Tullow Oil (TLW.L)

Rating	**NEUTRAL***
Price (17 Jan 14, p)	906.50
Target price (p)	(from 1,097.00) 1,025.00[1]
Market cap. (£ m)	8,248.90
Enterprise value (US$ m)	15,440.03

**Stock ratings are relative to the coverage universe in each analyst's or each team's respective sector.*
[1]Target price is for 12 months.

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DECREASE TARGET PRICE

2014: a better year with the drill bit?

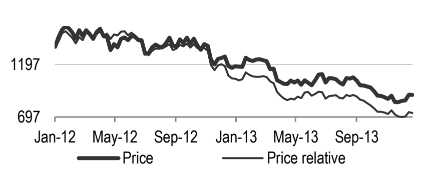
Maintain Neutral / Reduce TP to 1025p (from 1097p): the exploration charge in 2013 highlights the difficult year TLW has had in 2013 (offshore exploration), while the 2014 production guidance was disappointing. However, the issues at Jubilee are not fundamental in nature, while elsewhere we are seeing (good) progress in Kenya and even in Uganda. Also, the 2014 drilling campaign could be interesting. Bottom line, however, we lower our TP to 1025p (from 1097p) due to (**a**) the exploitation of reserves through production, (**b**) increase in net debt, and (**c**) recent unsuccessful wells, part of which is offset by the increase in NAV of the development assets being a year closer to first oil. Fundamentally, we remain Neutral with the stock trading above our core NAV of ~750p.

Drilling in 2014: In the **onshore**, TLW is focusing on the Tertiary rift basins in East Africa. It will continue exploration/appraisal in now 7 of the 10 frontier basins in Kenya/Ethiopia over the coming 18 months. 2014 is an important year, also in the context of potentially moving forward the South Lokichar resources into development in 2015/16. In the **offshore**, the drilling looks to be less scattered (Mauritania, Gabon, Guinea and Norway) targeting different play types. Over the past 4-5 years, TLW has been working on its geological model for Mauritania. It has embarked on a three-well programme, and we look to each one of the three with the first well update likely in late Jan/early Feb.

Monetisation: efforts here are key to reassuring the market on its funding capability and asset quality. The update on TEN (Ghana) will be important, so is progress on its North Sea assets. Otherwise, we think TLW is moving in the right direction to give itself further resources to (partly) monetise, such as the potential development of the South Lokichar development once fully appraised, and potentially another stake in Uganda as this moves towards FID in 2015.

Valuation: our TP is set close to our revised risked NAV of 1024p/share. Our EPS changes are reflective of (**a**) the new production guidance and (**b**) our recent macro changes, where we have lowered our oil price estimates.

Share price performance



The price relative chart measures performance against the FTSE ALL SHARE INDEX which closed at 3657.12 on 17/01/14
On 17/01/14 the spot exchange rate was £.82/Eu 1. - Eu .74/US$1

Performance Over	1M	3M	12M
Absolute (%)	8.2	-7.5	-22.2
Relative (%)	4.7	-9.9	-35.4

Financial and valuation metrics

Year	12/12A	12/13E	12/14E	12/15E
Revenue (US$ m)	2,344	2,603	2,486	2,331
EBIDAX (US$ m)	703.9	1,150.5	754.2	703.5
Pre-tax Profit Adjusted (US$ m)	413.4	267.2	760.9	584.5
CS adj. EPS (US$)	0.68	0.16	0.35	0.23
Prev. EPS (US$)	—	0.72	0.73	0.47
ROGIC (%)	-0.62	3.44	5.45	3.73
P/E (adj., x)	21.75	93.92	43.05	64.92
P/E rel. (%)	168.9	688.0	346.5	570.0
EV/EBIDAX (x)	20.4	13.4	21.5	24.9

Dividend (12/13E, USc)	—	Dividend yield (%)	—
Net debt (12/13E, US$ m)	1,900.3	GIC (12/13E, US$)	7,272.0
BV/share (12/13E, US$)	5.8	Current WACC	—
EV/GIC (x)	2.3	Number of shares (m)	909.97
Free float (%)	99.0		

Source: FTI, Company data, Thomson Reuters, Credit Suisse Securities (EUROPE) LTD. Estimates.

Tullow Oil TLW.L

Price (17 Jan 14): **906.50p**, Rating**: NEUTRAL**, Target Price: **(from 1,097.00) 1,025.00p**

Income statement (US$ m)	12/12A	12/13E	12/14E	12/15E
EBITDAX	1,154	1,231	1,159	1,037
Depr & amort (excl. goodwill)	—	—	—	—
EBITDA	**483**	**331**	**909**	**787**
Exploration expense	671	900	250	250
Goodwill impairment	—	—	—	—
Other adjustments to EBIT	—	—	—	—
EBIT	483	331	909	787
E&P	1,185	331	909	787
R&M	—	—	—	—
Chemicals	—	—	—	—
Gas & Power	—	—	—	—
Others	—	—	—	—
Net interest income (exp)	(49)	(76)	(148)	(203)
Net non operating inc (exp)	(20)	12	—	—
Share of associates/JVs' equity	—	—	—	—
Exceptionals	—	—	—	—
Profit before tax	**413**	**267**	**761**	**584**
Taxes	450	81	404	334
Profit after tax	**(36)**	**186**	**357**	**251**
Extraordinary gain/(loss)	—	—	—	—
Non-controlling interest (minority)	42	42	42	42
Preferred dividends	—	—	—	—
Other analyst adjustments	702	—	—	—
Adjusted net income	**624**	**144**	**314**	**208**
Reported net income	**624**	**144**	**314**	**208**

Cash flow (US$ m)	12/12A	12/13E	12/14E	12/15E
EBIT (CS)	**483**	**331**	**909**	**787**
Non Cash Items	562	687	720	710
Change in working capital	8	(420)	—	—
Other operating cash flow	468	883	(8)	63
Cash flow from operations	1,520	1,481	1,621	1,560
CAPEX	(1,849)	(1,800)	(2,200)	(2,500)
Disposals of PPE	—	—	—	—
Free cash flow to the firm	(329)	(319)	(579)	(940)
Acquisitions	—	(393)	—	—
Divestments	2,570	—	42	—
Exploration investment	—	—	—	—
Other investment/(outflows)	1	12	11	11
Cash flow from investment	**722**	**(2,181)**	**(2,147)**	**(2,489)**
Net share issue/(repurchase)	(1)	3	—	—
Dividends paid	(173)	(163)	(109)	(109)
Change in debt	(1,922)	900	—	—
Other financing cash in/(outflows)	(103)	(111)	(159)	(214)
Cash flow from financing activities	(2,198)	628	(268)	(323)
Effect of exchange rates	(20)	3	—	—
Movements in cash/equivalents	**44**	**(72)**	**(794)**	**(1,251)**
Net change in cash	23	(69)	(794)	(1,251)

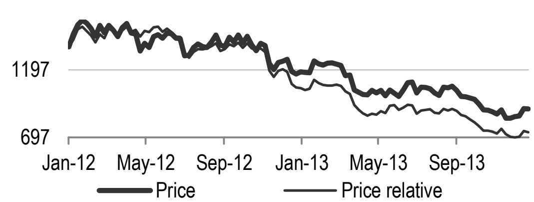
Balance sheet (US$ m)	12/12A	12/13E	12/14E	12/15E
Assets				
Goodwill & similar	—	—	—	—
PPE&E & intangibles	4,408	5,113	6,593	8,383
Associates & JV	—	—	—	—
Inventory	164	162	162	162
Receivables	239	309	309	309
Other current assets	892	1,600	1,483	1,366
Other non-current assets	3,680	4,270	3,978	3,728
Total assets	**9,382**	**11,454**	**12,525**	**13,948**
Liabilities & equity				
Payables	848	1,017	1,017	1,017
Net cash/(debt)	843	1,900	2,694	3,946
Other current liabilities	381	294	294	294
Total current liabilities	1,229	1,311	1,311	1,311
Provisions (incl Pensions)	—	—	—	—
Other non-current liabilities	1,988	2,871	2,871	2,871
Total liabilities	**4,060**	**6,082**	**6,876**	**8,128**
Ordinary equity	5,229	5,258	5,535	5,707
Minority interest	92	114	114	114
Total equity	5,322	5,372	5,649	5,820

Key earnings drivers	12/12A	12/13E	12/14E	12/15E
Brent (/bbl)	111.9	107.7	101.8	96.2
UK Spot gas (p/th)	57.2	65.4	67.0	66.2
Total WI production (kbd)	84.3	82.2	81.1	—
Total Entitlement	69.3	74.4	72.6	71.1
	—	—	—	—

Per share data	12/12A	12/13E	12/14E	12/15E
No. of shares (EOP)	912.45	908.80	908.80	908.80
CS adj. EPS (US$)	**0.68**	**0.16**	**0.35**	**0.23**
Prev. EPS (US$)	—	0.72	0.73	0.47
DPS (12/13E, US$)	—	—	—	—
Book value per share	5.8	5.8	6.1	6.3
Operating cash flow per	1.67	1.63	1.78	1.72

Key ratios and valuation	12/12A	12/13E	12/14E	12/15E
Margins (%)				
EBITDAX margin	49.2	47.3	46.6	44.5
EBIT margin	20.6	12.7	36.5	33.8
Net margin	26.6	5.5	12.6	8.9
Valuation metrics (%)				
Div yield	—	—	—	—
FCF yield (%)	(2.4)	(2.4)	(4.3)	(6.9)
EV/EBIDAX (x)	20.4	13.4	21.5	24.9
P/E	21.7	93.9	43.0	64.9
P/B	2.6	2.6	2.4	2.4
ROE analysis (%)				
ROE	12.6	2.7	5.8	3.7
ROGIC	(0.6)	3.4	5.5	3.7
Asset turnover	25.0	22.7	19.9	16.7
Interest burden	0.86	0.81	0.84	0.74
Tax burden	0.40	0.30	0.53	0.57
Financial leverage	0.22	0.47	0.59	0.79
Credit ratios				
Net debt/equity	15.8	35.4	47.7	67.8
Interest coverage ratio	9.8	4.4	6.2	3.9
Dividend payout ratio	—	—	—	—

Source: FTI, Company data, Thomson Reuters, Credit Suisse Securities (EUROPE) LTD. Estimates.



