

6 July 2011

## Tower Resources

Year End	Revenue (\$m)	PBT* (\$m)	EPS* (c)	DPS (c)	P/E (x)	Yield (%)
12/08	0.0	(0.93)	(0.2)	0.0	N/A	N/A
12/09	0.0	(0.71)	(0.7)	0.0	N/A	N/A
12/10	0.0	(1.13)	(1.1)	0.0	N/A	N/A
12/11e	0.0	(1.26)	(1.1)	0.0	N/A	N/A

Note: \*PBT and EPS are normalised, excluding intangible amortisation and exceptional items.

### Investment summary: Supergiant potential

Namibia is emerging as the next major deepwater frontier play and Tower has early mover status in the zone. Tower's recently released CPR, following an earlier 3D seismic programme, points to a considerable upgrade to the prospective resources in Licence 0010. The Licence, indeed, offers supergiant potential. Drilling of the first wildcat well continues to be scheduled for late Q112 and will test two prospects with a resource potential of more than 7bnboe gross.

#### Namibia resource base: 15.5bn gross potential

The latest CPR for Namibia Licence 001 is pointing to the potential for discovering a supergiant field along the lines of Tupi offshore Brazil. Based on a light oil scenario, which has been assigned a probability of 50%, prospective resources are put at 15.5bnboe gross or 2.2bn net on a best estimate basis. The new resource estimates on three different scenarios for fluid type are up about 60% on the previous CPR.

#### Drilling prospects: 7.1bnboe gross potential

The scale of the original Delta Maastrichtian prospect has been broadly confirmed by the latest CPR while the previous Delta Palaeocene lead has been upgraded to a prospect. Three new leads have also been added on the Delta structure. The two prospects have resources of 7.1bnboe on a best estimate basis, assuming a light oil scenario. Arcadia, the operator, is currently seeking a farm-in partner.

#### GCOS: Delta Maastrichtian prospect 40%

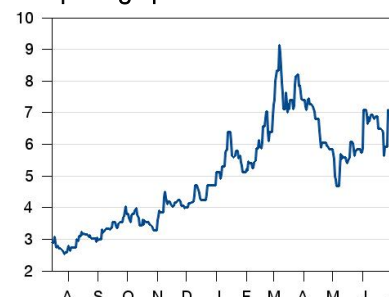
The 3-D seismic shot in Q310 was of very high quality and has enabled the GCOS (geological chances of success) to be sharply upgraded for the Delta Maastrichtian and Palaeocene prospects. Compared with previous estimates, the GCOS rises from 26% to 40% and from 8% to 26% respectively. A GCOS of 40% is highly positive for an exploration well in a poorly defined basin.

#### Valuation: Namibia EMV of £1.20/share

The latest CPR points to the valuation upside in the event of a major discovery offshore-Namibia. Based on risked adjusted resources of 270mmboe, the EMV is put at \$2.15bn or £1.20/share.

Price 6.5p  
Market Cap £73m

#### Share price graph



#### Share details

Code TRP  
Listing AIM  
Sector Oil & Gas  
Shares in issue 1,122.2m

#### Price

52 week High 9.1p Low 2.2p

#### Balance Sheet as at 30 June 2011\*

Debt/Equity (%) N/A  
NAV per share (c) 2.9  
Net cash (\$m) 5.4

\*Estimated

#### Business

Tower Resources is a frontier oil and gas exploration company focused on Africa. There are two projects in Uganda's Albertine Basin and offshore-Namibia.

#### Valuation

	2009	2010	2011e
P/E relative	N/A	N/A	N/A
P/CF	N/A	N/A	N/A
EV/Sales	N/A	N/A	N/A
ROE	N/A	N/A	N/A

#### Geography based on revenues

	UK	Europe	US	Other
0%	0%	0%	0%	0%

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## South-west Africa margin

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### Geological background: South Atlantic rift system

The south-west African margin offshore-Namibia is part of the South Atlantic rift system. The margin contains four large sedimentary basins which, running from north to south, are called Namibe, Walvis, Luderitz and Orange. Their existence is believed to reflect thermal subsidence following a period of rifting preceding the formation of the South Atlantic in the Mid Jurassic period approximately 150m years ago. Sediments were subsequently deposited during the Cretaceous and into the Paleocene period. Initially, the sediments were of continental lacustrine origin and included Mid Cretaceous organic rich shales and clays. These provided the source rock for the emerging petroleum system and are broadly similar in age and type to those found offshore Brazil. In the Upper Cretaceous period, possibly aided by marine incursions, sandstone and carbonate sequences were deposited which provided the foundation for potentially high quality hydrocarbon reservoirs. Shales deposited during the Upper Cretaceous and the Paleocene periods are thought likely to have provided the seal to the petroleum system. This contrasts with the offshore Brazilian fields where deep layers of salt perform this function. Maturation of the source rock was aided during the Cretaceous period by deepening sedimentation and water incursion.

