

DEVELOPMENT PROJECTS BUSINESS

The Development Projects business segment comprises:

- a) Infrastructure projects executed through its joint venture company L&T Infrastructure development projects limited and its subsidiaries and associates (L&T IDPL Group)
- b) The Hyderabad Metro Rail project, executed through its subsidiary L&T Metro Rail Hyderabad Limited
- c) Power development projects executed through its subsidiary L&T Power Development Limited and its subsidiaries (L&T PDL Group) and
- d) Katupalli port under its subsidiary Marine Infrastructure Developer Private limited was divested in Q1 of FY 18-19

The operations of the Development Projects business segment primarily involves development, operation and maintenance of basic infrastructure projects in the Public Private Partnership (PPP) format, toll collection including annuity based road projects, power development and power transmission and providing related advisory services.



765 kV DC Kudgi Transmission Line project

L&T INFRASTRUCTURE DEVELOPMENT PROJECTS LIMITED (L&T IDPL)

Overview:

L&T Infrastructure Development Projects Limited (L&T IDPL) is a pioneer of the Public-Private-Partnership (PPP) model of development in India, which involves the development of infrastructure projects by private sector players in partnership with the Central and State Governments. Since its inception in 2001, the Company has completed landmark infrastructure projects across key sectors like roads, bridges, transmission lines, ports, airports, renewable energy and urban infrastructure. It is one of India's largest road developers, as measured by lane kilometers under concession agreements signed with Union and State Government authorities.

Currently its portfolio includes 10 operational road projects covering 4434 lane km and transmission lines at Kudgi, Karnataka covering 482 kms.



Vadodara Bharuch Toll Plaza

Two decades of extensive experience in working with Governments, multi-lateral agencies, international and domestic financial institutions and corporate entities has helped the Company to develop proven competencies in Viability Assessment, Financial Closure, Project Management, Operations & Maintenance and Portfolio Management of Infrastructure Assets across various sectors.

The Canada Pension Plan Investment Board (CPPIB) made substantial financial investments in L&T IDPL in two investment tranches during 2014-15. This is the first direct private investment by the largest Canadian pension fund into an Indian Infrastructure Development company.

Business Environment

Transportation Sector

The Government of India has provided a strong thrust to the Infrastructure sector and specifically to the highway sector, in the last Union Budget. The ambitious Bharatmala Programme has been approved for providing seamless connectivity to develop about 35000 km in Phase-I at an estimated cost of ₹ 5,35,000 crore. A significant slice of these projects is expected to be bid out under the Hybrid Annuity Model (HAM), which would be of interest to the company.

Transmission Lines

After the Kudgi transmission line in Karnataka, the company participated in two new bids.

There is substantial opportunity in new transmission lines coming up since generating capacity is increasing, especially from renewable sources. The National Committee has fast-tracked power evacuation system for the green corridor for renewable energy in Gujarat and Rajasthan. Business opportunities in transmission lines of approximately ₹ 30000 crore are also available from system strengthening of networks and power evacuation from generators to the grid. Based on the National Committee's recommendation, currently REC and PFC have come out with 9 bids for transmission lines under the 'Green Corridor' programme. Furthermore, 3 bids have been cleared by the National Committee for Tamil Nadu, Karnataka and Andhra Pradesh.

Major Developments

Toll Collections and Operations

The total gross income from toll collections in 10 toll road subsidiaries (excluding the five subsidiaries transferred to InvIT) moved up by 23% over the previous financial year. This includes both traffic growth and annual revision of tariff.

In NHAI projects managed by the Company (including InvIT projects), gross income from toll collections increased by



An elevated road corridor decongests the bustling metropolis of Nashik

12% while Electronic Toll Collection (FASTag) increased by 66% over the previous period. Currently, over a quarter of all tolls are being collected under FASTag electronic toll collection.

Kudgi Transmission Line

The project faced a force majeure event in May 2018 when 5 of the 1162 towers collapsed due to unprecedented strong winds at Bannigola village in Karnataka. No one was injured during the event. The in-house team restored the towers and ensured power flow in a record time of 33 days. Except for this one-off situation, the project continues to perform well.

Major Achievements

During the year 2018-19, L&T IDPL monetized 5 of its road operational projects by selling its stake to an Infrastructure Investment Trust (IndInfraVIT Trust) set up by the Company as a sponsor. The said Trust was successfully listed with an issuance of units aggregating to ₹ 3700 crore, of which 15% is held by the Company. The other large investors of this first privately placed Trust are pension funds from Canada (CPPIB and OMERS holding approx. 30% and 22% of the units, respectively) and Allianz Capital Partners, Germany, a large global insurance group, holding 25%.

