

NORWAY



Purse strings stay open

While other North Sea sectors are seeing cost cutbacks and stalled energy developments, Norway is forging ahead as project purse strings remain very much open, writes John Bradbury.

Aker secured a five-year NKr4.5bn (£370mn) engineering, procurement management assurance services deal at the start of this year for the first phase of the Sverdrup field development – following a 10-year framework agreement signed with Statoil in 2013. ‘A key focus of the project team is to identify ways to reduce costs and improve the overall efficiency of the development,’ the contractor said at the time. Aker is already performing conceptual studies on future phases and completed a Sverdrup front-end engineering and design (FEED) study in 2014.

In September 2014 – just as Aker Solutions was de-merging into two separate entities, Aker Solutions and Akastor – the company revealed its 10-year Sverdrup framework engineering contract worth NKr650mn (£53.73mn) that year.

Phase 1 of Sverdrup was costed at NKr117bn (£9.68bn) – the figure given when the original plan for development and operation (PDO) for the field was submitted to the Norwegian Petroleum Directorate

(NPD) – to recover between 1.4bn and 2.4bn boe. However, in April 2015 the NPD unveiled a higher figure, suggesting Sverdrup phase one will cost NKr10bn more – up to NKr127bn (£10.51bn) overall and that the project will ‘likely’ be delayed by up to six months. That said, the NPD notes its new estimate is within the 20% either-way margin indicated in the PDO.

Sverdrup phase one comprises a field centre with drilling, process, riser and accommodation platforms, and three subsea water injection units, with production capacity for up to 315,000 b/d of oil. Reserves are between 1.8bn and 2.9bn boe – approximately 97% is oil and NGLs, and 3% is gas.

Sverdrup contracts galore

In February, Aibel declared an engineering, procurement and construction deal for the Sverdrup drilling platform worth NKr8bn, (£658mn) which is being built with Nymo in Grimstad and National Oilwell in Kristiansand, for delivery in 2Q2018. Odfjell Drilling also declared a NKr110mn

(£9.09mn) drilling engineering sub-contract from Aibel, for engineering Sverdrup drilling platform topsides.

The following month, Statoil inked a contract with Allseas for installation of three topsides at Sverdrup using the new *Pioneering Spirit* vessel, covering the drilling, 26,000 tonne process and utility and living quarters (ULQ) platforms, in 2018 and 2019.

At the end of 2Q2015, Statoil unveiled two Johan Sverdrup contracts worth up to NKr4.35bn (£360mn) with Odfjell Drilling. One is a three-year NKr2.5bn (£206mn) contract to use the semi-submersible *Deepsea Atlantic* for development drilling, commencing March 2016 with three years of options. Odfjell will also provide drilling services on one of the four Sverdrup platforms, commencing December 2018 under another four-year NKr1.85bn (£152mn) deal with six years of options.

In June, Statoil and Kvaerner announced the fabrication contract for the Sverdrup ULQ. Kvaerner will build the facility in a joint venture with KBR for NKr7.6bn (£555mn).

Much attention has focused on cost reduction and improving the overall efficiency of the Johan Sverdrup development
Source: Statoil

'The supplier industry has won the main Johan Sverdrup contracts. It is good to see that Statoil and the suppliers jointly are about to break the cost curve to ensure competitive force in a tough time for the whole industry,' noted Margareth Øvrum, Statoil's Executive Vice President for Technology, Projects and Drilling as the deal was declared.

Kvaerner Verdal is already building jackets for the Sverdrup drilling and riser platforms, for which it signed a Letter of Intent with Statoil in June 2014 worth Nkr3bn (£248mn). These are the two largest and most technically demanding jackets at the Sverdrup field centre and are due for delivery in summer 2017 and 2018.

Meanwhile, Apply Leirvik in Stord, Norway, will deliver the accommodation module for the ULQ to the KBR-Kvaerner venture, and the utility module will be built in Poland. Assembly will be done by Kvaerner at Stord. Topsides engineering will be performed by KBR in Leatherhead in the UK. Fabrication is due to commence next spring, with delivery in 1Q2019.

Tord Lien, Norway's Energy Minister, commented on Kvaerner's award, saying it '... shows that Norwegian suppliers are competitive in tough

international competition and can help to break free of the [cost] spiral in the industry'.

Contracts for steel jackets for the Sverdrup ULQ and process platforms were due mid-2015. In June the PDO for Sverdrup was approved by the Norwegian Parliament.

