

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 (the 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 (the L&T PDL Group)

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

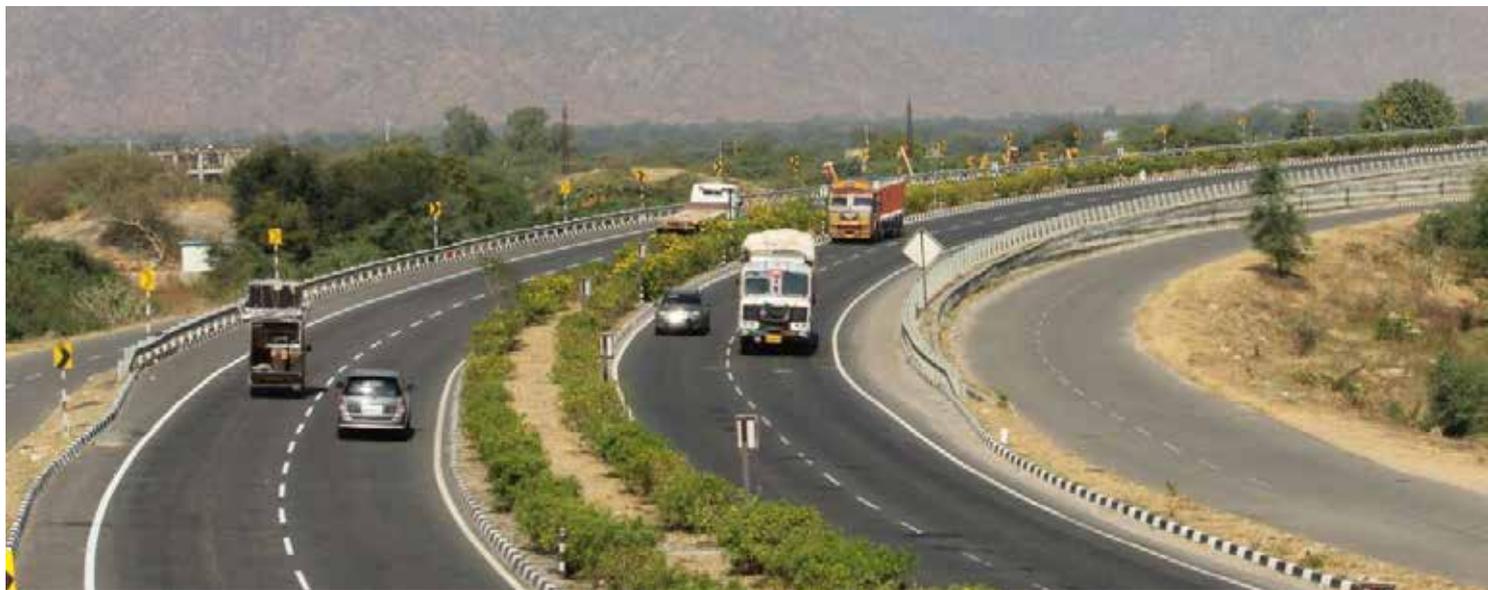


Vadodara-Bharuch Tollway Limited

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 entity has completed landmark infrastructure projects across key sectors like roads, bridges, transmission lines, ports, airports, water supply, renewable energy and urban infrastructure. It is one of India's largest road developers, as measured by lane kilometres under concession agreements signed with Union and State Government authorities. Currently, L&T IDPL has 10 operational road assets and the Kudgi Transmission Project in its portfolio. It also manages 5 operational road assets transferred to Indinfravit Trust, an InvIT that the entity sponsored



Interstate Road Corridor Limited

and launched in May 2018 as the first privately placed InvIT in India, with 77% holding from an international pension fund and insurance investors.

Two decades of extensive experience of working with governments, multi-lateral agencies, international and domestic financial institutions and corporate entities has helped the business 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, in December 2014 and December 2015 respectively. This is the first direct private investment by the largest Canadian pension fund into an Indian Infrastructure Development company. During the year, on conversion of Compulsorily Convertible Preference Shares, the CPPIB became a 49% equity holder and L&T's stake in L&T Infrastructure Development Projects Ltd (L&T IDPL) has been diluted to 51%.