One of the road subsidiaries received a favourable arbitration award from the Arbitration Tribunal for a

change of scope claim. In another subsidiary, a settlement agreement was reached with NHAI on a project terminated in 2016, thereby relieving the lenders of a stressed asset.

Significant Initiatives

International investment for Indian infrastructure assets was attracted through the Company- sponsored Infrastructure Investment Trust InVIT - the first on a private placement basis.

Asset Monitoring Systems for structures and highways of operating projects is underway, which will help in inventorying and monitoring of assets.

Project LEAP, a business process re-engineering exercise, was completed during the year

Digitalisation

- Rapid increase in FASTag electronic toll collection was made possible by streamlining our digital equipment at toll plazas. This has led to faster throughput of vehicles at toll plazas and reduced queues. It has also led to a less-cash operation. The Company has worked collaboratively with NHAI and other stakeholders to minimize reconciliation issues in FASTag collections.
- Highway route operation, maintenance and equipment function has been mobile enabled.



Rajkot-Jamnagar Highway

- A dashboard using Tableau software called 'Revenue Assurance Dashboard', conceptualised by PwC and developed with the internal IT team, has been rolled out and used by SPV managers.
- To monitor the FASTag traffic/revenue, the data is being pulled through API from the acquiring bank and the process is fully automated.

Environment, Health and Safety

The Company and its subsidiaries are committed to providing a safe and healthy workplace for their employees and stakeholders and to conserving the environment. EHS is one of the essential pillars of a good and robust corporate governance structure.

To achieve the Company's stated EHS objectives, the following key initiatives have been implemented.

- 31 Standard Operating Procedures (SOPs) have been formulated to:
 - define individual responsibilities and procedures relating to environmental, health and safety matters
 - incorporate EHS considerations in all business processes
- Digitisation of the records and review all accidents, occupational health and safety related incidents by

adopting a system called Route Operations Management System (ROMS) and reporting immediately to the concerned project head and functional head in the form of Preliminary Accident Information Report (PAIR) and Final Accident Information Report (FAIR).

- Monitoring to ensure that the employees avail of the medical check-up facility for themselves and their families.

The Company's Interstate Road Corridor SPV received the Silver Award for Excellence in Highway Safety from the Ministry of Road Transport and Highways.

Human Resources

Employees are the backbone of the organisation. The HR Team concentrates on certain key areas, including recruitment of some of the best talent in the market and keeping them engaged by providing access to learning opportunities, Development Centres, challenging business assignments, and individual need-based specific development interventions.

The Development Centre is a systematic and objective method to measure competence to provide insights into the strengths and development areas of individuals. Employees attended a fair mix of training on technical and behavioural programmes during the period in review.



A section of the Hyderabad Metro

Outlook

L&T IDPL would constantly evaluate new opportunities with worthwhile returns. The business sees major opportunities in the transmission line sector and also the roads sector under the Hybrid Annuity Model. The InvIT is expected to look at the secondary market for operational and revenue generating projects.

L&T METRO RAIL (HYDERABAD) LIMITED

Overview:

L&T Metro Rail (Hyderabad) Limited (L&TMRHL), incorporated in August 2010, is a special purpose vehicle to undertake, construct, operate and maintain the Metro Rail System, including Transit Oriented Development (TOD), in Hyderabad under Public Private Partnership model on a Design, Build, Finance, Operate and Transfer (DBFOT) basis. It is the largest TOD in India and the world's largest PPP project in the urban transportation sector. The Company entered into a Concession Agreement with the erstwhile Government of Andhra Pradesh on 04.09.2010.

The Metro Rail system is in Phase I, which includes three elevated corridors from Miyapur to

L. B. Nagar, Jubilee Bus Station to Falaknuma and from Nagole to Shilparamam covering a total distance of 71.16 km. This entire distance is further sub-divided into 6 stages for ease of implementation.

The concession period of the project is 35 years from the appointed date of July 5, 2012, and includes the initial construction period of 5 years. The concession period is extendable for a further period of 25 years subject to the fulfilment of certain conditions by the L&TMRHL as set out in the Concession Agreement.

The Concession Agreement includes rights for Real Estate development of 18.5 million sq. ft., with strategically located land parcels interspersed at prime city locations, adjoining metro stations and metro corridors.

