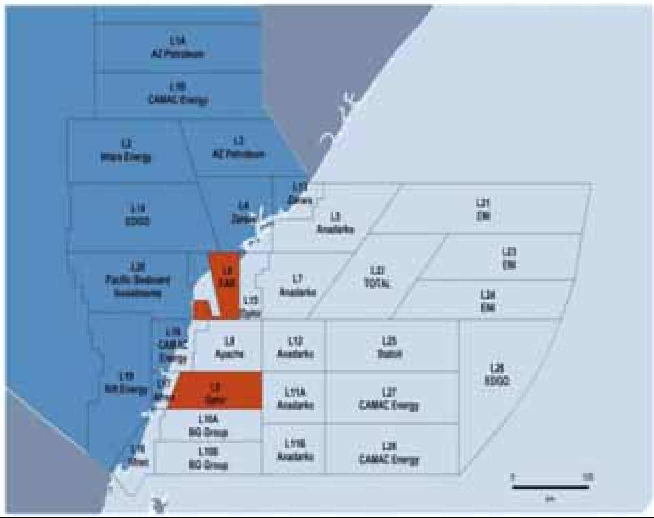
Group	Particpants
European E&Ps	Afren, Ophir, Premier, Tullow
European Integrateds	BG, ENI, Total
Other	Anadarko, Apache, Camac, FAR, Origin, Pancontinental, Vanoil

Source: Company data, Nomura research

What we learnt from Apache's Mbawa well

Mbawa was Kenya's first deepwater well since 2006 and found 52m of net gas pay together with high quality (24% porosity) cretaceous turbidite reservoirs, but no oil. The regional oil story is predicated on accessing oil-generating Jurassic source rocks, which are understood to drive the oil seeps that are evident along the coastline. The structure targeted by Mbawa was too young to be oil-bearing and a deeper and older structure is required to access the Jurassic source. Apache has identified a tertiary-cretaceous separation with different structural regimes and will drill into the deeper cretaceous with its follow-up well, Tai.

Fig. 74: Kenya offshore acreage



Source: Company data

Fig. 75: Regional map of offshore east Africa

Source: Wood Mackenzie

Apache and Anadarko targeting oil in Q1 2013

Drilling among European E&Ps appears geared towards the end of 2013, with wells expected from Ophir (L9) and BG/Premier (L10A/B) in 2H. We expect Afren to clarify drilling plans for L17/18 (100%) following seismic activity. We expect these names to benefit thematically if earlier exploration from Anadarko and Apache is successful. We point to two wells, Kiboko in L11B and Kubwa in L7, being drilled by Anadarko/Total in Q1, as well as Apache/Tullow's Tai well in L8, expected in early 2013. Tai is further south from Mbawa and is targeting c.200mmboe (unrisked). Of the small caps, Australian listed Pancontinental could also benefit as a non-operated partner in L8, while FAR plans to drill L6 in Q2 2013.

Fig. 76: Offshore Kenya – 2013 drilling activity

Well	Block	Operator	Key partners	Prospect size (mmboe)*	Remarks
2013 drilling activity					
Kiboko	L11B	Anadarko (45%)	Total (40%), Cove** (15%)	-	Drilling Q1 2013
Kifaru	L6	FAR (60%)	Pancontinental (40%)	-	Drilling Q2 2013. Pre-drill farm-out planned
Kubwa	L7	Anadarko (45%)	Total (40%), Cove** (15%)	-	
2 wells	L10A	BG Group (40%)	PTTEP (25%), Premier (20%), Pancontinental (15%)	-	Drilling 2 well programme in H2 2013
	L10B	BG Group (45%)	Premier (25%), PTTEP (15%), Pancontinental (15%)	-	
Tai	L8	Apache (50%)	Tullow (15%), Origin (20%), Pancontinental (15%)	c. 200	
1 well	L9	Ophir (60%)	FAR (30%), Vanoil (10%)	c. 300 (oil only)	
Ongoing & relevant historic activity					
Mbawa-1	L8	Apache (50%)	Tullow (15%), Origin (20%), Pancontinental (15%)	200	First discovery in offshore Kenya. 52m net gas pay
Seismic	L17, L18	Afren (100%)		-	
Simba-1	L9	-	-	-	Gas shows (1979)
Other notable licence holders					
CAMAC Energy (L16, L27, L28), ENI (L21, L23, L24), Total (L22)				-	

*Gross, unrisked, mean prospective resource; **PTTEP bought Cove, but deal has not yet been approved by the Kenyan government

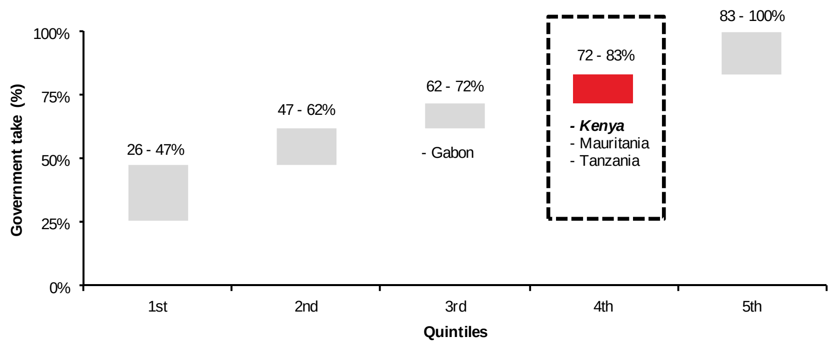
Source: Company data, Nomura estimates

Fiscal terms 'good enough'

Terms screen as reasonable and we estimate government take in the fourth quintile (72-83%) of our global fiscal ranking. While not as attractive as Gabon, terms are broadly in line with other African deepwater plays. Disclosure of terms is limited and we use Wood Mackenzie data for blocks L27/28 as representative for the offshore. On this assumption, our field model suggests a barrel discovered in 2013 with a time to market of six years could be worth USD 4.8/boe.