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On 17/01/14 the spot exchange rate was £.82/Eu 1. - Eu .74/US$1

Tullow Oil – financial summary

Figure 1: **Tullow Oil – financial summary**

Income Statement	Units	2009	2010	2011	2012	2013E	2014E	2015E
Key Drivers								
Oil	kbd	39.1	38.9	57.5	57.5	69.8	66.5	67.0
Gas	mmcfd	115.4	115.0	124.6	130.5	87.0	93.8	84.4
Group WI Production	kboe/d	58.3	58.1	78.3	79.2	84.3	82.2	81.1
Brent Oil Price	US$/bbl	61.9	79.6	111.1	111.9	107.7	101.8	96.3
UK Spot	p/th	30.7	42.3	56.7	57.2	65.4	67.0	66.2
USD:GBP	FX	1.6	1.5	1.6	1.6	1.6	1.6	1.6
Revenue	$mn	916	1,090	2,304	2,344	2,603	2,486	2,331
COGS	$mn	(626)	(611)	(931)	(999)	(1,195)	(1,147)	(1,109)
Gross profit	$mn	290	478	1,373	1,345	1,408	1,339	1,222
Administrative expenses	$mn	(78)	(90)	(123)	(191)	(177)	(181)	(184)
Disposals of subsidiaries/Profit on sale of assets	$mn	21	1	2	703	-	-	-
Other operating income	$mn	-	-	-	-	-	-	-
Exploration Cost	$mn	(83)	(155)	(121)	(671)	(900)	(250)	(250)
Operating profit	$mn	151	235	1,132	1,185	331	909	787
(Loss)/gain on hedging instuments	$mn	(60)	(28)	27	(20)	12	-	-
Financials	$mn	(59)	(55)	(86)	(49)	(76)	(148)	(203)
Profit from continuing activities before tax	$mn	33	152	1,073	1,116	267	761	584
Tax	$mn	(2)	(79)	(384)	(450)	(81)	(404)	(334)
Net Income	$mn	31	73	689	666	186	357	251
Clean Net Income	$mn	58	54	649	624	144	314	208
Earnings per Ordinary Share								
Basic Earnings per Share (c)	c/sh	58.5	3.2	72.5	68.8	15.9	34.6	22.9
Diluted Earnings per Share (c)	c/sh	57.8	3.1	72.2	68.4	15.8	34.6	22.9

Cash Flow Statement	Units	2009	2010	2011	2012	2013E	2014E	2015E
Profit Before Tax	$mn	33	152	1,073	1,116	267	761	584
DD&A	$mn	359	367	534	562	687	720	710
Income Tax Paid	$mn	(187)	(86)	(172)	(264)	(199)	(404)	(334)
Other non cash	$mn	190	243	226	99	1,146	544	599
CFO (cash earnings)	$mn	395	676	1,661	1,513	1,901	1,621	1,560
Working capital & other adjustment	$mn	(118)	56	71	8	(420)	-	-
CFO post WC and Other adjustments	$mn	277	732	1,731	1,520	1,481	1,621	1,560
CapEx	$mn	(1,189)	(1,354)	(1,654)	(1,849)	(1,800)	(2,200)	(2,500)
Interest Received	$mn	1	5	14	1	12	11	11
Net acquisitions (-) disposals (+) and other	$mn	17	(1,443)	(402)	2,570	(393)	42	-
CF before financing activities	$mn	(894)	(2,060)	(310)	2,242	(700)	(526)	(929)
Issue(+)/Purchase (-) of own shares	$mn	565	1,453	62	(1)	3	-	-
Dividends	$mn	(75)	(79)	(114)	(173)	(163)	(109)	(109)
Interest Paid	$mn	(49)	(94)	(210)	(103)	(111)	(159)	(214)
Proceeds (+) repayment (-) of debt	$mn	225	869	542	(1,922)	900	-	-
Increase (+) decrease (-) in cash	$mn	(229)	90	(31)	44	(72)	(794)	(1,251)
Exchange Diff	$mn	30	(4)	0	(21)	3	-	-
Net Change in Cash	$mn	(198)	86	(31)	23	(69)	(794)	(1,251)
Opening cash and cash equivalents	$mn	450	252	338	307	330	560	560
Closing cash and cash equivalents	$mn	252	338	307	330	560	560	560

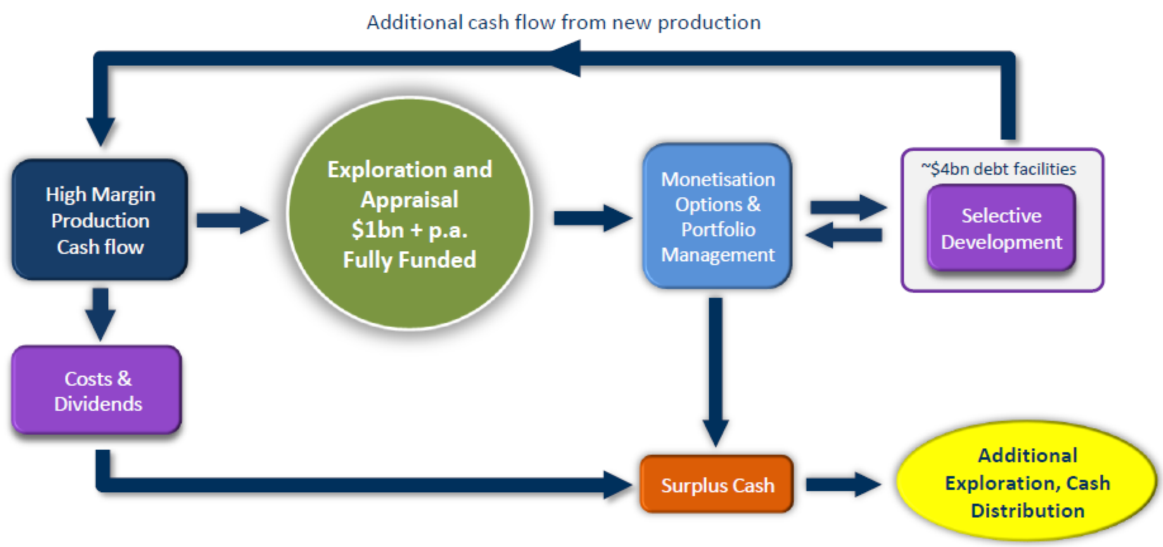
Balance Sheet	Units	2009	2010	2011	2012	2013E	2014E	2015E
Inventories	$mn	110	138	226	164	163	163	163
Trade receivables	$mn	92	159	272	239	309	309	309
Cash and cash equivalents	$mn	252	338	307	330	560	560	560
Other current assets	$mn	298	655	367	562	1,039	922	805
Current assets	$mn	753	1,291	1,172	1,294	2,072	1,955	1,838
Property, plant and equipment	$mn	2,200	2,974	3,658	4,408	5,113	6,593	8,383
Other non current assets	$mn	2,173	4,113	5,804	3,680	4,270	3,978	3,728
Total assets	$mn	5,125	8,378	10,634	9,382	11,454	12,525	13,948
ST borrowings	$mn	-	310	218	-	115	115	115
Payables	$mn	557	1,008	1,119	848	1,017	1,017	1,017
Other current	$mn	74	167	196	381	179	179	179
Current liabilities	$mn	631	1,485	1,533	1,229	1,311	1,311	1,311
LT borrowings	$mn	1,315	1,890	2,858	1,174	2,345	3,139	4,391
Other non current	$mn	749	1,134	1,477	1,658	2,426	2,426	2,426
Total liabilities	$mn	2,694	4,509	5,868	4,060	6,082	6,876	8,128
Share capital, share premium and reserves	$mn	987	969	1,249	1,298	1,305	1,335	1,364
Retained earnings	$mn	1,402	2,839	3,441	3,931	3,953	4,201	4,342
Minority Interest	$mn	42	61	76	92	114	114	114
Total shareholders' equity	$mn	2,431	3,869	4,766	5,322	5,372	5,649	5,820
Net Debt (Cash)	$mn	718	1,943	2,850	989	1,900	2,694	3,946
Net Debt / Equity	%	30%	50%	60%	19%	35%	48%	68%
Net Debt / (Net Debt + Equity)	%	23%	33%	37%	16%	26%	32%	40%

Source: Company data, Credit Suisse estimates

2014: a better drilling year to come?

Bottom line – the exploration charge (of $900m) highlights the difficult year TLW has had in 2013 (offshore exploration), and the production guidance for 2014 of 79-85kbd (82kbd mid-point) versus our prior estimate of ~90kbd sets the path for another disappointing year operationally. The cut in the production is, however, due to the delay in gas infrastructure at Jubilee constraining output at 100kbd through the year on average. Elsewhere, the newsflow onshore Kenya continues to be positive with the discovered resource base now in excess of 600mmboe potentially underpinning a commercial development – 2014 will be an important year to further de-risk the discovered resource base through tests/appraisal. Bottom line, our TP for TLW falls to 1025p (from 1097p) – the reduction is due to the exploitation of reserves through production, an increase in net debt, recent unsuccessful wells offshore (eg Norway, Cote d'Ivoire), all of which is only partly offset by the increase in NAV of the development assets being one year closer to first oil. We remain Neutral.

