

Rockhopper Exploration

A large part of a large pie

Rockhopper (RKH) holds a material stake in the major discoveries in the Falklands. The Sea Lion complex holds 517mmboe of 2C contingent resource (900mmboe 3C), while the Isobel Elaine complex could be a similar magnitude (according to management estimates). This resource base (over which RKH holds a >50% working interest) is significant on a global scale and commercially attractive given the cost reductions achieved through the FEED process so far – the project is NPV₁₀ break-even at \$45/bbl. Although the timing of project sanction is uncertain (particularly given the financial constraints of its partner PMO), the fiscal regime and resource base makes this a compelling long-term project. Our revised core NAV is 74p/share.

Year end	Revenue (\$m)	PBT* (\$m)	Operating cash flow (\$m)	Net (debt)/cash (\$m)	Capex (\$m)
12/14	1.9	(7.6)	(11.2)	(199.7)	(10.6)
12/15	4.0	(44.7)	(6.9)	(110.4)	(80.3)
12/16e	7.2	121.9	(10.5)	(62.7)	(32.0)
12/17e	12.0	(17.2)	(0.2)	(48.3)	(14.2)

Note: *PBT is normalised, excluding amortisation of acquired intangibles, exceptional items and share-based payments.

Giant undeveloped resource base in the Falklands

The Sea Lion complex is an important discovery and one of the largest undeveloped fields globally. A combination of political constraints, low oil price and financing issues has meant a slower development timeline than hoped, but this does not diminish the resource in a well appraised, well understood reservoir. With an extension of the licence to 2020, PMO/RKH have time to find the best development arrangement with potential partners and a recent thawing in the political climate gives us hope that a wider range of partners may be interested. Funding an initial development of c 220mmboe (with pre-first oil capex of \$1.5bn gross) opens up fully funded exploitation of the resource and significant value.

Production cash flows give a solid footing

Evolution in the production base over the last year (Civita start-up, successful Guendalina side track and Egyptian acquisition) has given a solid cash flow foundation that should largely cover G&A while giving potential exploration upside (from wells at Abu Sennan and El Qa'a Plain) in 2017. RKH is therefore well-funded to see it through to the development stage of Sea Lion Phase 1.

Valuation: Core NAV of 74p/share

We have revised our core NAV to reflect our uncertainty on project timing (we now assume first oil in early 2022) and commercial terms, as well as moving to a 2017 valuation date and increased discount rate. With our assumed long-term oil price of \$70/bbl, the development of Sea Lion will create significant free cash flows and value. A material move toward sanctioning the project (perhaps by the introduction of a new partner or financing structure) has the potential to increase this markedly, while firming up of Isobel Elaine complex volumes could add materially in time.

Company outlook

Oil & gas

18 October 2016

Price 28.00p

Market cap £128m

US\$1.3/£

Estimated net cash (\$m) at Dec 2016 63

Shares in issue 456.5m

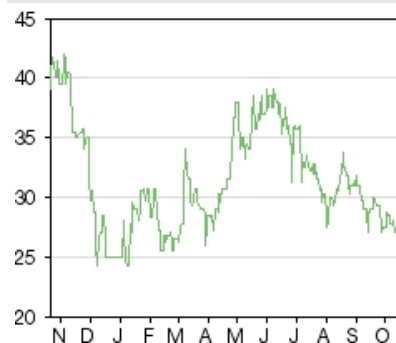
Free float 99%

Code RKH

Primary exchange AIM

Secondary exchange N/A

Share price performance



% 1m 3m 12m

Abs (3.5) (13.2) (34.5)

Rel (local) (6.1) (17) (39.5)

52-week high/low 42.0p 24.3p

Business description

Rockhopper Exploration is a London-listed E&P with fully funded development of Sea Lion, a 500mmboe+ field in the Falklands. The Isobel Elaine complex could add further significant resources. It also holds production and exploration assets in the Mediterranean and Egypt.

Next events

Completion of Sea Lion Phase 1 FEED H117

Exploration drilling in Egypt 2017

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**Rockhopper Exploration is a
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Investment summary

Company description: A large part of a large pie

Rockhopper is a London-listed E&P and a major holder in the significant discoveries in the Falkland Islands. The Isobel Elaine complex discovery has the potential to match the 517mmboe 2C resources currently ascribed at the Sea Lion complex, although further appraisal drilling will be required to confirm this. If proven up, it would leave Rockhopper with a >50% working interest in around 1bnbbbls of resources with attractive fiscal terms.

FEED for Phase 1 of Sea Lion (of c 220mmbbbl) is well advanced, with major contractors able to generate material cost savings in the current oil price environment – capex to first oil is currently expected to be \$1.5bn (vs \$1.8bn previously), while we model a life-of-field opex rate of \$25/bbl (vs \$30-35 previously). Phases 2 (Southern part of Sea Lion and additional Sea Lion complex reservoirs) and 3 (the Isobel Elaine complex) will more fully exploit the resource base.

Given the \$45/bbl NPV₁₀ break-even and attractive tax and royalty terms, the project should benefit from a firming of oil prices that many expect in the long term. Certainly, the phase one project returns are attractive (IRR of c 25% in 2017 at the forward curve, and 40% with our long-term assumptions of \$70/bbl real).

Exhibit 1: Gross Falkland Island asset resources.

		Recoverable, mmboe		STOIIP, mmboe		Recovery factor implied	
		Gross		Gross			
		2C	3C	Best	High	2C	3C
Sea Lion complex	Contingent (oil)	517	900	1,667	2,592	31%	35%
	Contingent (gas)	160	271	174	280	92%	97%
	Prospective	207	547	755	1,825	27%	30%
	Total	885	1,718	2,596	4,696	34%	37%
Isobel Elaine complex	Contingent (oil)	20	72	277	832	25%	32%
	Management resources (oil)	49	198				
	Prospective (oil)	70	350	282	999	25%	35%
	Total	139	619	559	1,831	25%	34%

Source: Rockhopper Exploration. Note: RKH owns between 40% and 64% of the Sea Lion complex, and 64% of the Isobel Elaine complex.

