

# TANKAGE & TERMINALS

## Capacities

Design, Engineering, Fabrication & Erection of storage tank/terminals for oil, water, chemicals, cryogenic applications (LPG and LNG) • Tank Refurbishment

## Client and Consultant

• Abu Dhabi Gas Industries Ltd • ADWEA • Al Jaber Energy Services • Aramco Overseas Co BV • Bechtel • Bharat Petroleum Corp Ltd • Cairn Energy PLC • Chambal Fertilisers and Chemicals Ltd • Dalal Consultants • Engineers India Ltd • FEDO • Hazira LNG Pvt Ltd • Helios Terminal Corporation Pte Ltd • Horizon Terminals Pte Ltd • Hyundai • IBP Co Ltd • Indian Oil Petronas Pvt Ltd • Indian Oil Corp Ltd • Ishikawajima-Harima Heavy Industries Co Ltd • Kochi Refineries Ltd • Kuwait National Petroleum Co Ltd • Mott McDonald • Nael and Bin Harmal Hydroexport Est. • Numaligarh Refineries Ltd • Oil and Natural Gas Corp • PB Tankers Ltd • Ratnagiri Gas and Power Pvt Ltd • Reliance • Shell • Skanska Cementation International Ltd • Saudi Aramco • Saudi Kayan Petrochemical Co • Technip

1	<b>Port Tank for Jubail Export Refinery Package 9, Saudi Arabia</b>	Saudi Aramco/ Satorp	Engineering, procurement and construction of tank farm, vapour recovery system, transfer pipelines, air system, sewer system, emergency diesel generator, port operation buildings, loading facilities, water OSBL, nitrogen. Two for fuel oil, four tanks for Paraxylene and gasoline/diesel, 54.7 m dia 21.9 m height with total capacity of 182,800 m <sup>3</sup> .	Ongoing Jul 2012
2	<b>LPG / Propane / Butane Import Terminal, Ennore, Tamil Nadu</b>	Indian Oil Petronas Pvt Ltd	Design, detailed engineering, procurement, construction, installation, testing and commissioning of propane / butane / LPG receipt, refrigerated / cryogenic storage (2 x 15000 MT), mounded bullets ( 2 x 300 MT), heating system, related auxiliary & utility system, hook up with existing bottling plant of pipeline transfer and operation of the terminal for three months commissioning.	Ongoing Aug 2011
3	<b>LNG Storage and Regasification Terminal</b>	Ratnagiri Gas and Power Pvt Ltd	Part engineering, procurement and construction, completion of balance work for LNG terminal and top of the jetty facilities at Dabhol.	Ongoing Mar 2011

