# Integrated EPCIC Services Offshore E&P Development





A wholly owned subsidiary of Larsen & Toubro Limited

L&T Hydrocarbon Engineering is an engineering, procurement, fabrication, construction and project management company providing integrated 'design-to-build' solutions for large and complex Offshore and Onshore hydrocarbon projects worldwide.

The Company is a wholly-owned subsidiary of Larsen & Toubro Limited (L&T), a USD multi-billion dollar technology, engineering, construction, projects, manufacturing and financial services conglomerate, catering to critical needs in key sectors including infrastructure, construction, hydrocarbon, defence and power.

The Company caters to the needs of its client base in India and in multiple geographies – the Middle East, Asia Pacific, Africa, the Americas and Europe.

Key strengths include project management, in-house engineering, state-of-the-art fabrication facilities, offshore installation, with sustained emphasis on quality, HSE and corporate governance.

The Company has large facilities in India (Mumbai, Vadodara, Chennai, Bengaluru, Faridabad, Hazira and Kattupalli), UAE (Sharjah), Saudi Arabia (Al Khobar) and Oman (Sohar). Offices at Abu Dhabi, Kuala Lumpur and Jakarta facilitate close interaction with our international clients.

L&T Hydrocarbon Engineering has over three decades of experience and expertise in the hydrocarbon sector and draws on L&T's strengths and shares L&T's value system, including its commitment to sustainability and inclusive growth.

Onshore

Facilities

• Fertiliser

• Upstream Oil & Gas

Petroleum Refining

Petrochemicals

& Terminals

Cryogenic Storage

Tanks & Terminals

Processing & Treatment

Cross-country Pipelines

# MISSION

#### **Execution Par Excellence**

We are committed to evolving into a major Indian multinational, occupying leadership position in the hydrocarbon industry.

Our people are our prime movers. We practise collaborative team-working with zeal, responsiveness and a sense of urgency. We encourage our personnel to demonstrate an entrepreneurial spirit and assume ownership for their actions.

We believe in an ethical work culture, with emphasis on governance in all business dealings. Our endeavour is to practise the highest levels of Quality, Health, Safety, Environmental and Information Security in all our operations.

Our focus is on sustainable value creation for all our stakeholders. We are passionate about our performance culture and committed to delivering excellence at every phase of our operations.

Date: 20th April, 2016



# L&T Hydrocarbon Engineering - Business Verticals

#### Offshore

- Process Complex
- Wellhead Platforms
- Subsea Pipelines
- FPSO Topsides
- Jack-up Rigs
- Redevelopment / Upgradation Projects
- Subsea Systems
- Living Quarters
- Decommissioning

#### **Construction Services**

- Site Development & Pile Foundation
- Complete Civil &
- Structural Work
- Plant & Non-plant Buildings
  Piping & Mechanical Erection
- Electrical & Instrumentation
- Tankages including
- Firefighting System
- Laying of Cross-country & In-field Pipelines

#### Modular Fabrication

- Offshore Structures & Modules
- Onshore Structures & Modules including Preassembled Unit, Pipe Rack & Manifold Modules
- Modular Speciality Furnaces
  Refinery & Petrochemical
  - Plant Equipment

#### **Engineering Services**

Balma

Subramanian Sarma

- Concept Studies
- Front End Engineering Design (FEED)
- Detailed Engineering
- Engineering for Thermal Systems & Modular Plants
- Advanced Analytical Engineering
- Special Studies
- EP / EPCM / PMC Services











#### **Offshore Platforms**

With close to three decades of experience in delivering more than 60 fixed offshore platforms, ranging from topsides weighing over 28,000 MT for process complexes to projects at water depths exceeding 150m and in high temperature and high pressure fields, L&T Hydrocarbon Engineering offers EPCIC solutions for projects such as large, integrated process platforms, wellhead platforms and living quarters.

#### **Offshore Modules**

L&T Hydrocarbon Engineering, with its comprehensive engineering and modular fabrication capabilities, offers modular solutions for the offshore and onshore sectors. Offshore modules include gas compression, separation, dehydration, power generation, water injection, gas sweetening, etc.





