Draugen oil platform. Photo: Shell

Stavanger, Norway's oil capital, is brimming with optimism. Investment is booming, especially in the gas sector. But environmental, political and financial clouds are gathering on the horizon.

Norway's continental shelf gets a new lease on life

by Reiner Gatermann

The Norwegian continental shelf is in greater demand than ever by the oil companies. Statistics Norway is predicting a new investment record of NK128 billion (€14.3 billion) for 2008 and NK133 billion for 2009. This trend began in 2005. Oil extraction has passed its peak, but this reduction has been compensated by increasing gas production.

One reason for the investment boom is that Oslo is putting on the pressure. It wants increased production, demanding more efficient use of the fields in operation. But oil companies are applying their own pressure. They want to develop the promising waters around the Lofoten and Vesterålen Islands and are pushing for the Barents Sea. But there is opposition from fishing and environmental organisations. Parts of the southern Barents Sea have been opened up, but with meagre results. And in the Barents Sea, the Norwegian are pushing up against the Russian border.

Ola Storeng, commentator for the respected Norwegian daily Aftenposten, is somewhat pessimistic about the prospects for the Norwegian continental shelf (NCS). 'It is about 30 years since there has been a significant oil find there. Norway is continuing to draw on the fields discovered during the 1970s: Ekofisk, Statfjord, Oseborg and Gullfaks. They are called our " work horses" . But the fact is, since 2001, oil extraction has fallen by 20%.'

Storeng is more optimistic about gas production, which – in terms of volume – will exceed oil production by 2013. It is expected to increase from approximately 90 billion m3 (bcm) to 116 bcm by 2011. According to the Norwegian Petroleum Directorate (NPD), the share of gas in total production will grow from 38% in 2007 to 46% in 2012. Oil extraction is not expected to shrink as sharply in the next five years as it has in the last five, as new wells are developed. However, Bente Nyland, Director General of NPD, notes that the situation of oil wells not producing as much as expected is 'reason for concern'.

> *'If it comes down to a direct confrontation between oil and fish, oil will win'*

Greater depths

According to Prime Minister Jens Stoltenberg, 'we still have large untapped resources on the Norwegian continental shelf.' Indeed, until now the available technology has been capable of extracting little more than half of the discovered oil. Approximately NK 20,000 billion (€2,244 billion) worth of oil has been left behind. This is why Nyland emphasises, 'In the NPD's view, one of the most important jobs is to maximise recovery from fields in production.' Significant progress has already been made in this on the Norwegian shelf. 'This progress has been greater in the last five years than in all the preceding years,' says Tom Botts, Shell Executive Vice President for Europe.

As drilling reaches greater depths, wells have become bigger and drilling directions more flexible. So far, pressure has been increased through the use of saltwater; now soapy water is to be used. And to reach the last remaining pores of the oil-bearing levels, nanoparticles will be used. Oil and gas flows will be optimised through wireless communication technology. The fields are becoming increasingly more closely interwoven, and more installations have been placed on the sea floor. Compressor technology is another area which is expected to be able to improve the exploitation of the reserves and increase extraction.

All this has led to impressive results. In some blocks, 70% of reserves have been exploited. Most impressive is the development of the Gullfaks field. This oil reservoir in the northern part of the North Sea was discovered in 1978 and began production at the end of 1986. This was expected to last until 2003. In 2002 the life expectancy of the field was increased to 2017, and now extraction could continue until 2030.

The situation is similar in Statfjord, which was discovered in 1974 and where production began five years later. It was expected to close a few years ago, but its oil is now expected to flow at least until 2020. The very first Norwegian offshore field, Ekofisk, has been through a similar development.

Yet another example is Draugen, off the coast of Trondheim, a rarity in the offshore industry. It is the world's only platform resting on just a single pillar. It consists of a concrete-steel mixture in which more steel was used than for the Eiffel Tower. When Draugen went into production in October 1992, its lifespan was calculated as lasting until 2007. Now it is expected to last until at least 2025.

Bernt Granås was there when Draugen was discovered and is impressed by its productivity. Botts calls the field 'the crown jewel of Shell's NCS engagement'. Combined with the gas field Ormen Lange, which went into production in 2007, and some other interests, Shell thinks it can become the largest foreign petroleum producer on the Norwegian shelf by the end of 2009. The installation of additional extraction wells is being considered for Draugen, but the plan to inject CO_2 has been abandoned. One argument was that it would disrupt the production flow and another was that is was too expensive.

'The fact remains that since 2001, oil extraction has fallen by 20%'

Investment obstacles

At the beginning of the decade, interest in investing on the Norwegian Contintental Shelf fell considerably. In addition to general market conditions towards the end of the 1990s, the Norwegian government itself erected an obstacle. Foreign investors and oil companies gained the impression they were being disadvantaged in the awarding of licences, especially the attractive and important operatorships, to the benefit of the 'Norwegian trio' – Statoil, Norsk Hydro and Saga.

This trio no longer exists. In 1999 private company Saga was taken over by the 50% state-owned Norsk Hydro. In the past year Statoil, almost completely state-owned, merged with the energy business of Norsk Hydro. The new giant, Statoil Hydro, 62.5% state-owned, controls 80% of Norway's oil and gas production.

