

GELF/Madhepura



1. PROJECT BACKGROUND OF GELF/MADHEPURA PROJECT

- **Railway Board sanctioned vide Pink Book item no-333a/2007-08 at the abstract cost of Rs 1293 Cr. for setting of Greenfield Electric Locomotive Factory at Madhepura.**
- **Project Mode - PPP, JV between Foreign Investor and Indian Railways (74:26) with M/s Alstom France (Electric).**
- **Under the Madhepura project supply 800 nos. of 12000 HP Electric Locos in 11 years INCLUDING maintenance of 500 locomotives at Saharanpur and Nagpur Depots.**
- **GELF Madhepura set up under PPP (Public-Private Partnership) agreement with an investment of Rs.1300 Cr.**
- **Joint venture between Ministry of Railways with Indian Railways equity share of 26% and leading international Electric Locomotive Manufacture i.e. M/s Alstom India Pvt. Ltd. who have the latest State of the art technology.**
- **Indian Railways has spent on Infrastructure Rs. 261 Cr. in Madhepura till date and in company paid up equity of IR is Rs. 100 Cr. each.**
- **The Locomotive availability and Energy Efficiency standards is comparable to world's standards. GELF, Madhepura will turn out 800 numbers of 12000HP, 8 Axle, Bo-Bo type Electric Locomotive, based on IGBT technology, in a span of 11 years to cater the need for hauling heavy Goods traffic preferably on Dedicated Freight Corridor (DFC).**
- **Sri Narendra Modi, Prime Minister of India, dedicated the GELF factory at Madhepura to the nation on April 10, 2018.**

2. TECHNICAL PARAMETER OF WAG12B LOCO

| SN | Parameters | WAG12B |
|-----------|--|---|
| 1 | Gross Horse Power (GHP) | 12000 (6000+6000) |
| 2 | Traction Horse Power (THP) | 12000 |
| 3 | Nominal Axle Load (MT) | 22.5 Tonn. |
| 4 | Starting TE | 706 KN |
| 5 | Continuous TE | 540 KN |
| 6 | Braking Effort | Reg. 514 KN, Pn.-153 |
| 7 | Maximum speed | 100 kmph |
| 8 | Gear Ratio | 110 : 23 |
| 9 | Brake Specific fuel consumption (BSFC) @ N8 | NA |
| 10 | Fuel Tank capacity (In Liters) | NA |
| 11 | Loco weight | 180 T. |
| 12 | Length over coupler pulling faces | 38400 mm |
| 13 | Minimum Maintenance interval | 45 days |
| 14 | Minimum availability (%) | 95 |
| 15 | Track Interface Performance at 110kmph: | Vertical Acceleration "g" = 0.20 Lateral Acceleration = 0.14 Vertical RI-Avg = 3.09 Lateral RI-Avg = 3.20 WAG12 track interface performance is very good and have less impact on the track wear |
| 16 | Air Compressor | One Main Air Supply Unit (MASU) per section consisting of One Screw Compressor of 2430 LPM, Air Dryer, Oil Filter, Safety Valve, Minimum Pressure Valve, Auxiliary Compressor and Two Connectors for Electrical Interfacing. |

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| | | Provided in Machine Room. |
| 17 | HV System | Compact HV Cubicle consists of CT, PT, VCB, Surge Arrester, Capacitor Bank. Provided in Machine Room. |
| 18 | Dehumidifier | Dehumidifier provided |
| 19 | HVAC System | Available |
| 20 | Electro Dynamic (regenerative) brake | Available, Working with both master controller and Auto brake, if driver applied auto brake, first of all load will be controlled by regeneration and if it would not sufficient then applied mechanical proportionate brake on wagon only locomotive still under electro dynamic mode. This reduces the mechanical wear & tear in locomotive. |
| 21 | Event Data Recorder | Available |
| 22 | Remote monitoring system for quick support | Available |
| 23 | Driving Cab | Adequate space in Driving Cab, Adjustable seat with parallelogram mechanism, Storage Cabinets, Tab for operation support of drivers (with TSD), Provision for DPWCS, EoTT, TPWS, Fire Extinguisher Control, Voice Recording system, helpful for failure investigation, Air tight Door & windows with optimised thickness of glass, Limit switch for alerting door/window opening/closing. |
| 24 | Driver Display Unit | Advanced DDU consists Speedometer, Brake Pressure detail, Headlight control, Marker Light Control, Flasher Light Control, Compressor Operation, ZTEL operation (300/529T), TCU/Aux. converter health status, TMs health status, VCB selection information etc, Maintenance screen. |
| 25 | TMB, MRB & Scavenger Blower | Compact unit consists MRB, TMB & Scavenger Blower in a single unit |