

Cairn Energy – Cowboy drilling in the High Arctic

April 2011

Key facts

- Cairn Energy is an Edinburgh-based oil company founded in 1981 by former Scottish rugby player Sir Bill Gammell. Despite its small size relative to other oil majors, the company is listed on the FTSE 100 with a market value of £6.3bn.ⁱ
- Although oil majors including Shell, Chevron and Exxon Mobil own licences nearby,ⁱⁱ Cairn is currently the only company drilling in the region.
- The Greenlandic government has refused to release any of Cairn's spill response plans,ⁱⁱⁱ while the company itself has kept them secret to apparently prevent sabotage by "third parties."^{iv} Last year it had 14 vessels in the Greenland area capable of dealing with a spill.^v BP's response in the Gulf of Mexico involved over 6,500 ships and nearly 50,000 people.^{vi}
- Financially strengthened by a major discovery at the giant Mangala field in Rajasthan, India, in 2004, the company is now at what Cairn executives describe as the "wildcat stage" of exploratory drilling in the Arctic.^{vii}
- Cairn currently holds 11 licences in Greenland, covering approximately 81,000 square kilometres.^{viii} It is estimated that its chances of a significant find this summer are only "one in ten."^{ix}
- Cairn plans^x to drill at least 4 exploratory wells in Baffin Bay this year.^{xi} Some of these are in water 1,500m deep, similar in depth to the ill-fated BP Macondo well in the Gulf of Mexico.^{xii}
- This year Cairn sourced a \$900m debt facility from a consortium of banks, including publicly owned Bank of Scotland, meaning that the British taxpayer is now partially underwriting the company.^{xiii}
- Last year Cairn drilled four wells off Greenland.^{xiv} Three were completed before the winter weather window closed and a fourth half-drilled and capped.^{xv} Despite originally claiming it had struck oil^{xvi} Cairn subsequently admitted that no significant quantities of either oil or gas had been found^{xvii} and it was forced to write off the entire \$185m cost of the project.^{xviii}

- Drilling is limited to a “summer window” between July and November. After this date sea ice becomes too thick to allow vessels to operate and relief wells cannot be drilled effectively.^{xix} In addition, Cairn’s environmental impact assessment of its operations only considers ice conditions during the summer months.^{xx}
- The company uses “ice management” techniques to tow icebergs out of its rig’s path, or use water cannons to divert them.^{xxi} The area in which the rig is situated is known locally as “iceberg alley.”^{xxii}
- Baffin Bay is home to globally significant populations of animals whose populations are increasingly under threat.^{xxiii} Many species found off Greenland are on the IUCN Red List, including the Blue Whale,^{xxiv} Narwhal,^{xxv} Polar Bear and Atlantic Halibut.^{xxvi} Such complex marine ecosystems are uniquely vulnerable to oil spills and a Deepwater Horizon-sized incident would have serious long-term impacts.^{xxvii, xxviii}

Introduction

Cairn Energy is a British exploration company currently searching for oil in the Arctic, a region that was considered too inaccessible, expensive or risky to exploit until just a few years ago. The Arctic’s changing climate is opening up larger ice-free areas to drilling each summer,^{xxix} although Cairn’s operation is not thought to be entirely reliant on recent warming. Cairn plans to drill in four blocks called Eqqua, Napariaq, Lady Franklin and Atammik to the west of Disko Island near Greenland. The company will use a semi-submersible drilling rig, the *Leiv Eiriksson*,^{xxx} a drill ship, the *Ocean Rig Corcovado*,^{xxxi} and a handful of support vessels including supply boats and ice management vessels.^{xxxii, xxxiii}

The company hopes to use the 2011 summer window between July and early October to drill four wells at a total cost of around \$500m.^{xxxiv} The potential wells will range in water depth from 288 to 1,530 meters below the sea surface.^{xxxv} This is the same depth as BP’s Macondo well that ruptured during the *Deepwater Horizon* disaster, spewing millions of barrels of oil into the ocean.^{xxxvi} Cairn’s Greenland project is representative of a new approach to oil exploration, where self-styled ‘wildcat’ companies take on huge financial and technical risks in the hope of hitting a previously undiscovered reservoir of oil. The British taxpayer has a stake in Cairn, after the publicly owned RBS bank made a \$100m loan to the company in December 2009.^{xxxvii} More recently Bank of Scotland, now part of the publicly-owned Lloyds Banking Group, was involved in providing a \$900m debt facility to the company.