Fig. 77: Offshore Kenya vs Global Fiscal Terms Index

Government take = state's share of pre-tax NPV at USD 95/bbl; a lower number is preferred



Source: Wood Mackenzie, Nomura estimates

Fig. 78: Fiscal terms and development assumptions

Term	Assumptions
Contract type	PSC
Taxation	Windfall profits tax
Royalty	-
State participation	15%
Gross resource	500mmboe
Capex	$18/boe
Opex	$8/boe
PV	$4.8/boe

Source: Wood Mackenzie, Nomura estimates

Tanzania gas – Closing the gap to Mozambique

The gas potential of East Africa is arguably better understood than the other frontier plays in this report. In Mozambique, Anadarko and Eni's appraisal programmes are largely complete and, with reserves certification in the coming months, this now appears more of a development story. Where we think there is still an active exploration story is Tanzania. The bar has been set high by Mozambique and for Tanzania to close the gap we think: 1) significant new volumes will need to be discovered; and 2) the resource base needs to be of comparable quality to Mozambique. Success from BG/Ophir's first well in the basin floor fans (H2 2013) and flow test on Jodari (Q1 2013) would be supportive and could see Tanzania compete more aggressively with Mozambique for buyers of gas resource.

Fig. 79: Breakdown by participants

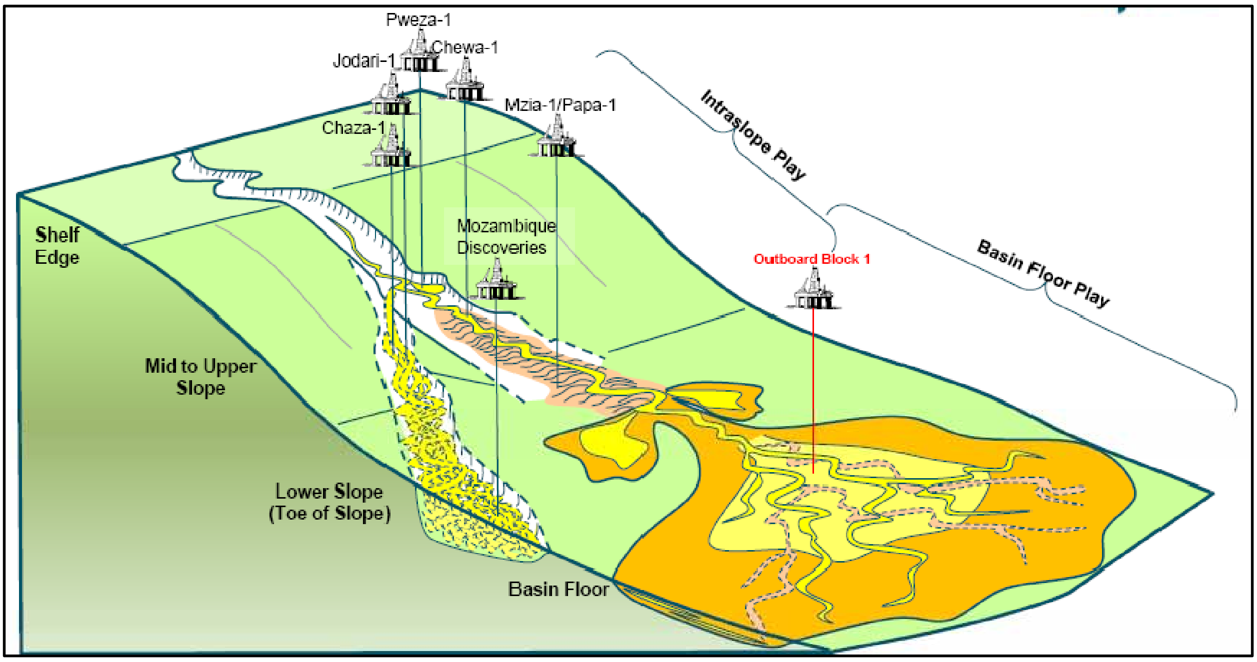
Group	Particpants
European E&Ps	Ophir, Afren
European Integrateds	BG, Statoil, Shell
Other	Exxon, Petrobas

Source: Company data, Nomura research

Tanzania reservoir quality needs to compete with Mozambique

Anadarko has indicated exceptional reservoir properties in Mozambique that should allow well designs of up to 200 mmscf/d and the initial 5-8 years of development to be largely subsea with no surface equipment required offshore. Wells that are 25-30km apart have shown pressure connectivity, all of which should be seen as supportive to development costs and ultimately project breakeven. Early indications in Tanzania are positive, with BG/Ophir's Jodari discovery in excess of 98% net to gross – but a critical test will be the flow rates from the DST at Jodari-1 expected in Q1 2013.

Fig. 80: Ophir and BG targeting Tanzania Basin Floor Play in 2013



Source: Company data

Basin floor fans key to closing the gap to Mozambique

With discoveries of c.120 Tcf in Mozambique versus c.25 Tcf in Tanzania, proving the basin floor fans extend north into Tanzania is key to closing the gap. Ophir has indicated large basin floor fan structures in the outboard section of Block 1 and BG/Ophir's Kusini well is likely to be the first test of this play in H2 2013. Kusini is a significant step-out from previous discoveries on the slope and trap integrity appears the key risk with Ophir carrying an 18% CoS, somewhat lower than the 30-40% pre-drill estimates at the successful intraslope wells.

