New Water Injection South - R Project for ONGC

HYDROCARBON BUSINESS

Overview

The Hydrocarbon business provides integrated D&B turnkey solutions for the hydrocarbon industry, globally. The business executes projects for oil & gas extraction and processing, petroleum refining, chemicals & petrochemicals, fertilisers, cross-country pipelines & terminals, and has recently launched asset management as well as services for offshore wind.

The business has integrated capabilities across the value chain, supported by in-house front-end design and detailed engineering, R&D, project management, procurement, modular fabrication facilities, Onshore construction, Offshore installation, and commissioning. Major fabrication facilities are in India and the Middle East. In India, the engineering, procurement & project management centres are at Mumbai, Vadodara & Chennai. Modular fabrication facilities are at Hazira (near Surat) and Kattupalli (near Chennai). Overseas presence is dominantly in the Middle East, i.e., in the UAE, KSA & Kuwait and in Algeria. The project management office with a training facility is in Al Khobar, KSA. The business has a state-of-the-art modular fabrication facility at Sohar in Oman, Piping shop at Jubail in KSA and an upcoming Heavy Wall Pressure Vessel Manufacturing shop at Jubail Industrial Zone in KSA.

Pursuant to the Scheme of Amalgamation, approved by National Company Law Tribunal (NCLT) on January 28, 2022, L&T Hydrocarbon Engineering Limited (LTHE) has become a division of L&T with effect from April 1, 2021. This amalgamation will enable the Hydrocarbon business to leverage the superior pre-qualification and financial capability of L&T for securing large bids. The synergies from amalgamation will further improve operational efficiencies and organisational capabilities to sustain the growth momentum, while continuing to maintain operational autonomy.

The business caters to clients across the hydrocarbon value-chain through following business verticals:

Offshore

Lumpsum Turnkey EPCIC solutions are offered to the global offshore oil & gas industry. The products encompass wellhead platforms, process platforms, process modules, subsea pipelines and systems, brownfield developments, offshore drilling rigs (upgrade and new builds), FPSO modules, deep-water subsea manifold & structures, living-quarters platforms, transportation & installation services, and decommissioning projects.

Leveraging its Offshore expertise, the business is carving out a part of the team to focus on the emerging business opportunities in Offshore Wind Farms, which will address renewable energy requirements and balance the portfolio.

The offshore vertical has comprehensive in-house engineering capabilities offering customised ‘Fit for Purpose’ engineering solutions, covering the complete project life cycle, from concept to commissioning, for offshore projects. As a vertically integrated EPCIC player, it also has in-house fabrication and offshore installation capability. Marine assets comprise a self-propelled heavy-lift-cum-pipe-lay vessel – LTS 3000 – held in a joint venture, and a wholly-owned pipe-lay barge – LTB 300.

One of the Three Gas PDMs installed in Hasbah Field, Saudi Arabia

Two Oil PDMs and Associated Facilities in Zuluf Field, Saudi Arabia

Onshore

This business vertical provides EPCC solutions for a wide range of onshore hydrocarbon projects covering oil & gas processing, petroleum refining, petrochemicals, fertilisers (ammonia & urea complexes), thermal systems such as cracking furnaces, cryogenic storage tanks and LNG regasification terminals, cross-country pipelines & terminals as well as coal / pet-coke gasification, coal-to-chemicals, and crude-to-chemicals projects. The business has a track record of concurrent execution of multiple mega projects successfully both in domestic and international markets, with diverse technology process licensors. Design engineering centers for the Onshore vertical offer the complete spectrum of FEED, process, and detailed engineering.

Construction Services

This business vertical renders turnkey construction services for refineries, petrochemical, fertiliser projects, gas-gathering stations, cross-country oil & gas pipelines and terminals including LNG & oil storage tanks and underground cavern storage systems for LPG. Its major capabilities include heavy-lift equipment erection competency, application of advanced welding technologies with high levels of automation, management of manpower and material in large volumes at construction sites and Quality / HSE systems conforming to international practices. The business has also invested in strategic construction equipment viz., a range of pipeline-spread equipment, automatic welding machines and other plant and machinery for mechanical construction works.