The Company has tied up the entire debt for the project, which includes the cost of the rail system, and 6 million sq. ft. TOD, and achieved financial closure on 1st March 2011.

The progress of the project as of March 2019 is as follows: -

- Stage 1, 2 and 3 were operationalized in November 2017 itself. Commercial operations of 16 km (from Ameerpet to LB Nagar) of Stage 5



India's longest extra-dosed, cable stayed bridge over the Narmada, Gujarat

and 10 km in Stage 4/1 (from Ameerpet to Hi-Tec City) were inaugurated by the Hon'ble Governor on September 24, 2018 and March 20, 2019 respectively.

- Received time extension from Government for achieving final COD by December 31, 2019. Accordingly, the lenders have also accorded sanction of extension of time for COD up to two years i.e., up to July 2019, with corresponding increase in loan period.
- Construction work in remaining part of Stage 4 (Hi-Tec City to Raidurg) in Corridor 3 and stage 6 (JBS to MGBS) forming part of Corridor 2 are proceeding at a brisk pace, and is expected to commence commercial operations during first half of the FY 2019-20.
- The TOD Project at Errum Manzil Mall (0.35 million sq. ft.) commenced commercial operations from August 2018. Musarambagh mall (0.24 million sq. ft.) is expected to commence commercial operations in April 2019. Construction work (0.5 million sq. ft. of office space) at Raidurg Site is underway.

Business Environment

About 10 million transport trips are performed every day in Hyderabad city, and a major share is undertaken by bus

transport (50%). The city's roads are congested with 8% road area, and traffic proceeds at the very low average speed of about 12 kmph. The Company is poised to provide safe and punctual travel and has been working on various value-added initiatives to minimize the commuters' pain points, such as last-mile connectivity, digital ticketing, mobile apps, etc., which ensures higher ridership to the metro system.

Establishing successful last-mile connectivity is a challenge and discussions with the Government are in progress to intensify steps to this end.

Significant Initiatives

- The Company is exploring various non-fare revenue generating options, viz.:
 - ◆ Leasing out space for erecting mobile towers
 - ◆ Skywalks connecting to malls and metros
 - ◆ Tie up with cab operators
 - ◆ Leasing out optical fibre spare capacity
 - ◆ Training metro staff with the existing infrastructure
 - ◆ Consultancy services for other metros
 - ◆ Focus on improving advertising income



Coimbatore Bypass Road



International Sea Port at Haldia

- Re-negotiate and amicably settle claims of contractors.
- Working on favourable resolution of the waiver of arrears of power charges, sub-lease, security, compensation for delays and scope change, concession period extension and other issues pending with the State Government.
- Discussions held with TSRTC, to emphasize that the nature of transport services is complementary rather than competitive, in order to improve last-mile connectivity. Steps have been taken to organise private transport for pick up and drop at metro stations and encourage large corporates to provide transport to their employees to and from metro stations.
- Completed sign ups in the TOD retail malls with major international and national retail brands viz. Decathlon, Marks & Spencer, PVR, Lifestyle, Shoppers Stop, Starbucks, Reliance Retail, etc.
- Naming rights for stations and advertisement wraps for trains are also added to the advertisement order stack-up.

Digitalisation

- The Company put in place the automation of the Fare Revenue Accounting System by integrating the AFC (Automatic Fare Collection System) with the SAP Accounting System. Through this automation process,

seamless, accurate and up-to-date accounting has been facilitated.

- An initiative to digitalise information regarding Bank Guarantees has been undertaken to synchronize information across the company in a centralized manner.
- The Company has implemented a digital signature system over the traditional document signature for all the invoices raised to customers from various departments of LTMRHL to ensure strengthen security, cut costs, improve digital work flow and save time, avoid paper printing and effectively utilize storage space.

Awards and Recognition

The Hyderabad metro project has been adjudged the Best Green Building Project by the ET NOW CSR Leadership Awards ceremony. Other prestigious awards received by the Company during the Financial Year 2018-19 include:

1. Golden Peacock Innovative Product / Service award on Leadership for Business excellence and innovation.
2. Exceptional Metro Rail project award from Metro Rail India Summit
3. Best Urban Mass Transit Project award from GOI, Ministry of Housing & Urban Affairs



4 - laning of Halol Godhra Shamlaji highway executed

4. Infrastructure Project of the Year (Outstanding Concrete Structure (Architects Award) from ICI Ultra Tech Award
5. Outstanding Public-Private-Partnership (PPP) Project in the Metro Sector in India from Rail Analysis India Awards 2019
6. International Leadership Innovation Excellence Award from the Institute of Economic Studies
7. Mobility Maven Special Awards 2018 from CIO 100 – International Data Group (IDG)

Environment, Health and Safety

L&T Metro Rail Hyderabad Limited considers Environment, Health and Safety as an integral part of its business philosophy. The management of L&TMRHL is committed to conserving the environment and providing a safe and healthy workplace.

