

Rail Business

[FOCUS-INDIA]

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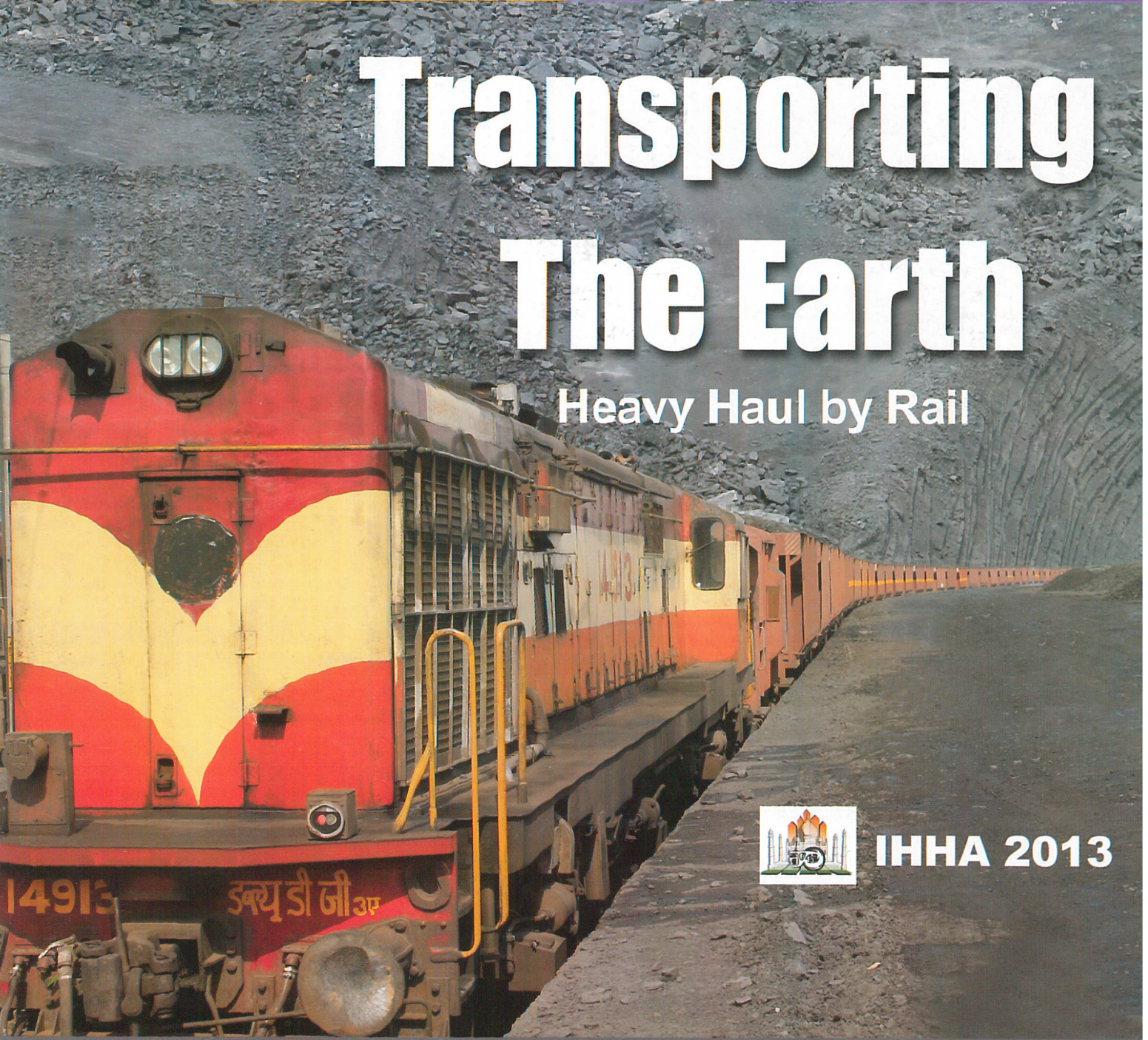
Worldwide experience dictates a higher axle load for India



