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ANALYSIS

Strategic decisions of international oil companies: Arctic versus other regions

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ABSTRACT

The increased attention devoted to the Arctic region in recent years is creating a misleading perception of the real activity of oil and gas companies in the region. Our analysis of the current and future E&P strategies of Exxon Mobil, Royal Dutch Shell, British Petroleum, Total and Chevron reveals that companies are approaching the region in a very cautious manner. Our objective was to analyze how much oil and gas was extracted in the Arctic in 2012 and how much can potentially come from there in the near future, while exploring the reasoning behind the IOCs' business strategies regarding the Arctic. The five major IOCs analyzed in the study do extract important amounts of oil and less of gas from the region, but Arctic and sub-Arctic assets represent only 15% of total oil production in 2012. Gas was close to 6% of the total. Although the Arctic appears to be comparatively more attractive than other regions given the potential of undiscovered resources, drilling costs can be substantially higher due to remoteness and technical challenges. The majority of the combined additional oil and gas these five IOCS will produce up to 2017, will likely not come from the Arctic, but instead from Africa, Asia and North America. Indeed, these three regions account for 60% of their forecast additional output, whereas the Arctic will not exceed six percent.

1. Introduction

Exploring energy resources in the Arctic is not a new phenomenon. In fact, Exxon Mobil's activity in the region dates back to 1920, when the affiliated Imperial Oil Resources discovered the Norman Wells field under the Mackenzie River, the world then most northerly oilfield. In 1968 Exxon Mobil made another important discovery, Prudhoe Bay, located in Alaska's North Slope [1]. The Trans Alaska Pipeline System (TAPS) built in 1977, could convey oil to Valdez in Alaska, through the challenging Arctic environment. From the 1970s and until the 1990s, Drome Petroleum, Gulf Canada Resources and Imperial Oil drilled more than 140 wells in the Canadian and Alaska Beaufort Sea [2]. In Russia, geological studies of the Barents and Kara Seas started in the 19th century. More systematic studies were conducted during the 1920s and 1930s in Novaya Zemlya, while deep drilling near Franz Josef Land started on the Pechora and Barents Sea during the 1980s [3].

While the interest in the Arctic is not new, in the last decade there was an increased attention to the region by politicians, environmentalists and industry in general. This is of course related to global warming and the consequent melting of the Arctic ice. Even countries that geographically are far away from the region, namely Singapore, China, South Korea, Italy and India, now show an interest in the Arctic. There are two main reasons for that. One is the possibility of exploring energy resources in the region; another is the considerable shipping cost savings that using the Northern Sea Route and Northwest Passage [4] can yield. As a result, these countries did request and were recently granted the status of observers to the Arctic Council [5]. This is just another symptom of an interest that resurged in the last decade, when US, Canada, Greenland, Norway and Russia started awarding exploration licenses for oil and gas companies to explore the Arctic region.

Through these license auctions, Exxon Mobil, Statoil, Royal Dutch Shell and many other companies, acquired new exploration rights in the Alaska Beaufort and Chukchi Sea, in 2003, 2005, 2007 and 2008 [6]. In Canada, licenses were also issued in 2007, 2008 and 2011 in the Beaufort Sea [7]. Additionally, in Greenland, the Kanumas project initiated in 1989 led to a substantial exploration in both the East and West coast by major oil and gas companies. A regional seismic program that included preliminary studies for hydrocarbons offshore Northwest

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and Northeast Greenland, the Kanumas Project implied that a prospecting license was granted to the group comprised of Exxon Mobil, Statoil, BP, Japan National Oil Company, Chevron, Royal Dutch Shell and Nunaoil. Another round of licenses is expected this year, although the recently elected government might postpone the final decision [8]. For its part, Russia has major projects planned to explore the Shotkman field in the Barents Sea, together with Total and Statoil, as well as in the Yamal Peninsula. Finally, recent discoveries in Norway led its government to award 20 exploration licenses in the Barents Sea [9].

All this activity could indicate that the Arctic is becoming a hot region. However, and despite the hype, many challenges still remain ahead for IOCs to explore it. While the Arctic appears to be comparatively more attractive than other regions given the potential undiscovered resources and political risks, drilling costs can be substantially higher due to many reasons. Our objective is to analyze how much oil and gas came from in the Arctic in 2012 and how much can potentially come from there in the near future, while exploring the reasoning behind the IOCs' business strategies regarding the Arctic.

2. Oil and gas strategic development

Until the early 1970s, IOCs controlled 85% of the world oil reserves. However, this was reversed during that decade. The governments of many oil-rich countries, especially in the Middle East and South America, seized control of resources and nationalized the operations of international oil and gas companies, establishing their own National Oil Companies (NOCs). Examples include Saudi Aramco, nationalized between 1973 and 1980, and *Petróleos de Venezuela* (PDVSA) in 1975 [11]. As a result of the nationalizations, most NOCs now hold large amounts of the world resources and are, for the most part, controlled by their governments, being very often instruments of their countries foreign policy, and leaving fewer resources available for IOCs. Already in the 1980s, NOCs controlled 59% of the world's oil reserves, in contrast to IOCs, whose share had shrunk to 12%. Today, NOCs share of the world oil reserves rose to 70% [11].