Cairn’s complete lack of in-house infrastructure and failure to provide a comprehensive spill response plan raises serious questions about its ability to deal

with an accident in one of the most hostile environments on earth. A major blow out deep under the freezing Arctic seas would have a disastrous effect on this fragile ecosystem, with impacts potentially far worse than those resulting from BP's oil spill in the warmer waters of the Gulf of Mexico.^{xxxviii} Freezing temperatures, deep waters, severe weather, extended periods of complete darkness, a narrow operational window and its remote location pose unprecedented logistical challenges that would likely overwhelm any spill response.^{xxxix} A blowout off Greenland, where a relief well cannot be completed in the same drilling season, could lead to oil gushing unchecked for two years,^{xl} with spilt oil becoming trapped under thick sheets of ice. Serious impacts from the *Exxon Valdez* spill in Alaska are still being felt today^{xli} and the Pew Environment Group says that a spill in the Arctic would have dire consequences for local wildlife and the indigenous peoples that inhabit the region.^{xlii} In short, the industry cannot ensure that a spill would never happen and Cairn itself admits that "logistics are complex."^{xliii}

History of drilling in Greenland

For most of the 20th century, oil companies considered the Arctic too remote or risky to develop. In 1975, however, 6 groups headed by Amoco, Chevron, ARCO, Mobil, Total, and Ultramar were granted licences and drilled 5 exploratory wells off Greenland's coast.^{xliv} Exploration was discontinued in late 1978 after all wells were declared dry by the operators. An additional well was drilled in 2000 by Statoil, but also came up dry.^{xlv} In January 2008, Cairn signed a series of licence agreements with Greenland's Bureau of Minerals and Petroleum.^{xlvi} In October 2009 Cairn sold a 10% interest in its 6 offshore blocks in the Disko West and Southern Greenland areas to Petronas.^{xlvii} Cairn now holds huge majority stakes in the Atammik, Lady Franklin, Sigguk, Eqqua, Saqqamiut, Kingittoq, Uummannarsuaq, Salliit, Pitu, Napariaq and Ignoraq blocks off the West coast.^{xlviii}

Lack of transparency over spill response plans

Cairn's repeated assurances on safety are undermined by the company's refusal to release a detailed spill response plan.^{xlix} Remarkably, Cairn's excuse is that it is worried that mysterious "third parties" might use the plan to try and stop the company from capping a leaking well. Despite this, the company's latest environmental impact assessment^l for the project states that "all spill scenarios were simulated within the proposed drilling window, corresponding to the ice-free period within which operations can be undertaken ... it has not been possible to model oil behaviour in ice." Failing to consider the impact of ice on a potential Arctic oil spill clearly renders the EIA unfit for purpose.

The document goes on to note add that it is "worth briefly considering some of the potential effects," though the phrase "briefly considering" does not indicate a thorough and rigorous consideration of the consequences of a major spill in an area that is covered in ice for much of the year. This is in spite of Cairn's own modelling

showed that a blowout at its well sites would mean oil crossing “both the 2005 and 2007 ice extent boundaries.”

The dangers of a spill are not insignificant. The US Minerals Management service has estimated a one in five chance of a spill of 1,000 barrels or more over the lifetime of just one drilling block in the Alaska’s Beaufort Sea,ⁱⁱ which shares many of the same Arctic characteristics as the blocks in Baffin Bay.