Fig. 81: Offshore Tanzania – 2013 drilling activity

Well	Block	Operator	Key partners	Prospect size (mmboe)*	Remarks
2013 drilling activity					
Tikiti/Maembe	East Pande	Ophir (70%)	RAKgas (30%)	517	Q2 2013. Pre-drill farm-out planned
Kusini	Block 1	BG (60%)	Ophir (40%)	3,122	Mid-2013. First basin floor fan well
Mlinzi	Block 7	Ophir (80%)	Mubadala (20%)	4,263	Q4 2013. Pre-drill farm-out planned
1-2 wells	Blocks 5 & 6	Petrobras (50%)	Shell (50%)	-	Exploration drilling planned
	Block 2	Statoil (65%)	Exxon (35%)	-	Statoil is looking to drill futher south close to Area 1/4 in Mozambique
Seismic	Tanga	Afren (74%)	Petrodel (26%)	-	Post L17/18 - 1H 2013
Ongoing & relevant historic activity					
3 discoveries	Block 1	BG (60%)	Ophir (40%)	-	Jodari, Miza & Chaza
1 discovery	Block 3	BG (60%)	Ophir (40%)	-	Papa
2 discoveries	Block 4	BG (60%)	Ophir (40%)	-	Pweza & Chewa
2 discoveries	Block 2	Statoil (65%)	Exxon (35%)	-	Zafarani and Lavani discoveries
Other notable licence holders					
Shell (Blocks 9, 10, 11, 12)				-	

*Gross, unrisked, mean prospective resource

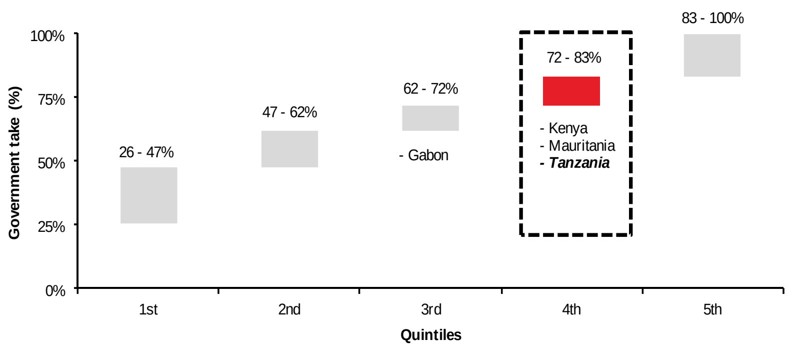
Source: Company data, Nomura research

Gas export agreements give BG/Ophir the edge

Terms screen at the lower end of fourth quartile (72-83% government take) on our Global Fiscal Terms Index. Our analysis applies to the upstream only and we assume midstream and LNG facilities offer a utility return equal to cost of capital. Arguably, just as important as the underlying PSC terms are gas export agreements and in the original PSCs there is a lack of clarity on export pricing. The exception is BG and Ophir, which appear well placed with commercialisation agreements that provide for LNG exports at international pricing. On our estimates, which assume a two-train LNG development and a c.14% s-curve pricing, we value a Tanzanian barrel at USD 2.9/boe.

Fig. 82: Tanzania vs Global Fiscal Terms Index

Government take = state's share of pre-tax NPV at USD 95/bbl. A lower number is preferred



Source: Wood Mackenzie, Nomura estimates

Fig. 83: Fiscal terms and development assumptions

Term	Assumptions
Contract type	PSC (production based)
Taxation	30% income tax
Royalty	-
State participation	-
Gross resource	10 Tcf
Capex	$17/boe
Opex	$6/boe
PV	$2.9/boe

Source: Wood Mackenzie, Nomura estimates

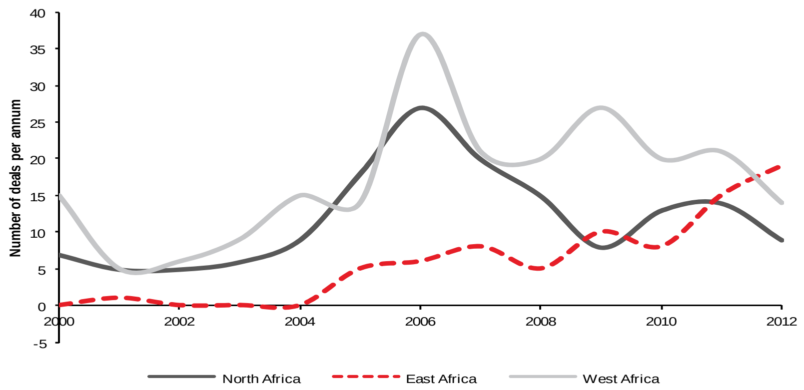
Theme 2: Consolidation – East Africa likely to accelerate

A large number of small-cap E&Ps, coupled with a lack of access to unlicensed blocks, should lead to further consolidation in East Africa. We highlight Kenya in particular, as increased exploration drilling and a long tail of small-cap incumbents act as catalysts to consolidate a fragmented corporate landscape. We think a growing industry preference for asset over corporate transactions is likely to remain unless there is a significant downward correction to oil prices. Meaningful corporate deals may be unlikely until 2013 drilling programmes are completed.