Modular Fabrication

This vertical specialises in modular fabrication and supply of offshore & onshore structures and process modules, including free-standing static equipment for oil & gas fields, refineries, petrochemical plants, and fertiliser plants. Leveraging its modular capability, much of the on-site work for mega projects – such as Onshore Process Modules (PAU) & Pre-assembled Piperacks (PAR) for a Residue upgradation Facility (RUF) in India, a Gasification plant in Singapore, a Hydrogen Plant in Netherlands, and a Refinery in Thailand are being executed at its fabrication yards.

World-class modular fabrication facilities are strategically located at Hazira (India's West coast), Kattupalli (India's East coast), Sohar (Oman) and Jubail (KSA). The combined annual capacity for fabrication is estimated at about 60 million manhours or about 200,000 MT (depending on the product mix).

The Piping shop and the proposed Pressure Vessel Manufacturing shop in KSA will mainly cater to the local market and for developing local skills to support the IKTVA programme.

The business is equipped to supply products like windfarm foundations and other modules for offshore windfarm projects and e-houses. All-weather waterfront facilities provide easy access to clients across the globe and have load-out jetties suitable for dispatch of large and heavy modules via ocean-going vessels and barges.

Advanced Value Engineering & Technology Services (AdVENT)

Leveraging the expertise in high-end engineering and execution of large-scale, technologically complex EPC projects

Cracker Furnace Package for HPCL-Mittal Energy Limited (HMEL) at Bathinda

over several decades and collaborating with well-organised R&D centres and renowned institutions, the AdVENT vertical delivers comprehensive customer-centric solutions for the entire value chain of the Hydrocarbon industry.

AdVENT's technical capabilities and agility enable it to offer associated tailored value engineering solutions such as product modular solutions, supporting customers in re-purposing study of existing assets and adoption to energy transition. AdVENT's offerings to clients encompass full spectrum engineering, technology co-development & commercialisation, strategic projects delivery through EPC & other contracting models, integrated modular solutions as well as emerging technology-driven solutions.

AdVENT also focusses on technology backed chemical industries which are now ramping up the investment in the chemical sector, reducing dependence on imports. These chemicals are the building blocks of high-value industrial end products.

Asset Management

The Asset Management business is a newly formed vertical with a view to diversify revenue streams and deliver highly integrated, digitally-enabled value-added services to the oil & gas industry.

These comprehensive asset management solutions extend the organisation's design, engineering, construction, and commissioning capabilities to cover operations, maintenance, performance enhancement and health assessment of critical assets. Asset Management complements EPC project offerings for mutually beneficial engagement with clients over the entire lifecycle of assets.

Business Environment

The FY 2021-22 began with a significant thrust across the developed world for energy transition from the Fossil Fuels to Renewables. However, energy transition to limit global warming to well below 2 degree Celsius as agreed in the 2015 Paris Climate Agreement, has been slower than anticipated due to the evolving nature of the technologies, their associated high costs as well as the geo-political risks.

With this backdrop, the oil & gas fraternity engaged with EPC players for cleaner technologies in the conventional areas. With normalcy returning post the COVID-19 pandemic leading to a surge in demand resulting in hardening of oil prices, traction was seen in the GCC region with Saudi Arabia leading the way. Therefore, at least in the near future significant investments are likely in oil & gas projects.

However, the business witnessed disruptive pricing by new entrants in the domestic market, particularly onshore, which caused loss of some market share. The business expects the situation to normalise soon. In the domestic offshore market, business has retained its strong foothold.

The business has been able to withstand the challenges and recorded its highest ever Order Inflow in FY 2021-22 with the Order Book remaining healthy. The Business has successfully completed multiple large projects and outperformed most of its peers in terms of profitability despite inflationary pressures in commodities.