Business Environment

Transportation sector

Considering that the private sector has moved away from Build Operate Transfer and the response to Hybrid Annuity Model projects has also been dwindling, NHAI has focussed on the Toll Operate Transfer (TOT) model. During the year, the entity associated itself with the National Infrastructure & Investment Fund (NIIF) and the CPPIB for their consortium bid for TOT Bundle 3.

In order to drive the Digital India vision of Electronic Toll Collection (ETC), the Ministry of Road Transport & Highways (MoRTH), with effect from December 2019, made the Fastag mandatory for all commercial and private vehicles plying on NHAI roads. The entity successfully led the Fastag implementation on some of the busiest stretches in the country. ETC collections, as a proportion of total toll collections, went up from 27% in March 2019 to 72% in March 2020. This has increased user convenience and reduced cash-handling issues.

Transmission Lines

During the year, the entity resumed bidding activities and participated in five bids under the TBCB (Tariff-Based Competitive Bid) framework.

The Ministry of Power, GoI, Central Electricity Authority (CEA) and Solar Energy Corporation of India have



Kudgi Transmission Limited

collectively decided to construct a Green Energy Corridor across the country to make India grid-ready for upcoming power generation through renewable energy sources. CEA has approved 24 projects worth ₹ 32,000 crore for bidding under TBCB. However, the timelines for bidding are uncertain due to COVID-19.

Major Achievements

MoRTH has instituted the 'National Highways Excellence Awards' to recognize the country's best-performing road assets and toll plazas, both concessionaire-managed and NHAI-managed. For the year 2019-20, Krishnagiri Thoppur Tollways Ltd (KTTL) managed by IDPL won the Silver award, while several others owned/managed by IDPL figured in various categories as Champions. These road assets are highlighted in the annual calendar and dossier of MoRTH, which are widely distributed across the country.

In a road subsidiary for a project terminated in 2015, there was a favourable arbitration award for termination payments. Another road subsidiary received a favourable arbitration award for a construction claim.

The entity actively supported Indian Highways Management Company Limited (IHMCL), the agency responsible to carry out Electronic Tolling, at various policy level discussions, SOPs and operational experiences to enhance the applicability and efficacy of Fastag across the nation. In

the Transmission Service Agreement of the project, the key aspect is its availability. In FY 2019-20, Kudgi Transmission Line (KTL) achieved an availability of 99.99% and thereby earned incentives. The maintenance cost of KTL was also reduced substantially as compared to the previous year.

Significant Initiatives

During FY 2019-20, remarkable advancements were made towards digitalisation. Ahead of Fastag being called in mandatorily, the business proactively envisaged the strong need to push IT infrastructure to facilitate an enhanced user experience and efficient operations. This resulted in the development of the completely automated and centrally monitored Fastag control system. This system enables the automatic generation of all related transactional reports and expeditious notification of class discrepancy evidence to the acquiring bank, arresting revenue leakages.

The various other Digital Initiatives across the functions include:

- **End-to-End Integrated new age SAP S4 Hana replacing existing ERP**

During the year, the project for implementing SAP S4 Hana 1909 along with various other bolt-on products/ applications, such as SAP Ariba, Vendor Portal, Business on Maps, Mobile Application for route operations and O&M teams, etc., were initiated. All these applications,



Sambalpur Rourkela Tollway Limited

once implemented, will be integrated with SAP, and will enhance the speed of reporting and response.

This initiative also includes the implementation of 17+ SAP modules, some of which are first of their kind in India to be implemented in an integrated way. Go-Live is planned by August 2020.

- **Human Resources**

In the current financial year, the entire spectrum of HR operations has moved to a sophisticated application called EmployWise, which covers the entire employee life cycle from 'Hire to Retire'. It is on the cloud (SAAS - Software as a service).

- **Security-related Implementation**

Numerous measures have been taken to tighten security, and various tools and components have been introduced and implemented. Network segregation has been done at all toll plazas as well. People were enabled to work from home in a secure way via secured VPN, end-point security, etc.

- Kudgi Transmission Ltd (KTL) has gone completely digital in its Operations and Maintenance

Environment, Health and Safety

The business is 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 facilitate the implementation of the EHS policy, various Standard Operating Procedures (SOPs) have been formulated defining individual responsibilities and procedures relating to Environmental, Health and Safety matters.