#### **Drilling Rigs and Floaters**

Leveraging its experience in the offshore oil & gas industry and through strategic alliances with technology partners, L&T Hydrocarbon Engineering offers services for jack-up rigs, FPSOs and semi-submersibles.

#### **Redevelopment & Upgradation Projects**

The Company offers single-point expertise for executing large-scale brownfield projects with minimum downtime. It draws on its engineering strengths to modularize the brownfield activity for onshore construction, saving offshore time – thus delivering value to both, client and contractor.



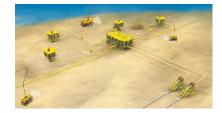


#### **Subsea Pipelines**

Multiple pipeline projects involving pipeline lengths exceeding 700 km and water depths exceeding 150 m have been executed by L&T Hydrocarbon Engineering.

#### Subsea Systems

L&T Hydrocarbon Engineering collaborates with leading technology partners for subsea projects. These tie-ups will leverage the state-of-the-art, strategically located Modular Fabrication Facility at Kattupalli, on the East Coast of India, to manufacture advanced subsea hardware and to operate as a spoolbase for deepwater pipelay installation. With its extensive experience in the fields of offshore design, precision manufacturing & testing, offshore installation and commissioning, the Company offers total EPC solutions for deepwater subsea development.





#### **Offshore Wind Farms**

Leveraging its extensive capabilities and experience in the offshore Oil & Gas sector, L&T Hydrocarbon Engineering offers comprehensive EPCI solutions for offshore wind farm projects – Turbine Generator Foundations, HVAC and HVDC Substation Platforms. The Company utilises its world-class fabrication facilities and associates with partners to meet specific client requirements. L&T Hydrocarbon Engineering has been pre-qualified for such projects in Europe. It is also registered on Sellihca (Supplier No. 115192) and UVDB (Supplier No. 031051) qualification systems.

The Company has in-house engineering, procurement, fabrication, installation and commissioning capabilities enabling it to serve the needs of global projects. Project management teams execute all projects efficiently, meeting set targets of cost, time and quality.

- **Engineering:** In-house Engineering Centres provide engineering services for offshore Oil & Gas projects including advanced analytical engineering and trouble-shooting services.
- Procurement teams undertake cost-efficient global sourcing.
- Fabrication: Three Modular Fabrication Facilities, with a total capacity of around 150,000 MTPA, have been set up at

strategically significant locations, viz. Hazira (Surat, Gujarat), Kattupalli (near Chennai), and Sohar in Oman, offering roundthe-year delivery.

- **Installation:** Our captive 3000-tonne heavy-lift-cum-pipelay vessel LTS 3000 undertakes offshore installation
- Expertise in hook-up and commissioning
- Comprehensive QHSE system with defined structures and procedures
- Extensive IT-enablement for virtual, single-office operations
- Robust Risk Management protocol



Topsides installed at Nasr and Umm Lulu fields of ADMA-OPCO, Abu Dhabi. EPCIC Scope includes 4 Wellhead Towers, 1 Riser Manifold, 103 km Pipeline and 55 km Fibre Optic Cables.



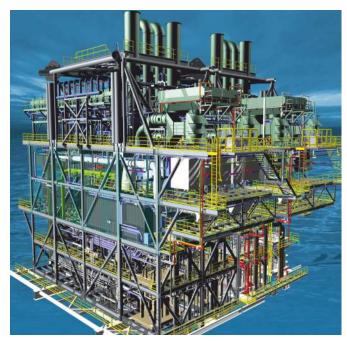
Additional Development of Vasai East Project on India's West Coast for ONGC. The scope included EPCIC of 2 Wellhead Platforms, 35 km Pipelines and modification. Picture also shows LTS 3000 – a captive heavy lift-cum-pipelay vessel.