Major Achievements

Orders won:

- Mega contract from Saudi Aramco for a Gas Compression Plant for Jafurah Basin Development Programme and laying

Onshore Process & Piperack Modules being loaded-out from MFF Hazira for a Refinery in Thailand

343 km gas transport pipelines between Jafurah Gas Plant and Juaymah Tank Farm

- Mega contract for new facilities and integration with existing facilities and significant contracts for expansion of a marine terminal and replacement of electrical as well as refurbishment of PDMs from a prestigious client in Middle East
- Large contract for Pipeline Replacement Project (PRP-VII) from Oil & Natural Gas Corporation (ONGC) for installation of 350 km subsea pipelines and related offshore works spread across India's west coast
- Significant contract from Indian Oil Corporation Limited for Diesel Hydrotreating Project for its Panipat refinery
- Significant contract from Petronet LNG for 2 x 170,000 m3 LNG tanks for Phase IIIB of the Dahej Expansion Project, Gujarat
- Significant contracts for laying of Mumbai-Nagpur Gas Pipeline (24" x 224 km) including construction of terminals along with associated facilities from GAIL and construction of Steam Methane Reformer, Air Separation Plant and Pressure Swing Adsorption Units for Jubail Industrial Gas Network Project from Air Products Middle East Industrial Gases
- Supply of PAU, PAR and Reformer modules for a Hydrogen plant in Rotterdam, the Netherlands

Projects completed:

- Development of Cluster 8 Marginal Field in Mumbai High for ONGC
- 28 Offshore Jackets for Saudi Aramco in Zuluf, Marjan, Safaniya and Rubiyan Oil fields
- Cracker Furnace Package for HPCL-Mittal Energy Limited (HMEL)
- New 48" Crude Transit Line (TL-5) for Kuwait Oil Company (KOC)
- SRT – III Ethylene Cracking Furnace at Panipat Refinery for Indian Oil Corporation Limited (IOCL)
- Supply of several onshore modules, skids and static equipment for various refineries and petrochemical plants in India and Algeria

Significant Initiatives

The business has placed a significant reliance on processes and on operational excellence, covering productivity improvement and Advanced Work Packs based Project Management, data driven decision making, Smart SCM, value engineering, besides robust QHSE processes. In May 2021, when cyclone 'Tauktae' impacted the Arabian sea, all manpower along with marine assets were safely demobilised from the Mumbai High. Further, towards the journey in digital transformation, the business has rolled-out multiple initiatives, viz., drone-based progress monitoring and survey, product quality surveillance, augmented reality based remote inspection, robotic welding systems for fabrication, electrostatic painting application for waste minimization and resources monitoring and scaffolding management system.

As part of Lakshya 2026, the business has identified various strategic initiatives to boost cost competitiveness and achieve growth aspirations.

Strategic actions include building partnerships, developing markets for adjacencies in business offerings, nurturing new businesses like asset management, offshore windfarms


New 48" Crude Transit Line from North Kuwait to CMM (TL-5) Project for KOC, Kuwait

and modular solutions, driving localisation efforts in key geographies where the business can have a long-term presence and digitally-enabled operational excellence.

Outlook

The ongoing geo-political conflict between Russia and Ukraine is leading to rebalancing of the world economic preferences. Consequent to the recent geo-political changes, the commodity prices which were already on a high, have spiralled further, resulting in a high inflationary trend across global economies. This resulted in sharp increase in the Brent and WTI crude oil prices. The US Energy Information Administration (EIA) expects the crude oil price to remain higher than USD 100 per barrel. With the rebound in oil prices and increased focus by the Governments to ensure energy security, Oil & Gas capex is expected to continue.

ONGC has planned a capital expenditure of ₹ 29,950 crore during the financial year 2022-23. Development of the Deepwater fields in the East Coast of India will continue, which will provide opportunities for the business, in addition to the existing products like subsea structures and pipelines.

With the hardening of global crude prices, the focus will be on the development of small and marginal fields by private players. This will offer Transportation & Installation (T&I) opportunities in India and Southeast Asia.