East Africa deal momentum to continue

M&A activity levels in Africa over the past decade reflect the evolution of the emerging east and maturing west and north, with 2012 representing an inflexion point – the first year transaction levels in the east have overtaken the west/north. Admittedly, absolute value has been higher in west Africa, supported by the sale of flowing barrels in Nigeria and Angola, but we still point to deal count as significant. In our opinion, this momentum is likely to continue as growth driven by exploration, a large number of small-cap incumbents and a lack of access to unlicensed blocks ensure supply of prime acreage is limited.

Fig. 84: Africa M&A switches focus to east Africa



Source: IHS Herold, Nomura estimates

Industry preference for asset over corporate transactions likely to remain

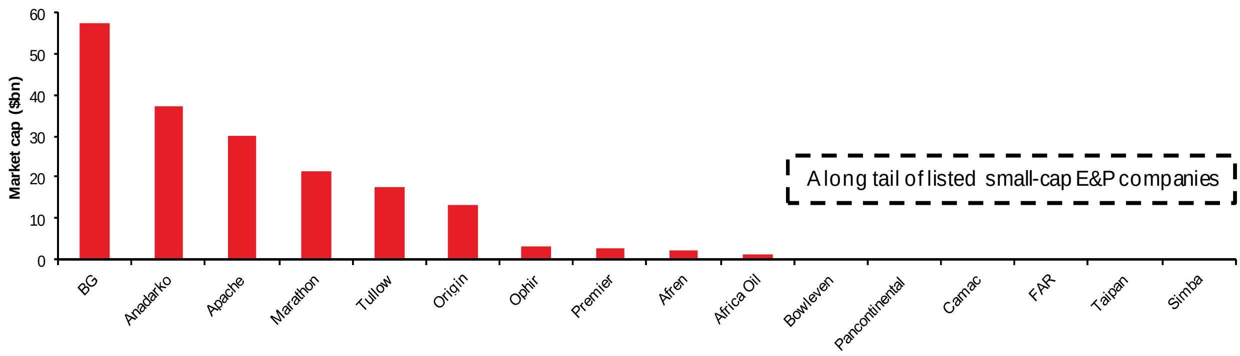
Increasingly, we see evidence of buyers being more selective and looking to pursue asset deals at industrial valuations instead of corporate transactions at equity market valuations. Of the c.40 east and west Africa transactions since 2011 (highlighted in Figure 86), only 15% were corporate deals. We are cautious of equity prices that may be carrying an embedded M&A premium based on a premium corporate valuation. For east Africa, we think corporate deals may be unlikely until 2013 campaigns are drilled out.

Kenya consolidation likely, although further de-risking required

We have conviction that with continued exploration success, consolidation in Kenya is likely in the long run. In Figure 85 we identify a long tail of listed small-caps with acreage across the onshore and offshore. Where we are more cautious is timing. With only a handful of discoveries to date, we would expect a period of de-risking across the resource base before material acquisitions take place. We note that after Tullow's initial Uganda discovery in 2006, significant M&A did not occur until 2010/11, following an E&A well programme that saw over 40 wells drilled. Applying a similar timeline to Kenya would imply consolidation is more likely after 2013 drilling campaigns are completed.

Fig. 85: Fractured corporate landscape in Kenya unlikely to persist

Market cap of listed companies holding Kenyan acreage



Source: Datastream, Nomura research

Companies with a clear strategy of monetising assets and management track record should be supportive

For an industry that is struggling to find large resource bases, material discoveries that have been partially de-risked by exploration and appraisal will continue to screen as attractive. We have a preference for companies with: 1) a clear strategy of monetising assets post-E&A; and 2) management teams with a track record of value creation via disposals. We make the following observations:

- **For Ophir, the elephant in the room remains Tanzania.** A successful flow test of Jodari and further exploration success would go some way to demonstrating the asset quality is comparable to Mozambique and could see Tanzania compete more aggressively with Mozambique for buyers of gas resource. In our opinion, a large equity position (40% in BG-operated blocks 1, 3 and 4) should screen as attractive to an international oil company (IOC) seeking a controlling stake and offers a more straightforward entry to east Africa LNG than Mozambique, where multi-party ownership and unitisation add complexity.
- **Africa Oil's management team has had a strong track-record of value creation** in Africa over the past five years and after the spin-off of the Puntland assets, the company offers unique leverage to onshore Kenya. Establishing commercial levels of resource (we estimate 300-500mmboe) will be required prior to any deal, in our opinion. The possibility of a joint Uganda/Kenya regional development, with an integrated export solution, means Africa Oil's assets could be of wider strategic benefit to a potential acquirer.