A system called Route Operations Management System (ROMS) has been implemented, which enables immediate reporting of any incident to the project head and functional head concerned in the form of a Preliminary Accident Information Report (PAIR) and Final Accident Information Report (FAIR).

Kudgi Transmission Line (KTL) has successfully achieved a full safe year for all its manpower.

With the onset of the COVID-19 pandemic, the entity enhanced its preparedness early on. A range of preventive measures were undertaken in line with the guidelines under Government advisories/regulations. The entity has also been an early mover in rolling-out a detailed Operations SOPs for not only dealing with the contagion but also ensuring business continuity, including establishing a concrete Disaster Recovery Plan.



Sambalpur Rourkela Tollway Limited

Human Resources

The business has well-laid practices in terms of recruitment of talent and retention. Employees are kept 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.

The business has in place a Rewards & Recognition (R&R) programme to drive performance and boost the morale of the employees spanning across the categories. 'An engaged workforce will be a very productive workforce' is the principle based on which the R&R programme has been devised.

With the aim of building future leaders, the business has devised a 9-month long learning programme, called 'Capability Capitalization', for a select few potential future leaders. This journey aims to mould an employee into a well-rounded leader. The sessions comprise psychometric tools to enhance self-awareness, awareness of the ecosystem, etc. Tools are administered to further enhance the Emotional Intelligence quotient. Change orientation, mastering the change curve, team behaviour using tools such as Belbin and Business Simulations are also covered.

Getting these potential future leaders to understand the importance of communication for influence, business thinking and developing managerial acumen are integral parts of this learning journey.

Risks and Concerns

Traffic & Tariff are key factors in the Toll business. In the aftermath of COVID-19, the nature of recovery across various sectors, such as automobiles, mining, construction, exports, etc., will play a pivotal role in determining the traffic growth characteristics across the portfolio. Further, in some of the projects, the annual toll tariff revisions are based on the wholesale price index (WPI). Lower WPI coupled with lower traffic could lead to lower toll collections. The impact of the pandemic on toll collections is being addressed by the business by resorting to provisions under the Concession Agreements under *force majeure*.

The mandatory implementation of Fastag has led to various challenges, such as plaza-level cyber security, data management and timely discrepancy reporting to acquiring banks. However, the entity proactively recognised the associated risks and reinforced the IT infrastructure requirements and SOPs. This resulted in the seamless shift towards Fastag implementation across the SPVs. Currently, the entity hosts a completely digitalised and centrally monitored in-house data management and monitoring



Hyderabad Metro Rail - Hitec City line

framework for Fastag transactions, which is thoroughly secured.

Outlook

The Government of India intends to provide a strong thrust to the Infrastructure sector via the National Infrastructure Pipeline (NIP). Out of the total project capital expenditure of NIP, 19% ~ ₹ 20 lakh crore would be spent on the Transportation sector.

Prior to COVID-19, toll revenue was expected to increase to the tune of 6%. However, in the near term, the toll revenues are expected to contract as compared to the previous year due to lower traffic growth and lower WPI. COVID-19 has presented an unprecedented challenge, resulting in a nationwide lockdown and hence a sharp decline in traffic across the country. This event has been categorised as a *force majeure* event under the concession agreement, the cashflow for the year will be stressed, and hence cash conservation will be the key.

The MoRTH has issued a memorandum providing relief to contractors / developers of the road sector under the 'Atmanirbhar Bharat' Scheme and directing NHAI to provide *force majeure* relief to concessionaires impacted by COVID-19. A separate committee is being set up under the chairmanship of Director General (RD) & Special Secretary to suggest further steps in this regard.

The Ministry of Finance (Department of Expenditure), Government of India has also issued a circular to provide extension of concession period between 3 to 6 months. Expedient approval in the Change of Scope in contracts, extension of Concession Period, and provision of Revenue Shortfall Loans are some of the immediate relief measures mentioned in the memorandum published by MoRTH. In addition, certain SPVs of the entity have availed of the debt repayment moratorium announced by the RBI to take care of immediate cashflow requirements.