Figure 2: **TLW's exploration-led value growth strategy**



Exploration and Appraisal	Significant success in Kenya; resource estimates doubled at Ngamia and Twiga S following successful flow testing; further discovery at Etuko
Monetisation	Good progress TEN farmdown – advisors appointed, Government discussions on carry structure, early marketing commenced, data room Aug/Sept. Bangladesh sale being finalised; Initial bids received N Sea assets
Selective Development	TEN project proceeding to final contract awards; MOU being finalised in Uganda for basin commercialisation plan; already looking at development options for Kenya

Source: Tullow Oil (November 2013 presentation)

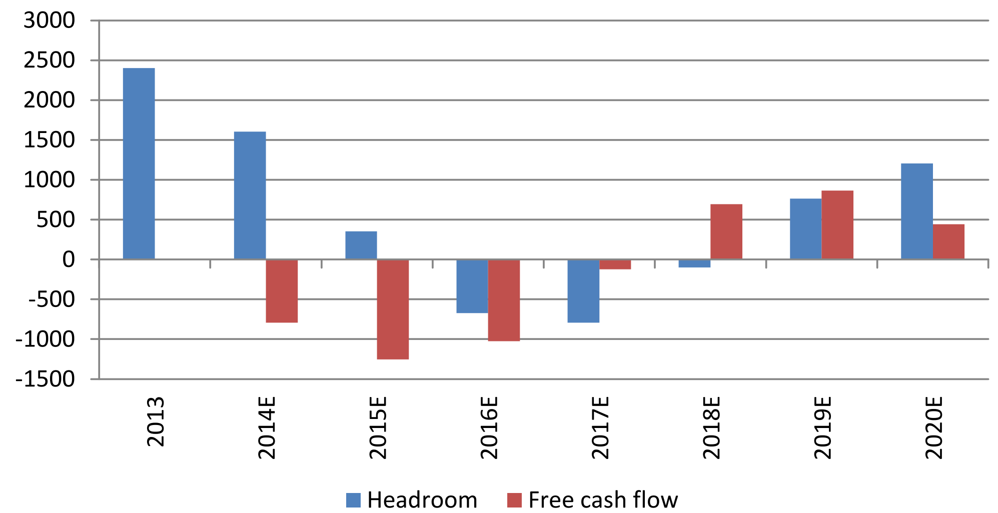
Key (non-exploration) variables for 2014

- **Production guidance disappoints**: TLW guides to 100kbd (gross) on average for the Jubilee field in 2014; a disappointing update due to (**a**) the failure of water injection pumps and (**b**) constrained gas disposal. This is delaying the field from producing at design capacity (120kbd). The former has now been repaired, but TLW expects gas export sales to commence in 2H14, which would also help oil production. The delay is a disappointment, but it is not fundamental in nature with the reservoir and FPSO performance otherwise exceeding expectations.
- **Cash flow cycle** – following the recent bond issuance, TLW stated that its cash headroom now stands at $2.4bn, up from $2.2bn in 2012. We expect TLW to be free cash flow negative at current equity stakes to the tune of ~$3.0bn over the next three

years before it turns cash flow positive in 2H17 as TEN contributes on a full year basis (TEN is expected to come online in the middle of 2016).

- With this, the disposal plan at TEN is important, and we look forward to an update, hopefully, soon. In addition to this, the South Lokichar basin has proven up over 600mmboe and in 2015/16, once more tests and appraisal activities are concluded in 2014 in a region where pre-drill estimates have been exceeded, TLW could have another development asset that it may opt to partially monetise before it goes into development. Unlike the TEN Complex in Ghana, we believe interest for the Kenya would be more competitive (ie more strategic, in our view). Elsewhere, as progress is made in Uganda, TLW could look to monetise another stake in this development closer to FID.

Figure 3: **Free cash flow versus headroom – current portfolio without disposals ($mn)**



Source: Company data, Credit Suisse estimates

- **Monetization efforts:** Efforts to monetise part of its discovered resources are on-going. Successful execution on proposed divestments will be important to reassure the market on the its funding capability and asset quality.

  - **TEN Complex (Ghana)** – our view is unchanged as we have written before. The name says it all; it's complex and not so strategic to an NOC, in our view. In other words, a less easy asset to monetise on good terms. The announcement of the farm-out in the form of a capex carry is one the key catalysts for TLW in the near-term. Based on our valuation, TLW would need to farm-out just under half of its stake in TEN to achieve a full carry to first oil. In other words, it would need to sell more than its prior indication of 15-20ppts in TEN (TLW's stake is ~47%).

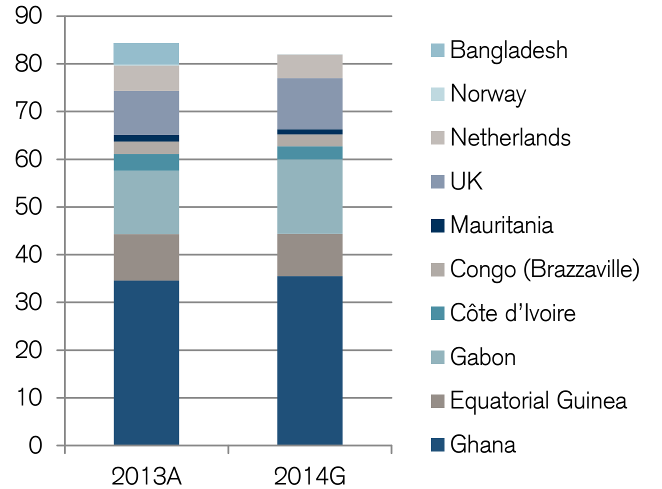
  - **UK/Dutch Assets** – this is delayed as indicated at the end of last year. The prior target was to make an announcement by the end of 2013. This will now occur over the coming 18 months. The company has now decided to sell its North Sea assets (Dutch/UK) in pieces rather than as a package in response to the market. This may give greater certainty on the valuation of these assets. We value these assets at ~$700m.

  - **Bangladesh/Pakistan (small deals)** – The ~$42m transaction for TLW's Bangladesh asset has now been completed. TLW has also agreed to sell its Pakistani assets to the Hashoo Group (undisclosed amount).

Production and Development

Figure 4: **2013 realised versus 2014 guidance (kbd)**

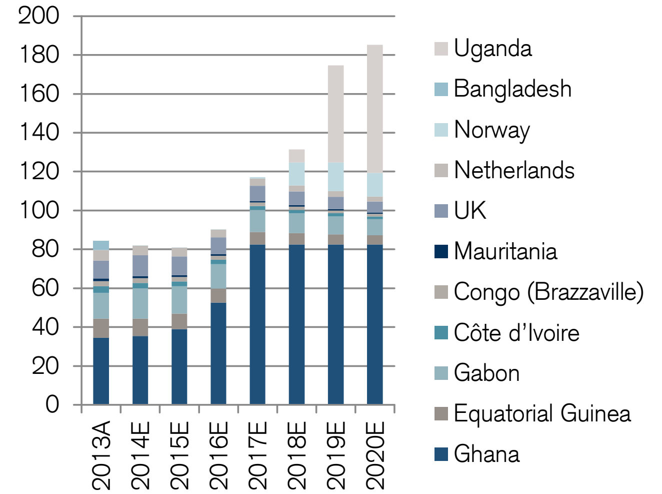
Working interest basis



Source: Company data, Credit Suisse Research

Figure 5: **Current portfolio: outlook without Kenya (kbd)**

Working interest basis



Source: Company data, Credit Suisse estimates

PRODUCTION

Jubilee – The Jubilee field, discovered in 2007, consists of six Cretaceous reservoirs with very favourable properties that are likely to drive a high recovery factor. Phase 1A, focused on the development of three of these reservoirs and is now largely finalised. There are a few wells that will be completed when the capacity needs to be topped up.

In 2013, the Jubilee field production averaged 100kbd, and had an exit rate of 100kbd (down from 120kbd achieved earlier in the year) following issues with the FPSO's water injection system. Although the wells have the potential to produce 130kbd+, there is a gas constraint on the FPSO, which is limiting this. The Ghana National Gas Company's onshore gas processing plant will not be ready to receive gas until 2H14, which causes us to cut our production estimates for 2014 to 100kbd.

It is worth noting that these problems are not fundamental geological issues, therefore the recoverable reserves are not affected. However the aim of the partners is to shorten the production plateau timeline, but increase the level of the plateau in order to gain maximum value from the project, which is now being pushed back due to the lack of gas compression facilities.

UK – TLW produced 9.2kbd (WI) in the UK in 2013, which is expected to rise to 10.7kbd in 2014, according to TLW. It is not quite clear what is driving the production increase, whether it is related to a view on better uptime after a lacklustre 2013, which saw production decline to 9.2kbd from 10.8kbd in 2012. Generally, we suspect that 'surprises' in 2014, will form a similar pattern and blame, in general, a trend toward over-estimating 'up-time' of facilities in the UK, that are dealing with aging infrastructure and pronounced reservoir decline rates. With this, it seems sensible to assume UK production to be beset by frequent production problems, which is for now not our base case.

Asia – following the sale of TLW's assets in Bangladesh (closed) and Pakistan, Asia will have no production contribution (versus 4.4kbd WI production in 2013). The sale of these assets made sense to us – from a scale and resource allocation perspective.

DEVELOPMENT

TEN – on track for first oil in mid-2016 – All long lead items have now been awarded and the key contracts have gone to Technip and Subsea 7, which puts the consortium on track to deliver first oil by mid-2016. The Centennial Jewel trading tanker arrived into a Singapore shipyard in October 2013, where work has started to convert it to the TEN FPSO. The difference in the character of the TEN field vs. the Jubilee field is that it is long and sinuous compared to the round and efficient shape of Jubilee, which means that more equipment is needed and the capital costs are higher. Currently, TLW guides to $1.5bn of capex to first oil at current equity of ~47% (which assumes FPSO leased, not capitalised).