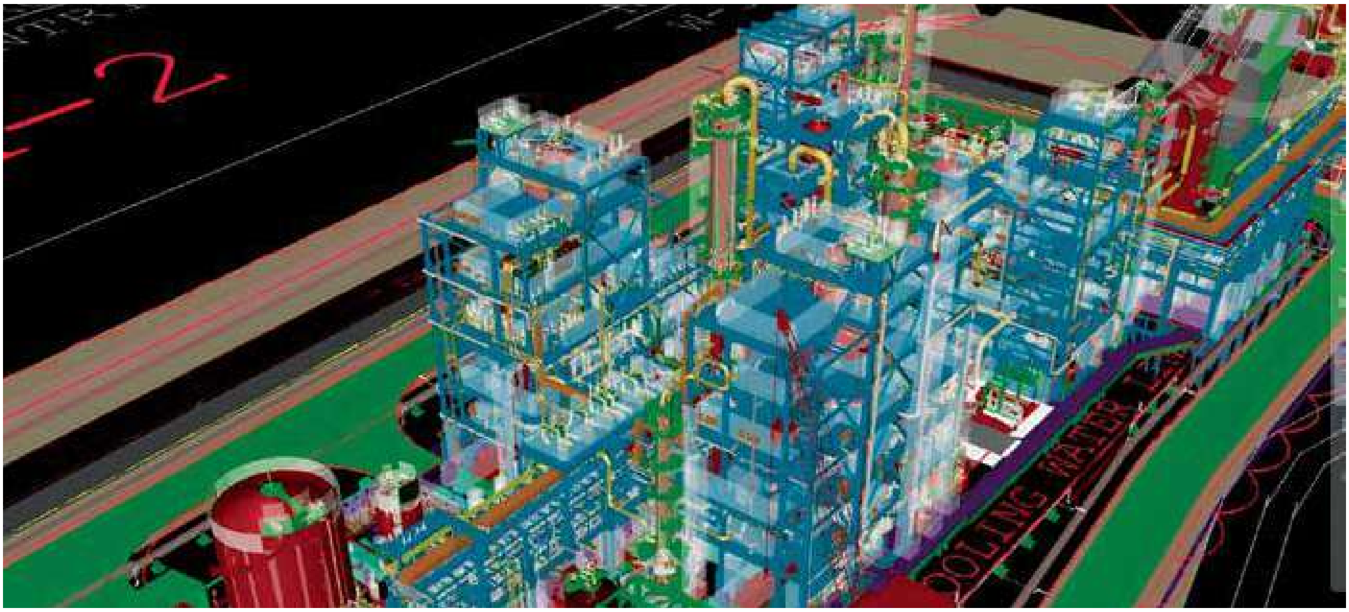
The Government of India (GoI) has planned to spend about ₹ 750,000 crore in oil and gas infrastructure over five years. State-owned oil companies are planning to spend about ₹ 110,000 crore in the financial year 2022-23. After a gap of several years, there are strong indications of green shoots in private investment in petrochemical and crude to chemicals projects in India, which augurs well for the business.

India's existing refining capacity of about 250 MMTPA is expected to reach 298 MMTPA by 2025 for which Indian refiners have plans to invest ₹ 200,000 crore with an emphasis on setting up residue upgradation facilities.

With an expected increase in the demand for petrochemical products, investments in integrated Refinery-Petrochemical as well as Oil to Chemical (O2C) / Crude-to-Chemicals (C2C) projects are expected to be triggered. The draft LNG policy announced by the GoI aims to create LNG regasification capacity of about 70 MMTPA by 2030 from the current level of 42.5 MMTPA. Further, Indian Government is planning to invest ₹ 70,000 crore to expand the gas pipeline network across the country. The GoI has also set up an ambitious target to gasify 100 million tonnes of coal into value added products like fertiliser / methanol by 2030 towards the announced net zero targets by 2070.

GoI intends to maximise production of fertilisers like urea, phosphates, and potash, mainly based on indigenous feedstocks and also decrease import dependency of specialty chemicals like ammonium nitrate and nitric acid to achieve self-sufficiency.