During both the rifting and post rifting phases the south-west African margin was subject to heavy faulting. This has provided a potentially effective mechanism for the efficient migration and trapping of hydrocarbons. In common with elsewhere in the South Atlantic rift system, it is the combination of tectonic activity and sedimentation that makes the south-west African margin prospective for hydrocarbons.

**Analogy with Brazil:** The very large discoveries made in the pre-salt zone of the Campos and Santos Basins offshore-Brazil in recent years have led many to theorise, by analogy, on the prospectivity of the south west African margin. Namibia and Brazil did indeed share a common geological heritage before the South Atlantic rifting and as we have noted the offshore basins have been subject to the same sedimentation and tectonic activity. Interestingly, the Brazilian and Namibian offshore basins do appear to share similar Upper Aptian-Barremian (Lower/Mid Cretaceous) source rock. Tower's CPR points to the relevance of the high rates of exploration success offshore Brazil in basins that are similar to those offshore Namibia.

## Namibia project

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### Project background: Licence 0010 15% interest

Tower has a 15% working interest in Licence 0010 which contains blocks 1910A, 1911 and 2011A and covers 23,277km<sup>2</sup>. Arcadia Petroleum, a private company with large trading interests, owns the other 85% and is the operator, having farmed-in in September 2007. Geo-physically the licence is located at the northern end of the Walvis Basin and the southern end of the Namibe Basin on the southern flank of the Walvis Ridge, the high point between Angola and South Africa. It lies between 50km and 200km west of the north Namibian Skeleton Coast approximately 450km north-west of Walvis Bay, the nearest deepwater port. The water depth across the licence area ranges from a not

particularly deep 150m to a very deep 3,000m. The key leads are located at depths between approximately 900m and 1,300m.

### **Prospects and leads: Palaeocene lead upgraded to prospect**

Four large structures were identified on Licence 0010 following 2-D seismic surveys shot in 2006 and 2007. The four run south-east to north-west over about 200km towards the western extremity of the licence. Running from north to south the structures are called Beta, Alpha, Gamma and Delta. Based on 2-D seismic and AVO analysis the Delta structure was identified as being the most promising for hydrocarbons. A drilling prospect was identified targeting a Maastrichtian (Upper Cretaceous) sandstone formation 54km south west of the earlier Norsk Hydro 1911-15 well. In addition, there were Palaeocene leads in the Delta, Gamma and Alpha structures.

To improve understanding and reduce drilling risk a 3-D seismic survey was shot over the Delta prospect in the third quarter of 2010. The results have been incorporated into Oilfield International's latest CPR. The seismic was of very high quality and greatly enhanced resolution on the Delta structure. Specifically, five potentially very large reservoirs were identified. Very strong direct indicators of hydrocarbons were identified in the Maastrichtian prospect and weaker but nevertheless clearly detectable indicators in the Palaeocene. As a result of the seismic and related analytical work, Oilfield has confirmed the original Delta Maastrichtian prospect and upgraded the Palaeocene lead to prospect status, which implies that it can, in principle, be drilled without further information. Three leads (projects with potential hydrocarbon accumulation but which as yet are poorly defined) have also been identified on the Delta structure targeting the Upper Campanian (Upper Cretaceous), the Campanian Wedge and the Albian (Lower Cretaceous) formations.

**GCOS upgraded:** Importantly, the quality of the seismic has enabled Oilfield to sharply upgrade the GCOS (geological chances of success) on the Delta Maastrichtian and Palaeocene prospects. For the former the GCOS is now 40% against 26% previously while for the latter the GCOS rises from 8% to 26%. As Oilfield has noted, a 40% GCOS is very high for an exploration well in a poorly explored basin. Looking at the individual components for determining the GCOS, Oilfield is very confident about the existence of structure, in fact, it has indicated that there is no doubt about the structural integrity of four-way dip closure of the top four horizons. According to Oilfield, there is also little doubt concerning the existence of a seal and the maturity of the source rock is in the oil/gas window. Compared with the other components, Oilfield is less confident about the existence of a reservoir, although the probability assigned at 50% is still relatively high. In support of its position concerning the existence of a reservoir Oilfield refers to the good quality reservoir sands identified for the two Norsk Hydro wells drilled 55km or so to the north-east of the Delta prospect. Oilfield believes that the depositional environment and scale of the Maastrichtian and Palaeocene prospects is such that it is reasonable to assume that the reservoir sands in these two Norsk Hydro wells extend to the Delta structure.