The plan is to develop the field in two phases. The first phase is 17 wells and the second is 7 wells. If the field proves to exceed expectations, more phases may be added, which may also then include the upside from Wawa. The FPSO will have a capacity of 80kbd. Following encouraging results of the recent Enyenra-6A well which confirmed a deeper oil-water-contact, TLW is carrying a base case (initial development) of 300mmboe.

Figure 6: TEN Complex

Recent well results encouraging

- Enyenra-6A confirms deeper OWC
- Nt-04 confirms OWC and supports water injection plans
- Base case reserves of initial development ~300mmboe

PoD approved; contract awards in progress

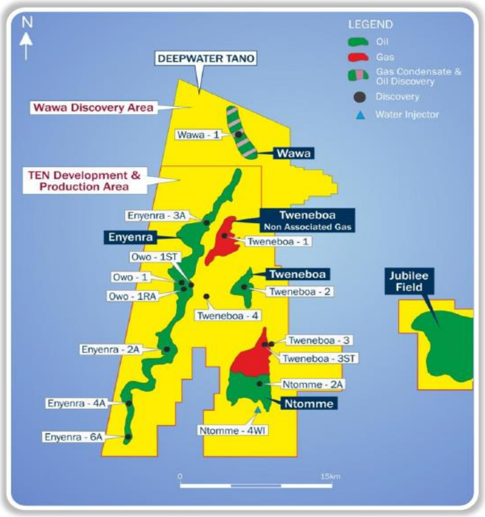
- Base plan of 24 wells
- FPSO capacity of 80,000 bopd
- Major FPSO and Subsea contract awards in progress
- First oil by mid-year 2016
- Gross development capex of ~$4.9bn + leased FPSO

Tullow capex exposure being managed

- Tullow net capex to first oil ~$1.5bn (10 wells)
- Farmdown process initiated

mmboe	P90	P50	P10
TEN Reserves & Resources *	200	360	600
Oil/Gas Ratio (%)	80:20	70:30	60:40

* Excludes prospective resources



Source: Tullow Oil (November 2013 presentation)

Uganda – FID now delayed to 2015 (from late 2014 previously) – The key issues with Uganda are (**a**) landlocked reserves/resources, **(b)** lack of infrastructure and **(c)** the waxy nature of the crude. This makes for a costly development, which the consortium estimates at $10bn ($8-12bn gross) for the thus far discovered reserves (plus costs for the pipeline; we assume none of the players will materially participate in the refinery project). On the development front, there has been progress, which is encouraging after such a long period of stalemate.

We estimate first (commercial) oil will be reached in 2H18 with FID in mid-15. In other words, around 36 months after FID. There seems finally to be some progress, with the partners successfully convincing the Ugandan government on a smaller scale refinery (20-30kbd initially and potentially rising to ~60kbd longer term), thus we expect the majority of the production from the 1.7bn bbls of discovered oil resources to be exported.

TLW stated that the Ugandan and Kenyan presidents have agreed on a joint-export pipeline with the northern route (to Lamu) providing the greatest regional synergies. The project in Uganda can potentially produce at peak in excess of 200kbd (gross).

Under Ugandan petroleum law, the consortium has to create a separate company to construct, operate and maintain an export pipeline. Thus, we assume that the investments in constructing the pipeline are not part of the upstream PSC and therefore not cost recoverable. We assume the same for the refinery investment. As the consortium moves closer to FID, we believe that TLW will look to reduce its current stake of 33.3% to potentially 15-20% in the joint development with Total and CNOOC. The obvious buyers of this stake would be Total and CNOOC – ie an acquisition that would complement their existing position.

Figure 7: **Uganda development**

Source: Tullow Oil (November 2013 presentation)

Kenya development – South Lokichar basin – TLW recently announced two additional discoveries on Block 10BB in Kenya, including Amosing-1 encountering a potential net pay of 160-200 meters (exceeds pre-drill estimates) and Ewoi-1 encountering 20-80 meters of potential net pay. These discoveries push the success rate in the Lokichar basin to seven consecutive discoveries to date with a resource base in excess of 600mmboe (gross) already. Both wells will be production tested in the future to confirm net pay, with priority likely given to Amosing. The two drilling rigs will mobilize to Block 13T in Kenya to drill the Emong prospect (formerly Ngamia West) and the Twiga South-2 appraisal well.

We believe these new discoveries provide a greater degree of certainty of commercial development, with sanctioning potentially in the 2015/16 timeframe and first production roughly three years thereafter. This is impressive in many ways compared to Uganda.

Onshore exploration

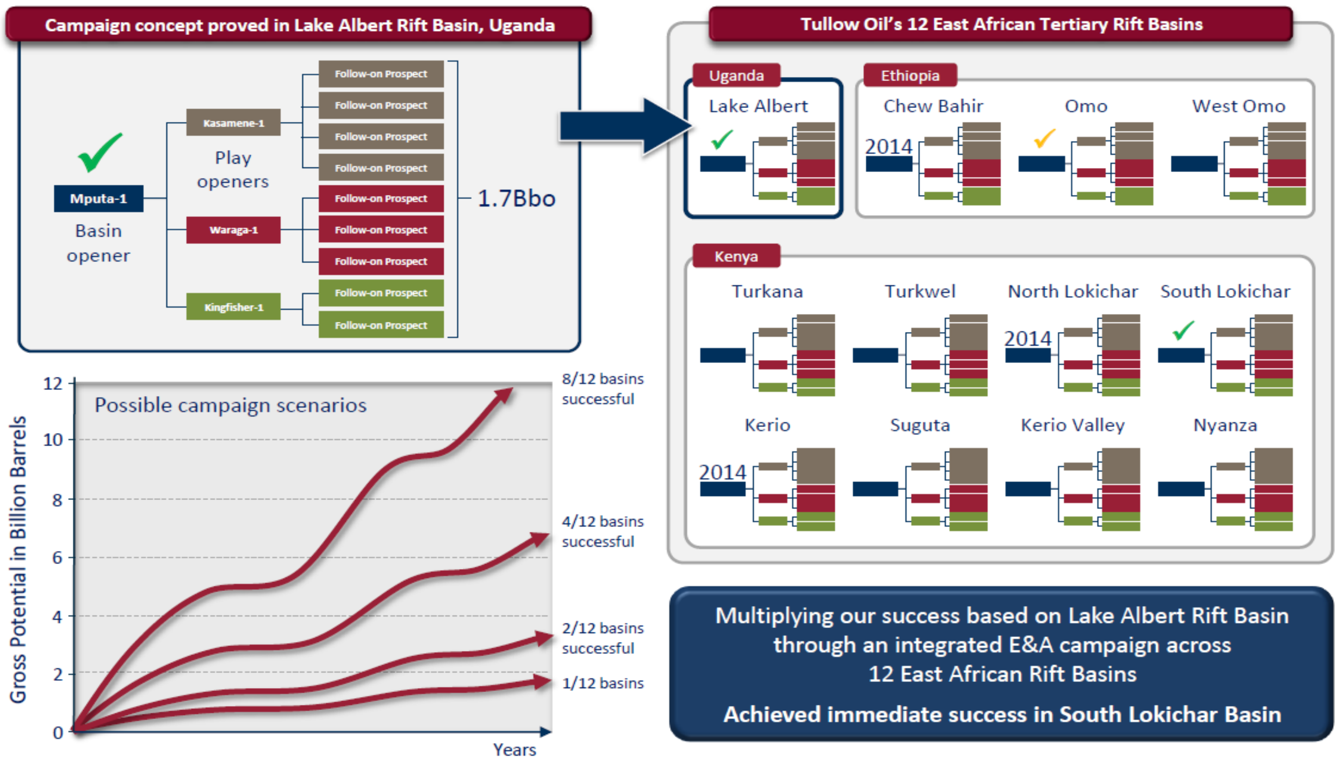
Kenya/ Ethiopia – TLW/AOI are now focusing on the Tertiary rift basins in Kenya after having relinquished block 10A, which hosted the older Cretaceous play and the Paipai prospect. TLW will continue exploration and appraisal activities in seven of ten frontier basins in Kenya and Ethiopia over the coming 18 months, namely South Lokichar (where it has proven in excess of 600mmboe in resources), North Lokichar, Turkana, North Turkana, South Kerio, North Kerio and Chew Bahir basins.

New basin-opening wells remain the major needle movers, which will include

- Shimela in the Chew Bahir basin (to spud in 1Q14)
- Tausi in the North Lokichar basin (to spud in 4Q14)
- Kiboko in the North Turkana basin (to spud in 3Q14)
- Kifaru in the Turkana basin (to spud in 4Q14)
- Lukwa in the South Kerio basin (to spud in 3Q14)
- Aze in the North Kerio basin (to spud in 4Q14)

Additionally, Etuko-1 on Block 10BB is testing and is expected to be completed by the end of January 2014, with Ekales-1 testing soon. Testing and appraising of the discovered resources in the South Lokichar basin will be important to further de-risk the discovered resource base in the basin with potential upside.

Figure 8: **East Africa – Tertiary Rift Basin**



Source: Tullow Oil (November 2013 presentation)

South Lokichar moving towards development in 2015/16 – The 100% track record in Kenya for exploration was cemented at TLW's January operational update, where two more wells were announced as discoveries. The Amosing well – a rift bounding fault play - exceeded pre-drill expectations with 160-200m of net pay. The Ewoi well – a rift flank play – was also a discovery, although slightly smaller than expected. We expect the Amosing well to be tested as a priority later this year and sanction for the South Lokichar basin development is expected in 2015/16.

