



LME:012: C

**BHARAT HEAVY ELECTRICALS LIMITED,
Jhansi**

SPECIFICATION

BHEL/ EOI/METRO

ISSUE DT:

REV.NO.- 00

REV. DT:

SHEET 1 OF 6

**SUBJECT: CONSULTANCY FOR ESTABLISHING STAINLESS STEEL METRO
COACH FACTORY AT BHEL JHANSI**

Enclosures: Annexure -I

Rev	Date	Prepared	Rev	Date	Prepared	Rev	Date	Prepared
		Approved			Approved			Approved

DUE DATE OF OPENING – 09/11/2012 (November 9th, 2012)



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1. General:

Presently, BHEL Jhansi is in the field of design manufacturing testing and supply of various types of power transformers, Diesel Electric Shunting Locos & Electric Locos. BHEL has planned to diversify in field of stainless steel metro coaches. We have formed a consortium with Hitachi, Japan for participating in Delhi Metro Rail Corporation recent tender (RS10) for rolling stock. This tender is for design, manufacture, supply, testing, commissioning and training of 486 No standard gauge cars - Electric Multiple Units (EMUs). Indigenous manufacturing of these stainless steel coaches shall be carried out at BHEL Jhansi this shall mainly cover following aspects :-

- a) Car body fabrication from Stainless steel sheets.
- b) Bogie frame fabrication from high tensile steel.
- c) Coach & Bogie assembly.
- d) Testing of coach
- e) Train formation & its testing
- f) Dispatch of coaches by road / rail

For manufacturing of these Coaches & Bogies we require a world class facilities and infrastructure at BHEL Jhansi, which will have flexibility & provision for manufacturing different types & sizes of stainless steel coaches. For establishing facilities and infrastructure we require competent consultant to prepare the detailed project report (DPR) for setting up the required facility. **We call for Expression of Interest (EOI) from reputed consultancy firms to partner us in our mission of setting up of the manufacturing facility of international standards**

This specification covers qualifying requirement of consultant and broad aspects to be covered in DPR and responsibilities of consultant in establishing a world class facilities and infrastructure at BHEL Jhansi for manufacturing of stainless steel Coaches & Bogies

About BHEL

Bharat Heavy Electricals Ltd. (BHEL) with annual turnover of US\$8.5 billion is one of India's largest engineering, manufacturing and services organization and is recognized internationally as a supplier of state of the art quality products, systems and services. The wide spectrum of products and services include providing total business solutions for a wide product range in Rail Transportation, Power Generation, Transmission, Telecommunication, oil and gas, non-conventional energy sources, defence sectors and other allied systems. BHEL has fifteen manufacturing units spread over the country. All the manufacturing units have ISO accreditation. BHEL also has global presence around the world. BHEL has been major player in the field of transportation business in India for more than four decades and around 70% of Indian Railways Rolling Stocks are fitted with BHEL propulsion system. BHEL has state of art facilities for manufacture of 3-phase AC Electrical propulsion system and



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Controls. BHEL has also manufactured a large number of Electric and Diesel Locomotives for Indian Railways and Industrial users.

2. Brief description of stainless steel coaches for DMRC

As per DMRC RS 10 tender Hitachi and BHEL consortium has offered a six car formation train to DMRC. Each train consist of 2 Nos driving motor coach , 2 Nos motor coach & 2 Nos trailer coach. Salient features of these coaches are as given below:-

- a. Material for car body manufacturing – Stainless steel of grade SUS301L of JIS G 4305 or equivalent in form of sheets & coils as available in market.
- b. Gauge - Standard gauge / 1435 mm
- c. Maximum length over body – 22010mm
- d. Maximum width over body -3000 mm
- e. Maximum width between threshold plate- 3200 mm
- f. Minimum passenger saloon headroom -2015mm (approx)
- g. Locked down pantograph height – 4048 mm (approx)
- h. Height of carbody from rail level – 3500 mm (approx)
- i. Height of floor from rail level – 1100 mm to 1130 mm (approx)
- j. Bogie wheel base – 2200mm (approx)
- k. Distance between bogie centres –15100mm (approx)
- l. Wheel diameter- 860mm (New)
- m. Maximum axle load – 17 tonne
- n. Tare weight of car body – 16 tonne (approx)
- o. Maximum Tare weight of any assembled coach- 42 tonne
- p. Material for bogie frame manufacturing – High tensile steel
- q. Approximate weight of bogie frame – 3.5 tonne
- r. 2-Axle radial bogie with air spring & damper shall be used.
- s. Approximate over dimension bogie assly would be about - 3500 mm (length) x 3200 mm (width) x 1200 mm(Height)
- t. Approximate weight of assembled bogie – 10 tonne

Broad activities which shall be performed at BHEL Jhansi for manufacturing of these coaches are listed at annexure - I for ready reference

3. Scope of work of consultant:-

Preparation of detailed project report for establishing world class facilities and infrastructure for manufacturing, testing & dispatch of stainless steel coaches at BHEL Jhansi at optimum cost. These facilities & infrastructure will have flexibility & provision for manufacturing different types & sizes of stainless steel coaches and shall able to deliver 250 nos coaches per year by engaging approx 250 direct manpower. This proposed facilities shall operate in 02 shift , each shift of 08



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working hours. Consultant to elaborate the type of coaches which can be manufactured in the proposed facility in addition to coach required by DMRC. Consultant would also be required to be involved during execution of project for completion of project in time and in cost specified in its report.

Since time is the essence of this contract, the total set up time for the factory must not exceed 52 weeks.