The business has initiated necessary action and believes that the impact will be substantially mitigated.

L&T METRO RAIL (HYDERABAD) LIMITED (L&TMRHL)

Overview:

L&T Metro Rail (Hyderabad) Limited (L&TMRHL) is a Special Purpose Vehicle (SPV) incorporated on 24th August, 2010 to undertake the business to construct, operate and maintain the Metro Rail System including the Transit Oriented Development (TOD), in Hyderabad under the Public Private Partnership model on Design, Build, Finance, Operate and Transfer (DBFOT) basis. L&TMRHL



Hyderabad Metro Rail on the Viaduct

entered into a Concession Agreement with the erstwhile Government of Andhra Pradesh on 4th September, 2010.

The Concession Agreement includes construction of 71.16 km of elevated metro rail corridor and rights for real estate development of 18.5 million sq. ft., with strategically located land parcels interspersed in prime city locations adjoining metro stations and metro corridors. The concession period of the project is 35 years, from the appointed date of 5th July, 2012 including the initial construction period of 5 years. This is extendable for a further period of 25 years, subject to fulfilment of certain conditions by the SPV as set out in the Concession Agreement.

As per the Concession Agreement (CA), the scheduled Commercial Operation date (COD) for the project was 5th July, 2017. However, due to delays in providing required RoW and confirming alignment changes by the Government, extension of the COD to 30th June, 2020 was approved. L&TMRHL completed execution of the project well ahead of the extended time granted. L&TMRHL completed commissioning of the entire stretch progressively, with the last stage getting commissioned in February 2020. The entire project is now operational.

During the year, the construction of 1.28 million sq. ft. of Transit Oriented Development (TOD) consisting of 4 malls and an office block has been completed and has commenced commercial operations. Construction work of 0.5 million sq. ft. of office space at Raidurg site is currently under way. The entity is chalking out plans for phased development of the balance TOD.

Business Environment

The Hyderabad Metro Rail is the world's largest metro project in public-private partnership mode. It brings together 'best in class' resources and technology in every aspect of the project – stations, rolling stock, track work, depots, AFC, power supply, traction and SCADA system, signalling and train control systems and telecom systems.

Metros are an environment-friendly, safe and punctual mode of transport. They ease commuting in densely populated cities and towns. Given the population density of Hyderabad, L&TMRHL 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 ensure higher ridership of 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.



Hyderabad Metro Rail Uppal Depot and Nagole Station

However, with the onset of the COVID-19 pandemic, the environment has been impacted in the short term. The entity is looking at various innovative business models to overcome this challenge.

Significant Initiatives

- Robust and affordable last mile connectivity initiatives to enhance the ridership
- Launched corporate shuttle services from metro stations to corporate offices
- All metro stations have a bike-rental facility
- Exploring non-fare revenue generating options, viz. royalty amount from QR ticketing partners, consultancy services for other metros, cross-selling of products to commuters
- Tied up with ticketing partners like Goibibo, MakeMyTrip, Phonepe, Paytm, etc. and launched Mobile Ticketing (QR Code generation) solution for the convenience of metro commuters
- Provision of skywalks from the Metro stations to the adjoining TOD malls to enhance convenience and business potential

Digitalisation

Easing the pressure of reconciling huge, heterogeneous data on fare collection, L&TMRHL has automated Fare

Revenue Reconciliation between Automatic Fare Collection System Reports Vs Payment Channel Reports Vs Bank Reports. To make the metro travel easy and trouble-free, it is coming up with the EMV-based Open Loop Ticketing (Euro Master Visa (EMV) card) solution for metro commuters.

L&TMRHL has started using Business Intelligence IT tools like Alteryx and Tableau for both business and passenger data analysis/interpretation, which will improve Management decisions.

L&TMRHL has put in place a process for automation of refunds to customers by developing an auto verification process of the refund data using software tools. This software tool verifies items of refund reported by the Automatic Fare Collection System (AFC) with the smart card history data base. The tool helps minimising the process time and facilitates timely refunds to customers.