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4 <b>Offsite and Storage Facilities for Naphtha Cracker</b>	Indian Oiltanking Ltd	Engineering, procurement and construction of storage facilities including civil, mechanical, structural, piping, electrical, instrumentation & fire protection system for four double walled cryogenic storage tanks including allied system, seven storage spheres, six mounded bullets, eight atmospheric tanks at Panipat.	Completed Apr 2010
5 <b>Early Need Tanks, Jubail, Saudi Arabia</b>	Saudi Kayan Petrochemical Company (SABIC)	Engineering, procurement and construction of eight nos tanks for DM water, fire/service water, MEG and crude storage and one sphere for mixed butanes storage for offsite and utility of petrochemical complex .	Completed Dec 2009
6 <b>Onshore Gas Development Phase III</b>	Abu Dhabi Gas Industries Ltd (GASCO)/Eastern Bechtel Co Ltd	Fabrication of small bore pipe, erection, alignment, testing, painting of pipe support installation work for piping and mechanical equipment offsites and utilities at Abu Dhabi, UAE.	Completed Oct 2009
7 <b>Onshore Gas Development Phase III</b>	Abu Dhabi Gas Industries Ltd (GASCO)/ Eastern Bechtel Co Ltd	Design, engineering, supply, fabrication, erection, testing and painting of 19 tanks at Abu Dhabi, UAE.	Completed Aug 2009
8 <b>New Fuel Oil Terminal at Pulau Laut, Kalimantan, Indonesia</b>	PT Shell Indonesia	Engineering, design, construction, installation, testing, pre-commissioning and commissioning of four aboveground storage tanks of 41.5 m dia x 15.5m ht (capacity 18,000 KL) each, including terminal piping and pumping facility, bunkering line up to plot boundary, fire fighting work, civil and building work, electrical, instrumentation and utility work.	Completed Aug 2009
9 <b>LNG Storage Tank Expansion Project, Dahej</b>	Ishikawajima-Harima Heavy Industries Co Ltd, Japan/ Petronet LNG Ltd	Construction of two LNG storage tanks each of 140,000 m <sup>3</sup> capacity (Tank 3 and 4) of 80 m dia and 40 m height. The scope includes civil, mechanical and electrical work.	Completed Apr 2009
10 <b>Bulk Liquid Products Terminal – Phase III Expansion, Singapore</b>	Horizon Singapore Terminals Pte Ltd	Design, procurement, fabrication, construction and testing of 23 storage tanks with pile foundations, in accordance with API 650.	Completed Sep 2008
11 <b>Bulk Liquid Storage and Blending Facility</b>	Helios Terminal Corporation Pte Ltd	Design, engineering, procurement, supply, fabrication, erection testing and painting of 21 storage tanks at Meranti, Jurong Island, Singapore.	Completed Mar 2008
12 <b>Bulk Liquid Products Terminal, Phase II Expansion, Singapore</b>	Horizon Singapore Terminals Pte Ltd	Design, procurement, fabrication, construction and testing of six storage tanks with pile foundations comprising in accordance with API 650.	Completed Jun 2007
13 <b>Topside Facilities, Singapore</b>	PB Tankers Ltd (Tankstore) Singapore	Topside facility for jetty 9 & 10 comprising marine loading arms, gangway towers, ship unloading system, all attendant import and export pipelines, PLC upgradation, field instrumentation, fire and gas detection system upgradation, CCTV system upgradation, completion and integration with existing systems.	Completed Apr 2007



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14 <b>Petroleum Storage Expansion, Phase 5</b>	PB Tankers Ltd (Tankstore) Singapore	Engineering, procurement and construction of 15 petroleum storage tanks at Pulau Busing, Singapore. <ul style="list-style-type: none"> <li>• 6 x 3000 m<sup>3</sup></li> <li>• 5 x 8000 m<sup>3</sup></li> <li>• 4 x 5000 m<sup>3</sup></li> </ul>	Completed Mar 2007
15 <b>Crude Oil Terminal</b>	Indian Oil Corp/ Indian Oil Tanking Ltd	Design, partial procurement, fabrication, mechanical erection and testing at Paradip: Crude Oil Tanks - 7 nos. 79 m dia x 13.5 m ht DDFR Fire Water Tanks - 2 nos. 30 m dia x 14.5 m ht CR	Completed Mar 2007
16 <b>Bulk Liquid Product Terminal</b>	Horizon Terminals Pte Ltd/Jurong Consultants Pte Ltd	Design, fabrication, construction and installation of additional three product storage tanks including tank foundation, civil and other work on Jurong Island, Singapore.	Completed Nov 2006
17 <b>Bulk Liquid Product Terminal</b>	Horizon Terminals Pte Ltd/Jurong Consultants Pte Ltd	Design, fabrication, construction and installation of 27 product storage tanks including tank foundation, civil and other work on Jurong Island, Singapore.	Completed Nov 2006
18 <b>Crude Oil Tank Farm at Vadinar Refinery</b>	Essar Projects Ltd/Tata Consulting Engineers	Design, fabrication, erection, painting of 10 Nos. 80 m dia x 20 m ht crude oil tanks with double-deck floating roof, tank pads including design and supply of jet mixers and CP systems.	Completed Oct 2006
19 <b>LPG Low Temperature Storage Tank</b>	Reliance Industries Ltd	Design, supply, fabrication, installation and commissioning assistance of one LPG low temperature storage tank of 38,230 m <sup>3</sup> capacity, including associated civil, piping, electrical, instrumentation, painting and insulation work at Reliance Jamnagar Refinery : Inner Tank : 54.15 m dia x 18.8 m ht Outer Tank : 55.95 m dia x 20 m ht	Completed Jun 2006
20 <b>Crude Oil Storage Facility</b>	Indian Oil Corp Ltd/Engineers India Ltd	Design, supply, fabrication, erection, testing and commissioning of tanks including foundation and civil work within the dyke walls at Panipat Refinery : <ul style="list-style-type: none"> <li>• 2 Nos. 62 m dia x 14.1 m ht SDFR</li> </ul> Modification of existing : <ul style="list-style-type: none"> <li>• 2 Nos. 62 m dia x 14.575 m DDFRT</li> <li>• 2 Nos. 54 m dia x 14.1 m ht column supported IFRT.</li> </ul>	Completed Mar 2006
21 <b>LNG Storage Tanks for Receiving Terminal</b>	Hazira LNG Pvt Ltd/Shell Global Solutions Int. BV	Construction of 2 full containment type LNG storage tanks each of 160,000 m <sup>3</sup> capacity (83.6 m dia and 49 m ht), including civil procurement, along with associated civil, structural steel, piping, insulation, electrical, instrumentation and painting work.	Completed May 2005
22 <b>Desalinated Water Tanks</b>	Nael and Bin Harmal Hydroexport Est./ Mott McDonald/ ADWEA	Design, engineering, procurement, fabrication, erection, testing, painting and commissioning of 2 Nos. (26 m dia x 10 m ht) cone roof tanks at Sir Baniyas Island, Abu Dhabi.	Completed Sep 2004
23 <b>Steel Storage Tanks for Water and Power Project</b>	Technip/Al Jaber Energy Services	Design, engineering, procurement, fabrication, erection, testing, painting and commissioning of 9 Nos. cone roof tanks for water storage at Fujairah, UAE: <ul style="list-style-type: none"> <li>• 5 Nos. 83 m dia x 18 m ht</li> <li>• 2 Nos. 59 m dia x 17.8 m ht</li> <li>• 2 Nos. 47 m dia x 15 m ht</li> </ul>	Completed Aug 2004