Fig. 86: Notable M&A deals in east and west Africa since 2011

Date	Buyer	Seller	Region	Comments
Jan-11	Petrolog International	AsherXino	Offshore Nigeria	15% stake in OPL 2012
Jan-11	Maersk Oil	Devon Energy Corporation	Offshore Angola	15% in Angola deepwater Block 16; Chissonga field
Jan-11	Statoil	Government of Angola	Offshore Angola	Interest in 5 pre-salt blocks
Feb-11	Apache	Origin	Offshore Kenya	Apache farms in to 50% of Block L8 in Kenya for $13.2m of historical costs
Mar-11	Africa Oil	Lion Energy	Corporate	Africa Oil acquires Lion Energy for all shares deal valued at c. $22m
Mar-11	Tullow	Pancontinental	Offshore Kenya	Tullow acuires 10% in Block L8, Kenya for $1m historical cost and funding of future work programme capped at $9m. Option to acquire further 5% in return for funding second well up to a $6m cap
Mar-11	Total	Semliki	Onshore DRC	Total farms into 60% in Block III in DRC for $15m and all costs to FID
Mar-11	Afren	Petrodel	Onshore/Offshore Tanzania	Afren farms in to 74% in Tanga Block, Tanzania for funding of future work programme capped at $40m
Mar-11	Elcrest E&P	Eni/Shell/Total	Offshore Nigeria	45% stake in OML 40
Apr-11	Ophir Energy	RAKGas	Onshore/Offshore Tanzania	Ophir farms in to 70% in East Pande Block, Tanzania for reimbursement of certain back-in costs and carry RAKgas for 3D seismic and first exploration well
May-11	Canadian Overseas Petroleum	Peppercoast Petroleum	Offshore Liberia	100% interest in deepwater Block LB-13
May-11	Neconde Energy Consortium	Shell/Total/ENI	Offshore Nigeria	45% of Nigeria OML 42
May-11	Horn Petroleum	Africa Oil	Corporate	Horn Petroleum acquires 60% in two blocks in Somalia. Horn raises $41 of equity and warrants
Jun-11	Petrofac	Seven Energy	Corporate	Additional 11.9% stake in Seven Energy
Jun-12	Noble Energy	Ophir Energy	Offshore Senegal	30% stake in AGC Profond PSC
Jul-11	Afren	Candax Petroleum	Onshore Madagascar	Afren acquires further 50% in Block 1101, Madagascar for repayments of back-in costs and undisclosed share of future production royalties
Jul-11	Sapetro	RocOil	Offshore Madagascar	Sapetro acquires 75% in Nova Maritime Profound deep offshore Mozambique channel for a consideration of $8.5m
Sep-11	Total	Anadarko/Cove Energy	Offshore Kenya	Total acquires 40% of 5 Blocks (L5, L7, L11A, L11B and L12) in Kenya for an undisclosed amount
Sep-11	Jacka Resources	Providence Resources	Offshore Nigeria	2.67% in OML 113
Oct-11	Shell	Petrobras	Offshore Tanzania	Shell farms in to 50% of Petrobras Blocks 5 and 6, Tanzania for an undisclosed amount
Oct-11	Mubadala	Dominion Petroleum	Offshore Tanzania	Dominion farms-out 20% of Block 7, Tanzania to Mubadala for consideration of $22m
Oct-11	Marex	Sapetro	Offshore Madagascar	Marex acquires 90% in Belo Profound deep water offshore Madagascar for an undisclosed amount
Nov-11	ExxonMobil	Canadian Overseas Petroleum	Offshore Liberia	70% stake in deepwater Block LB-13
Dec-11	PetroChina	Varun Industries	Onshore Madagascar	PetroChina farm-in to 51% of Block 3101 in Madagascar for an upfront consideration of $150m and initial funding of exploration activities
Jan-12	Kosmos Energy	Government of Cameroon	Onshore Cameroon	100% of Cameroon onshore Fako Block
Feb-12	Ophir Energy	Dominion Petroleum	Corporate	Ophir acquires Dominion in cash and shares worth c. $225m
Mar-12	PTTEP	Cove Energy	Corporate	PTTEP improved on Shell's initial bid for Cove, with a bid of $1.9bn
Mar-12	Perenco	Bowleven	Offshore Gabon	100% interest in EOV offshore permit
Apr-12	Taipan	Lion Petroleum	Corporate	Merger of the two companies, that will shortly revert to the name of Lion Petroleum
Jul-12	Marathon Oil	Africa Oil	Onshore Kenya	50% interest in Block 9 and 15% interest in Block 12A for $35m
Aug-12	Consortium	Shell/Total/ENI	Offshore Nigeria	30% stake in OML 34
Aug-12	Inpex	Total	Offshore Angola	Inpex acquired a 9.99% stake from Total in the Chevron-operatered Block 14 off Angola
Sep-12	Admantine	Bowleven	Onshore Kenya	50% interest in Block 11B. Bowleven will fund the initial 2-year exploratory period at an estimated cost of $10m
Oct-12	Tullow	Hyperdynamics	Offshore Guinea	Tullow in talks to acquire Hyperdynamics 77% stake in its concession off Guinea
Oct-12	New Age	Africa Oil	Ethiopia	25% interest in Blocks 7 & 8 together with the operatorship of those Blocks and the Adigala area. New Age paid Africa Oil $1.5m in consideration of past costs
Nov-12	Heritage	Shell/Total/ENI	Offshore Nigeria	Acquired a 45% stake in onshore licence OML 30 in a $850m deal
Nov-12	Vaalco Energy	Petronas	Equatorial Guinea	31% interest in PDA in offshore Block P
Nov-12	Sinopec	Total	Offshore Nigeria	Sinopec struck a $2.5 billion cash deal to acquire Total's 20% stake in the producing Usan oilfield off Nigeria
Nov-12	Vanoil	Avana Petroleum	Corporate	Vanoil acquires Avana for $15m. Gains 10% stake in L9 offshore Kenya and in areas A and B in the Seychelles

Source: Company data, Nomura estimates

Theme 3: Country risk levels increasing

A continual push from a number of African governments for more influence and control over the oil sector is likely to be a defining theme over the next 12 months. From our time at Africa Oil Week, it was clear a number of countries are proposing potentially far reaching changes including actively revisiting oil and gas laws, increasing the role of national oil companies and delaying decisions around licensing and development plans. Material discoveries and a sustained high oil price can both act as catalysts for changes in government policy. We highlight five African countries where noise levels have been elevated recently and in particular see the highest potential downside risk in Nigeria (fiscal risk) and Uganda (development risk).