Awards and Recognition

Prestigious awards received by L&TMRHL during FY 2019-20 include:

1. DCD National Awards 2019 – Hybrid IT Project of the Year Award
2. Institute of Economic Studies – Enhancing the Image of Metro Rails in India - Globally



Sharp bend of the Viaduct

3. DCD Global Awards 2019 – Hybrid IT Project of the Year Award
4. CSO 100 Awards 2019 – the Information Security Project has added significant benefit to the organization, its employees, associates and vendors

Environment, Health and Safety

A mass transit system helps move large numbers of commuters away from private vehicles, helping reduce the carbon footprint of the city. It helps reduce the air pollution, since it operates on electricity and hence there is no emission of greenhouse gases. It also helps reduce sound pollution due to the efficiency of the coaches and the advanced engineering that has been used for building the track, viaduct as well as metro coaches. Further, the smart-card option reduces paper consumption.

The Automatic Train Protection (ATP) System implemented continuously monitors safe train operations. Automatic Train Supervision (ATS) pre-empts unscheduled interruptions of train services. Station equipment such as Computer-based Interlocking (CBI), wayside ATP, etc., are vital signalling equipment and ensure safe and uninterrupted train operations. Passenger Emergency Stop Plungers are provided on each platform and in the Station Control Room (SCR) to stop a train immediately in case of an emergency.

Risks and Concerns

With the Metro fully commissioned, the risks related to construction phase are averted, except for the financial risks of close out of pending claims. While the operational risks now kick in viz. safety of passengers and assets, bus mode of transport being preferred, considering the connectivity and a drop in commuters in the feeder industry, especially IT.

The business has a robust risk mitigation process and several initiatives have been taken to avert / minimise the impact of various risks, including:

- The appointment of Keolis, a reputed O&M operator from France, with experience of providing safety solutions
- Discussions with local bus transport authorities, impressing upon them the need to work complementarily
- Thrust on developing additional revenue sources

However, the COVID-19 pandemic in the end of the financial year is expected to have an impact on the commuters, additional costs and real estate monetisation. The business is working on ways to facilitate contactless travel, increase focus on sanitisation of the metro system, etc.



Rajpura project at the cusp of completion in December 2013

Outlook

With the entity getting into first full year of operation of the metro, things had started looking up, aided by the planned partial monetisation of the real estate. However, the pandemic has brought in the challenges of:

- Commuters preference for avoidance of mass transit
- ITES commuters' preference to continue to Work from Home
- Drop in advertisement income due to curtailment of expenses by various corporates
- Drop in oil prices, making alternative modes of transport more attractive
- TOD revenues impacted by overall business sluggishness
- Major investments in realty sector may be on hold in the short to medium term

All efforts are being taken to make Hyderabad Metro the safest and cleanest transportation mode keeping in mind the current pandemic situation. This gives L&TMRHL the opportunity to shift the new customer segment to Metro rail from other transportation modes like bus, auto, etc. Also, contactless travel system integrated with other transport modes focus on making travel safe.

Strategy alignment through innovative business models to retain the competitive advantage in TOD and station retail developments is a focus area.

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 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 at an advanced stage of construction and is expected to be commissioned in FY 2020-21. The hydel projects in L&T Himachal Hydropower and L&T Arunachal Hydropower have been shelved. In the thermal sector, Nabha Power Limited owns and operates a 2 X 700 MW supercritical thermal power plant at Rajpura, Punjab.



Rajpura 2x700 MW Supercritical Technology based Thermal Power Plant

Nabha Power Limited (NPL)

Business Profile

NPL is operating a 2 X 700 MW supercritical thermal power plant at Rajpura, Punjab. 100% of the power generated from this plant is tied-up to Punjab State Power Corporation Limited (PSPCL) for a period of twenty-five years upto 2039 under a Power Purchase Agreement (PPA). The plant is the first indigenously manufactured supercritical power plant, built using technology sourced from Mitsubishi, Japan.

The plant sources its fuel from South Eastern Coalfields Ltd. (SECL), a subsidiary of Coal India Limited, under a 20-year Fuel Supply Agreement (FSA). NPL has 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 six years with an availability of over 85 % during FY20. 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 also.

NPL is the lowest cost thermal power producer within Punjab, with benchmark-setting operational efficiency.

