

# OFFSHORE PLATFORMS & PIPELINES

## Client and Consultant

- BPCL • PetroChina International • Korea development Co Ltd
- Total E&P Indonesie • PT Perusahaan Gas Negara
- PTT Public Company Ltd • Oil & Natural Gas Corp Ltd

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|---|--|-----------------------------------|---|-----------------------|
| 1 | <b>Platform Compression Facilities, Thailand</b> | PTT Public Company Ltd            | Detail engineering, design, equipment and material procurement, transportation, construction, load-out, installation, pre-commissioning, commissioning, technical assistance, associated work. The major equipment : aftercoolers, gas turbine generator, HIPPS valves and I/U air package with all other associated piping, structural and electrical and instrumentation work.  | Ongoing<br>Jan 2012   |
| 2 | <b>Heera Redevelopment Project</b>               | Oil & Natural Gas Corp Ltd, India | Survey, design and detailed engineering, procurement, fabrication, load-out, transportation and offshore installation of four wellhead platforms, anticorrosion & weight coating, laying of 57 km rigid pipeline & flexible submarine pipelines (10.5 km), laying of 25 composite cables (power+OFC), modifications on 6 Nos. existing platforms, replacement of SA – SBM, Hook-up, testing, pre-commissioning, commissioning of entire facilities. Water depth of 49 ~ 62 m. | Completed<br>May 2010 |



PROJECT	CLIENT/ CONSULTANT	SCOPE	STATUS
3 <b>South Utility Platform, Indonesia</b>	Total E&P Indonesia	Engineering, procurement, construction and commissioning of the platform, including deck structure for power, effluent treatment, potable water system, safety and fire fighting equipment, piping, electrical and instrumentation work in Mahakam Delta, Indonesia	Completed Aug 2008
4 <b>Uran Trombay Gas Pipeline</b>	Oil & Natural Gas Corp Ltd	Engineering, procurement and construction of (20" dia) 24 km gas pipeline from Uran to Trombay in marshy area, sub-sea and onshore.	Completed May 2008
5 <b>Poleng Process Platform, Indonesia</b>	Korea Development Co Ltd	Engineering, procurement, fabrication and loadout of a offshore 6-leg platform consisting of deck 1,500 T, jacket 900 T and piles of 700 T with jacket leg length of 180 feet. The major equipment on the platform : vapor recovery compressor and its cooler/scrubbers, Oil & Gas process separators (high, medium, low pressure separators), crude oil transfer pump systems, power generation systems, MCC & control building.	Completed Nov 2007
6 <b>Betara Complex Development, Indonesia</b>	PetroChina International	Project management, surveys, design, engineering, procurement, fabrication, transportation, installation, hookup, testing, pre-commissioning and commissioning. Offshore facilities comprise three segments of seamless sub-sea pipelines for condensate/ propane/butane, LPG marine terminal (80,000 m <sup>3</sup> FSO) and an oil marine terminal (1,000,000 bbl FSO), fixed process unit comprises a four leg jacket and a two level topside deck of 1200 MT.	Completed May 2005
7 <b>Backwater and Onshore Pipeline</b>	Bharat Petroleum Corp Ltd	Fabrication, installation and testing of (30" dia) pipeline for Crude Oil Receipt Facilities at Kochi. 3 Offshore crossings : <ul style="list-style-type: none"> <li>• 750 m</li> <li>• 750 m</li> <li>• 2660 m</li> </ul> Onshore section in marshy area <ul style="list-style-type: none"> <li>• 870 m</li> </ul>	Completed Apr 2007
8 <b>Uran Trombay Jawahardeep Oil Pipeline</b>	Oil and Natural Gas Corp	Engineering, procurement and construction of (30" dia) 3.4 km and (36" dia) 28.25 km oil pipeline from Tee Off at Sheva South to JNPT terminal, including 5.1 km in marshy area, 14.90 km in sub-sea, 0.15 km on bridge along with bridge construction and 8.1 km on land.	Completed Mar 2007
9 <b>Tunu Field Development Phase 9, Indonesia</b>	TotalFinaElf E&P Indonesia	Engineering, procurement and construction of offshore/onshore natural gas pipeline, installation of (20" dia) 15 km trunkline, (8" dia) 1.6 km flowline, including detailed engineering; procurement of linepipes, coating and other bulk items; installation of offshore and swamp pipelines, including Horizontal Directional Drilling; pre-commissioning and assistance for commissioning.	Completed Jan 2005
10 <b>Panaran Pemping Gas Pipeline, Indonesia</b>	PT Perusahaan Gas Negara	Engineering, procurement and construction of natural gas pipeline (28" dia) 30 km (10 km offshore in water depths up to 20 m and 7 km marshy and swampy area) including two terminal stations having scraper receivers, scraper launchers, gas metering skids, two crossings, each 550 m long by Horizontal Directional Drilling method.	Completed Aug 2003
11 <b>Tunu Field Development Phase 8/EPSC 3, Indonesia</b>	McConnell Dowell Indonesia/ TotalFinaElf E&P Indonesia	Construction of gas pipeline in swamp and shallow water, (24" dia) 8 km API 5L Grade X 65, 65 mm thick concrete coating.	Completed Dec 2002
12 <b>Tunu Field Development, Phase 7, Indonesia</b>	Petrosea Engg. and Cons Co/ Total Indonesia	Installation of (36" and 20" dia) gas trunklines in marsh and swamp areas and associated risers and doglog assemblies.	Completed Mar 2001

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13 <b>Tunu Field Development EPSC 4 and 5, Indonesia</b>	PT Bouygues Offshore/Total Indonesie	Construction of gas pipeline in swamp and marsh at Kalimantan, Indonesia: <b>EPSC 4</b> : 4.2 km (24" dia); 5.1 km (20" dia); 1.6 km (8" dia) <b>EPSC 5</b> : 15.4 km (32" dia); 17.1 km (14" dia); 5.4 km (12" dia)	Completed Nov 1997