- The metro system provides a welcome relief from the heavy air pollution caused by the growing number of vehicles and the congestion on roads.
- It operates on electric systems, thereby curbing emissions.
- Sound pollution will be minimal, thanks to the efficiency of the coaches and the advanced engineering that has

been used for constructing the track, viaduct as well as metro coaches.

Safety Features

- Hyderabad Metro rail trains run on Automatic Train Operation (ATO) mode with an Automatic Train Protection (ATP) System that continuously monitors and ensures safe train operations.
- All vital train-borne equipment, the Station Equipment (computer-based interlocking (CBI) and wayside ATP), and vital signalling equipment are highly safe, and back-ups are available to ensure safe and uninterrupted train operation.
- Passenger emergency stop plungers are provided on each platform and in the Station Control Room (SCR) to stop a train immediately in case of emergency.

Human Resources

The Company has introduced employee-focused initiatives during current year:

- Launch of voice-enabled BOT called LISA (L&TMRHL Interactive Service Application) for employees of L&TMRHL to enable resolution of service requirements
- Launch of LnT (Leaders of new Tomorrow) – An idea incubation programme to inculcate the start-up mindset amongst the employees



A two-lane road transformed into a 6-lane highway

- Implementation of Project Parivartan – Competency Development Programme (a pilot project, based on heuristic study, to inculcate habit of using the e-learning platform in a classroom atmosphere)

Risks and Concerns

With progress achieved, the construction risk by way of non-availability of required Right of Way (RoW) and delay in approvals from Railways is mitigated to a large extent, except for one stage. The operational risks of safety of commuters and assets and alternative modes of transport are addressed by having a robust in-house team to check the safety measures and holding discussions with nodal agencies of alternative modes of transport to work in a complementary manner.

Outlook

- Overall ridership expected to increase to approximate 10 lakhs per day on the opening of stages 4/2 and 6/1 in FY 2019-20, thus taking the total metro operations to 66 km. For the balance 5.5 km of stage 6/2, Right-of-Way clearance is yet to come from the Government.

The Government of Telangana has plans to implement Phase II of Metro project covering 85 km (including the airport link). This will significantly enhance average ridership due to the network effect.

- The Company intends to begin a large integrated development at Raidurg with a potential to develop 3.5 million sq. ft. comprising retail and grade A office space.

L&T POWER DEVELOPMENT GROUP

Overview:

L&T Power Development Limited, a wholly-owned subsidiary of L&T, is engaged in developing, operating and maintaining power generation assets. The portfolio comprises of projects in thermal and hydel power generation projects aggregating to 1499 MW.

In the hydel sector L&T Uttaranchal Hydropower Limited is executing a hydel power project of capacity 99 MW in the state of Uttarakhand, which is in advanced stage of construction. The other three hydel projects in Arunachal Pradesh and Himachal Pradesh are under hold.

In thermal sector, Nabha Power Limited owns and operates a 2X700 MW super critical thermal power plant at Rajpura, Punjab.



2 x 700 MW Rajpura Thermal Power Plant, Punjab

Nabha Power Limited (NPL)

The Company has Power Purchase Agreement (PPA) with Punjab State Power Corporation Limited (PSPCL) for selling all the power generated from this plant for a period of twenty-five years. The plant is built on the supercritical technology of Mitsubishi, Japan. It is the first 'made in India' supercritical power plant to be commissioned and operational in the country.

The plant sources its fuel from the South Eastern Coalfields Ltd. (subsidiary of Coal India Limited) under a 20-year Fuel Supply Agreement (FSA). The Company also secured approvals to arrange coal from alternative sources to make up for any shortage in supply of coal under the FSA. The Bhakra-Nangal distributary is the perennial source of water for the plant under an allocation by the State Government. The plant is operated by an in-house team of experienced operations and maintenance professionals.

The power plant has been running successfully for over five years with an availability of over 85% during FY19. NPL has been the most reliable source of power for the state of Punjab and has supported its requirements with uninterrupted supply during the peak season. NPL also happens to be the lowest cost power producer within Punjab with benchmark operational efficiency.