Levels of state involvement in the oil sector are rising

Over the past six months, we have seen African resource holders increasingly seek to influence and gain further control over the oil sector. In Figure 87, we highlight five countries where the state's role in the industry is actively under review. Broadly, we see three categories that governments are seeking to influence: 1) licensing/approval delays; 2) changes to oil and gas laws/terms; and 3) an increase in domestic requirements.

Fig. 87: A number of sub-Saharan countries are reviewing state involvement

Country	Licencing/approvals	Changes to oil and gas laws/terms	Increase in domestic requirements	Presidential elections
Uganda	- Ban on fresh licencing - Ongoing tax dispute with Heritage	- New Petroleum Bill passed (Dec-12) - New law likely to be challenged	- Increased 120kb/d refinery for Lake Albert project - Domestic power generation requirements	2016
Nigeria	- Draft PIB includes upstream licencing and more recycling of acreage	- Draft PIB includes 1) New NOC and NGC, 2) Tighter income hydrocarbon tax terms & 3) Increased ministerial power, including setting of royalties. - Government take expected to grow by 7-8%	- Gas Master Plan (GMP) includes plans to use all associated gas currently being flared	2015
Kenya	- Blocks transfer of Cove licences to PTTEP - Increasing sign-on bonus - Reducing new block size	- Petroleum Act to be reviewed soon - Changing law to stop block hoarding - Increasing NOC participation		March 2013
Mozambique	- Increasing capital gains tax to 32% (vs 12.8% for Cove/PTTEP deal)	- Increasing ENH carry - Reviewing petroleum code - Legislating for LNG	- Increasing local content is 1 out of 3 main government objectives for the E&P industry	2014
Tanzania	- Postpones fourth licencing round - Fined Pan African Energy $20m	- Amending Natural Gas Policy, Natural Gas Utilisation Plan & Natural Gas Act - Reviewing NOC participation		2015

Source: Nomura research

We remain cautious on Uganda and Nigeria

In Uganda, legal revisions appear broader and deeper than elsewhere, with the government effectively establishing the state's role in what remains a new industry domestically. In parallel, the gap in expectations on monetisation of resource (including domestic vs export requirements) appears particularly wide. At Africa Oil Week, the Ugandan government delegate indicated far reaching plans for power generation and a 120kb/d refinery as part of the Lake Albert development, significantly higher than the 20-30kb/d Tullow has suggested. Taken together, we are cautious on the outlook for Uganda and see potential for further delays and scope changes to the Lake Albert project.

On Nigeria, our caution is driven by the continuing uncertainty of the PIB. We acknowledge fiscal uncertainty is not particularly new but we argue a number of recent developments support our more cautious view. At Africa Oil Week, the Nigerian Ministry of Petroleum indicated a new era of "industry transformation" and a desire to utilise all associated gas (currently being flared) risking oil production if necessary. Indications that the new terms could increase government take by 7-8% (Petroleum Minister, FT, 19 November) are also unhelpful, in our view. We are sceptical that significant progress will be made in 2013 and remain cautious on Nigeria.

Kenyan elections in March could affect sentiment

Presidential elections in March are likely to provide noise that could be unhelpful to onshore operations. Past elections have been marked by unrest and violence. Drilling locations are largely away from population centres but logistics and moving rigs between drill sites could be disrupted. With the profile of the oil sector relatively high, domestic resources is likely to be high on the political agenda and could potentially be seen as an easy target to gain public support.