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24 <b>LNG Storage and Regasification Terminal</b>	Skanska Cementation International Ltd/ Enron, USA	<b>Procurement:</b> includes insulation material for LNG storage tanks and cryogenic piping, structural steel, piping material, electrical and instrumentation items, fire-fighting system and consumables. <b>Construction:</b> includes civil/structural work, construction of 3 Nos. (79.2 m dia x 54 m ht), 160,000 m <sup>3</sup> LNG tanks, pipework, insulation application, painting, electrical and instrumentation work, fire-fighting system, equipment erection, including unloading arms installation and commissioning assistance for LNG Storage and Regasification Terminal at Dabhol.	89% Completed
25 <b>Product Storage Tanks</b>	Numaligarh Refineries Ltd/ Engineers India Ltd	Design, supply, fabrication, erection, welding, painting and fire-fighting system of 19 Nos. storage tanks at Numaligarh Refinery Marketing Terminal: <ul style="list-style-type: none"> <li>• 3 Nos. 55 m dia x 14 m ht SDFR</li> <li>• 3 Nos. 53 m dia x 14 m ht SDFR</li> <li>• 3 Nos. 20 m dia x 13.5 m ht SDFR</li> <li>• 1 No. 13 m dia x 8.5 m ht SDFR</li> <li>• 3 Nos. 20 m dia x 14 m ht IFR</li> <li>• 3 Nos. 20 m dia x 14.5 m ht IFR</li> <li>• 3 Nos. 16 m dia x 13.5 m ht CR</li> </ul>	Completed Jul 1999
26 <b>Low Temperature LPG/Propylene Storage</b>	Reliance Industries Ltd/ Bechtel, UK	Residual engineering, procurement, construction for Propylene system package to convert pressurised LPG into cryogenic LPG, storage and re-liquefaction package including one double walled propylene storage system (26,000 m <sup>3</sup> ) and allied mechanical, electrical, instrumentation and civil work at Reliance Jamnagar Refinery.	Completed Jun 1999
27 <b>Product Storage Tanks at Marine Tank Farm Area</b>	Reliance Petroleum Ltd/ Bechtel, UK	Design, fabrication, erection, painting, etc. of 23 Nos. DDFR tanks: <ul style="list-style-type: none"> <li>• 6 Nos. 66 m dia x 20 m ht</li> <li>• 12 Nos. 55 m dia x 20 m ht</li> <li>• 5 Nos. 48 m dia x 20 m ht</li> </ul> including 332,000 inch m piping for fire-fighting system at Jamnagar Refinery.	Completed Feb 1999
28 <b>Additional Product Storage Tanks</b>	Kochi Refineries Ltd/FEDO	Design, fabrication, erection, painting, etc. including construction of tank pad foundations of the following tanks at Kochi Refinery: <ul style="list-style-type: none"> <li>• 5 Nos. 36 m dia x 13.5 m ht SDFR</li> <li>• 2 Nos. 36 m dia x 13.5 m ht CR</li> <li>• 1 No. 1.5 m dia x 2 m ht sump</li> </ul>	Completed Nov 1998
29 <b>Tankage Refurbishing</b>	Kuwait National Petroleum Co Ltd	Refurbishing of tanks, including fibreglassing, rebottoming and painting work at Mina Abdulla Refinery, Shuaiba Refinery and Mina Al Ahmadi Refinery.	Completed Dec 1997
30 <b>Ravva Oil &amp; Gas Field Development</b>	Hyundai Heavy Industries Ltd/ Cairn Energy PLC	Construction of onshore processing facility for oil and gas fields in S. Yanam, Andhra Pradesh, comprising design, detailed engineering, procurement, fabrication, erection and commissioning of 6 Nos. oil storage tanks, including design and construction of stone column foundations for the following tanks: <ul style="list-style-type: none"> <li>• 3 Nos. 65.5 m dia x 13 m ht DDFR</li> <li>• 1 No. 18.3 m dia x 13 m ht DDFR</li> <li>• 2 Nos. 18.3 m dia x 11.6 m ht CR</li> </ul> All civil work, fabrication and erection of piping, electrical and instrumentation work, equipment erection and onshore pipelines from the process plant to the landfall point.	Completed Oct 1996