Kenya provided Tullow with significant exploration success in 2013, with 4 successful exploration wells (7 in total), Ngamia-1 (2012), Twiga-1, Etuko-1, Ekales-1 and Agete-1. The success of these wells has opened up the South Lokichar basin and with the addition of the Amosing and Ewoi discoveries, TLW now estimates the discovered resources for the basin to be over 600mmboe, well above the threshold for commercial development studies. The size of Kenya is very material, to put it into perspective, the Ngamia discovery had 200m of net pay, compared to the biggest in Uganda which was about 45-50m.

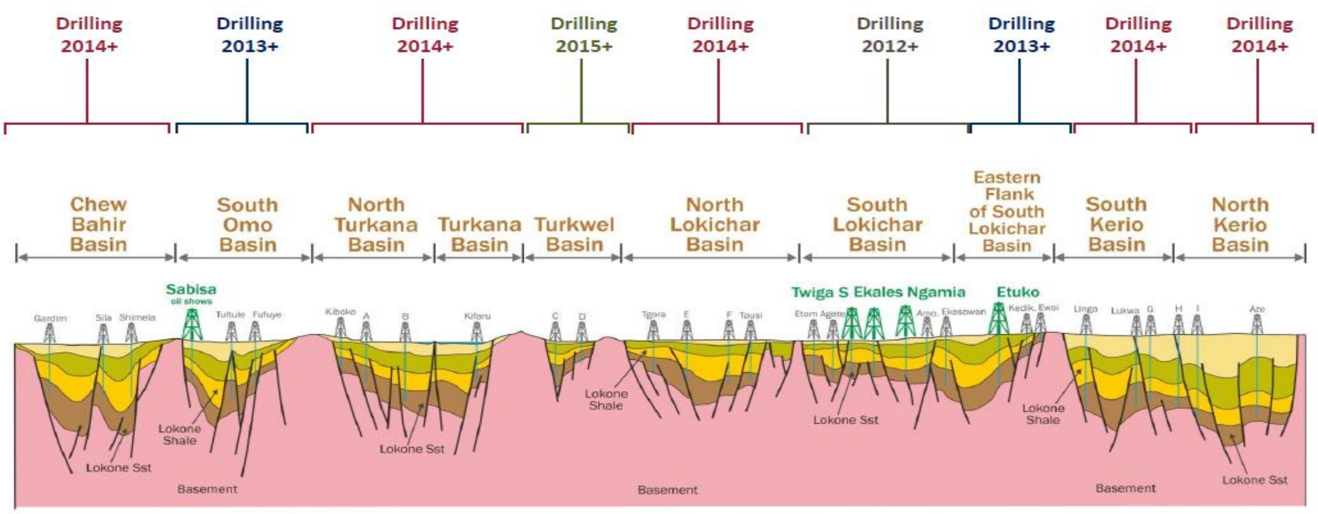
Forward plan – We anticipate some 20 exploration and appraisal wells and flow tests across the Kenya and Ethiopia acreage in the next 18 months. The partnership will also enter into discussions with the Government of Kenya and other relevant stakeholders to consider development options, including the possibility of oil export via road and rail, or a full-scale pipeline development.

Ethiopia not as successful so far – In 2014, TLW targets to drill the Shimela and Gardim prospects in the Chew Bahir basins. The results in Ethiopia have thus far not been as promising as in Kenya. Two wells have been drilled in the South Omo basin, which failed to yield the oil volumes hoped for with Sabisa only discovering oil and gas shows and Tultule was a dry well.

- **Sabisa-1** showed hydrocarbon indications in sands beneath a thick claystone top seal, but instability issues meant the well had to be sidetracked. Although reservoir quality sands were encountered, only oil and gas shows were discovered. The positives from the well were that an oil prone source rock and thick shale section was found, which should provide good seals for numerous fault bounded traps and led TLW to take the decision on drilling Tultule.

- **Tultule-1** was plugged and abandoned as a dry hole. The well was targeting a structure to the nearby and similar Sabisa. The rig from Tultule will now move to the Chew Bahir basin where it will drill the Shimela prospect in the South Omo block, which in a success case could be a basin-opener.

Figure 9: **Multiple basins in Kenya and Ethiopia within TLW acreage**



Source: Tullow Oil (November 2013 Presentation)

Madagascar

TLW will drill a wildcat in Block 3111 in 1H15 following encouraging 2D seismic interpretation. It intends to farm-down 50% of its 100% equity in both Blocks 3111 and 3009 and a dataroom is now open. The Berenty prospect lies in a rift basin trend that has a proven light oil discovery directly to the south. Although Madagascar has a good ratio of oil discoveries, these are predominantly heavy oil, with no commercial light oil accumulations thus far.

Offshore exploration – key wells in 2014

2013 was not a very successful year for TLW in offshore exploration, with 9 dry or non-commercial discoveries across French Guiana, North Sea, Cote d'Ivoire and Mozambique. The most successful well to note is the Wisting Central well in the Barents Sea, which has encountered oil and opened up a new area, proving the theory of oil in the Barents Sea. High risk, high impact wells in TLW's offshore drilling campaign in 2014 will include (and this looks to be less scattered, but more concentrated in a fewer countries):

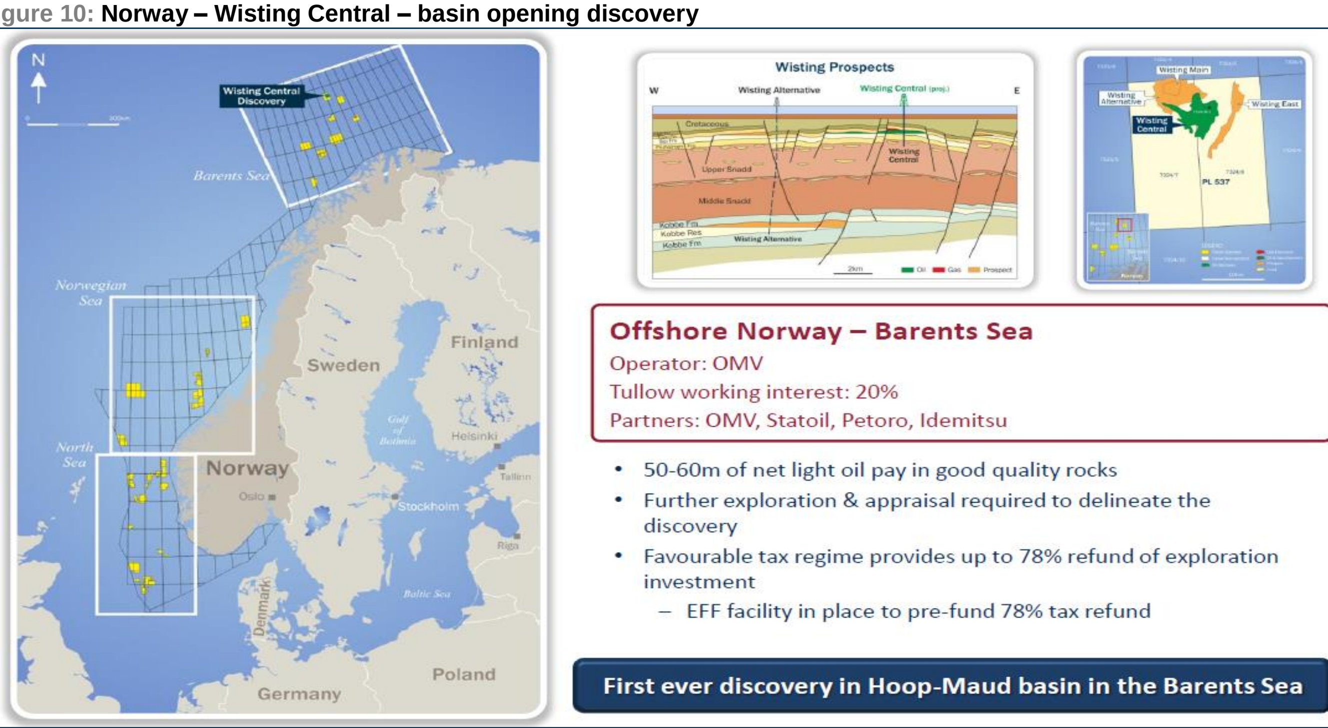
- Mauritania
- Guinea
- Gabon
- Norway

Norway drilling campaign – TLW's acquisition of Spring Energy positioned it in Norway across the Barents Sea, Norwegian Sea and North Sea. In 2013 both the Carlsberg and Mantra prospects in the Norwegian North Sea were dry holes.

Success was met in Wisting Central in the Barents Sea, which lies in the Hoop-Maud Basin in the Barents Sea. The primary reservoir targets lie in the Wisting Realgrunnen (Wisting Central) and secondary potential exists in the Wisting Kobbe (Wisting Main) formation. Wisting Central is 170km northeast of Johan Castberg and was an important discovery, opening a new area in the Barents Sea, demonstrating oil potential. There are additional prospects in the same horizon in the block, which TLW will target in 2014 taking this play to 200-500mmboe for the Jurassic reservoir formations.