However, there is a risk of slippage to the project. Although the project is NPV₁₀ break-even at \$45/bbl, industry should require a notably higher return than 10% to give the go-ahead, and we expect that a strengthening of the oil price (or lower costs) will be required for project sanction – something that the forward curve implies is not likely in the near term. Premier's financial position has been under scrutiny in recent months and it is currently unable to finance the >\$1.2bn (net) required to first oil, so a project sanction pre-2018 may be dependent on a third party entry to the project. On top of this, the carry arrangement with Premier (PMO) means its economics of NPV₁₀ break-even are slightly higher than RKH's at \$48/bbl (according to our modelling).

Balancing these factors is the enormous NPV to which a full exploitation of the resource would lead for those involved in the project. Although an earlier production start-up is very possible if FID is reached quickly, we model first production in 2022 to factor in a delay. Even modelling this relatively late start-up, the unrisks project value for Phases 1 and 2 (combined) is above \$4bn (@ 10% discount rate) or \$2bn (@ 15% rate), and Phase 1 cash flows should largely fund the capital investment in further phases. Gross peak volumes considerably above 100mb/d should be possible even without a development of Isobel Elaine complex (and ignoring the potential 3C upside in Sea Lion). As a result, we believe management of both Premier and Rockhopper are open to approaches to get the project sanctioned.

Elsewhere, the acquisition of the Egyptian assets from Beach Energy should provide steady, low-risk cash flows that, when combined with cash flows from Italian gas production should broadly offset G&A expenses. Furthermore, the portfolio contains a number of exploration targets that could add longer-term value (incremental exploration targets at Abu Sennan, a committed exploration well at El Qa'a Plain in late 2017, and Monte Grosso in Italy could be drilled under ENI's operatorship).

Valuation: Core NAV adjusted to 74p/share

The Falklands remain the core of the value for investors in Rockhopper. Although the timing and commercial arrangements that will eventually see Sea Lion's first production are unclear, the exploitation of a 500mmbbl discovery with good fiscal terms means development is surely inevitable in time. However, the current low oil prices and investment appetite in the industry mean we assume a delayed FID (vs previous thoughts) and first oil in early 2022, while uncertainty on commercial terms under which development will occur means we have lowered our risking. These changes, together with consolidation of the Beach Energy assets and a move to a 2017 discount year, lead to a revised core NAV of 74p/share (from 93p/share), using a 12.5% discount rate. This would fall to 56p/share at a 15% discount rate (and 34p at a 20% rate).

Financials: \$75m of cash in September 2016

Cash flows from Italian gas production and Egyptian oil production should be enough to largely offset administration expenses, enabling management to focus on its use of the remaining c \$60m cash that we expect it to have by end 2016. Availability of capital to develop Sea Lion is key among the considerations, although minor expenses in exploration in Egypt, and possibly in Italy, will need to be catered for.

The existing development carry with Premier implies that RKH will need to find more than \$250m to get to first oil in Phase 1 assuming current cost assumptions. While our base case is that this will come from the loan arrangement with PMO as a backstop, other (cheaper) sources should be available (the bond market and later a reserve-based lending facility as production nears) – though given our current assumption of first oil in early 2022, there is plenty of time to arrange alternative sources if required.

Sensitivities

The overriding factor in the valuation of Rockhopper is the timing of the development of Sea Lion. Although the project break-even (NPV_{10}) is \$45/bbl, project sanction is more dependent on PMO's higher NPV_{10} break-even (which we calculate as \$48/bbl) and its financial position, which may not improve towards an acceptable level (net debt/EBITDA of <3x) until 2018. The resulting time to first oil (of five to six years) reduces unrisks value materially and makes it more sensitive to increasing discount rates. A 2.5% decrease in the discount rate (from our assumed 12.5%) increases Phase 1 NPV by c 25% – we would expect the effective cost of capital to decrease as the risk of the project reduces as production nears and ramps up.

The uncertainty on project sanction also leads to uncertainty on the exact commercial terms at which Rockhopper will participate in the project. Given the size of the prize, it makes sense for the company to take a view on sacrificing some working interest/value (as it did when the development carry was renegotiated and split between phases 1&2) if it means a faster project sanction and first oil. This is equally true of Premier (if not more so given its financial situation).

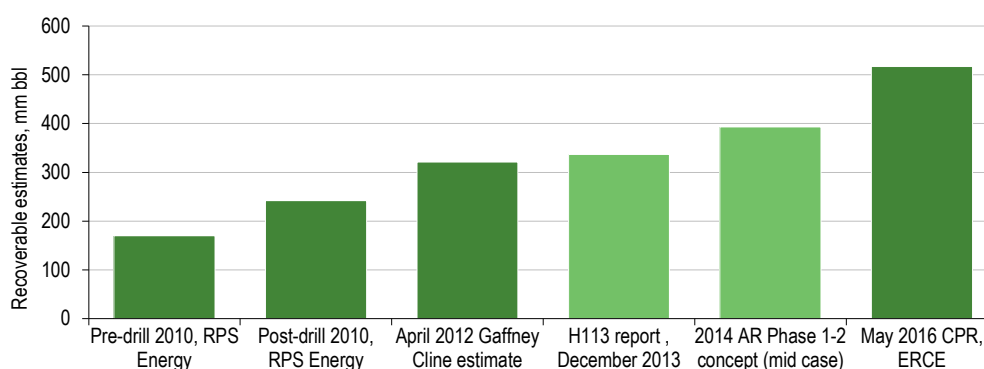
Once up and running, cash flows should benefit from increases in oil prices. For Phase 1, our modelling indicates that a \$5/bbl increase in Brent oil price would see $NPV_{12.5}$ rise by c 15% (although we would estimate that accompanying cost inflation in this scenario would dampen this).

Geologic setting of the North Falkland Basin

The North Falkland Basin (NFB) is a north-south trending Atlantic failed rift, filled primarily by early Cretaceous to Tertiary sediments. Rivers entering the basin from the north deposited sand that accumulated as a shoreface deposit, and redeposited from that shelf as a series of fans to be encased in the organic mud. Rockhopper identified the canyon feeder systems as originating from the eastern flank, with fans of many kilometres of areal extent coming from those feeders and Sea Lion close to the eastern margin.