Hyderabad Metro & L&T: new benchmarks for private investment

Transporting The Earth

Heavy Haul by Rail



IHHA 2013



Formations are critical to longterm track health



Resurrection of the long freight trains



Wide options for track machines

Hyderabad Metro: a rainbow cooperation



Hyderabad, with its twin city Secunderabad, is choked by transport growth. Not unlike other major Indian cities. Relief could be just a couple of years away, with the dream of mass rapid transport through an elevated 68 km metro network expected to begin operations in 2014. But then again, this project is just more than another megacity metro: it is a nearly ₹ 20 000 Cr projects with more than 80% investment (build and operate) from the Indian private sector major Larsen & Toubro (L&T). Hyderabad metro needs to succeed to be a role model for enhanced private sector investments in the Indian rail sector. A negative report would be a long term dampener.

“Before and after the Metro”

NVS Reddy, MD, Hyderabad Metro Rail (HMR) is passionate about both the city and rail transport as he enumerates the advantages, the need and the models followed for this project. He believes that HMR is the most prestigious project in the city's 400 old history. He adds that for Hyderabad (that traces its roots to the handsome Golconda fort and includes the envied diamond mines), history could be defined as “Before and After the Metro” with the commissioning of the elevated Metro. HMR is expected to answer the burgeoning traffic problems and redefine the cityscape making it the most liveable city in India. Besides, it could be a game changer for railway investments.

In the late 1990s, initial efforts of converting the long distance railway lines to serve intra-urban needs were, rather sketchily, addressed through the concept of MMTS (see accompanying report). The existing railway lines were not designed to serve the work or residential centres deep within the city; MMTS addressed the problem rather superficially, more in hope than in plan.

The 72 km HMR network, planned for completion in 2015, will end up costing nearly ₹ 20 000 Cr that includes ₹ 2000 Cr from the Central government's viability gap funding. This would be a major project where a railway

system has been provided with such a large VGF, even as IR has not been able to get such funding for any other project.

The local state government decided to go the PPP route early. The first bidding effort, though completed in 2007, was vitiated with the collapse of the Satyam group. The private investment has been made by L&T. A ₹ 60,000 Cr Company, L&T is one of the largest and most respected among India's Corporates, with interests in engineering & construction and footprints in manufacturing, IT, financial services and a growing international presence.

Just 5 metro projects the world over are in PPP mode, indicating the fjords that had to be crossed. It has not been a very easy process for a major private sector investment in an urban transport. The initial hurdles have included suspicion, legal hurdles and NGO activities which have fortunately been overcome broadly.

A trodden path was naturally not available and developing model documentation involved multiple experts, ably aided by G Haldea from the Planning Commission; the structure of the agreement was later appended by inputs from expert groups. HMR was able to develop its own policies and procedures including manual of standards and specifications.

Here experience of smaller projects came in. Reddy recounts that having worked earlier on smaller public facility projects in Hyderabad municipality, he had built a confidence for this prove out venture. The bidding centered about suitability of the bidding consortia and the lowest viability gap funding required and L & T offered 10%. The agreement in Sep 2010 and a financial closure in March 2011 set a record speed for a pioneering project. The project is billed to break even 5 years after commissioning, with a project IRR of 14.5% and return on equity of around 17%. A consortium of 10 public sector banks led by SBI is financing the project. GoAP will spend another ₹ 1,980 Cr towards land acquisition, R&R package, shifting of utilities, etc. (this does not form part of the project cost as per VGF guidelines of GoI).

Project contours

‘Appointed Date’ (a contracted start date) for the HMR project was declared as July 05, 2012 jointly by Andhra Pradesh and the Concessionaire L&T Metro Rail Hyderabad Ltd. Concession period of 35 years including the Construction Period of 5 years will be counted from this date.

- Govt. approved project cost ₹ 12, 132 Cr. (updated cost approved by lenders: ₹ 14, 132 Cr.)
- Viability Gap Funding by GoI and balance by the concessionaire (L&T)
- Additional ₹ 1, 980 Cr. by GoAP for land acquisition, shifting of utilities, relief and rehabilitation, pedestrian facilities, etc.



- Concession Period 35 years (incl 5 for construction), extendable by another 25 years.
- 269 acres of land for 3 Depots and passenger/commercial areas at 25 stations.
- Scope for property development through air space use – property cannot be sold.
- Lease rentals during concession to cross subsidize losses.
- Property + rail system to revert to government at the end of concession.