Despite these drastic changes, creating far greater uncertainty for IOCs after 1980, their relationship to national companies varies from country to country. While partnering with some NOCs in the richest regions in the world seems unthinkable, in other places this might be happening already or could likely happen in the future. Some NOCs like Saudi Aramco are both financially and technically strong and most likely will continue to have little or no interaction with either IOCs or other NOCs. Saudi Aramco has been mostly closed to foreign investment after the oil nationalization in the 1970s. Even though there was an attempt in 1998 to open the upstream exploration in Saudi Arabia to IOCs, driven mostly by economic factors, the bidding process was purposely left vague in its aims and scope. It soon became clear to IOCs that gas, rather than oil was the driving factor. Given the low, subsidized price of gas in Saudi Arabia, most IOC-led projects were not commercially viable. Although four agreements were signed (SRAK with 40% from Shell and 30% from Total, Sino-Saudi gas with 80% from Sinopec, Luksar with 80% from Lukoil and a fourth consortium owned 50% from Eni and 30% from Repsol), the results fell short of their expected targets [12]. Abu-Dhabi National Oil Company (ADNOC), on the other hand, has long had a very strong relationship with IOCs. While apparently ADNOC largely controls the United Arab Emirates (UAE)'s reserves, the company has had a different approach towards IOCs. ADNOC was never nationalized during the 1970s, since the oil industry of the UAE was in its infancy at that time. ADNOC decided then to control 60% of its subsidiaries, splitting the remains among foreign companies. BP, Shell, Total, and Exxon Mobil still hold important shares (9–15%) of the subsidiaries. The company is well managed and exchanges technological information with its foreign western partners [13].

In contrast, other NOCs including National Iranian Oil Company (NIOC), PDVSA and Gazprom, despite performing poorly from a financial and technical point of view, do not particularly favour business with IOCs, mostly because of the authoritarian regimes in Iran, Venezuela and Russia, their home countries. The National Iranian Oil Company (NIOC) controls close to 90% of its country's oil and gas reserves owing to its monopoly on Iranian oil after the 1974 nationalizations [10,14]. The Islamic revolution did change the country, such that few foreign companies operated in Iran between 1979 and 1997. However, the buyback system, allowing a five to seven year exploration period (extended in 2004 to 25 years) after which the operation of the field would be given back to NIOC, convinced some IOCs, including Total and Shell to return to the country [15]. But the 2005 election saw the replacement of experienced NIOC people by friends of Ahmadinejad and the company became very inefficient. On top of that, US and United Nations (UN) sanctions hindered most foreign operations, making it difficult for NIOC to muster the financial resources needed for large projects. Most recently, NIOC established partnerships with national companies from China, Venezuela and Russia, since Iran desperately needs both new investments and new technology to explore its oil fields. As for PDVSA, the company holds significant gas and oil reserves in Venezuela. While it was nationalized in 1976, until the early 2000s it remained one of the best-managed NOCs. During the 1990s, the need for capital led to its opening the oil sector to IOCs, yielding majority equity interests in projects coupled with attractive fiscal packages [16]. Following agreements signed with BP, Chevron, ConocoPhillips, Exxon Mobil, Statoil and Total, foreign direct investment in the Venezuela oil industry rose from $619 million US in 1995 to $4.4 billion US in 1999 [17]. Later in 2007, Hugo Chavez nationalized the company, taking majority control in all projects and offering compensations to the IOCs involved, although at a much lower rate than they were entitled to [16]. While Exxon Mobil and ConocoPhillips went to arbitration, the other IOCs operating in the country accepted the new rules. In 2010, the government awarded minority interests in the Orinoco region to Chevron and Repsol, while establishing partnerships with NOCs from Russia and China. Venezuela has large amounts of heavy oil, which is costly to explore, thus requiring foreign financial and technological assets. Finally, Gazprom was first nationalized in 1991 but remained open to small shares of foreign investment for many reasons. Gas markets are different than oil requiring a closer contact with customers [18]. Thus the Russian Federation owns 50.1% of Gazprom with the rest being controlled by banks, Germany's E.ON and many small Russian firms. The company holds very small amounts of oil reserves, but controls 70% of the gas in Russia, the rest being the turf of Rosneft and small Russian independent companies [19]. Russia heavily subsidizes Gazprom internal market, thus impairing its financial performance. Indeed, for 2008, its debt to asset ratio was 22%, while for most IOCs that ratio was close to 7%. Barring undisclosed capital investments it seems unlikely that this has changed. However, the company's ambitious projects such as the Shtokman field will likely require both foreign investment and technology, eventually making Gazprom more willing to partner with IOCs in the future.

As can be seen, NOCs do behave very differently. While Saudi Aramco has the resources and technology to continue exploring oil and gas fields on its own, other NOCs do not. Despite the government intervention in the oil sector, national oil and gas companies from Venezuela, Iran and Russia do need both the expertise and financial strength of IOCs or other powerful NOCs to extract resources from their countries. Authoritarian regime interference, mostly in Venezuela and Iran caused formerly well-managed companies to drop their performance. But it is difficult to predict whether there will be any changes soon. Traditionally, oil and gas resources are present in large quantities in politically unstable regions such as the Middle East and Africa (MENA), Central and South America, South Caucasus and Central Asia. For many countries in these regions, instability is caused by authoritarian regimes, corruption and terrorist attacks. For the most part, IOCs do not have any other option but to deal with the unpredictability