Business Environment

India's Electricity Generation grew at 5.4% in FY 19 and there was an addition of 2.12 GW of Thermal Energy Capacity Additions in the same period. The Power Demand in Punjab was 4541 MW (Q4 FY19) registering an 8% increase over the demand in the corresponding period last year. Coal shortages continue to plague power plants, resulting in higher merchant power rates. The Average Power Purchase rate was ₹ 3.92/KWh in FY19 vs ₹ 3.25/KWh in FY18. Being at the top of the merit order, average energy charge for NPL remained at ₹ 3.30/KWh.

Third Party Sampling and testing through CIMFR (Central Institute of Mining and Fuel Research) has been operating quite well to mitigate the grade slippage issues in linkage coal.

Significant Milestones and Initiatives

- Received a partial payment from PSPCL, based on a favourable Supreme Court judgement in the coal washing matter
- Achieved an availability rate of over 85%
- Plant operated at PLF of 74% despite plant shutdown due to forced outages
- Secured highest ever imported coal approval of 9.5 Lakh MT



The 221.4 km Beawar – Pali – Pindwara road in Rajasthan is the longest four lane road project developed under the (PPP) model in the National Highways sector.



Devihalli Hassan Toll Road

- Ensured complete coverage by CIMFR at SECL through intense efforts
- CSR initiatives in the area of development of village infrastructure, education, skill building, gender equality, health and environment were implemented during the year
- During the year, the business was awarded and decorated with the following:
 - i) Excellent Energy Efficiency Unit Award by CII, Hyderabad
 - ii) High Efficiency Leadership and Innovation award by PEABODY ENERGY, USA
 - iii) Energy Conservation Award by Punjab Energy Development Agency, Govt. of Punjab

Digitalisation

Steps taken towards digitalisation are:

- Upgradation of the Maximo mobility application – an ERP system which plays a crucial role in asset management, approval of PO/ PR, maintaining logs of plant operations and other HSE functions like Hazard reporting
- Development of Mobility apps for approval of Purchase Requisition, Purchase Orders approvals and maintain

e-logbooks which maintains logs of work done by shift engineers to facilitate no-overlap.

- Real time capturing of vital power plant parameters like plant availability, financial data like profitability and billing and making it available on a management dashboard along with relevant historical data.

Environment, Health and Safety

The entity is committed to generate reliable and environment-friendly power under safe working conditions. A policy on Quality, Environment, Health and Safety has been put in place. Emphasis is laid on continual improvement of our processes and practices to achieve improved environmental, health and safety performance. Training on EHS for employees and stake holders is undertaken on a regular basis to foster a culture of health and safety.

Human Resources

The business has built a committed team of professionals experienced in the field of operations and maintenance of power plants. Special emphasis is given to training and development of the workforce through various training programs. In addition to the competency building programs, the business also focusses on soft skills and leadership development.



NH-14 Palanpur-Swaroopganj Highway

Risks and Concerns

As regards the financial risks, the financial health of the state Discoms remains an area of concern, considering that they are the sole customer. Also, the entity is exposed to cashflow stress pending dispute resolution with PSPCL on certain aspects, though it is fairly positive on the outcome, the risk of unfavourable resolution exists.

Being a coal based thermal plant, availability of coal fuel, quality of coal received, storage loss, supply chain logistics for fuel including lead time between requisition and arrival of coal wagons, transit loss in terms of quality, as well as quantity of coal continues to be a major operational risk for the business.

Demand Supply situation of coal as well as power and the overall market scenario brings about certain business volatility and strategic risks.

Additionally, environmental compliances, as well as Government Policies on various aspects of thermal power pose multiple concerns for the business.

The risk management policy of the company provides for a robust risk management framework which involves

risk identification, assessment and evaluation, strategy and mitigation and monitoring and review mechanism. The company has implemented multiple measures in each of the risk areas to ensure a pro-active approach and timely mitigation including but not limited to timely major maintenance and repairs, coal import sanctions on domestic shortages, etc.

Outlook

Punjab is expected to witness a flat growth in demand for electricity during FY 20.

NPL is likely to remain the lowest cost power producer amongst the IPPs in the state with expected plant load factor of 78% in FY20. On the fuel side coal supply continues to be challenging in the FY 20.

The business has embarked on a five-year strategic plan under the 'Lakshya 2021' program of the group. Major focus areas for NPL during FY20 would be maximising plant availability, resolution of long pending litigations, improving operational efficiency, reducing under recoveries in coal, enhancing fuel quality, resolving the regulatory issues, cost management, digitalisation initiatives and EHS compliance.