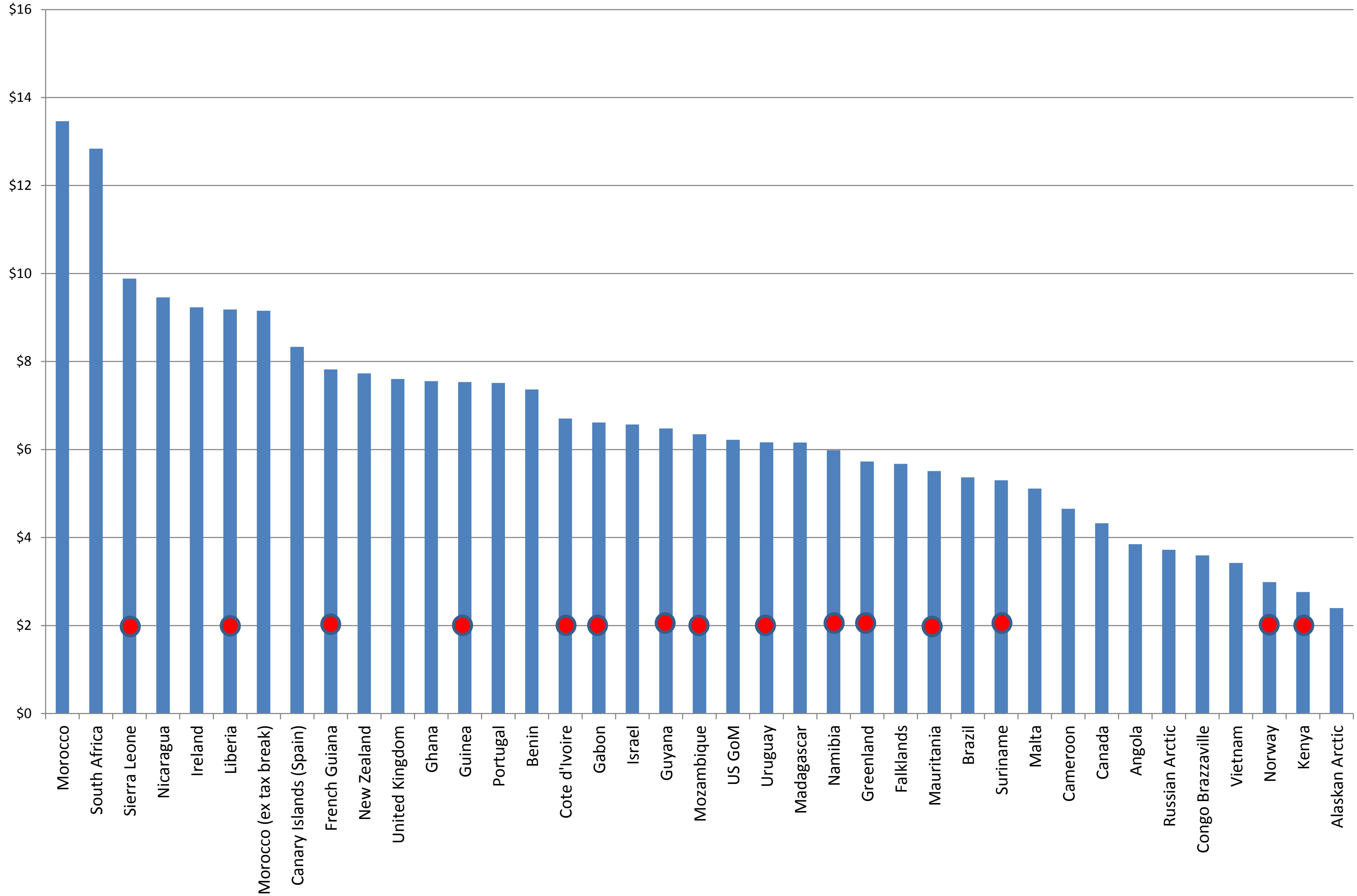
The update on Wisting Main wildcat (unsuccessful) has no implication to the 200-500mmboe potential as it pursued a different, deeper target in the Middle Triassic Kobbe rock formation – a deeper independent structure that did not penetrate the Middle to Jurassic reservoir rocks and encoutered poor reservoir rock.

Figure 10: **Norway – Wisting Central – basin opening discovery**



Source: Tullow Oil (November 2013 presentation)

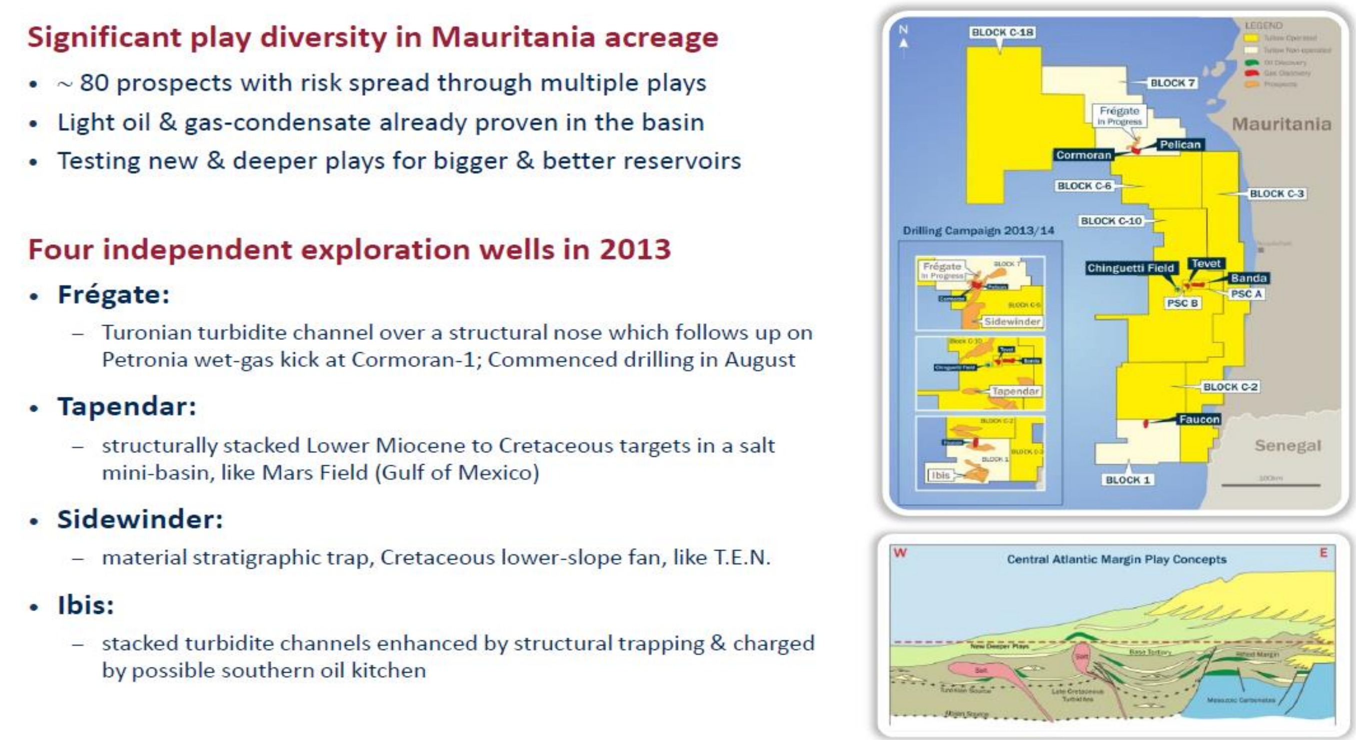
Figure 11: TLW's offshore acreage position – Economic Index (NPV10 on WI) – 350mboe offshore oil field with first oil in 2021 based on CS assumptions ($/boe)



Source: Company data, Credit Suisse estimates; Note: we assume initial flow rate per well of 10kbd for all countries in this instance

Mauritania – **various play types** – Over the past 4-5 years years, TLW has been quietly working on its geological model for Mauritania and the company has recently embarked on its long awaited 3-well campaign (previously 4-well campaign) in Mauritania, and the results of the first – the Fregate prospect – is expected in late January/early February 2014.

Figure 12: **Mauritania – Ibis is no longer part of the 2014 drilling campaign**



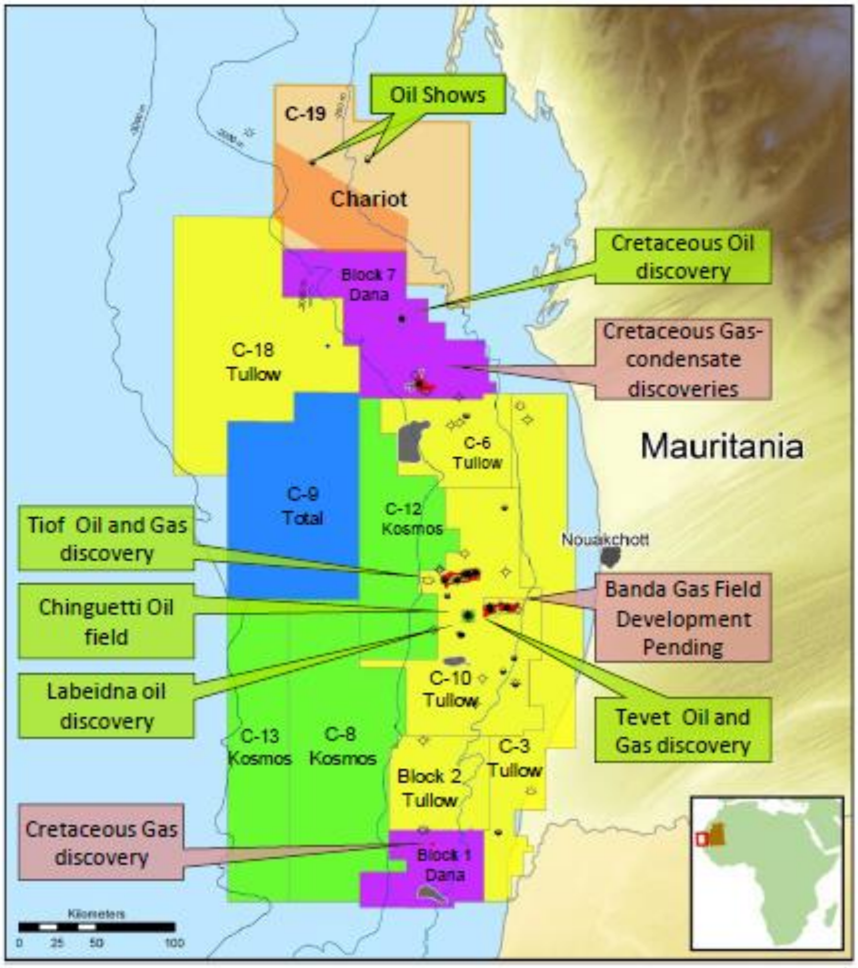
Source: Tullow Oil (November 2013 presentation)

There are 6 wells drilled in the vicinity of this programme, 3 of which have been technical discoveries (Aigrette, Pelican and Cormoran), 2 with oil shows and 1 dry well, the former proving that a light oil/gas condensate system exists. The Chinguetti oil field is also located nearby, although this is in the shallower Miocene. The Chinguetti field was known for poor performance due to the unconsolidated nature of the reservoir sands and large number of faults associated with salt emplacement.