FD-VII jack-up-rig after major repair and upgradation for Foresight Drilling, UK

Sail-away of Asia's largest Process Platform jacket (13,500 MT) from the Oman yard

Load-out of India's heaviest offshore module (4300 MT) – 150-man Living Quarters for ONGC



3D model of BCP-B2 Compressor Module for ONGC

Our engineering centres – with world-class client facilities, robust IT infrastructure and a capacity of over 3.5 million man-hours per annum – offer services across the hydrocarbon value chain.

The Engineering Centre for offshore projects at Bengaluru has around 400 experienced engineers and draughtsmen. It offers engineering solutions for wellhead platforms, process facilities/platforms/complexes, independent process and utility modules, complete FPSO topsides, riser and pipeline & subsea systems, jack-up rigs and MODU to MOPU conversions. Activities



OSX3 FPSO – Complete Topside engineering



Nasr Feld WHT 2 platforms engineered for ADMA-OPCO, Abu Dhabi

undertaken include concept studies, FEED/basic engineering, detailed engineering utilising complex 3D tools, procurement engineering, as-built documentation, pre-service engineering, marine transportation & installation support and special studies. Special analyses performed include Transient Flow Analysis, Dynamic Simulation, Non-linear Analysis (Wave Pushover Analysis, Time Domain Analysis for Rare Intense Earthquake, Boat Impact Analysis) using USFOS, Onbottom Roughness Analysis using SAGE, etc.



Offshore Engineering Centre at Bengaluru

In addition, L&T-Chiyoda (a joint venture with Chiyoda Corporation, Japan) offers expertise in engineering of onshore projects and modules, while L&T-GULF (a joint venture with GULF Interstate Engineering, USA) offers engineering and consultancy services for onshore hydrocarbon pipeline projects.

Complete FPSO Topside Engineering Projects					
FPSO Project	Client	Completion	Capacity (BOPD) (Oil processing facilities)	Capacity (MMSCMD) (Gas processing facilities)	Capacity (BWPD) (Produced water handling facilities)
Cluster-7	ONGC	2015	26,500	1.8	25,000
MV-29	MODEC	2015	150,000	5	162,000
T. E. N	MODEC	2014	80,000	4.8	
OSX3	MODEC	2012	100,000		15,000
Jubliee	MODEC	2010	120,000	4.5	80,000
MV-20	MODEC	2009	31,250	3*3.3	12,500 (Skimming, hydrocyclones, flotation cell)
MV-18	MODEC	2008	100,000	3.5	1,500 (Hydrocyclones, degassing & disposal facilities)

### **Expertise & Experience**

The Company's Project Management teams, backed by sound processes and experience, deliver large and complex offshore projects of over USD 1 billion, meeting world-class HSE, quality and schedule requirements. Procurement teams ensure certainty and cost competitiveness of supplies through a worldwide network of suppliers, efficient expediting and detailed planning. We have standardised on Primavera Enterprise software for project planning, scheduling and control. Primavera is integrated with SAP ECC 6.0, resulting in a common work break-down structure in both systems.

An integrated IT-enabled Project Management approach accelerates schedules, enhances efficiencies and enables clients to monitor progress. The system runs SAP along with e-Procurement, MOSS-based Document Management System, Pro-eTrack, KnowNet 2.0, eALPS+ and easyTRACK.

Operations and projects are managed professionally with the expertise of a diverse talent pool of project management professionals, backed by software like DOCTRAC, PRIMAVERA P6 Ver. 8.3, SAP ECC 6.0 and TIMETRACK.

L&T has also established an advanced facility – Knowledge City – on a 112-acre campus at Vadodara (India) to leverage its strengths in project management. Knowledge City houses the 'L&T Institute of Project Management', a pioneering initiative for developing leading project managers across the domains of EPCIC projects.

### **Global Sourcing**

Experienced procurement teams, with category-specific domain expertise, source a variety of material. This includes structural bulk, piping, static equipment, rotary equipment (pumps and compressors), packaged items (gas dehydration units and chemical injection skids) and electrical and instrumentation items.