The field was discovered in 2010 by Rockhopper's first operated well in the basin (14/10-2) and was extensively appraised throughout 2010 and 2011 with nine wells over the Sea Lion structure. The campaign established the presence of c 400mmbbl recoverable oil (150mmbbl net to RKH) and 1.8tcf gas in Sea Lion and the other reservoirs in the complex (Casper, Casper South and Beverley). The 14/10-5 well demonstrated that the field could deliver commercial flow rates when it produced at a stable rate through an ESP at 5,508b/d (and a maximum rate of over 9,600b/d).

Exhibit 2: Growth of recoverable resources, Sea Lion complex



Source: Rockhopper Exploration, Edison Investment Research. Note: Dark green bars represent independent audit estimates, light green provided by company and/or Premier Oil.

Development concept, FEED and costs

The development concept has not changed markedly since our [initiation report](#) last year as the development definition was completed in late 2015. The field will be subject to a phased development.

Phase 1

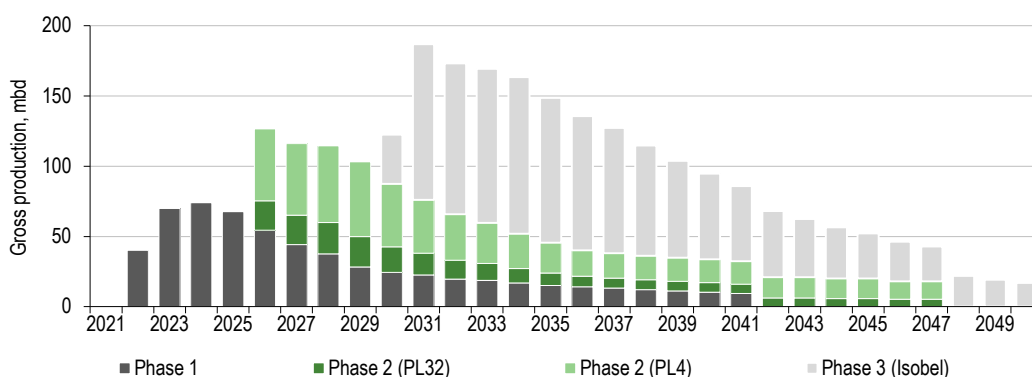
Phase 1 will see approximately 220mmbbl extracted from the northern sections of the fields. A peak production plateau of 75mb/d is expected, with a field life of 15-20 years. Our modelling (following Premier's guidance) is a three-year plateau of 70-75mb/d, declining thereafter with a total field life of 20 years.

FEED on Sea Lion started in January and contracts have been awarded to major service companies. The FPSO work is being completed by SBM Offshore, and this is expected to take 15-18 months. Elsewhere, Subsea 7 is reviewing subsea installation work, National Oilwell Varco (flexible flowlines) and One Subsea (subsea production system). Drilling and logistics still have to be finalised – tenders are expected by year end. Under the terms of the current deal, Premier will provide a development carry net to Rockhopper of \$337m for Phase 1.

Work so far has reduced the expected capex to first oil from \$1.8bn to \$1.5bn, and total costs from above \$45/bbl to around \$35/bbl, giving an NPV₁₀ break-even of around \$45/bbl according to

Premier. This may reduce further as FEED progresses and the service industry adapts to the lower oil price environment.

Exhibit 3: Gross production profile for Phases 1 to 3



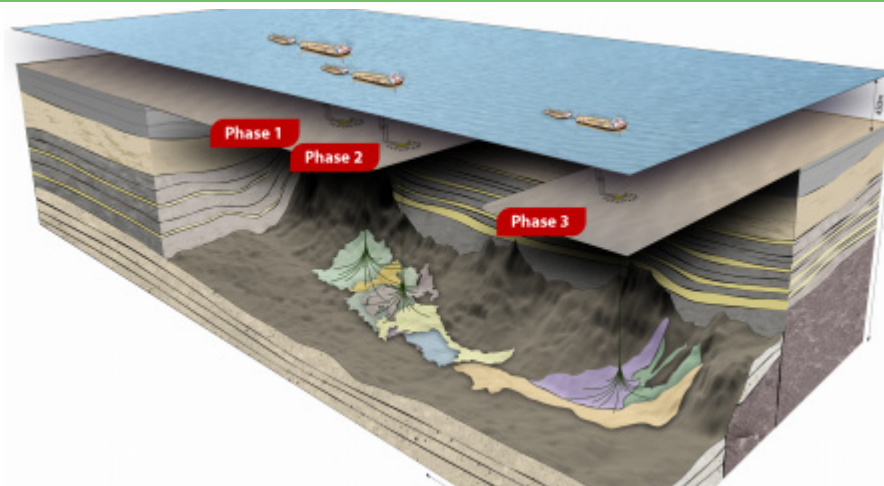
Source: Rockhopper Exploration, Edison Investment Research. Note: We assume a non-phased development for the Isobel Elaine complex given the material free cash flow that the previous phases are expected to generate by the time development spending is needed.

Phase 2

The second phase will follow a number of years later (we model first oil four years after Phase 1 start-up), extracting a further 300mmbbl. The second FPSO is likely to have a similar production capacity as the first, although the combination of a slower decline and longer production life increases the reserves recovered.

Premier will provide a development carry to Rockhopper of \$337m for Phase 2.

Exhibit 4: Development concept



Source: Rockhopper Exploration

Phase 3 – Isobel Elaine complex

Current estimates of Isobel Elaine complex suggest a very material reservoir of more than 500mmbbls, which has the potential to be very valuable if proved up. Unfortunately, the time to a potential first oil (of just under 15 years in our current modelling) means that its value on a discounted basis is diluted. However, we model this delay given the cash flow profile of the developments – should a third party (with deep pockets) enter the project, Isobel Elaine could be developed much sooner, boosting NPV materially.

The reservoirs discovered in the 2015 programme could make up a third leg to the development. Although the company is confident in the potential of the reservoirs at Isobel Elaine complex,

operational issues during the drilling in the two wells means that insufficient information has been collected to properly prove up the reservoir size. As yet, reserve auditors have only been able to attribute 2C/3C contingent resources of 20/72mmbbl. This leaves a material prospective resource base to be further understood (2C/3C of 139/350mmbbl). Appraisal drilling will enable these numbers to be firmed up, and this is currently planned during the development drilling of Phase 1.