### **Resources: Estimates up by around 60%**

As in the earlier CPR, Oilfield has made estimates of prospective resources for the leads and prospects in Licence 0010 base on three different assumptions for the fluid type. These are that the reservoirs are predominantly light oil, gas condensate and dry gas bearing. For the Delta structure Oilfield has continued to assign probabilities to these outcomes of 50%, 40% and 10%

respectively. For the Gamma and Alpha structures probabilities of 45%, 44% and 11% respectively have been used, again the same as previously.

Overall, Oilfield's latest prospective resource estimates reflect considerable uplifts from those provided in 2010. Its best estimates based on the alternative fluid type assumptions are as follows:

- In the event of light oil, gross recoverable resources of 12.28bn barrels and 19.2tcf of natural gas or 15.47bnboe. Tower's share would be 1.75bn barrels and 2.7tcf or 2.21bnboe. Overall the latest estimate is up by 61% on that given previously. Interestingly, however, the estimate for the Delta Maastrichtian prospect has fallen by 8%. Effectively, therefore, the higher resource base this time around reflects the upgrading of the Delta Palaeocene lead to prospect and the addition of three Delta leads. For the two prospects the best estimate of resources using the light oil scenario is put at 5.7bn barrels gross for liquids and 8.5tcf for natural gas. This translates into 7.1bnboe gross or 1.1bnboe net.
- In the event of gas condensate, gross recoverable resources of 1.53bn barrels and 45.0tcf of natural gas or 9.03bnboe. Net to Tower this would be equivalent to 219mm barrels and 6.4tcf or 1.29bnboe. This is 63% up on the estimate given previously.
- In the event of dry gas, gross recoverable resources of 107mm barrels and 45.2tcf of natural gas or 7.63bnboe. Net to Tower this would be equivalent to 16mm barrels and 6.4tcf or 1.09bnboe. This is up 65% on the estimate given previously.
- Net attributable risked resources 270mmboe, up 59% on the previous estimate.

The light oil scenario, in particular, points to the potential for discovering a supergiant field along the lines of Tupi (now Lula) or Jupiter offshore Brazil. Assuming the light oil rich case, commercial development, however, does not necessarily require billions of barrels. At current economics we suspect that the minimum requirement in terms of recoverable reserves for commercial viability might be in the region of 300mm barrels. A gas intensive scenario would, of course, be considerably less attractive financially than for one that is oil-rich bearing in mind drastically less attractive operational economics and very heavy infrastructural costs. The tentative plan would be to construct a gas pipeline to Walvis Bay where an LNG facility would also be built.

### **Drilling programme: Wildcat scheduled for Q112**

Arcadia intends drilling the first wildcat well to explore the potential of the Delta structure late in the first quarter of 2012. The targets will be the Delta Maastrichtian and Palaeocene prospects with a resource potential of more than 7bnboe. This certainly constitutes high impact drilling. If drilling points to a potentially commercial discovery, a second well may be drilled later in 2012. In the event of a positive outlook, a further five wells could be drilled in 2013 and eight in 2014, according to the CPR. We believe commercial development and production could begin by late 2015 assuming a light oil scenario. Development would be based on a FPSO with a gas re-injection facility.

Drilling offshore-Namibia will be costly given the remote location, relatively deep water and the likelihood that the well will be deep at 3,200-3,700m. The operator suggests up to \$45m gross, including rig mobilisation/demobilisation. Significantly, Tower is carried for the first two wells. Given the magnitude of the drilling costs and the inherent risks involved in drilling in a frontier zone such as Namibia, Arcadia is currently seeking a farm-in partner or partners. The quality of the partner or

partners in terms of operational experience in a deepwater frontier zone will be of significance from both operational and investor perception perspectives.

In addition to Arcadia/Tower two other players are planning to drill offshore Namibia during the next window of opportunity in the 2011/12 southern hemisphere summer. These are Chariot Oil and the rapidly growing Brazilian independent, HRT. Clearly, Namibia is emerging as the next major deepwater frontier play. Chariot has reputedly recently agreed terms for a farm-in on two of its offshore-Namibia blocks.