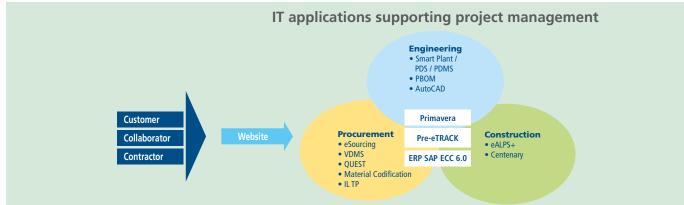
1. Project offices at the Powai Campus, Mumbai

 L&T Institute of Project Management at Vadodara – a registered educational provider of PMI, USA – develop project managers across the domains of EPC. An established worldwide vendor network supported by an inspection and expediting team aids cost-efficient global sourcing enabling us to meet critical project schedules. We actively consider and evaluate new vendors with an impressive past track record from LCC.

We follow customer-oriented purchasing with a 'Total Cost of Ownership' approach and SAP-based procurement processes. IT-based procurement helps automate purchasing systems and effectively controlling delivery schedules, the cost and quality of procurement. Procurement uses SAP ARIBA, easy- TRACK, and various other in-house developed MOSS-based programs for Vendor Documentation Management (VDMS) for effective Supply Chain Management (SCM). GPS techniques are used for online tracking of critical assignments and rapid transportation of equipment and materials from source to final destination.







The Company offers comprehensive EPF (Engineering, Procurement, Fabrication) modular solutions for setting up projects primarily in the Oil & Gas sector.

The Company's three world-class Modular Fabrication Facilities are strategically located in proximity to major oil and gas fields and allied maritime infrastructure. The yards offer year-round delivery with robust QHSE performance and are equipped for flexibility, project control and management, and cost competitiveness. Facilities are situated on the waterfront with load-out jetties suitable for dispatch of large and heavy modules via ocean-going vessels and barges.

The Fabrication Facilities are accredited with global certifications, pre-qualifications from all major Oil & Gas customers and have state-of-the-art equipment to deliver complex modules and structures, duly tested / pre-commissioned at the facility itself.



Modular Fabrication Facility at Hazira, Surat on the west coast of India.

#### Modular Fabrication Facility - Hazira, West Coast, India

The Modular Fabrication Facility at Hazira is one of the largest in South Asia. Located on the Tapti river near Surat, the facility has unimpeded passage to the Arabian Sea, 8 km away. It has set multiple benchmarks in fabricating and loading out offshore / onshore Oil & Gas structures for Oil & Gas majors. It holds the distinction of being

Fabrication of a process platform for  $\ensuremath{\mathsf{ONGC's}}$  MHN Project at the yard

'green-banded' by Shell for Occupational Health and Safety Systems as part of its global pre-qualification process.

- Total Area
- : 515,000 sq.m.
- Fabrication Capacity
- : In excess of 50,000 MTPA
  - (depending on the product mix)



Modular Fabrication Yard at Sohar, Oman

#### Modular Fabrication Yard - Sohar, Oman

A state-of-the-art yard at Sohar offers year-round load-out of complex structures such as large, integrated process topsides, jack-up rigs, FPSO topsides and semi-submersibles. We are committed to Omanisation, and have inducted young Omanis at various levels in the organisation, by imparting a range of technical



Zawtika WP3 topside for PTTEP ready for loadout at Modular Fabrication Yard in Oman

skills through various technical programmes.

- Total Area
- Fabrication Capacity : Ir
- : 500,000 sq.m. ity : In excess of 50,000 MTPA
  - (depending on the product mix)



Modular Fabrication Facility at Kattupalli, near Chennai on the east coast of India. Inset: Sail out of a Wellhead Platform Topside for the Yetagun North Development project of PETRONAS Carigali

#### Modular Fabrication Facility – Kattupalli, East Coast, India

The mega-complex at Kattupalli near Ennore Port, India, offers year-round load-out facilities. It is part of L&T's sprawling 1200acre marine complex in a Special Economic Zone, which includes a shipbuilding and ship-repair yard, a minor port as well as a freightcontainer station.