4. Broad aspects of detailed project report:-

Detailed project report shall broadly cover the following :-

- 4.1 Plant lay out covering manufacturing shops, offices, warehouse and testing etc.
- 4.2 Detail shop layout with craneage.
- 4.3 Cost of civil work including land development, survey, soil testing and time frame required to complete the civil work.
- 4.4 Requirement of Plant & Machinery with their broad specification, cost, delivery period and probable source.
- 4.5 Requirement of material handling equipments with their specification and cost.
- 4.6 Requirement of welding equipments with their specification and cost.
- 4.7 Requirement of Man power Managers, Engineers, Supervisors and Workers.
- 4.8 Requirement of tooling, jigs and fixtures with their technical detail / specification and cost.
- 4.9 Requirement of special assembling equipments with their technical detail / specification and cost
- 4.10 Process flow chart with list of above facilities & manpower required at different stages
- 4.11 Safety and statutory and regulatory requirement.
- 4.12 Project & activity schedule.
- 4.13 Details of all auxiliary & utility services like power, water supply, rainwater harvesting and drainage, sewage disposal and firefighting system etc
- 4.14 Any other requirement necessary for coach manufacturing.
- 4.15 DPR to be prepared in close association with BHEL and Hitachi Japan
- 4.16 The above aspects are not exhaustive. The project report must cover other aspects also required for successful completion of the project

5. Input required from BHEL for preparation of DPR:

Consultant to clearly specify in its expression of interest the input it require from BHEL for preparation of DPR. Designing of the coaches shall start after award of contract from DMRC. However the basic information available with us about the coach to be manufactured in mentioned in at cl no 2. However any other information about the product required for finalizing the DPR can be specified



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6. Qualifying Criteria:

Bidder shall have wide experience in similar type of work like consultancy for establishment of similar plant with all required facilities and machinery for Stainless Steel sheet metal fabrication, assembly of coaches, bogies, car body including its testing & dispatch etc. Bidder should submit documentary evidence for execution of at least one completed project during last 10 years along with offer. Following documents must be submitted.

- a. Documentary proof that the Bidder is a registered private or public legal entity .Copy of last three years balance sheets (year 2009-10, 10-11, 11-12) and profit and loss account, audited by Chartered Accountant / Public Accountant must be submitted.
- b. Documentary proof that the Bidder has the requisite power and authority to submit the bid, and the Bid Security, and to execute the Agreement and perform its obligations there under
- c. Self certificate that the Bidder is not prohibited under any Applicable Law from submitting the bid or executing the Agreement and performing its obligations there under and also has never been found guilty by a court of law in India for any crimes of fraud, dishonesty or moral turpitude, has never been black listed by any BHEL unit or any other organization. Further the bidder must undertake to abide by all statutory and regulatory requirements while carrying out work at BHEL Jhansi.
- d. Bidder must have set up with necessary software and hardware for undertaking design and engineering for project of this magnitude. List of available facilities and organization chart shall be submitted, along with names of experts clearly mentioning their qualification and experience.
- e. The EOI is issued for the consultancy for setting up of factory and covers all aspects including machinery planning, Civil and environmental clearances. If the bidder does not have experts in all relevant fields in their organization, he may engage experts at his own expense in the particular fields.
- f. In case the bidder engages experts, the following must be submitted for consideration; else the bidder will be disqualified. Joint bidding is not acceptable.
 - (i) Name of Agency/Expert
 - (ii) MOU with Agency/Expert as commitment for support during the entire execution of work in case of order.
 - (iii) Evidences in support of Experts' experiences.
- g. Should agree to submit the DPR as per our requirement within 30 days of getting firm order from BHEL.

7. SELECTION PROCEDURE FOR CONSULTANT

The bidders satisfying our qualification criteria will be invited for technical meeting at BHEL Jhansi. The bidders will be expected to give a brief presentation followed by a discussion with BHEL officials and subsequently tenders / price bids will be invited from shortlisted bidders.



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INSTRUCTIONS TO BIDDERS

1. This **Expression of Interest** (EOI) conditions & specification as a whole, furnishing all the details and other documents as required, shall be duly signed and sent as in a sealed cover boldly super scribing the name of work as given in the EOI notice.
2. The EOI Tender shall be addressed to as follows :
Sh Vinod Kumar
Sr DGM – LME & FES
BHEL Jhansi – 284129
PH NO 0510 2412655, 9453001076
Email : vinodkumar@bheljhs.co.in
: ankur@bheljhs.co.in

Sealed EOI Tenders submitted (i) personally, (ii) by Courier, or (iii) by post shall be sent as “REGISTERED POST ACKNOWLEDGEMENT DUE”. EOI Tenders shall be sent/posted with due allowance for any transit/postal delay. Telegraphic offers and offers received by telex/fax may not be considered unless confirmed in writing by a detailed offer. The expression of interest shall also be acceptable through email followed by post confirmation copy of complete detailed response against EOI. The decision of acceptance of such offers solely rests with BHEL.

3. The bidders shall closely peruse all the clauses, specifications and drawings indicated in the Tender Documents before quoting. If the bidder has any doubt about the meaning of any portion of the Tender Specifications or find discrepancies / omissions in the tender documents issued are incomplete or shall require clarification on any of the technical aspect scope of work etc., he shall at once contact the authority inviting the tender for clarification before the submission of the tender.
4. Before quoting, the bidders are advised to inspect the site of work and the environments and be acquainted with the actual working and other prevalent conditions, facilities available, position of material and labour. No claim will be entertained later on grounds of lack of knowledge after submission of the tender.
5. Bidder must fill the schedules and furnish all the required information as per the instructions given in various sections of the tender document and specification. Each and every page of the Tender Specification must be **SIGNED, STAMPED AND SUBMITTED ALONG WITH THE OFFER** by the bidder in token of complete acceptance thereof. The information furnished shall be complete by itself.
6. The bidder shall quote their offer in English Language using international numerals. For the purpose of the tender, the metric system of units shall be used.