## What's happening in Uganda ?

In Uganda Tower has a 100% working interest in Block EA5, the most northerly licence area in the Albertine Basin. The Block has considerably less resource potential than offshore Namibia but the exploration upside is nevertheless significant. Following the disappointing drilling results of late 2009 and early 2010 at the Iti-1 and Avivi-1 wells, Tower undertook an aero gravity gradiometry (GGI) survey in the third quarter of the latter year. The results were encouraging in that the existence of a potential hydrocarbon kitchen was confirmed which is large enough to fill a commercial sized trap. Tower now believes that it has evidence of a working petroleum system and has moved a significant way towards de-risking the Albertine play. A 150-200km 2-D seismic survey was commenced in early June and should be completed by end July. The cost of the survey is expected to be about \$4m.

Based on the results of the seismic, a well location will be selected. Tower is looking to spud in October/November 2011 so the schedule is pretty tight. In terms of licence commitments a well needs to be started by March 27, 2012. Rig availability is an issue but may not be an insuperable problem according to Tower given the presence of a number of rigs in Uganda. There is however the question of financing given that the well is likely to cost about \$7.5m. Global Petroleum has an option to take a 25% licence interest and may be willing to participate. If it does, it will be liable to repay about \$1m in project costs already incurred and to contribute \$1.5m to forward operations excluding drilling. In the event of Global's involvement, Tower's financial exposure to the prospective well would be about \$4m. In the absence of Global Tower would, of course, be exposed to meeting the full cost of the well. Tower has indicated in its Annual Report that it is confident that it will be able to raise the necessary funds. In reaching this conclusion Tower points to the continuing farm-in interest and its recent success in raising new equity capital.

The prospective Uganda well is expected to target resources of around 100mm barrels, although 30mm barrels would probably be commercial at anything like current crude oil prices. Oil from any discovery in Block EA5 could probably be trucked relatively easily to the planned Tullow/Total/CNOOC storage and processing facility close to Lake Albert.

## Cash position: Comfortable near term

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Tower is comfortably financed near term. In February 2011 \$6.9m net was raised through a share placing and according to the company there was a cash position at end May of \$5.6m. This is sufficient to finance the Uganda seismic and operating costs for around one year. In the absence of farm-in partners, Tower will need to raise more capital in the third or fourth quarters to finance the planned Uganda well.

## Valuation: EMV £1.20/share

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Given the magnitude of the prospective resource base, offshore Namibia is clearly the key potential value driver for Tower. Based on Oilfield's calculations, the EMV attributable to Tower across the two prospects and five leads with net estimated risk adjusted resources of 270mboe, is \$2.15bn or £1.20/share (1122.163m shares, £1=\$1.60). Taking the two Delta prospects in isolation, with net adjusted resources of 185mboe, the EMV is \$1.52bn or 85p/share. Both EMV calculations imply around \$8/boe and reflect ICE UK Futures slates for Brent and natural gas dated 31 May 2011. Commercial production is assumed to commence in 2020. For perspective, Tower Resources' current market capitalisation is about \$118m (£73.5m at £1=\$1.60) or 6.55p/share.

Clearly, even if risk-adjusted, any valuations for offshore Namibia should be considered highly tentative at this stage given the frontier nature of the project and the long lead times involved. A particular area of concern is a gas intensive discovery. In our view, however, the project has moved significantly along the de-risking curve over the past year or so. The EMVs are an interesting pointer to the valuation upside in the event of a major discovery or series of discoveries offshore Namibia along the lines of the pre-salt zone offshore Brazil. It should be noted that a discovery of even 500mm barrels gross recoverable would be a company changing event for Tower, assuming a potential valuation basis of \$5/barrel. This would translate into 21p/share.

## Uganda

Assuming recoverable resources of 100mm barrels, we believe Uganda could justify a valuation currently of about \$113m or 6p/share. This reflects a 75% working interest (assuming a Global farm-in), a geological chance of success of 30% and a price per barrel of \$5 based on the Tullow-Heritage benchmark deal of 2010. Clearly, if after drilling the indications were a discovery of anything like 100mm barrels the impact would be considerably greater than 6p/share and might indeed be closer to 20p/share.