The TLW three-well programme will target the deeper Late Cretaceous that are interpreted to contain bigger reservoirs. Over 80 prospects have been identified in the area in a number of different play types that should spread the exploration risk. These play types include salt structures, stratigraphic traps and carbonates.

- **Fregate (risked 8p / unrisked 40p) –** TLW has a ~36% stake in the block and is the operator of this exploration, but not the operator of the block. The Fregate well spudded in August 2013 and TLW expects the well to reach TD (5,800m) by the end of January 2014. The well is targeting light oil in a Turonian channel, in the interval below the Petronia wet-gas kick in Cormoran-1.
    - Nearby discoveries were Pelican-1 gas discovery in 2003 and Cormoran-1 gas discovery in 2011 that found good quality reservoirs, although these were thinner than expected in the Cormoran-1 well. The Cormoran-1 well appraised the Pelican discovery and proved gas in a further 2 deeper levels. The Fregate well, according to partners Dana Petroleum, is aiming to prove prospectivity of the deeper reservoirs found in the Cormoran with oil as the main objective. Presumably, the biggest risk in this well may be the presence of gas, not oil.

Figure 13: **Drilling results in Mauritania**



Source: Chariot Presentation

- **Tapendar (risked 4p / unrisked 23p) –** TLW has a ~59% stake in the block and is the operator. The Tapendar well will target stacked Lower Miocene to Cretaceous targets, in a similar salt basin setting to the Mars Field in the US GoM. The Mars formations are Pliocene to deeper Miocene reservoirs in a deepwater salt basin with a number of reservoirs stacked in a 10,000ft sequence. One of the unique aspects of the field is the lack of structural complexity with very little faulting in the basement.

- **Sidewinder (risked 15p / unrisked 92p) –** TLW has a 88% stake in the block and is the operator. The Sidewinder well will target a large stratigraphic trap in a Cretaceous fan, akin to the Ghanaian TEN discoveries. The TEN cluster is also in the Cretaceous, primarily Turonian-age sediments of a turbidite origin. The sands are encased in low permeability and low porosity shales that act as a stratigraphic trap.

Gabon

TLW has a portfolio of 10 fields in Gabon and continues to carry out development and E&A activity in its acreage. It currently has 2 exploration wells planned across separate blocks: Igongo (Nziembou) and Sputnik East (Arouwe). The higher impact well is the Sputnik East prospect (risked 5p / unrisked 28p); a pre-salt prospect.

- The Sputnik East prospect lies in the Arouwe block, a few blocks south of the Ophir Energy blocks in similar water depth of 1,000m. The Falcon North-1 exploration well was drilled on the licence in 2010 and encountered oil shows, however success was limited as the primary and secondary reservoir targets, although well developed, had low oil saturations. The partnership will now attempt to de-risk the large pre-salt Sputnik Prospect.

Guinea

TLW's Guinea acreage is vast in size, 1.5 times the existing WATM acreage. The acreage was picked up from Hyperdynamics in a deal completed in January 2013. Plans are in place to drill the Fatala (risked 10p / unrisked 60p) prospect in 2Q14.

- Fatala prospect is Cenomanian deepwater turbiditic fan structures. The Guinea acreage has a number of play types including large structural-stratigraphic traps and carbonate leads.

Suriname (operated unlike in French Guiana)

In Suriname Tullow has signed a PSC with NOC Staatsolie for deepwater Block 47, that is interpreted to potentially extend the Jubilee field from west Africa across the Atlantic, as has been proven in by the Zaedyus wildcat in French Guiana. 3D seismic in Suriname has highlighted multiple stacked fan systems analogous to Ghana overlying fault blocks that TLW is likely to target. Drilling will only begin in 2015.

Tullow Oil – risked NAV

Figure 14: **Tullow Oil – risked NAV**

Country/ Region	Net URR, Oil+Gas mn boe	Risked Reserves mn boe	Disc EV US$/boe	Risked US$mn	Risked per sh
Ghana	135	135	25.4	3,446	236
Equatorial Guinea	26	26	22.4	591	40
Netherlands	35	35	16.4	569	39
Congo (Brazzaville)	31	31	16.1	495	34
Gabon	15	15	18.9	287	20
Cote d'Ivoire	8	8	32.9	273	19
UK	12	12	7.9	91	6
Mauritania	2	2	16.8	34	2
Norway	1	1	18.2	15	1
Producing NAV	**266**	**265**	**21.9**	**5,802**	**397**

Country/ Region	Net URR, Oil+Gas mn boe	Risked Reserves mn boe	Disc EV US$/boe	Risked US$mn	Risked per sh
Ghana	394	318	12.0	4,138	283
Uganda	667	438	4.0	1,747	120
Kenya	352	299	4.4	1,311	90
Mauritania	68	51	3.9	197	13
French Guiana	74	25	7.8	194	13
Norway	54	33	4.3	156	11
Cote d'Ivoire	60	20	6.7	134	9
Pakistan	30	10	1.3	13	1
Development & Contingent NAV	**1,698**	**1,194**	**6.1**	**7,888**	**540**

adj Financing NAV incl Hedging (beg 2013)				-1,887	-129
Bangladesh cash proceeds				42	3
G&A (@ 5x multiple)				-886	-61
core risked NAV				**10,959**	**751**

Country/ Region	Net URR, Oil+Gas mn boe	Risked Reserves mn boe	Disc EV US$/boe	Risked US$mn	Risked per sh
Kenya/Ethipia (onshore)	8,294	831	4.0	3,340	229
Norway	428	108	4.1	440	30
Mauritania	410	72	5.5	396	27
Guinea	115	19	7.5	145	10
Madagascar	350	35	6.2	216	15
Suriname	350	35	3.4	118	8
French Guiana	622	16	7.8	122	8
Gabon	65	11	6.6	72	5
Greenland	400	10	5.7	57	4
Uruguay	245	6	6.2	38	3
Netherlands	14	5	8.0	37	3
Exploration NAV	**11,292**	**1,147**	**4.4**	**4,979**	**341**

Risked Norway bonus payment (4 prospects)				-75	-5
Dry well cost (@ historical COS) - 3x multiplier				-900	-62
risked NAV	**13,256**	**2,607**	**4.7**	**14,964**	**1,025**

Source: Company data, Credit Suisse estimates

CREDIT SUISSE

Companies Mentioned *(Price as of 17-Jan-2014)*

Africa Oil Corp (AOI.V, C$9.51)
CNOOC Ltd (0883.HK, HK$13.86)
Subsea 7 S.A. (SUBC.OL, Nkr119.3)
Technip (TECF.PA, €66.93)
Tullow Oil (TLW.L, 906.5p, NEUTRAL, TP 1025.0p)

Disclosure Appendix

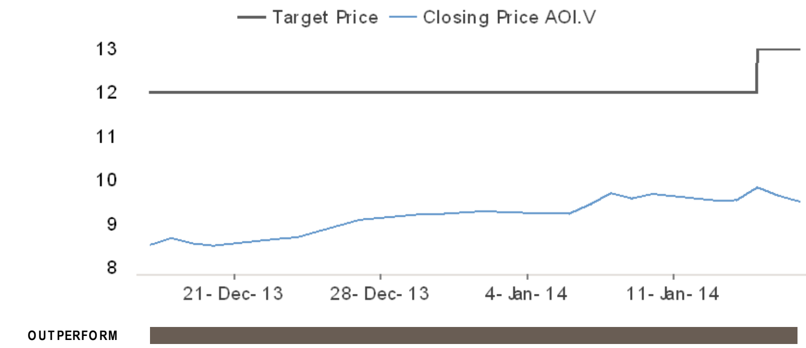
Important Global Disclosures

The analysts identified in this report each certify, with respect to the companies or securities that the individual analyzes, that (1) the views expressed in this report accurately reflect his or her personal views about all of the subject companies and securities and (2) no part of his or her compensation was, is or will be directly or indirectly related to the specific recommendations or views expressed in this report.