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31 <b>JNPT Storage Tanks</b>	Reliance Industries and Infrastructure Ltd	Supply, fabrication, erection and commissioning of 7 Nos. petroleum storage tanks at Nhava Sheva: <ul style="list-style-type: none"> <li>• 5 Nos. 28 m dia x 20 m ht FRT</li> <li>• 1 No. 21 m dia x 18 m ht FRT</li> <li>• 1 No. 21 m dia x 16 m ht CRT</li> </ul>	Completed Oct 1995
32 <b>Petroleum Products Storage Depots</b>	IBP Co Ltd	Consultancy services, including basic design, detailed engineering and total project management up to commissioning at Wadala and Cherlapalli.	Completed Jan 1995
33 <b>Oil Storage Facility</b>	Bharat Petroleum Corp Ltd	Fabrication and erection of tanks at Rairu POL Depot, near Gwalior.	Completed Dec 1993
34 <b>Storage Tanks and Vessels</b>	Chambal Fertilisers and Chemicals Ltd	Design, engineering and supply of 24 Nos. vessels/tanks.	Completed Jun 1993
35 <b>DM Water Plant</b>	Chambal Fertilisers and Chemicals Ltd/ Toyo Engineering India Ltd	Design, engineering, supply, fabrication, erection, testing and commissioning of 4 Nos. DM water and polished water storage tanks at Gadepan: <ul style="list-style-type: none"> <li>• 2 Nos. 18,000 m<sup>3</sup> (38 m dia x 18 m ht)</li> <li>• 2 Nos. 4,000 m<sup>3</sup> (22 m dia x 12 m ht)</li> </ul>	Completed Jun 1991
36 <b>Oil Storage Depot</b>	Oil and Natural Gas Corp Ltd	Supply, erection and testing of 4 Nos. CS tanks of 12 m dia x 9 m ht, including all associated civil work at Ankleshwar.	Completed Oct 1990
37 <b>Oil Terminal</b>	Bharat Petroleum Corp Ltd	Mechanical erection of equipment, fabrication, and erection of piping valves, instruments, etc. at Butcher Island.	Completed Nov 1987
38 <b>Additional Tankage Depot</b>	Bharat Petroleum Corp Ltd/Dalal Consultants	Fabrication and erection of 4 Nos. MS storage tanks at Brijwasan, including construction of tank pads.	Completed Nov 1986
39 <b>Tankage Depot</b>	Bharat Petroleum Corp Ltd/Dalal Consultants	Fabrication and erection of 12 Nos. MS tanks at Bhilai.	Completed May 1986
40 <b>Oil Storage Depot</b>	Bharat Petroleum Corp Ltd	Underground tank lube godown, tank enclosure wall and other associated civil work at Bhilai.	Completed Aug 1985