- Total Area
- : 600,000 sq.m.
- Fabrication Capacity
- : In excess of 50,000 MTPA depending on the product mix)



Captive 3000 T, 290-man heavy-lift-cum-pipelay vessel LTS 3000 undertakes installation of offshore structures.

#### Installation Vessel: LTS 3000

L&T Hydrocarbon Engineering with SapuraKencana Petroleum Berhad of Malaysia, operates LTS 3000, which was jointly built to provide heavy lift and pipelay services to the Oil & Gas industry. LTS 3000 is a self-propelled, fully SPS-compliant, DP3 convertible heavy lift-cum-pipelay vessel. L&T Sapura Shipping Private Limited (LTSSPL) owns and operates LTS 3000. L&T Sapura Offshore Private Limited (LTSOPL) provides offshore installation services for platforms and pipelines. LTS 3000 has successfully installed 78 offshore structures (jackets, topsides, etc.) and has laid 272 km of sub-sea pipelines (including piggyback pipelines) at various oil fields in India, Malaysia, Indonesia, Myanmar and Vietnam.

#### Specifications

Length	: 160 m
Beam	: 37.8 m
Depth	: 15 m
Propulsion	: 3 Azimuth Thrusters
Crane Capacity	: 3000 ST (maximum)
Pipelay Capacity	: Pipe OD : 6"- 60" S-Lay method
Accommodation	: 290 Man LQ
Classification	: ABS+IAI (E)+AMS+DPS-1

L&T Hydrocarbon Engineering has an integrated Management System for Quality, Occupational Health & Safety, Environment, Energy and IT Security.

**ISO 9001** certification affirms our capabilities in the execution of turnkey projects covering design, engineering, project management, procurement, manufacturing, erection, construction and commissioning of various plants and systems.

**ISO TS 29001**-certified for Offshore Engineering (standard for the Oil & Gas sector)

**ISO 14001 (Environment)** certifies us to design and engineer environmentally-friendly plants. All our Modular Fabrication Facilities / Yards and project construction and commissioning activities comply with this certification.

**OHSAS 18001 (Health & Safety)** certification has been received by our Modular Fabrication Facilities/Yards. All project construction and commissioning activities comply with this certification.

**ISO 50001 (Energy)** certification has been received by our Modular Fabrication Facilities / Yards, which comply with Energy Management Systems.

**ISO/IEC 27001 (IT Security)** L&T is the first company to be certified to ISO/IEC 27001 on the very first day of its publication. The certification was granted by BVC.

**NBBI, ASME & API Authorisation:** Our Modular Fabrication Facilities are accredited by NBBI, ASME and API, and are authorised to use their 'U', 'S', 'R', 'NB' & 'API' symbols and monograms.



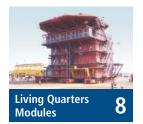
### Awards & Accolades

The Company's quality and safety focus has been affirmed by several awards and accolades.