The initial studies and project reports were carried out by Delhi Metro. The project will involve three corridors:

- Miyapur (Terminal) –LB Nagar 28.9 km , 27 stations.
- Secunderabad – Falaknuma, 14.8 km, 16 stations.
- Nagole –Shilparamam, 27.5 km, 23 stations.

A station every km plan indicates the high population activity in the areas served.

Construction features

- Elevated twin line rail tracks on a deck erected on piers generally in central median stations at an average interval of 1km (total: 66 stations).
- Adequate parking space & circulating area at stations for multi-modal integration.
- Max speed: 80 kph; Average speed: 34 kph



NVS Reddy
Managing Director
Hyderabad Metro

Ahead on an uncharted path

Heading the largest PPP sector Metro rail project in the world comes easy to NVS Reddy. With above 30 years experience of various government positions and in PSU's, his prior work as Additional Commissioner of Hyderabad Municipal Corporation, Director (Finance) of the state's power distribution company and the mega Konkan Rail project have all contributed to bridging the divide with the private sector. One can sense that he speaks a language called 'can do' even in the archaic government setups that he has to confront regularly. Successful management of a large PPP project needs leaders of such understanding and 'can do' attitudes.

Reddy is known for his financial acumen, managerial ingenuity, open minded approach and leadership. He has built on his early years in IR's Accounts Service, with experience acquired in diverse positions in Rail Transportation, Power, Urban Transportation, Urban Governance and Project Management. Reddy is always willing to share and learn, speaking regularly in engineering, management and professional institutes in India and abroad.

- Air conditioned coaches with automatic door closures & other safety features.
- Sophisticated signalling system based on ATP, ATC, ATO.
- A maximum service frequency of 3 minutes during peak hours.
- Carry about 1.5 million passengers per day by 2017 and 2.2 million by 2025.
- Smart ticketing with contact less cards.

Business model and tariffs

HMR fare structure involves slabs from ₹ 8 to ₹ 19 with 5% increase per year for the first 15 years & 60% of WPI-based inflation. HMR has strategized a more practical approach to

fare revisions so that private investors could realistically compute the long term returns. By contrast the Delhi Metro adopted a model with a fare succession committee that has faced resistance and interference.

The system has prioritised revenues from the urban infrastructure with 300 m on both sides of the rail system having been declared for special incentives for transit oriented development. HMR has acquired 269 acres of government land at 25 different locations for revenue generation schemes including parking and circulatory shopping. Reddy stresses that the private sector involvement has helped better innovations and faster technical decision making.

Diverse needs for urban transport investment

From the railway's standpoint, the foremost concern stems from operational losses suffered on these services and capacity constraints. Railway networks in urban areas were primarily built for long-distance intercity transport. Only with segregation of suburban and long distance passenger/freight traffic, efficient provision of commuter service is possible.

MRVC in Mumbai and MMTS in Hyderabad are two successful models for financial participation and cooperation with State Governments. Other states need to be engaged for similar initiatives.

Viable cost sharing arrangements for both infrastructure and rolling stock investment and management of commuter operations need to be configured. It is envisaged that over the next 20 years IR's share of expenditure (@ 50%) in augmentation of urban networks would amount to ₹ 3000 Cr. per annum or roughly ₹ 60,000 Cr.

In addition, two elevated rail corridors are using the existing right of way of railways in both Western and Central Railways in Mumbai (Churchgate-Virar and Mumbai VT to Karjat) costing approximately ₹ 40, 000 Cr. could be implemented through PPP along with Viability Gap Funding. Similar other projects in Mumbai and other cities will come up in future. It is estimated that an investment of the order of ₹ 2, 00,000 Cr. would be required on this account.

Extract from the Interim Report of the Rakesh Mohan chaired National Committee for Transport Planning.



Road sector integration

The peak load traffics in Indian cities can be overbearing. HMR steps include preparation of a master plan for pedestrian facilities, entrusted to IIT Delhi. Multi modal road sector integration will focus around attached bus terminals, MMTS local train stations and merry go round buses with residential colonies. Interchanges are provided at 3 points: Ameerpet, Parade Grounds and MGBS besides IR interchanges at Nampally, Secunderabad and Begumpet. In effect a lot of thought has been given to the transportation experience rather than just a A-to-B service on rail.