Financing and farm-down conundrum

As Rockhopper reported in the H116 financial report, "...whilst the spot price for Brent crude is around \$50 per barrel today, Premier has confirmed that, given their financing position, any final investment decision on Sea Lion will be subject to the successful conclusion of a farm-down process". We see this as the result of two factors that have different solutions:

Issue: Premier's current financial position has suffered from lower oil prices and its heavy capital investment programme on developments (Solan and Catcher). This has put pressure on its balance sheet, and it believes it will not return to a net debt/EBITDAX ratio of 3x until 2018 (current level of 5.2x). This implies that its ability to invest will be curtailed until then and a project sanction is therefore somewhat off. Additionally, due to the development carry, the IRR for PMO is lower than the project IRR (by around 3%). This means that, as operator, they will require a slightly higher oil price to sanction the project than RKH would need.

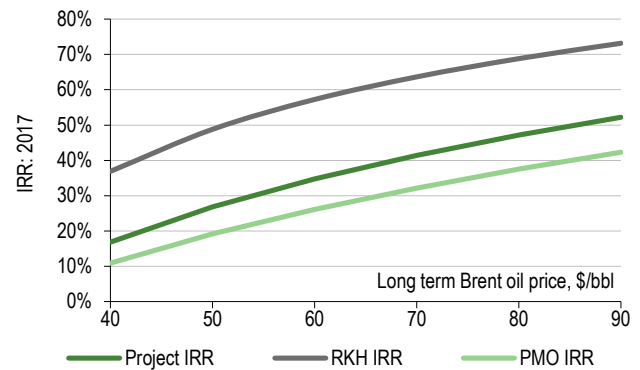
Solution: the current financial position and investment burden of Premier is a material barrier to the project being sanctioned (even with higher oil prices). If this investment burden can be lessened/removed by a deal/third party, the odds of project sanction increase markedly. Unfortunately, the capital invested so far (\$231m initial cash consideration and significant appraisal and FEED costs incurred since adding to the \$655m net to PMO at H116) plus the contractual development carry (due to RKH) may act as a hindrance to an agreement. Our analysis of recent industry deals suggests that a partner will require a relatively high IRR to enter the project and so it is possible (and in our view very likely) that both PMO and Rockhopper may have to sacrifice a portion of their project's value to allow a development in a shorter timeline than seems possible with a PMO-led project. While this is relatively easy for Rockhopper (the development carry gives a 2017 go-forward IRR for Phase 1 of c 50% on our modelling using the strip), it is more difficult for Premier (which has a go-forward IRR of 19%).

Issue: despite costs falling, the lower oil price environment has put pressure on margins of the project. Although the tax and royalty regime in the Falklands leads to a relatively low government take overall and to strong incentives to develop within a higher oil price environment, it is also more levered to falling prices. In the absence of a sharply different oil price outlook, the current c 20% IRR of the project (as per PMO's estimate) may not increase markedly and be enough to attract interested parties to invest. It would make sense for the partners to seek a rebalancing of fiscal terms if possible.

Solution: renegotiations of fiscal terms could be structured such that it is at least revenue neutral for the government, while providing better returns to the contractors for two reasons: (i) better terms could/should lead to a quicker FID and delivery of first oil sooner vs current terms; and (ii) the lower discount rate that the Falklands Islands government has (vs contractors) means that a lower initial take (on, say, royalties) could be more than balanced out by higher taxes later as oil prices recover. This has the potential to increase returns/incentives for the contractors, while being simultaneously revenue (NPV) neutral/positive for the Falklands Islands government, especially if first oil can be accelerated.

Exhibit 5: Brent prices (historic and forward curve)


Source: Bloomberg, Edison Investment Research

Exhibit 6: Project and partner IRR at various oil prices


Source: Edison Investment Research

Based on forward curves (which have obvious issues with their reliability to accurately forecast pricing, but are useful for illustration), the EIA has performed an analysis of the probability that the oil price will reach or exceed various levels. This suggests that there is only a 25% chance of spot oil exceeding \$60/bbl by 2018, although this rises to 35% for a \$55/bbl oil price. Forward curves (along with most oil price forecasting) are notoriously unreliable indicators but, given the sensitivity of project returns to the oil price, the partners may be cautious about sanctioning Sea Lion until they have a strong sense that the price will be supportive of the project.

Comparing Sea Lion and SNE

There are a number of similarities between Sea Lion and SNE in Senegal and it is worthwhile comparing the two fields/developments. The excitement over the SNE discovery in 2014 (the largest offshore discovery in that year) is comparable to the reaction to Sea Lion's discovery, although it is clear that the projects are being valued very differently by the markets at the moment (looking at FAR's EV/bbl of \$2.7bbl vs RKH's \$0.4/bbl). As currently envisaged, the field developments are very similar in size (excluding Phase 3 in the Falklands and any further upside at SNE).