More Norwegian deals

Elsewhere, in May Aibel secured a Nkr860mn (£71.29mn) contract from Wintershall Norge to increase and tie-in water injection facilities at the Heidrun platform for the 180mn boe Maria field, which is being tied back subsea and is due onstream in 2018. Overall, Maria's development is slated to cost Nkr15.3bn (£1.23bn).

Aibel is also providing hook-up for the new 210mn boe Ivar Aasen platform for operator Det Norske oljeselskap, and performing FEED for the Oseberg Future Development, which may involve a new unmanned wellhead platform linked to the Oseberg B installation and modifications to the Oseberg field centre. If approved, Aibel anticipates an engineering services, procurement, construction and installation contract starting at the end of the year, continuing throughout 2017.

Statoil signalled in March that it would take longer to refine both

the Johan Castberg (formerly Skrugard) project and the Snorre 2040 life extension programme, involving a third installation, Snorre C, and importing gas. An early design phase for Snorre 2040 was extended from March to October 2015. A final investment decision (FID) remains scheduled for 4Q2016 and production start in 4Q2021.

'Castberg and Snorre 2040 are two major and important projects in our portfolio, and it is important that we find sound and robust development solutions for them,' said Ivar Aasheim, Statoil's Senior Vice President for NCS field developments. One of the reasons for the deferrals was to exploit Statoil's technical efficiency programme (STEP), to optimise projects and save costs.

This summer saw Statoil install a new subsea system at the Asgard field, at a water depth of 300 metres, to capture 282mn of additional barrels using two 1,500-tonne gas compression trains. The equipment was installed early June by the *North Sea Giant* vessel.

Exploration and production

Including Sverdrup, there 98 developments and discoveries offshore Norway recognised by the NPD – 11 are located in the Barents Sea; 33 in the Norwegian Sea and 54 in the Norwegian North Sea (see **Table 1**).

In the Barents region, three discoveries – Drivis, Castberg and Tornerose – are in planning phases; two discoveries – Gotha and Alke – are classed by the NPD as likely for development, although the format is not yet clear. Six finds – Alta, Isfjell, Pingvin, Hanssen, Skalle and Wisting – have not yet been evaluated. Tornerose is destined to be tied back to the Snohvit gas field. Drivis will be part of the Sverdrup project.

Of the 33 potential projects in the Norwegian Sea, nine are in a planning phase, development of a further 14 is regarded as likely but not yet clear. Ten have still to be evaluated.

Meanwhile, in the Norwegian North Sea, 11 of the 54 projects are in planning phases, development of 18 is deemed likely but not yet clear, and 25 have still to be evaluated.

This year has witnessed further exploration success offshore Norway. In the Aasta Hansteen area in the Norwegian Sea, Statoil made a third gas discovery in June; drilling the 6706/11-2 well on the Gymir prospect which proved a 70 metre gas column. Gymir,

Field/discovery	Discovery year	Resources	Operator
North Sea:			
1/9-1 Tommeliten Alpha	1977	gas/cond	ConocoPhillips Skandinavia
15/8-1 Alpha	1982	gas	Statoil
16/2-6 Johan Sverdrup	2010	oil	Statoil
17/12-1 Vette	1972	oil	Premier Oil Norge
25/2-10 S Frigg-Gamma Delta	1986	oil/gas	Centrica Resources (Norge)
30/11-7 Fulla North Sea	2009	gas/cond	Lotos E&P Norge
30/11-8 S Krafla	2011	oil	Statoil
31/2-N-11 H	2005	oil	Statoil
35/11-13 Astero	2005	oil/gas	Statoil
35/9-7 Skarfjell	2012	oil	Wintershall Norge
8/10-4 S Butch	2011	oil	Centrica Resources (Norge)
Norwegian Sea:			
6406/2-7 Erlend	1999	gas/cond	Statoil
6406/3-2 Trestakk	1986	oil	Statoil
6406/3-8 Maria	2010	oil/gas	Wintershall Norge
6407/6-6 Mikkel sør	2008	gas	Statoil
6407/8-6 Snilehorn	2013	oil	Statoil
6407/9-9 Hasselmus	1999	oil/gas	Norske Shell
6506/9-2 S Fogelberg	2010	gas/cond	Centrica Resources (Norge)
6507/7-14 S Zidane	2010	gas	DEA Norge
6705/10-1 Asterix	2009	gas	Statoil
Barents Sea:			
7220/7-3 S Drivis	2014	oil/gas	Statoil
7220/8-1 Johan Castberg	2011	oil/gas	Statoil
7122/6-1 Tornerose	1987	gas/cond	Statoil

Table 1: Norwegian sector – discoveries in planning phase

Source: Norwegian Petroleum Directorate