**FPSO** Topsides

- Engineering

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**3 DECADES** OF EXPERIENCE ACROSS GEOGRAPHIES













ExonMobil

ConocoPhillips























L GSPC





ओख्नजीसी ज़्री ONGC







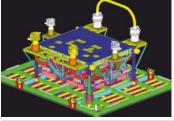
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Client	Project	Completion
	Process Platforms	
Oil & Natural Gas Corporation (ONGC)	Bassein Development Project	2017
Gujarat State Petroleum Corporation (GSPC)	Process-Cum-Living Quarter Platform Project	2014
ONGC	Mumbai High North (MHN) Project	2012
ONGC	Vasai East Development Project	2009
ONGC	Booster Compression Platform (BCP-B2) Project	2008
Bunduq Company Ltd	Gas Reinjection Project	2008
ONGC	MNW Project	2004
ONGC	HRC Process Platform, Bridge & Modifications	1998
Enron Oil & Gas India Ltd.	Process Deck & Equipment	1998
	Wellhead Platforms	
Saudi Aramco	Hasbah II Gas Increment Project (6)	2019
ONGC	Addl. Devp. of Vasai East Project (2)	2016
ONGC	MHN RD Phase-III 5 Well Platform Project (5)	2015
British Gas	MB Platform & Pipeline Project (1)	2015
ADMA-OPCO	Umm Lulu & Nasr Phase-I Field Devp. Project (4)	2015
PETRONAS Carigali	Yetagun North - Phase V Development Project (1)	2014
ONGC	HRP-II Well Platforms Project (3)	2014
ONGC	B127 Well Platforms Project (4)	2014
GSPC	Deen Dayal West Field Development Project (1)	2014
PTTEP International Limited	Zawtika Development Project, Phase-1A (3)	2013
ONGC	MHN RD Phase II Wellhead Project (4)	2012
Maersk Oil Qatar	Block 5 Development Plan - Package 14 (2)	2010
ONGC	MHSRP II Project (3)	2009
ONGC	4 Wellhead Platform Project (4)	2007
ONGC	9 Wellhead Platform Project (9)	2005/06
ONGC	N-9 & N-10 Well Platform Project (2)	2004
ONGC	S1-Sand Project (3)	1995
ONGC	I-MNTW Project (4)	1994
	Subsea Systems	1991
ONGC	S1 Vashishta Project	2017
	Modification Projects	2017
ONGC	NQ Reconstruction Project	2010
ONGC	Pipeline Replacement Project	2008
Qatar Petroleum	PS-2/3 Living Quarters & Power Upgradation Project	2005
ONGC	Additional Process Gas Compressor Project	2003
ONGC / EIL	Bombay High Pipeline Replacement Project	2002
ONGC	Pipeline & Platform Modification Project	2000
ONGC / EIL	Clamp-On Related Project	2000
	Rig Repair, Upgradation & Modification	2000
ONGC	Sagar Pragati	2016
ONGC		2018
	Sagar Uday (BMC Class 300)	
Lynemouth Drilling SA	FD VII	2009
ONGC	Sagar Lakshmi	1998

(All projects completed without any delay penalty)

Wellhead Platform quantity included in bracket

Hasbah II Gas Increment Project		
Client	Saudi Aramco	
Field Location	Hasbah Offshore, Saudi Arabia	
Key Features	EPCIC scope includes 6 Wellheads (Topside only), 2 Tie-in platforms including jackets with flare platform connected by bridge, 516 km offshore pipeline, 102 km composite cable, 45 km umbilicals, 164 km onshore pipeline, valve station and OHL line connectivity.	
	Subsea Installation of VA & S1 Development Project	



Subsea Installation of VA & S1 Development Project		
Client	Oil & Natural Gas Corporation	
Field Location	Eastern Offshore, India	
Key Features	EPC of of pipelines, umbilicals and fabrication of subsea structures to tie- in 3 deepwater wells, located in water depths of 350 to 700 metres, to an onshore terminal located off the East Coast of India. The project involved the establishment of a state-of-the-art spoolbase at our Kattupalli Fabrication Facility to support reel-lay of deepwater pipelines.	

MHNRD Phase-III 5 V	MHNRD Phase-III 5 Well Platform Project	
Client	Oil & Natural Gas Corporation	No.
Field Location	Mumbai High North, west coast of India	
Key Features	EPCIC of 5 unmanned wellhead platforms, clamp-on structure and	
	associated modifications at N11 platform, associated modifications at MNW	
	platforms and strengthening of NQD jacket.	ALL



Additional Development of Vasai East Project	
Client	Oil & Natural Gas Corporation
Field Location	Vasai East Field, west coast of India
Key Features	EPCIC of 2 unmanned wellhead platforms, 36 km subsea pipeline and topside modification works on existing BPA and BCP-A2 process platforms.

#### **MB Platform and Pipeline Project**

Client	British Gas
Field Location	Panna Mukta Field, west coast of India
Key Features	EPCIC of MB wellhead platform, laying of 30 km of subsea pipeline and
	modification works at MA & PPA platforms.