Exhibit 7: Comparison of Sea Lion and SNE

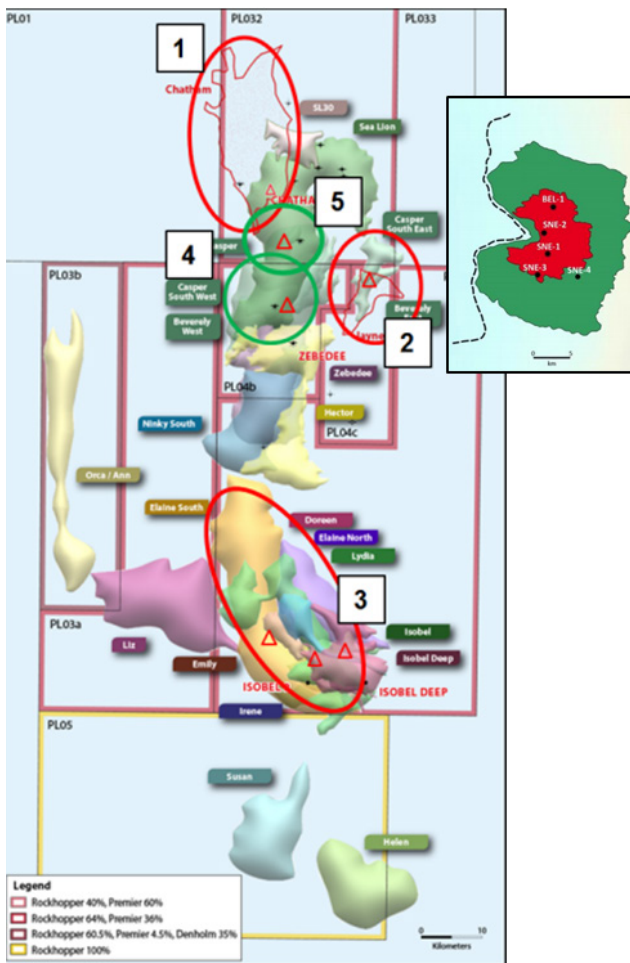
	Sea Lion	SNE
Size	520mmboe over two phases (though data below is for phase one which is to develop c 220mmbbbls)	473mmboe (according to Cairn), 561mmboe (according to FAR)
NPV ₁₀ break-even (company estimates)	\$45/bbl	\$35/bbl
Exploration/appraisal wells drilled	Ten	Four
Capex per bbl	c \$10-12/bbl	c \$12-15/bbl
Opex per bbl	c \$20-25/bbl	<\$10/bbl (includes FPSO leasing cost)
Capex pre-first oil (gross)	\$1.5bn	\$2.8bn
Water depth	450m	1,100m
Peak	75mbd FPSO for phase one	c 100-120mbd FPSO
IP rate per well	8mb/d assumed (Edison estimate)	DST flowed at 1-8mb/d
Oil quality description	26-29° API	32° API, good quality oil
Pros	More fully appraised, FEED well progressed Better understood connectivity of reservoirs Better defined upside (with Isobel Elaine complex discovery)	Entry by Woodside provides keen and well capitalised player (with an option to operate)
Cons	Waxy crude Location in Falklands, more isolated region with political uncertainty Phased development adds overall costs Operator requires farm-down to reach sanction	Connectivity has yet to be fully proven, particularly in upper reservoirs The horizon with the majority of the volumes has exhibited much lower flow rates Deeper water Non-phased development requires significant upfront capex
Valuation comparison	RKH: EV of US\$115m for 50% of NPV value	FAR Ltd: EV of US\$190m for 15% of NPV value
Implied project market valuation	US\$230m (assumes that Italian and Egyptian assets are of no value for simplicity – given the production, this penalises RKH in this analysis)	US\$1,270m
Implied EV/bbl	\$0.4/bbl	\$2.7/bbl

Source: Rockhopper Exploration, Cairn, FAR, Edison Investment Research estimates

The main difference between the development concepts is the phasing of the production. PMO/RKH are looking to minimise upfront capex (to \$1.5bn pre-first-oil currently) with an initial plateau production of 75mb/d, while the current Cairn development concept calls for a larger single FPSO with a 100-120mb/d capacity. This will require a far larger upfront investment pre-first oil, but does bring production forward (vs a phased development). This is aided by the PSC structure of the fiscal regime, and the deeper pockets of Woodside/Cairn.

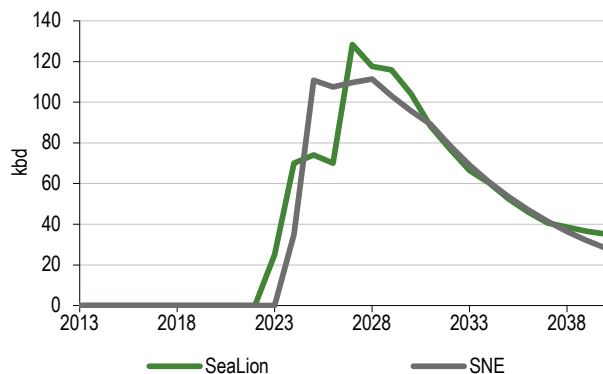
Differences between the economics of the projects attributable to the higher opex at Sea Lion (we model c\$25/bbl vs <\$10/bbl indicated by Cairn on SNE, which seems relatively low to us, given it includes the FPSO leasing cost). The economics even out if we increase the SNE opex cost to levels we expect at Sea Lion.

Exhibit 8: Comparison of areal extent of Falkland Islands vs current mapping of SNE by FAR (same scale)



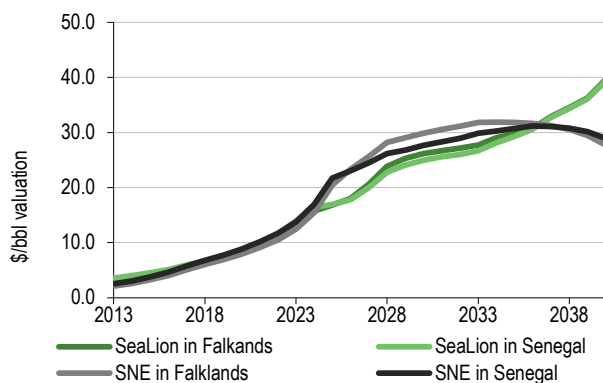
Source: Rockhopper Exploration and FAR Ltd

Exhibit 9: Production profiles for Sea Lion and SNE



Source: Rockhopper Exploration, Cairn, Edison Investment Research

Exhibit 10: Comparison of NPVs for Sea Lion and SNE (under both regimes for comparison)



Source: Edison Investment Research

Italian assets

Rockhopper holds interests in two producing fields. The Guendalina field in the Northern Adriatic (20% WI) is currently producing around 500boe/d (net), an increase from the 220boe/d seen in H115 – production has been helped a side-track drilled by ENI (80% WI), which targeted a more up-dip location, boosting production and ultimate recoverable gas. We model production from Guendalina continuing until 2021, producing around 2mmboe gross.

The onshore Civita gas development (100% WI) started in late 2015, supplying a main Snam Rete Gas pipeline network. Both Guendalina and Civita have suffered from weaker gas prices than we expected. Realisations of €0.14/scm were seen in H116 (vs Edison estimate of €0.16/scm).