There are visible opportunities in international markets for both onshore and offshore projects. The business will selectively target focussed geographies in GCC and Algeria and continue to look at product based modular opportunities in Africa and Iraq. Further, the business is building capabilities to address opportunities arising out of new businesses like asset management and offshore windfarms.



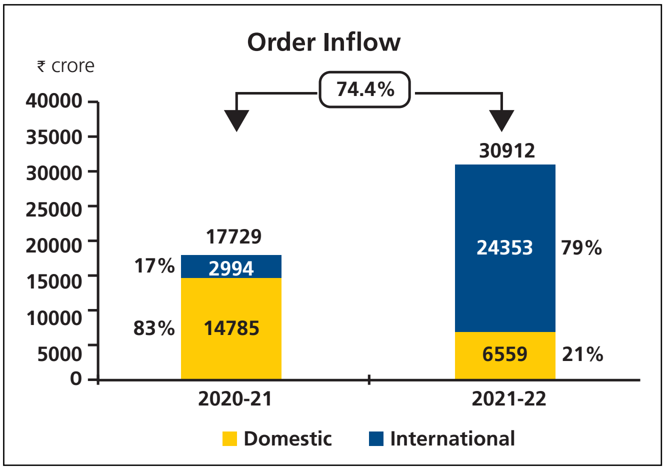
A rendering of the 3D Model for IOCL's 3G Ethanol Project

Aggressive competition and increasing commodity prices are expected to continue in the near future. The business is geared up to respond to challenges through selective bidding, enhanced cost competitiveness and prudent management of risks. There is an increased thrust on localisation in KSA, UAE and Qatar and the business has taken up significant initiatives to address localisation requirements in KSA, which is the biggest market for the hydrocarbon business presently.

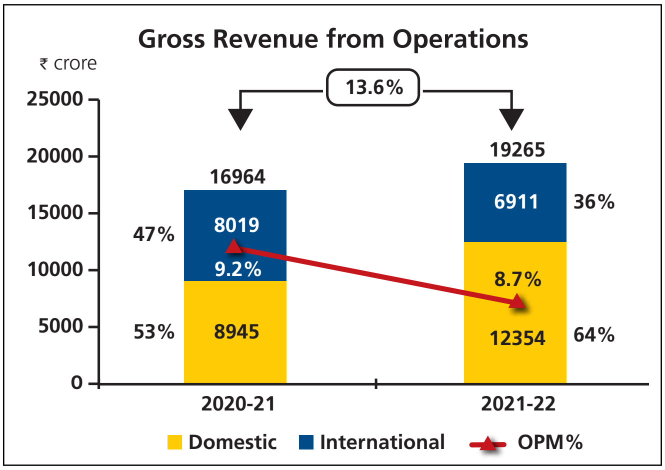
With profit-driven growth at the core, the business continues to remain a customer-centric organisation with sustained focus on improved competitiveness to achieve mission of 'Execution Par Excellence'.

Financial Performance of the Segment

Consequent to L&T Hydrocarbon Engineering Limited being merged with the parent entity, the previous year's figures have been regrouped, wherever necessary.



The Hydrocarbon segment achieved order inflows of ₹ 30,912 crore, registering robust growth of 74.4% over the previous year with receipt of two large value orders during the year from Saudi Arabia, which led to the share of international orders increasing to 79% from 17% in FY 2020-21.



The segment revenue at ₹19,265 crore for the year grew by 13.6% y-o-y, due to pickup in execution momentum, mainly in the Onshore vertical of the business. The share of international revenue in FY 2021-22 was lower at 36% of the total revenue of the segment as compared to 47% in the previous year, with a lower opening international Order Book.

The segment's operating margin decreased to 8.7% from 9.2%, mainly due to input cost inflation and change in job mix.

Funds employed by the segment as on March 31, 2022 at ₹ 2,167 crore increased substantially over March 2021, mainly due to increase in contract assets in some large value onshore projects.