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Field Location Key Features

Process-cum-Living Quarters Platform		
Client	Gujarat State Petroleum Corporation	
Field Location	Deen Dayal West Field, east coast of India	
Key Features	EPCIC scope includes process platform with living quarters (45 personnel), flare tripod, TG module, two connecting bridges and modification work on connecting Deen Dayal Wellhead Platform (DDW1).	

Yetagun North Phase V DevelopmentClientPetronas G

-26	Umm Lulu & Nasr Field Development	
	shutdown period.	
	which included critical activities performed during the client-specified	A A
	extensive brownfield modification works on a process platform,	
	EPCIC of a wellhead platform, 11.2 km of 10" subsea pipeline and	A Statements
	Yetagun Field, Myanmar	
	Petronas Carigali	H.



Umm Lulu & Nasr Field Development		
Client	ADMA-OPCO	
Field Location	Nasr & Umm Lulu Fields, Abu Dhabi (UAE)	
Key Features	Umm Lulu - EPCIC of 2 wellhead platforms, 24 km pipeline, 38 km fibre optic cable. Nasr - EPCIC of 2 wellhead platforms, manifold platform, 79 km rigid pipeline and 40 km fibre optic cable.	

# USD 1.1 billion MHN Process Platform & Living Quarters Project for ONGC.

It won the 'Project of the Year-Large' award instituted by the Project Management Institute (USA). Scope of work covered detailed engineering, procurement, fabrication, installation and commissioning of Project Facilities designed to handle 8.8 MMSCMD of Gas Processing & Compression.

- MNP Process Platform
- MLQ Living Quarters (150 men), 4 Interconnecting Bridges
- Modifications on MNW and NA Platforms





#### GSPC's Process-cum-Living Quarters Platform for Deen Dayal West Field Development Project on India's East Coast.

It won the 'Project of the Year – 2014' award. Scope included Process Platform with 45-man LQ, flare tripod, two connecting bridges and modification work on connecting wellhead platform (6-Legged with 16-wellslots) designed to accommodate Jack-up Rig, Tender Assisted Rig & Modular Rig for drilling operations post WHP installation.

#### BCP-B2 Booster Compression Platform Project for ONGC.

It won the Global Project Management Institute (USA) award. Scope of work included detailed engineering, procurement, fabrication, installation and commissioning of project facilities with 4 compressor trains (5 MMSCMD each)

- Topside (6,970 MT), Jacket (2,100 MT), Piles (2000 MT)
- Modification on existing platforms
   BCP-B2 bridge connected with BCP-B (existing) platform (260 MT)





#### HRC Process Platform, Bridge & Platform Modification Project for ONGC at Heera Complex, Mumbai High.

Scope inculdes Process Platform 1.5 MMSCMD) with Compression Module and 20-man Living Quarters; Bridge; Platform Modification 30,000 BPD oil, 20,000 BPD water, and 1.5 MMSCMD gas. L&T Hydrocarbon Engineering draws on the culture of safety of its parent company, Larsen & Toubro Limited. It has recognized that an industrialized process of improvement is the key to sustaining the safety culture, through a robust structure created to implement HSE management systems.

Periodic training and competency-building are the pillars of the Company's HSE Management Programme. The personnel at our fabrication sites and offshore projects adhere to standards prepared in consultation with Du-Pont Sustainable Solutions. Regular audits ensure compliance. A world-class Safety Innovation School at Hazira provides experiential training in safety. Here, employees and contractors internalise a sense of responsibility for their own safety and that of their colleagues, to attain the goal of accident-free projects. Awards for exemplary HSE performance from clients as well as independent agencies affirm the success of efforts to continuously raise the bar.