Egyptian assets

The acquisition of Egyptian production and exploration assets from Beach Energy was completed in August 2016. Rockhopper now holds a 22% interest in the Abu Sennan asset, which is producing 900-1,000boe/d (net to RKH), and a 25% interest in the El Qa'a Plain exploration concession. A production well was drilled in July, which exceeded expectations and could add 2mmboe to 2P reserves according to the company. We model the field as continuing to produce around 1mboe/d net to Rockhopper until 2019 and declining thereafter. With opex of <\$10/bbl and annual capex of

\$1-2m, the asset should produce \$4-6m of excess cash flows to offset company G&A in coming years. We see the acquisition as accretive with a 2016, post-closing-IRR of c 20%.

We have yet to hear of a detailed exploration timetable in the El Qa'a Plain concession, but a well is committed before the end of 2017. Rockhopper has previously indicated prospect sizes of 50-100mmbbl in fault assisted traps – seismic is still being interpreted.

We note that a partner in the block (Petroceltic, 37.5%) has changed owners and management recently, so we have yet to gain clarity on the effect on drilling plans. As we noted in April: "Should Petroceltic default on this well, there is the possibility that Rockhopper will increase its working interest, and therefore net exposure to the well (costs and net risk value). If the PCI stake is apportioned according to current working interest, RKH's interest may increase to 40%." We intend to include the risk value of this well once we get further details on sizes and timing, though we include the net \$2-2.5m well cost (at 25% WI) in cash flows in our model.

Management

David McManus (non-executive chairman): David is a petroleum engineer with a degree from Heriot-Watt University. He has over 36 years' experience in the oil and gas industry with Shell, Ultramar, ARCO and BG Group. David has extensive project management and commercial expertise at high level, and is currently a director of Costain, Hess Corporation and Flex LNG.

Sam Moody (CEO): Sam is a co-founder of Rockhopper and has been responsible for building and managing the group from its formation in early 2004. He previously worked in several roles in the financial sector, including positions at AXA Investment and St Paul's Investment Management.

Fiona MacAulay (COO): Fiona is a geologist with over 25 years' experience including time at Mobil, Amerada Hess and BG. She joined Rockhopper in 2010 immediately following the Sea Lion discovery and was an integral member of the senior team that managed the appraisal of the Sea Lion field and discovered the Casper, Casper South and Beverley fields.

Stewart MacDonald (CFO): prior to joining Rockhopper, Stewart was a director in Rothschild's global oil and gas group and spent 12 years advising clients in the sector on a range of M&A and financing transactions. Stewart was appointed to the board in March 2014.

Sensitivities

Reservoir risk: Sea Lion has been extensively appraised so reservoir distribution here is understood and the waxy nature of the Sea Lion crude known. Similar appraisal and analysis will be required at the Isobel/Elaine complex, although this is only likely as part of the development drilling in Phase 1.

Funding: given the current funding structure, Rockhopper has debt capital available to fund the development of Sea Lion Phase 1, while cash flows from these should fund any further development. However, as we indicate elsewhere in the report, Premier is financially stressed and its ability to raise the \$1.5bn pre-first oil is doubtful. As a result, we do not think shareholders should automatically assume that the current structure survives (or if it does, this implies a material delay to development).

Oil price risk: as an E&P, RKH's value will depend on the (expected) oil prices it will be able to realise, once production has started up. Please see our valuation sensitivities section for further details. Gas volumes will be re-injected and not sold.

Fiscal regime change: in high oil price environment, the tax and royalty terms in the Falkland Islands is one of the most attractive fiscal regimes in the world, though this suffers as oil prices fall. History has shown that governments have a habit of increasing their stakes when oil exploration is successful (or when oil prices increase markedly) and are slower to adjust to a less buoyant market. We do not think a negative fiscal regime change is likely; indeed given the lower oil prices seen in recent years, and the delays in getting project sanction, a renegotiation of terms is not impossible, we think.

Argentina: relations between Argentina and the UK have historically been troubled. However, under the new President Mauricio Macri there seems to be a movement towards thawing this relationship. In September 2016, the UK and Argentinian governments agreed to work together to remove “restrictive measures around the oil and gas industry, shipping and fishing affecting the Falkland Islands”. We hope that a path to normalisation of diplomatic relations continues.

Ocean Rig legal dispute: the contract with Ocean Rig was terminated in February 2016 mid-way through the proposed drilling programme, meaning that a final well in the Northern Basin went undrilled. As a result, Ocean Rig is claiming termination fees of up to \$63m (based on a “termination for convenience” clause in the contract, an amount refuted by the operators given the significant operational issues with the rig. The operators are preparing counterclaims against Ocean Rig, which will be subject to a formal arbitration process to complete in H217. We do not take a stance on the outcome at this time (we would expect the companies to vigorously fight the termination fee claim), but highlight that in the event that Ocean Rig is awarded the full \$63m claimed, only a small proportion is due to Rockhopper.

Payment and repatriation risk from Egypt: Egyptian production can be paid in a combination of Egyptian pounds and US dollars, and we believe that it is materially easier to be paid in Egyptian pounds (although to date RKH has only accepted US dollars). As currently modelled, Rockhopper will continue to have excess cash flow from its production and will look to move cash. While payment in Egyptian pounds is easier, the continuing de-valuation of the currency means that the company is exposed to currency risks. We believe management are taking steps to mitigate this potential (by moving to pay contractors in Egyptian pounds as much as possible, for example).

Valuation

In our core NAV, we include production, development and contingent resources that could be developed, while exploration is valued (in our RENAV) only if wells are planned and funded in the next 18 months.

For commodity pricing, we assume real \$70/bbl long-term inflated for Brent (after a recovery from current prices). For the Sea Lion development, we model transport costs of \$3/bbl and a 4% discount to Brent. For Phase 1, we assume capex of \$11/bbl and opex of \$25/bbl (of which around \$10/bbl is FPSO leasing cost), though importantly capex pre-first oil is limited to \$1.5bn. We generally value oil companies using an asset-by-asset NAV derived from detailed DCF modelling, which gives an unrisks \$/bbl figure for the asset.