Ability to deal with a spill

Despite a Freedom of Information request from Greenpeace, Cairn has refused to make its spill response plan public. In 2011 the company had 14 vessels in the area ready to help with any clean up operation. BP’s response in the Gulf of Mexico involved the use of 6,500 vessels and the cost of the disaster led to speculation that one of the world’s wealthiest and best resourced companies might collapse entirely.ⁱⁱⁱ

A marine pollution expert, looking at publicly available information such as this, said he was not sure Cairn had “taken on board some of the risks that are associated with this high latitude work.”^{liii} According to a senior official at a Canadian firm that specializes in oil-spill response “there is really no solution or method today that we’re aware of that can actually recover [spilt] oil from the Arctic.”^{liv} The Pew Environment Group recently examined^{lv} oil spill response plans for operations in the Arctic and warned that the oil industry is “not prepared for the Arctic, the spill plans are thoroughly inadequate.”^{lvi} Analysis for WWF found that industry proposals for assessing the risks of a spill in the Arctic were inaccurate, describing it as “imagineering, not engineering.”^{lvii}

According to a memo prepared for Canadian regulators,^{lviii} drilling a relief well in the Arctic’s Beaufort Sea could take up to two years because of the impossibility of drilling during the harsh Arctic winter. An internal Cairn presentation freely admits that the company is unable to drill a relief well during the winter months.^{lix} This scenario raises the possibility of oil gushing unchecked into the ocean for up to two years as thick ice forms on the sea’s surface.

Though the Greenlandic government has apparently demanded that oil companies hand over \$2bn to cover spill costs before they are allowed to drill in Baffin Bay,^{lx} it is not clear that any company has been forced to do this. The truth is that although the company has a market value of over \$6bn Cairn would be completely unable to pay for the costs of a spill off Greenland. Even though such costs would dwarf those of Deepwater Horizon, dealing with the Gulf of Mexico spill is estimated to have cost BP over \$40bn.^{lxi} Capital of this magnitude is simply beyond the reach of an independent oil company like Cairn.

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One possible solution to this problem is to drill a relief well simultaneously with the main drilling operation, but Cairn is refusing to pursue this option, preferring to use both components of its drilling infrastructure to drill two wells in separate locations despite the increased risks.

Cairn's approach

Cairn's business model represents a new approach within the oil sector. Smaller independent exploration companies, like Cairn, normally spread their risks by taking a small stake in fields operated by larger companies and skimming off the profits to reinvest in small 'wildcat' exploration or new ventures. Since these smaller companies don't have access to massive amounts of capital to finance risky exploration programmes, they often try to minimise that risk by exploring in well-developed or mature provinces such as the North Sea or the Gulf of Mexico. Cairn however, often tries to take majority stakes in blocks and focuses narrowly on a few regions at a time, usually in vastly under-explored and unexplored territories. This is the approach taken in Greenland.

Such operations are considered by investors to be 'high risk' but also potentially 'high reward' as was the case for the company's Rajasthan find - which has been estimated to be well above 1 billion barrels of recoverable oil to date.^{lxii} The company's focus on Greenland is very much along the same lines. According to Gammell, the company seeks 'big acreage' to give it a wide area for exploration, in contrast to the smaller parcels that are routinely found in places like the North Sea.^{lxiii} The dangers of this approach become clear in the event of a spill, where the operation's remote location means there is little infrastructure nearby to assist with any clean up operation. Additionally, the investment community is now beginning to question Cairn's strategy. Analysts claim it is "overexposed for a company of that size to wells which have a relatively low chance of success. With cost inflation, the Greenland geology becoming more difficult...it puts the onus on them to farm down quite aggressively."^{lxiv} The company is believed to have begun trying to sell off parts of its Arctic operations, though no buyers have yet come forward.

Political links

Bill Gammell has enormous political influence with leading political figures such as Tony Blair and the Bush family. In an interview Gammell states that "I learned a lot about the oil business from George W Bush"^{lxv} and he worked with Bush in Texas during his early career. Gammell's father, founder of the Scottish investment fund Ivory & Sime, provided much of the initial investment in Bush Sr.'s oil firm Zapata Petroleum in 1952 and gave crucial backing to George Bush in investor disputes. Indeed Gammell Sr. sat on the board of Zapata (now Pennzoil) for 30 years. Cairn is a founding member of the Greenland Oil Industry Association, which was set up last year together with ExxonMobil, Chevron, Dong Energy, Husky Energy, Nunaoil and PA Resources.^{lxvi}