#### HSE recognitions:

#### **Offshore Projects**

- ADMA-OPCO: 13 million man-hours without LTI on Nasr & Umm Lulu Phase I Field Development project
- PTTEPI: 4 million man-hours without LTI on ZAWTIKA project
- PETRONAS: HSE Award 2014 for exceptional HSE performance on Yetagun Project under 'Contractor' category (International)
- ONGC: Certificate of Appreciation for commitment and

# Corporate Health, Safety & Environment Policy

As an integral part of our business philosophy, we are committed to protecting the environment and providing a safe and healthy workplace for our employees and stakeholders. To achieve this, we shall:

- Incorporate HSE considerations into all business processes
- Ensure compliance with statutory and other applicable requirements
- Prevent adverse environmental impact and avoid occupational health and safety risks
- Conserve natural resources, minimise waste generation
   and environmental emissions
- Impart structured training and augment resources for HSE performance
- Encourage communication, consultation and collaboration with all stakeholders





Date: 1" October 2015

contribution to HSE on HRP II WPP

• British Gas: Certificate of Appreciation for safe completion of 1.5 million man-hours for MB Project

#### Modular Fabrication Facility, Kattupalli

- British Safety Council (BSC), UK International Safety Award with Merit for 2015 and 2014
- Three Star Rating in CII South India EHS Awards 2014
- FICCI: Certificate of Appreciation for Good Practices in Safety Systems Excellence Awards for Manufacturing – 2013

#### Modular Fabrication Facility, Hazira

- BSC International Safety Award with Merit for 2015 and 2014
- Royal Society for the Prevention of Accidents (RoSPA, UK) Gold Award – 2014
- Gold Certificate of Merit in Indian Manufacturing Excellence Awards - by Frost & Sullivan and *The Economic Times* – 2014
- Platinum Award from FICCI Safety Excellence Awards Contest for Manufacturing – 2013
- Green Banding of HSSE Management System by Shell 2012

#### Modular Fabrication Yard – Sohar, Oman

- BSC International Safety Award 2014 for outstanding HSE management system
- Sword of Honour 2014 from BSC for outstanding commitment to HSE
- ASSE GCC HSE Excellence Award 2014 by American Society of Safety Engineers (Kuwait Chapter)
- RoSPA Gold Award 2014 & 2013 for excellence in implementing HSE management system
- Safety recognition award by ADMA OPCO for achieving 5 million LTI-free man-hours 2013
- ONGC: Certificate of Appreciation for commitment to HSE during major lay-up repair of jack-up rig 'Sagar Uday' 2013
- 5 Star Rating from BSC for excellent HSE management system & effective implementation 2013



L&T Safety Innovation School at Hazira, India - part of multiple initiatives for propagation of a safety culture across the Company



L&T and its Group Companies are guided by the principles of sustainability that advocate the production and use of resources in ways that generate economic growth, create social benefits and minimise the negative impact on the environment.

L&T is the first Indian Engineering & Construction company to report on the triple bottom line. We are driven by values such as transparency, empowerment, accountability and ethical corporate citizenship to create larger societal capital.

Climate change is one of the thrust areas in which our proactive initiatives of investing in cleaner technology and propagating renewable energy help us improve our operational efficiency and environmental performance.

We strive to develop innovative eco-processes by minimising the negative impact on the environment arising out of our operations through optimal use of material, energy and water.

Our CSR initiatives include a thrust on activities such as mother and child health, education, skill-building and water & sanitation at our international and domestic project locations.

Feedback from all stakeholders, including vendors, suppliers and contractors is obtained through a well-developed engagement process.

L&T Hydrocarbon Engineering's Sustainability Reports highlight its approach towards a sustainable future through transparent governance, safer workplaces, developing competencies and initiatives towards conservation of water and energy.



## L&T's Global Footprint



- ★ Offices
- Engineering & Construction Projects
- Product & Equipment Supply
- Manufacturing / Fabrication Facilities
- Agents
- Modular Fabrication Facilities

Note: Map is broadly representative of L&T's presence in markets worldwide. For details of establishments within India, please refer to'National Network'.

#### National Network

★ Registered Office

- Campus<sup>+</sup>
- Power Plant
- ShipyardsOffices
- Knowledge Cit
- Knowledge City
   Leadership Development Acad
- Leadership Development Academy Construction Skills Training Institutes\*

Campus' denotes facilities for design and manufacture
 Part of L&T's Corporate Social Initiatives

#### **Offshore EPCIC Projects**

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