An international MRTS consultancy major, Louise Berger, the 'Independent Engineer', will review designs & drawings, monitor progress & quality of construction and systems. AECOM, another international consultancy major, is the General Consultant, assisted by a number of other agencies like Parsons Brinkerhoff, Halcrow, RMJM, Nikken Sakkei, CRN and L&T Ramboll for detailed engineering designs etc. 9 well experienced MRTS/ex-IR Chief Engineers have been enlisted on an HMR Experts' Panel for technical guidance, scrutiny & review.

A pioneering effort of this magnitude does require extensive contractual documentation, a process not rendered easy due to involvement of the number of governmental agencies. Reddy details a series of acronyms for all the documents: RFQ and RFP stages, DCA, MSS, RFP, SHA, MSS etc. The contract negotiations had to be based on certain key bases like being 'technology neutral', 'input based and output oriented', 'performance specification', scope for design innovation and reduction in life cycle costs. A key support was the need for

bankability of the project that allows allowing property development over 269 acres. Extensive consultations with all stake holders were critical to make financial closure easier.

Reddy, who started his career as a finance manager with IR, looks back on key components of the negotiation process. The allocation & management of risks is a key to success of a PPP, with the risk to be borne by the party (of the three players viz., authority, concessionaire and lender) best able to manage it. He delineates the main risks:

Project risk allocation

Reddy has clear demarcations of risks for a project of this nature.

Authority side: Provision of Right of Way to the site; Fare and Fare escalation formula prefixed, Scope for differential Fare, notification; Procuring permission from Railways, NH etc. for Right of way; Acquisition of land; Police help during construction; Permission for utilities (electricity, water, municipal permission etc.); Shifting of utilities.

Commercial risk

No traffic guarantees – extension of Concession Agreement in case of fall in traffic.

Management Risk

Concessionaire to hold 51% of Equity up to 2 years from COD; Arm's length from Govt. ; IE supervision; Change in scope pre-defined; Key performance indicators; Obligations by Government and Concessionaire.

Present status

A steady pace of physical progress has been achieved with over 800 expat & Indian engineers. Surveys, soil investigations & most of the design works have been completed. With depot & precast yard works in full swing, ground works including pier construction works on roads commenced in April 2012.

Geotechnical investigation and most of the engineering design works for the other parts of the Metro Rail system have been completed. Engineers of the Concessionaire and its various consultancy agencies are working on designs and at several project locations in the city.

Order for procurement of coaches

(171 coaches, about ₹ 1,800 Cr.) has been placed by the Concessionaire on Hyundai Rotem, South Korea, the first supplier for Delhi metro coaches. Rotem won the contract over other shortlisted companies including Bombardier, Spain's CAF and China's CSR.

With the preparatory works having been completed and engineering design works in advanced stage of completion, other ground works are going on at a brisk pace. Depot works at Uppal & Miyapur depots and pillar construction works between Nagole & Mettuguda (8 km; stage 1 of the Project) and between Miyapur & SR Nagar (11km; stage 2) are in full swing. So far 139 pillars, 268 foundations and 548 viaduct segments have been completed

The award of ₹ 700 Cr. signalling and communications systems contract to Thales India has recently been announced. Thales will install communications-based train control and integrated communications and supervision systems on the future Hyderabad. Thales will design, build, deliver and manage the installation of its SelTrac CBTC signalling technology. The ICS package will comprise data transmission, public address, passenger information display, fault reporting facilities, office automation and information technology, CCTV, access control and intrusion detection, master clock, telephony, voice recording and radio tetra systems.

French firm Keolis, an SNCF concern, secured a contract in May 2012 to operate and maintain the new metro system for eight years. The international expertise on view in the project should help build Indian expertise and confidence for the future.

CSR efforts

For Reddy, general involvement and appreciation of the citizens is a core value, leading to HMR initiating a number of CSR efforts, including: mass tree plantation and distribution of free saplings, Hyderabad Cycling Club and heritage conservation with adoption of three heritage structures i.e., Paigah Palace, AP State Museum, and MJ Market. **RF**