

Statoil Glitne Field Development

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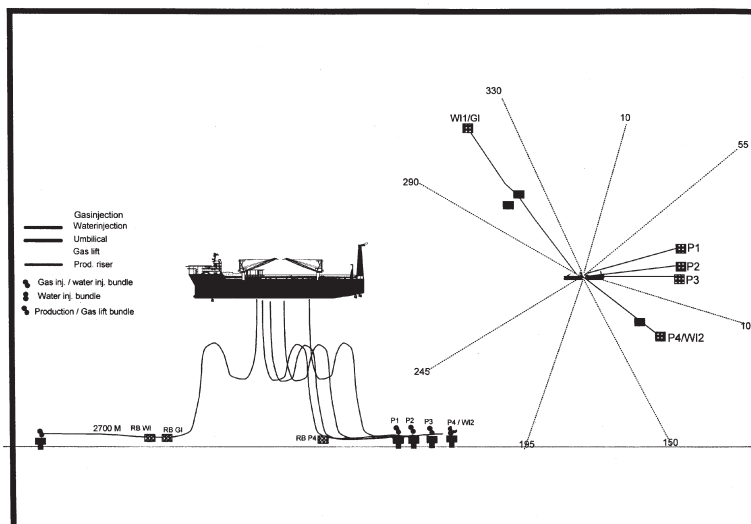
At the end of 2000 Statoil contracted with Golar-Nor to develop the Glitne Field. It will be developed using Petrojarl1 owned by PGS Golar-Nor. The FPSO has been chartered for two-three years - depending on how long a profitable output can be sustained.

PGS Golar-Nor awarded the contract for the installation of flowlines and risers to Stolt Offshore, and subsequently NKT Flexibles was awarded the Letter of Intent for the delivery of the following flexible pipes:

Field	Type	Application	Length (m)	Design Pressure (psi)	Design Temperature
Glitne	4"ID Dynamic Riser	Gas Injection	1 @ 220	5000	120°C
Glitne	4"ID Static Jumper	Gas Injection	1 @ 20	5000	120°C
Glitne	4"ID Topside Jumper	Gas Injection	2 @ 15	5000	120°C
Glitne	6"ID Dynamic Riser	Production	3 @ 220	5000	130°C
Glitne	6"ID Dynamic Riser	Water Injection	2 @ 220	5000	65°C
Glitne	6"ID Static Flowline	Water Injection	1 @ 2635	5000	65°C
Glitne	6"ID Static Flowline	Water Injection	1 @ 2360	5000	65°C

The NKT Flexibles scope of supply covers design, engineering, procurement, manufacturing, testing, documentation and load-out. Further to this, ancillary equipment such as piggy back clamps and buoyancy modules is included.

Three subsea wells will use trees originally used in the Tommeliten field, which have been removed and refurbished. The gas and water injection system will be upgraded, and gas will be injected into one of the water injection wells to obviate flaring. Glitne will be developed by three producers located immediately below the floating production system as well as two water injectors located 2-3km away. The water injector wells will be drilled vertically to a depth of 2000 m. Production will be through horizontal wells with 800-1000m horizontal sections.



Glitne is the smallest field that has been developed in the Norwegian sector so far. The chosen configuration with flexible pipes and a chartered FPSO has made it economically viable in spite of a producing life of only two-three years. The flexible pipes are designed to 5000 psi and are intended to be re-used by PGS Golar-Nor when Glitne is shut down

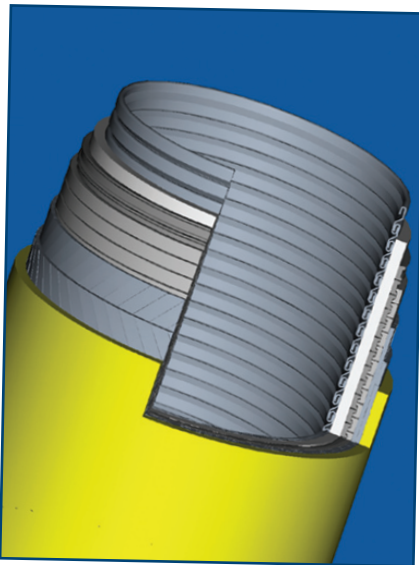
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The Glitne oil field lies in blocks 15/5 and 15/6 in the Sleipner area of the Norwegian North Sea, about 40 kilometres northwest of Statoil's Sleipner East Development



Plan view of the Petrojarl 1 in operation

Statoil holds 38.9% of Glitne, the state's direct financial interest (SDFI) 30%, TotalFinaElf 21.8% and Norsk Hydro 9.3%. The group is currently awaiting official approval for its sale of a 10% stake in the field to DNO.



Due to the 120-130°C design temperature for the gas injection and production pipes, PVdF has been chosen for inner liner material. NKT Flexibles is the sole fully qualified supplier of flexible pipes with non-plasticised PVdF. The major benefit of the non-plasticised PVdF is that it is not susceptible to the shrinking problems that have been reported on other flexible pipe applications equipped with the conventional plasticised PVdF.

The basis of the riser is a rough bore steel carcass with an extruded inner lining. The lining is armoured with two layers of C-shaped armour wires (pressure armour) and two layers of cross-wound steel strips (tensile armour). Finally, an outer sheath of PA-11 is applied to seal the pipes against sea water ingress thus protecting them from corrosion.

All the flexible pipes will be delivered in the Spring 2001, and the field is expected to come on stream during third quarter of 2001. Recoverable reserves of 25m barrels of oil means that this discovery would have a producing life of two-three years, making it the first marginal field development in the Norwegian sector.

The flexible pipes are designed by NKT Flexibles and manufactured at the company's ultra-modern flexible pipe factory, located at the harbour of Kalundborg. The factory was opened in late 1996 and covers a total area of 120,000 m² of which 25,000 m² is under roof. The product envelope includes pipe sizes from 2½" ID to 16" ID, which can be manufactured and supplied in long continuous lengths.

NKT Flexibles I/S is an independent company owned 51% by NKT Holding and 49% by Stolt Offshore. The company is responsible for manufacture and supply of flexible pipe systems for the offshore oil & gas industry as well as the chemical and water industry.



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Revision 2 Nov 2004/LEH