Local content approach evolves with sector maturity

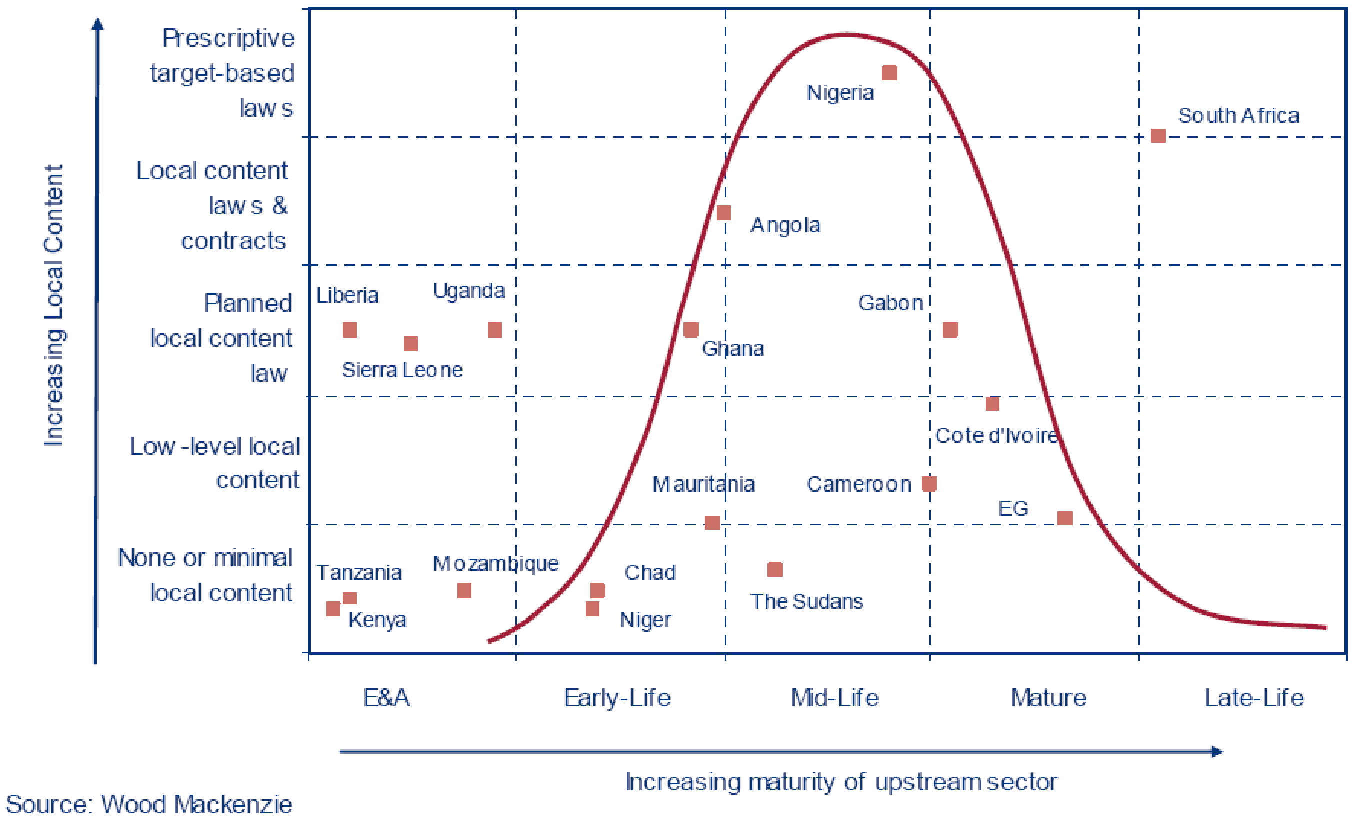
Recently proposed legislation in sub-Saharan Africa suggests that operators will increasingly have to comply with local rules, rather than a 'best endeavours' approach. A recent review by Wood Mackenzie pointed to a wide spread in approach to local content, predominantly driven by industry life cycle. In Figure 88, we highlight two key issues:

1) Nigerian local content is particularly prescriptive, something the draft PIB suggests is likely to remain.

2) Local content in emerging east Africa is in its infancy and the trajectory from here remains uncertain.

Overall, while we have some sympathy for emerging countries that are typically unprepared for significant oil/gas discoveries (from both an infrastructure and legislative perspective), we believe that overly prescriptive hydrocarbon laws and more stringent local content requirements are likely to erode project values, potentially compromising their economic viability and leading to sub-optimal outcome for the resource holder.

Fig. 88: Qualitative summary of local content approaches in sub-Sahara Africa



Source: Wood Mackenzie

Appendix A-1

Analyst Certification

I, Tom Robinson, hereby certify (1) that the views expressed in this Research report accurately reflect my personal views about any or all of the subject securities or issuers referred to in this Research report, (2) no part of my compensation was, is or will be directly or indirectly related to the specific recommendations or views expressed in this Research report and (3) no part of my compensation is tied to any specific investment banking transactions performed by Nomura Securities International, Inc., Nomura International plc or any other Nomura Group company.

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Materially mentioned issuers

Issuer	Ticker	Price	Price date	Stock rating	Previous rating	Date of change	Sector rating
Afren	AFR LN	138p	16-Jan-2013	Neutral	Buy	18-Jan-2013	Bullish
Africa Oil	AOI SS	SEK 46.20	16-Jan-2013	Buy	Not Rated	01-Mar-2012	Bullish
Cairn Energy	CNE LN	281p	16-Jan-2013	Buy	Not Rated	01-Mar-2012	Bullish
Dragon Oil	DGO LN	578p	16-Jan-2013	Buy	Rating Suspended	01-Mar-2012	Bullish
DNO International	DNO NO	NOK 9.32	16-Jan-2013	Buy	Not Rated	01-Mar-2012	Bullish
Faroe Petroleum	FPM LN	133p	16-Jan-2013	Buy	Not Rated	01-Mar-2012	Bullish
Lundin Petroleum	LUPE SS	SEK 162.50	16-Jan-2013	Buy	Reduce	31-Jul-2012	Bullish
Ophir Energy	OPHR LN	521p	16-Jan-2013	Buy	Reduce	18-Jan-2013	Bullish
Premier Oil	PMO LN	371p	16-Jan-2013	Buy	Reduce	07-Jan-2013	Bullish
Soco International	SIA LN	380p	16-Jan-2013	Buy	Not Rated	01-Mar-2012	Bullish
Tullow Oil	TLW LN	1180p	16-Jan-2013	Reduce	Not Rated	01-Mar-2012	Bullish

Rating and target price changes

Issuer	Ticker	Old stock rating	New stock rating	Old target price	New target price
Afren	AFR LN	Buy	Neutral	185p	175p
Africa Oil	AOI SS	Buy	Buy	SEK 100.00	SEK 95.00
Ophir Energy	OPHR LN	Reduce	Buy	683p	750p
Tullow Oil	TLW LN	Reduce	Reduce	1635p	1350p

Tullow Oil: Valuation Methodology We use a risked NAV framework to value our companies and state this in our model summaries. This comprises Producing (DCFs of producing assets, discounted to 01 January 2012 using discount rates of 10-12% and a long-term oil price of USD 95/bbl); Development (same as Producing but with an additional risk factor to incorporate the possibility of delays/cost over-runs); Contingent and Exploration (resource potential multiplied by an NPV/boe from analogue fields weighted by a risk factor and further discounted depending on estimated time to development); and Financing (net debt position). To reach our year-end target price we apply a discount or premium to reflect our view of management's track record, near-term option value (for example from drilling newsflow or M&A potential), risks to financing, political risk profiles, exposure to project execution risk (especially for fields due to come onstream). We set our target price of 1,350p/sh in line with risked NAV of 1,339p/sh, rounded to the nearest 50. The benchmark index for this stock is Dow Jones STOXX 600 Oil and Gas.