Business Environment

India's Installed Capacity rose to 3,70,106 MW in FY 2019-20, a marginal increase of 1.41% over the previous year, of which the Installed Capacity of thermal power plants is 55%. Dependence on the thermal generation is clearly reflective, as it fulfils 71% of the total power requirement in the country.

The Average Power Demand in Punjab was 6486 MW in FY 2019-20 and NPL contributed to 14% of the demand. The Average Power Purchase rate was ₹ 3.60 per KWh in FY20 vs ₹ 3.48 per KWh in FY19.

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

Unit 1 was under a planned shutdown since Feb. 1, 2020 for 77 days for the first major capital overhaul in which 1004 personnel were involved. The task involved rectification and replacement of various equipment under turbine, boiler, electrostatic precipitator.



Aerial view of cooling towers, Rajpura Thermal Power Plant

During the year, in order to comply with the emission compliance norms the construction work of Flue Gas Desulphurisation has been awarded to L&T Power, who emerged as a successful bidder in the competitive bidding process.

During the COVID-19 lockdown, NPL, being classified as delivering an essential service, maintained business continuity, while ensuring the health and safety of all its employees and contract staff. Various steps were undertaken, including social distancing and following best safety practices with robust Standard Operating Procedure (SOP).

Major Achievements

- Best Operational Performance: - Annual Plant Load Factor (PLF): 71%, (All India Thermal Average: 56%)
- Received a Favourable Order from Supreme Court on the washing charges petition and received partial payment from PSPCL
- Partial Favourable Order received from PSERC in imported coal matter, clearing partial dues
- Ensured Fuel Adequacy, as no lapsing despite flooding of mines in Korba Coalfields of South Eastern Coalfields Limited (SECL) and approval for imported coal

- During the year, NPL was awarded the following awards:
 - National Energy Leader Award, CII
 - Excellent Energy Efficient Unit Award, CII
 - Winner - Water Management and Ash Handling, Mission Energy Foundation
 - Finalist, Global Platts Energy Excellence Award S&P USA
 - Gold Award, Grow Care India CSR Award 2019
 - Best Operating Thermal Power Generator, IPPAI Third Consecutive Year
 - National Best Employer Brands 2019

Significant Initiatives

- Reduction in costs through alternate sourcing, reverse engineering
- Digital Initiatives
 - Implementation of Energy Management System
 - Management Dashboard upgradation

Environment, Health and Safety

NPL is committed to generating 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 processes and practices to achieve improved environmental, health and safety performance. Training on HSE for employees and stakeholders is undertaken on a regular basis to foster a culture of health and safety.

Human Resources

NPL has a team of 296 personnel including professionals experienced in the field of operations and maintenance of power plants and other support staff. NPL focusses on leadership development and communication skills. Emphasis is laid on participation in various training and development programmes organized internally and externally.

Risks and Concerns

As a private developer, NPL faces the following major risks:

- Delay in plant scheduling – increase in yard loss
- Delay in receipt of payment from DISCOM for monthly bills
- Dispute for force majeure with DISCOM
- Coal quality from different mines
- Flue Gas Desulphurisation environmental compliances

The risk management policy of NPL provides for a robust risk management framework which involves risk identification, assessment & evaluation, strategy & mitigation, and monitoring and review mechanisms. NPL has implemented multiple measures in each of the risk areas to ensure a proactive approach and timely mitigation.

Outlook

Due to the lockdown to contain spread of COVID-19, power demand by industrial units and farmers in Punjab has dropped substantially since March 2020. PSPCL may prefer to optimize its power purchase costs by purchasing power from the cheaper sources as the power exchange prices have dropped substantially.

NPL is likely to remain the lowest cost thermal power producer amongst the Independent Power Producers (IPPs) in the state with an expected plant load factor of 73% in FY21.

On the fuel side, coal supply continues to be challenging. The GoI and GoP are pushing for reduction in coal imports to reduce the cost of power. Non-approval of imported coal may have adverse implications. Higher usage of RoM coal may lead to higher maintenance and auxiliary consumption and lower boiler efficiency.

NPL is geared to address the challenging times and has been taking proactive steps like deferring capex/ modifications/non-routine purchases, negotiating better credit from suppliers of coal, etc.