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- ⁱⁱ http://www.bmp.gl/images/stories/minerals/list_of_licences/list_of_licences.pdf
- ⁱⁱⁱ <http://www.oceanpowermagazine.net/2010/11/22/cairn-energy-refuses-to-publish-full-oil-spill-plan-for-the-arctic-ocean>.
Freedom of Information request denied August 2010. Contact Greenpeace for full details.
- ^{iv} <http://www.bbc.co.uk/news/uk-scotland-11788122>
- ^v <http://www.ft.com/cms/s/0/2755cb2c-892b-11df-8ecd-00144feab49a.html>
- ^{vi} <http://www.bp.com/genericarticle.do?categoryId=98&contentId=7068377>
- ^{vii} <http://www.bloomberg.com/apps/news?pid=newsarchive&sid=aloE9ZcITfis>
- ^{viii} <http://www.pressandjournal.co.uk/Article.aspx/2031202>
- ^{ix} <http://www.guardian.co.uk/business/2010/sep/21/cairn-energy-oil-find-greenland>
- ^x <http://www.cairnenergy.com/NewsDetail.aspx?id=1423>
- ^{xi} <http://dk.nanoq.gl/Service/Hoeringsportal/Milj%C3%B8vurderinger/2011/~media/1B72E8D4F636448D8FF3BB21BD53DA84.a.shx>
- ^{xii} <http://www.bbc.co.uk/news/10149233>
- ^{xiii} <http://www.cairnenergy.com/NewsDetail.aspx?id=1423>
- ^{xiv} <http://www.guardian.co.uk/business/2010/aug/24/cairn-confirms-greenland-oil-find>
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- ^{xvi} <http://www.bbc.co.uk/news/uk-scotland-11381281>
- ^{xvii} <http://www.thisislondon.co.uk/standard-business/article-23891360-cairn-energy-has-no-oil-for-drilling-efforts-in-arctic.do>
- ^{xviii} <http://www.independent.co.uk/news/business/news/cairn-greenland-oil-finds-too-small-2117301.html>
- ^{xix} <http://www.cairnenergy.com/uploadedFiles/Investors/Downloads/Petroleum%20Exploration%20Greenland%20Conference,%20Copenhagen.pdf>
- ^{xx} <http://dk.nanoq.gl/Service/Hoeringsportal/Milj%C3%B8vurderinger/2011/~media/FE44AE545CC349189554B75B9926AB41.a.shx>
- ^{xxi} <http://www.cairnenergy.com/uploadedFiles/Investors/Downloads/Simon%20Thomson%20Core%20Presentation%20on%20Greenland%20Operations%20Jan%20Update%20Final.pdf>
- ^{xxii} <http://www.guardian.co.uk/business/2010/jul/09/oil-company-cairn-energy-arctic-row>
- ^{xxiii} http://www2.dmu.dk/1_viden/2_Publikationer/3_fagrappporter/rapporter/FR415.pdf
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- ^{xxv} <http://www.iucnredlist.org/apps/redlist/details/13704/0>
- ^{xxvi} <http://www.iucnredlist.org/apps/redlist/details/10097/0>
- ^{xxvii} <http://www.worldwildlife.org/what/wherework/arctic/threats.html>
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- ^{xxxi} http://www.ocean-rig.com/modules/module_123/proxy.asp?D=2&C=43&I=66&mid=41&exp=19
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- ^{xxxix} http://wwf.panda.org/what_we_do/where_we_work/arctic/publications/?122240/Oil-Spill-Response-Challenges-in-Arctic-Waters
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- ^{xlii} <http://www.guardian.co.uk/environment/2010/nov/11/arctic-oil-spill-plans>
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- ^{xviii} <http://www.cairnenergy.com/operations/greenland/summary-of-interest/>
- ^{xix} Response to Freedom of Information request from Greenpeace Nordic, Aug 2010– copy available on request
- ⁱ <http://dk.nanog.gl/Service/Hoeringsportal/Milj%C3%B8vurderinger/2011/~media/69FE592FB1394433B879530A89661352.aspx>
- ⁱⁱ <http://www.boemre.gov/itd/pubs/1997/97-0039.pdf>
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