3-Year Price and Rating History for Africa Oil Corp (AOI.V)

AOI.V Date	Closing Price (C$)	Target Price (C$)	Rating
17-Dec-13	8.52	12.00	O *
15-Jan-14	9.83	13.00	

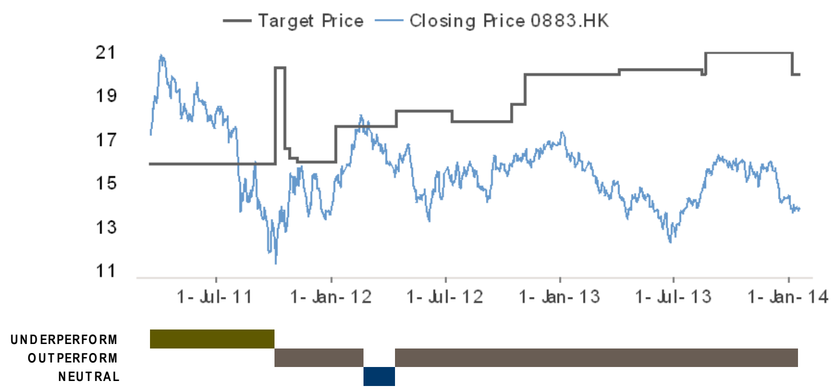
** Asterisk signifies initiation or assumption of coverage.*



3-Year Price and Rating History for CNOOC Ltd (0883.HK)

0883.HK Date	Closing Price (HK$)	Target Price (HK$)	Rating
18-Mar-11	17.24	15.90	U
03-Oct-11	12.16	20.28	O
04-Oct-11	11.34		*
19-Oct-11	13.18	16.60	O
26-Oct-11	14.54	16.15	
07-Nov-11	14.92	15.95	
08-Jan-12	15.08	17.60	
23-Feb-12	17.38	17.60	N
13-Apr-12	15.82	18.30	O
11-Jul-12	15.38	17.80	
15-Oct-12	15.78	18.60	
05-Nov-12	16.28	20.00	
04-Apr-13	14.94	20.20	
15-Aug-13	14.68	20.00	*
20-Aug-13	14.82	21.00	
06-Jan-14	13.84	20.00	

** Asterisk signifies initiation or assumption of coverage.*



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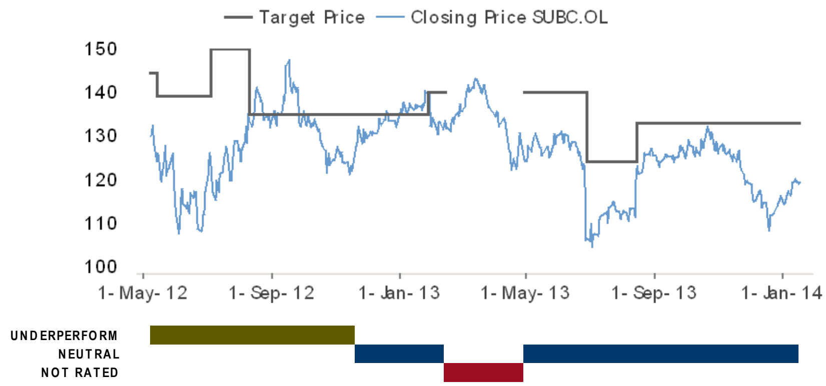
3-Year Price and Rating History for Subsea 7 S.A. (SUBC.OL)

SUBC.OL Date	Closing Price (Nkr)	Target Price (Nkr)	Rating
08-May-12	130.05	144.39	U *
10-May-12	132.36		*
14-May-12	124.18	139.00	U
05-Jul-12	121.70	150.00	
10-Aug-12	133.30	135.00	
20-Nov-12	127.60	135.00	N
28-Jan-13	139.10	140.00	
13-Feb-13	133.40		NR
30-Apr-13	124.20	140.00	N *
28-Jun-13	106.50	124.00	
15-Aug-13	123.10	133.00	

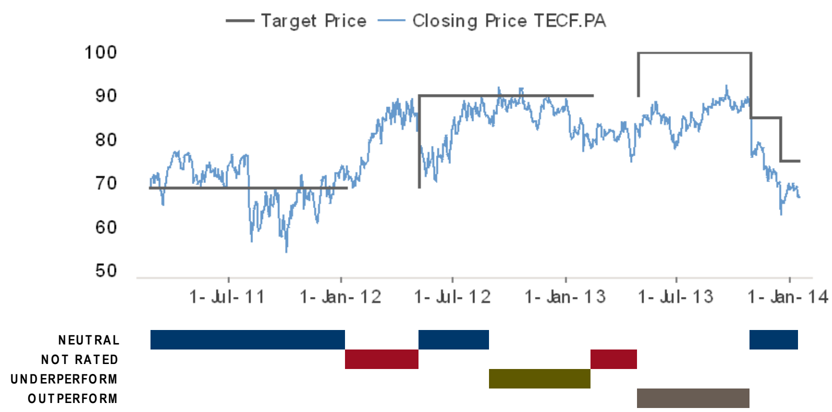
** Asterisk signifies initiation or assumption of coverage.*



3-Year Price and Rating History for Technip (TECF.PA)

TECF.PA Date	Closing Price (€)	Target Price (€)	Rating
24-Feb-11	68.71	69.00	N
17-Nov-11	66.13		*
09-Jan-12	71.43		NR
08-May-12	77.52	90.00	N *
31-Aug-12	83.74	90.00	U
13-Feb-13	78.89		NR
30-Apr-13	81.50	100.00	O *
31-Oct-13	77.15	85.00	N
18-Dec-13	62.80	75.00	

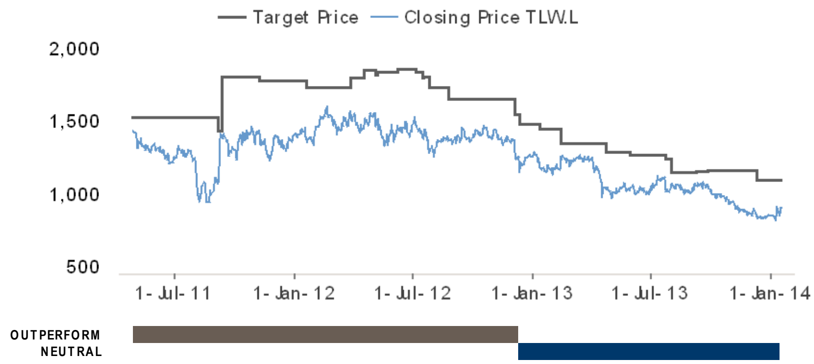
** Asterisk signifies initiation or assumption of coverage.*



CREDIT SUISSE

3-Year Price and Rating History for Tullow Oil (TLW.L)

TLW.L Date	Closing Price (p)	Target Price (p)	Rating
28-Apr-11	1433.00	1527.00	O
06-Sep-11	1086.00	1437.00	
12-Sep-11	1397.00	1804.00	
09-Nov-11	1360.00	1776.00	*
14-Nov-11	1347.00		*
15-Nov-11	1362.00		*
19-Jan-12	1383.00	1733.00	O
27-Mar-12	1562.00	1800.00	*
17-Apr-12	1483.00	1853.00	
04-May-12	1469.00	1818.00	
08-May-12	1517.00	1841.00	
07-Jun-12	1468.00	1856.00	
05-Jul-12	1476.00	1841.00	
16-Jul-12	1386.00	1796.00	
18-Jul-12	1428.00	1803.00	
26-Jul-12	1310.00	1730.00	
24-Aug-12	1370.00	1650.00	
04-Dec-12	1292.00	1550.00	
12-Dec-12	1182.00	1480.00	N
11-Jan-13	1186.00	1450.00	
13-Feb-13	1260.00	1350.00	
23-Apr-13	1037.00	1289.00	
30-May-13	1043.00	1270.00	
23-Jul-13	1041.00	1240.00	
01-Aug-13	1066.00	1150.00	
09-Sep-13	1059.00	1155.00	
26-Sep-13	1061.00	1161.00	
10-Dec-13	853.50	1097.00	



** Asterisk signifies initiation or assumption of coverage.*

The analyst(s) responsible for preparing this research report received Compensation that is based upon various factors including Credit Suisse's total revenues, a portion of which are generated by Credit Suisse's investment banking activities

As of December 10, 2012 Analysts' stock rating are defined as follows:

Outperform (O) : The stock's total return is expected to outperform the relevant benchmark*over the next 12 months.

Neutral (N) : The stock's total return is expected to be in line with the relevant benchmark* over the next 12 months.

Underperform (U) : The stock's total return is expected to underperform the relevant benchmark* over the next 12 months.

**Relevant benchmark by region: As of 10th December 2012, Japanese ratings are based on a stock's total return relative to the analyst's coverage universe which consists of all companies covered by the analyst within the relevant sector, with Outperforms representing the most attractive, Neutrals the less attractive, and Underperforms the least attractive investment opportunities. As of 2nd October 2012, U.S. and Canadian as well as European ratings are based on a stock's total return relative to the analyst's coverage universe which consists of all companies covered by the analyst within the relevant sector, with Outperforms representing the most attractive, Neutrals the less attractive, and Underperforms the least attractive investment opportunities. For Latin American and non-Japan Asia stocks, ratings are based on a stock's total return relative to the average total return of the relevant country or regional benchmark; Australia, New Zealand are, and prior to 2nd October 2012 U.S. and Canadian ratings were based on (1) a stock's absolute total return potential to its current share price and (2) the relative attractiveness of a stock's total return potential within an analyst's coverage universe. For Australian and New Zealand stocks, 12-month rolling yield is incorporated in the absolute total return calculation and a 15% and a 7.5% threshold replace the 10-15% level in the Outperform and Underperform stock rating definitions, respectively. The 15% and 7.5% thresholds replace the +10-15% and -10-15% levels in the Neutral stock rating definition, respectively. Prior to 10th December 2012, Japanese ratings were based on a stock's total return relative to the average total return of the relevant country or regional benchmark.*

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Price Target: (12 months) for Tullow Oil (TLW.L)

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 01 Jan 2013 using discount rates of 10-14% and long term Brent oil price of US$90/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 as at end-2012E). To reach our year-end target prices we apply a discount or premium to reflect our view of management track record, near-term option value (eg. 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 our risked NAV of 1,025p/sh.

Risk: 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.

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See the Companies Mentioned section for full company names

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