We apply risking that aims to take account of geological, technical and commercial uncertainties. If a company lacks funding or production that could provide cash for development, we need to take account of the value sacrificed to get through appraisal/development. This dilution is difficult to accurately estimate. As a result, our overall CoS applied would therefore be materially lower than any geological CoS for exploration prospects. In RKH's case, the uncertainty over the commercial terms at which the project would get sanctioned means we have reduced our current CoS to a conservative level. We note that once it becomes more evident that a project sanction is close, this would move up and the value of the NAV would increase. We have also increased the period over

which to value the cash outflows of G&A from three to five years given the extended period of time we expect investors to have to wait for project sanction and development. Our new core NAV of 74p is lower than the prior 93p, due to the lower oil price, delayed start-up of projects, higher risk factors on the project, a slightly increased discount rate (from 12%) and a number of other factors.

Exhibit 11: Valuation summary

Asset	FX: £/US\$1.3		First prod'n	WI %	CoS	Recoverable reserves		NPV \$/boe	Net risked value at 12.5% WACC		Risked value at varying WACCs (p/share)		
	Shares: 457m					Gross	Net				10%	15%	20%
	Country					mmboe			\$m	p/share			
Net cash at December 2016e									63	11	11	11	11
G&A (NPV ₁₀ of five years)									(41)	(7)	(7)	(7)	(7)
Production													
Guendalina	Italy		20%	100%		2.0	0.4	11.6	5	1	1	1	1
Civita	Italy		100%	100%		0.2	0.2	3.1	0	0	0	0	0
Abu Sennan	Egypt		22%	100%		19	4.2	3.9	16	3	3	2	2
Development													
Sea Lion Phase 1	Falkland Islands	2022	40%	25%		220	88	9.4	208	36	47	29	18
Sea Lion Phase 2 in PL32	Falkland Islands	2026	40%	20%		88	35	4.9	35	6	9	4	2
Sea Lion Phase 2 in PL04	Falkland Islands	2026	64%	20%		215	137	4.9	135	24	36	16	7
Core NAV						544	265		421	74	100	56	34
Isobel Elaine complex	Falkland Islands		64%	13%		472	302	2.1	81	14	29	6	0
Note: CPR 2C of Isobel Elaine complex	Falkland Islands		64%	13%		140	90	2.1	24	4	8	2	0

Source: Edison Investment Research. Note: For simplicity, we use the value per barrel derived from modelling the large 472mmbl development at Isobel Elaine complex to value the 140mmbl illustrative development.

This valuation is heavily dependent on assumptions used. We note that WACCs applied and oil prices are key.

Exhibit 12: Sensitivity to oil prices and discount rates (core NAV), p/share

	Discount rate					
		7.5%	10.0%	12.5%	15.0%	17.5%
Brent oil price, \$/bbl	30	5	5	5	5	5
	40	33	22	15	10	9
	50	69	48	35	25	19
	60	103	74	54	41	31
	70	138	100	74	56	43
	80	173	125	93	71	55
	Strip	75	53	38	28	21

Source: Edison Investment Research

We note that a move in the oil prices is correlated with capex/opex costs, so longer-term increases/decreases in oil prices would see costs increasing/decreasing, thus buffering the moves in NPV. As a result, we would see the likely NPVs indicated as upper bounds.

Exhibit 13: Sensitivity of core NAV (p/share) to capex and opex

	Capex						
		(40%)	(20%)	0%	20%	40%	60%
Opex	(40%)	98	90	82	74	66	58
	(20%)	94	86	78	70	62	54
	0%	89	82	74	66	58	50
	20%	85	77	69	62	54	46
	40%	81	73	65	57	49	41
	60%	77	69	61	53	45	37

Source: Edison Investment Research

Value implied by the share price

We can back-calculate the possible risk applied by investors that is implied by the current share price, assuming our existing assumptions (on timing, costs and risk) remain the same.

Using our price deck, this works out as approximately 8%, while it moves to around 16% on the futures strip. If we ignore cash and focus on core assets (including Sea Lion Phases I and II and the impact of G&A), the current share price implies the market is applying an 11% risk (or 24% on the strip).

Finally, using our current assumptions on discount rate and risking on core NAV constituents, the share price would be justified by a long-term oil price of \$47/bbl.

Financials

As of June 2016, Rockhopper held \$65m in cash and has since received \$10m in cash from Premier as part of the exploration/appraisal carry. The company expects to end the year with \$60-65m in cash (we are at the lower end). This is enough to fund the company's activities in the coming years.

Rockhopper will also continue to bear 40% of the pre-sanction costs. As we note elsewhere in the report, Premier is seeking to farm-out a portion of its interest in Sea Lion and we could see these financing arrangements alter should a partner enter (Rockhopper is likely to be flexible to incentivise a deal in our view).

Sources of finance for development funding

The current arrangement with Premier gives the company a \$337m carry for Sea Lion Phase 1 (post FID), although this will leave it needing to source \$263m pre-first oil (assuming \$1.5bn to first oil cost estimate) – most likely in the 12 months pre-first oil. This may be covered by the 15% financing arrangement with Premier, though we would expect Rockhopper to be able to source cheaper finance elsewhere – an RBL and/or corporate facility should be the cheapest source. For simplicity, in our modelling we assume it fully utilises the PMO loan facility.

As oil prices currently stand, the availability of RBL finance is extremely limited, and there is a risk that this situation is continued for the time that RKH seeks finance. RBL banks typically assume a debt capacity based on proven reserves valued at a discount to expected oil prices at a discount rate normally lower than WACC for companies. For an offshore development such as Phase 1 of Sea Lion, this means an RBL facility is most likely only available year ahead of production. However, given RKH's carry should extend to around 12-18 months before start-up, we are currently optimistic that an RBL would cover the vast bulk of the capital shortfall.

The acquisition of the production in Egypt adds to the cash flow generation of the group, and will largely cover the company's G&A bill, reducing the cash burn over coming years.