## Share price outlook

The next few months look like being highly interesting from a news flow perspective for Tower, given the imminence of planned drilling on its two projects. Near term the key event will probably be news on the seismic survey results in Uganda probably followed by the identification of a farm-in partner and a drilling date. In terms of Namibia the next most influential event is for Arcadia to select a farm-in partner. After this the key developments probably revolve around securing a rig contract and confirming the spud date. News surrounding Chariot and HRT could also have a bearing on the Tower share price. We would expect Tower to firm noticeably ahead of spudding.

**Exhibit 1: Financials**

Year end 31 December	\$'000s	2008	2009	2010	2011e
		IFRS	IFRS	IFRS	IFRS
<b>PROFIT &amp; LOSS</b>					
<b>Revenue</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Cost of Sales		0	0	0	0
Gross Profit		0	0	0	0
<b>EBITDA</b>		<b>(949)</b>	<b>(715)</b>	<b>(1,133)</b>	<b>(1,261)</b>
<b>Operating Profit (before GW and except.)</b>		<b>(984)</b>	<b>(750)</b>	<b>(1,172)</b>	<b>(1,300)</b>
Intangible Amortisation		0	0	0	0
Exceptionals		(311)	(336)	(181)	0
Other		0	0	0	0
<b>Operating Profit</b>		<b>(1,295)</b>	<b>(1,086)</b>	<b>(1,353)</b>	<b>(1,300)</b>
Net Interest		51	40	41	45
<b>Profit Before Tax (norm)</b>		<b>(933)</b>	<b>(710)</b>	<b>(1,131)</b>	<b>(1,255)</b>
<b>Profit Before Tax (FRS 3)</b>		<b>(1,244)</b>	<b>(1,046)</b>	<b>(1,312)</b>	<b>(1,255)</b>
Tax		0	0	0	0
<b>Profit After Tax (norm)</b>		<b>(933)</b>	<b>(710)</b>	<b>(1,131)</b>	<b>(1,255)</b>
<b>Profit After Tax (FRS 3)</b>		<b>(1,244)</b>	<b>(1,046)</b>	<b>(1,312)</b>	<b>(1,255)</b>
Average Number of Shares Outstanding (m)		542.71	683.1	1011.7	1114.7
EPS - normalised (c)		(0.17)	(0.10)	(0.11)	(0.11)
EPS - FRS 3 (c)		(0.23)	(0.15)	(0.13)	(0.11)
Dividend per share (c)		0	0	0	0
Gross Margin (%)		N/A	N/A	N/A	N/A
EBITDA Margin (%)		N/A	N/A	N/A	N/A
Operating Margin (before GW and except.) (%)		N/A	N/A	N/A	N/A
<b>BALANCE SHEET</b>					
<b>Fixed Assets</b>		<b>15,294</b>	<b>18,329</b>	<b>26,325</b>	<b>32,894</b>
Intangible Assets		15,140	18,187	26,154	32,754
Tangible Assets		154	142	171	140
Investments		0	0	0	0
<b>Current Assets</b>		<b>1,146</b>	<b>9,605</b>	<b>1,488</b>	<b>564</b>
Stocks		0	0	0	0
Debtors		419	1,024	275	300
Cash		727	8,581	1,213	264
<b>Current Liabilities</b>		<b>(1,715)</b>	<b>(579)</b>	<b>(531)</b>	<b>(579)</b>
Creditors		(1,715)	(579)	(531)	(579)
Short term borrowings		0	0	0	0
<b>Long Term Liabilities</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Long term borrowings		0	0	0	0
Other long term liabilities		0	0	0	0
<b>Net Assets</b>		<b>14,725</b>	<b>27,355</b>	<b>27,282</b>	<b>32,879</b>
<b>CASH FLOW</b>					
<b>Operating Cash Flow</b>		<b>(771)</b>	<b>(2,590)</b>	<b>(432)</b>	<b>(1,277)</b>
Net Interest		51	40	41	45
Tax		0	0	0	0
Capex		(5,563)	(2,937)	(8,034)	(6,600)
Acquisitions/disposals		(94)	0	0	0
Financing		1,568	13,341	1,057	6,883
Dividends		0	0	0	0
Net Cash Flow		(4,809)	7,854	(7,368)	(949)
<b>Opening net debt/(cash)</b>		<b>(5,536)</b>	<b>(727)</b>	<b>(8,581)</b>	<b>(1,213)</b>
HP finance leases initiated		0	0	0	0
Other		0	0	0	0
<b>Closing net debt/(cash)</b>		<b>(727)</b>	<b>(8,581)</b>	<b>(1,213)</b>	<b>(264)</b>

Source: Edison Investment Research, company accounts

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