Tullow Oil: Risks that may impede the achievement of the target price Our forecasts are based on Nomura's current forecasts for oil prices. Oil prices are subject to the movements of global supply and demand. Political factors and the decisions of OPEC can significantly influence the global supply of oil, affecting oil prices and, as a result, the performance of the company. Thus, changes in underlying commodity prices can cause movement, in our view, of company profitability and, as a consequence, our current rating and price target may change. For Tullow risk is delay in development of Uganda and remaining Ghana reserves.

Afren: Valuation Methodology We use a risked NAV framework to value our companies and state this clearly in our model summaries. This comprises Producing (DCFs of producing assets, discounted to 01 Jan. 2012 using discount rates of 10-12% and a long-term oil price of USD 95/bbl); Development (same as Producing, but with an additional risk factor to incorporate the possibility of delays/cost over-runs); Contingent and Exploration (resource potential multiplied by an NPV/boe from analogue fields weighted by a risk factor and further discounted depending on estimated time to development); and Financing (net debt position. To reach our year-end target price we apply a discount or premium to reflect our view of management's record, near-term option value (for example, from drilling newsflow or M&A potential), risks to financing, political risk profiles, exposure to project execution risk (especially for fields due to come onstream). We set our target price in line with risked NAV of 175p/sh. The benchmark index for this stock is Dow Jones STOXX 600 Oil and Gas.

Afren: Risks that may impede the achievement of the target price General risks include a decrease in oil/gas prices, delays in production start-up, currency fluctuations, political risk, changes to fiscal regimes, poor production rates from producing fields, exploration drilling failures, financing risk.

Ophir Energy: Valuation Methodology Method: We use a risked NAV framework to value our companies and state this clearly in our model summaries. This comprises Producing (DCFs of producing assets, discounted to 1 Jan 2012 using discount rates of 10-12% and a long-term oil price of USD 95/bbl); Development (same as Producing, but with an additional risk factor to incorporate the possibility of delays / cost over-runs); Contingent and Exploration (resource potential multiplied by an NPV/boe from analogue fields weighted by a risk factor and further discounted depending on estimated time to development); and Financing (net debt position). To reach our year-end target price we apply a discount or premium to reflect our view of management track record, near-term option value (for example from drilling newsflow or M&A potential), risks to financing, political risk profiles, exposure to project execution risk (especially for fields due to come onstream). We set our target price in line with risked NAV of 750p/sh. The benchmark index for this stock is Dow Jones STOXX® 600 Oil & Gas.

Ophir Energy: Risks that may impede the achievement of the target price General risks include a fall in oil/gas prices, delays in production start-up, currency fluctuations, political risk, changes to fiscal regimes, poor production rates from producing fields, exploration drilling failures, financing risk. A specific risk for Ophir is a disappointing exploration programme in Tanzania.

Africa Oil: Valuation Methodology We use a risked NAV framework to value our companies and state this clearly in our model summaries. This comprises Producing (DCFs of producing assets, discounted to 1 January 2012 using discount rate of 10% and a long-term oil price of USD 95/bbl); Development (same as Producing, but with an additional risk factor to incorporate the possibility of delays/cost over-runs); Contingent and Exploration (resource potential multiplied by an NPV/boe from analogue fields weighted by a risk factor and further discounted depending on estimated time to development); and Financing (net debt position). To reach our target price, we apply a discount or premium to reflect our view of management's record, near-term option value (for example, from drilling newsflow or M&A potential), risks to financing, political risk profiles and exposure to project execution risk (especially for fields due to come onstream). We set our target price in line with our risked NAV estimate of SEK 95/sh. The benchmark index for this stock is the Dow Jones STOXX® Oil & Gas.

Africa Oil: Risks that may impede the achievement of the target price General risks include a decrease in oil/gas prices, delays in production start-up, currency fluctuations, political risk, changes to fiscal regimes, poor production rates from producing fields, exploration drilling failures and financing risk.

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STOCKS

A rating of '**Buy**', indicates that the analyst expects the stock to outperform the Benchmark over the next 12 months. A rating of '**Neutral**', indicates that the analyst expects the stock to perform in line with the Benchmark over the next 12 months. A rating of '**Reduce**', indicates that the analyst expects the stock to underperform the Benchmark over the next 12 months. A rating of '**Suspended**', indicates that the rating, target price and estimates have been suspended temporarily to comply with applicable regulations and/or firm policies in certain circumstances including, but not limited to, when Nomura is acting in an advisory capacity in a merger or strategic transaction involving the company. Benchmarks are as follows: **United States/Europe**: please see valuation methodologies for explanations of relevant benchmarks for stocks, which can be accessed at: http://go.nomuranow.com/research/globalresearchportal/pages/disclosures/disclosures.aspx; **Global Emerging Markets (ex-Asia):** MSCI Emerging Markets ex-Asia, unless otherwise stated in the valuation methodology.

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Explanation of Nomura's equity research rating system in Japan and Asia ex-Japan

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