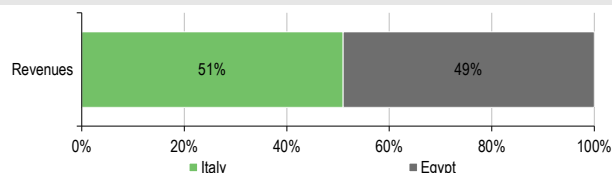
Exhibit 7: Financial summary

	\$'000s	2012	2013	2014	2015	2016e	2017e
Dec		IFRS	IFRS	IFRS	IFRS	IFRS	IFRS
PROFIT & LOSS							
Revenue		0	0	1,910	3,966	7,212	11,959
Cost of Sales (incl. depreciation of production assets)		0	0	(3,970)	(11,049)	(7,818)	(12,591)
Gross Profit		0	0	(2,060)	(7,083)	(605)	(632)
EBITDA		(12,924)	(16,948)	(8,031)	(32,824)	133,621	(3,076)
Clean EBITDAX		(6,966)	(15,487)	(6,249)	(9,890)	(3,584)	(3,076)
Operating Profit (before amort. and except.)		(13,191)	(17,230)	(8,031)	(40,922)	128,483	(11,859)
Intangible Amortisation		0	0	0	0	0	0
Exceptionals		58,668	0	0	0	0	0
Other		0	0	0	0	0	0
Operating Profit		45,477	(17,230)	(8,031)	(40,922)	128,483	(11,859)
Net Interest		1,640	1,499	448	(3,775)	(6,574)	(5,332)
Profit Before Tax (norm)		(11,551)	(15,731)	(7,583)	(44,697)	121,909	(17,191)
Profit Before Tax (FRS 3)		47,117	(15,731)	(7,583)	(44,697)	121,909	(17,191)
Tax		(122,359)	(62,542)	(5)	55,395	283	652
Profit After Tax (norm)		(133,910)	(78,273)	(7,588)	10,698	122,191	(16,539)
Profit After Tax (FRS 3)		(75,242)	(78,273)	(7,588)	10,698	122,191	(16,539)
Average Number of Shares Outstanding (m)		284.2	284.3	292.6	293.4	456.5	456.5
EPS - normalised (US\$c)		(47.1)	(27.5)	(2.6)	3.6	26.8	(3.6)
EPS - normalised and fully diluted (US\$c)		(47.1)	(27.5)	(2.6)	3.6	26.8	(3.6)
EPS - (IFRS) (US\$c)		(26.5)	(27.5)	(2.6)	3.6	26.8	(3.6)
Dividend per share (c)		0.0	0.0	0.0	0.0	0.0	0.0
Gross Margin (%)				-107.9	-178.6	-8.4	-5.3
EBITDA Margin (%)				-420.5	-827.6	1852.6	-25.7
Operating Margin (before GW and except.) (%)				-420.5	-1031.8	1781.4	-99.2
BALANCE SHEET							
Fixed Assets		152,540	154,009	227,816	279,098	486,873	492,290
Intangible Assets		151,957	153,656	204,164	256,658	458,944	460,811
Tangible Assets		583	353	12,146	12,637	17,925	21,475
Goodwill / Other		0	0	11,506	9,803	10,004	10,004
Current Assets		299,582	249,723	207,979	120,495	72,226	57,784
Stocks		0	0	2,188	1,670	1,866	1,866
Debtors		1,559	1,932	4,681	6,199	6,000	6,000
Cash		297,741	247,482	199,726	110,434	62,703	48,261
Other		282	309	1,384	2,192	1,657	1,657
Current Liabilities		(34,921)	(110,140)	(119,797)	(30,466)	(28,130)	(28,130)
Creditors		(34,921)	(110,140)	(119,797)	(30,466)	(28,130)	(28,130)
Short term borrowings		0	0	0	0	0	0
Long Term Liabilities		(85,304)	(39,137)	(60,960)	(106,893)	(109,062)	(114,585)
Long term borrowings		0	0	0	0	0	0
Other long term liabilities (FI CGT liability and P&A costs)		(85,304)	(39,137)	(60,960)	(106,893)	(109,062)	(114,585)
Net Assets		331,897	254,455	255,038	262,234	421,907	407,359
CASH FLOW							
Operating Cash Flow		(14,029)	(12,834)	(11,237)	(6,856)	(10,493)	(242)
Net Interest		0	0	0	0	0	0
Tax		0	0	0	0	0	0
Capex		208,792	(41,312)	(10,588)	(80,302)	(31,988)	(14,200)
Acquisitions/disposals		0	0	(24,037)	0	(4,688)	0
Equity financing / buybacks		(3,383)	3,887	(1,894)	(2,134)	(562)	0
Dividends		0	0	0	0	0	0
Net Cash Flow		191,380	(50,259)	(47,756)	(89,292)	(47,731)	(14,442)
Opening net debt/(cash)		(103,263)	(297,741)	(247,482)	(199,726)	(110,434)	(62,703)
HP finance leases initiated		0	0	0	0	0	0
Other		3,098	0	0	0	0	(0)
Closing net debt/(cash)		(297,741)	(247,482)	(199,726)	(110,434)	(62,703)	(48,261)

Source: Edison Investment Research, Rockhopper Exploration accounts. We note that the financial expense seen in the income statement is largely a non-cash expense regarding the unwinding of the capital gains liability.

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Revenue by geography (2017e)

Management team
Non-executive chairman: David McManus

David is a petroleum engineer with a degree from Heriot-Watt University. He has over 36 years' experience in the oil and gas industry with Shell, Ultramar, ARCO and BG Group. David has extensive project management and commercial expertise at high level, and is currently a director of Costain, Hess Corporation and Flex LNG.

Chief executive officer: Sam Moody

Sam is a co-founder of Rockhopper and has been responsible for building and managing the group from its formation in early 2004. He previously worked in several roles within the financial sector, including positions at AXA Equity & Law Investment Management and St Paul's Investment Management.

Chief operating officer: Fiona MacAulay

Fiona is a geologist with over 25 years' experience including time at Mobil, Amerada Hess and BG. She joined Rockhopper in 2010 immediately following the Sea Lion discovery and was an integral member of the senior team that managed the appraisal of the Sea Lion field and discovered the Casper, Casper South and Beverley fields. Fiona was appointed to the board in March 2013.

Chief financial officer: Stewart MacDonald

Prior to joining Rockhopper, Stewart was a director in Rothschild's global oil and gas group and spent 12 years advising clients in the sector on a range of M&A transactions as well as debt and equity financings. Stewart was appointed to the board in March 2014.

Principal shareholders

	(%)
UBS	6.9
Fidelity	5.7
Carlson Capital	5.1
Majedie	3.9
Royal London	3.5
Odey	3.1
Credit Suisse	3.0

Companies named in this report

Premier Oil, Beach Energy, Cairn, FAR (PMO, BPT, CNE, FAR)

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