There are questions as to whether this was a positive step for the industry. Before the merger, at least there were two large Norwegian companies competing with each other. 'This led to many new processes, especially in the areas of geology and technology. These times are over since the merger,' a leading employee of a foreign company laments.

However, in terms of production, StatoilHydro is significantly overshadowed by Petoro. This state-owned company manages the royalties, which are assigned to the Norwegian state from almost every discovery. At the end of 2007, The State's Direct Financial Interest (SDFI) covered 34.5% of known oil and gas reserves, StatoilHydro's added up to 32.5% and the remainder stood at 33%.

The race is on

Despite creating a state oil giant, the Norwegian government does actively try to attract new foreign investors. The main focus is on mid-sized and small businesses. The Norwegians saw a noticeable drop in interest from some multinationals, such as Exxon, Total, Chevron and BP. Shell is an exception, as Head of Communication Svein Ildgruben explains: '25% of Shell's total production is in Europe, and we want to maintain this, which is why we want to be particularly active here.'

If Norway wants to remain the 'reliable supplier', the hunt for oil and gas must be accelerated. Tor Rasmus Skjaerpe, in charge of managing Petero's own licences, states categorically, 'If new oil and gas reserves are to go into production by 2015 to 2020, then they must be found now.' Around 40 new wells are expected to be drilled this year. Given the sometimes drastic changes in the credit markets, Björn-Erik Orskaug, a senior economist at DnB NOR Markets, observes: 'The investment plans of Norwegian oil and gas companies are pretty expansive, to say the least. But of course, the credit crisis might change this to some extent. The impact on oil prices is pivotal for investment plans.' Indeed Orskaug had already expressed reservations before the crisis about the huge size of the investment plans, which he described as 'sheer madness'. 'There is quite simply not the capacity and there won't be for many years'.

Gavin Strachan, rig analyst with consulting company ODS Petrodata, thinks that some projects will be deferred at a price of \$80 per barrel. The real pain barrier at which investment would actually fall drastically would be in the region of \$60. Leif Borge, head of finance at Aker Solution, has a similar view. 'Even a price of \$70 to \$80 is still acceptable.'

The platform sector is still brimming with optimism. Helge Haakanson, general manager of Fred. Olsen Energy says confidently, 'The oil concerns have got the cash, they need more oil and there's a lack of equipment. Additionally, our finances are securely in place.'

The Ministry of Petroleum and Energy recently tendered the 20th concession round for the Norwegian shelf. In early 2009, 79 blocks will be allocated. Oil Minister Terje Riis-Johansen wants to use this round to develop new areas. He stresses that the blocks present a balanced solution between the demands of the oil industry, fisheries and environmental interests. The government often speaks of oil and fish living together which, says the respected Norwegian environmental organisation Bellona, is just not possible.

Especially in the Lofoten, and the Vesterålen further north, there is a clash. Bellona and the fishing industry protested against the seismic research carried out there. It went to court – and lost. The oil industry sees this area as one of the most promising. Bellona argues that the continental shelf here is very narrow, and it is one of the most important spawning grounds for North Atlantic cod, herring, haddock and saithe. Juvenile fish are very sensitive to oil pollution. Says Bellona's legal adviser, Christine Molland Karlsen: 'It is unthinkable that oil and fish could comfortably coexist in such a narrow space.'

In early 2009 the government is expected to present a " management plan" for the disputed area. The Labour Party (Arbeiderpartiet), the largest party, faces a dilemma. They are very environmentally aware, but the offshore industry is an important employer and the income from the oil sector constitutes a quarter of Norway's GDP. Bellona representative Tone Aspevoll is certain: 'If it comes down to a confrontation between oil and fish, oil will win.'

International politics

In the Barents Sea the environmental question is overshadowed by an international conflict which has lasted more than 30 years. Norway and Russia cannot reach agreement over part of the border in the Barents Sea. East of this " grey zone", Russia made an enormous gas discovery in the Shtokman field. Since August 2007, Norway has been extracting petroleum from the Snöhvit field, a first in the Barents Sea. Many experts believe there remain large amounts of undiscovered resources.

Björn Tore Godal has been struggling with this issue for decades, as Foreign Minister and now as energy consultant. The two sides are in constant dialogue, he says, and adds, 'Both are very patient.' Following a Norwegian visit in 1990, Michail Gorbatschov declared '80% of the problem has been solved.' According to Godal, the most important obstacle is actually the Russian Duma (parliament).

Norway does not have any negative feelings towards Russia, Godal says. 'Norway was freed by Russia at the end of World War Two. The border has always been peaceful.' Now Russia is a partner in the supply of energy, and also a competitor. The strategy of the Norwegian government is to 'further develop cooperation with Russia in the north. This is in the interests of Europe.' No one dares to predict when the border issue will be resolved. At some stage petroleum exploration will bump up against the grey zone border. ■

Pipelaying vessel Acergy Piper off Norway. Photo: Scott Barbour/Getty