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**BHARAT HEAVY ELECTRICALS LIMITED,
Jhansi**

SPECIFICATION

BHEL/ EOI/MEMU

ISSUE DT:

REV.NO:- 00

REV. DT:

SHEET: 1 OF 7

**SUBJECT: SPECIFICATION FOR CONSULTANCY REQUIRED FOR ESTABLISHING
STAINLESS STEEL MEMU COACH FACTORY AT BHILWARA, RAJASTHAN.**

Enclosures:

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



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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. Now BHEL has planned to diversify in field of stainless steel MEMU coaches as well.

Recently, BHEL has signed a MoU with Indian Railways for setting up a MEMU coach factory in Bhilwara, Rajasthan with capacity of approximately 400 coaches per annum. Manufacturing of these stainless steel coaches shall be carried out at Bhilwara. It will mainly cover following aspects:-

- a) Carbody fabrication from stainless steel sheets.
- b) Coach & bogie assembly.
- c) Testing of Coach.
- d) Train formation and its testing.
- e) Dispatch of coaches by rail.

For manufacturing of these coaches, we require world class facilities and infrastructure at Bhilwara Rajasthan, which will have flexibility & provision for manufacturing different types & sizes of stainless steel coaches. For establishing of these facilities and infrastructure, we require competent consultant to prepare the detailed project report (DPR) for setting up the required facility. **We hereby 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 Bhilwara Rajasthan for manufacturing of stainless steel MEMU coaches.

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



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2. Brief description of stainless steel MEMU coaches:-

The basic details of MEMU coach are as following:

1. Each rake will consist of 2 motor coaches and 6 trailer coaches.
2. Material for Carbody (Except Underframe) : Stainless Steel (SS 301/ SS 304)
3. Material for Underframe : High Tensile Steel
4. Track gauge : 1676 mm (approx.)
5. Coach length over body : 21337 mm (approx.)
6. Max. Width over body side : 3245 mm (approx.)
7. Height of Body Shell : 2720 mm (approx.)
8. Carbody is to be supplied in unpainted condition, hence carbody need to be manufactured using such techniques so as to give a spotless smooth surface finish.
9. The exterior appearance of the stainless steel car body shall be smooth unpainted metal without the use of filler or other similar material, such that the maximum variation from the required car profile, over any one metre length, shall not exceed 1.5 mm. Cumulative deviation should not be more than 5 mm.
10. **Bogies:** The bogies used for these coaches shall be of proven design (ICF design) and shall provide the required riding comfort. The suspension shall give a low transmissibility of vibration to the bogie and the Coach body and shall minimize impact, vibration and noise. Suspension characteristics shall be selected so as to avoid resonance.

3. These stainless steel MEMU coaches shall be in line with RDSO requirement. RDSO requirements about these coaches can be shared during discussion at BHEL. Further detail design shall be provided to the successful bidders.

4. Scope of work of consultant:-

To prepare detailed project report for establishing world class facilities and infrastructure for manufacturing, testing & dispatch of stainless steel MEMU coaches at Bhilwara Rajasthan at optimum cost. These facilities & infrastructure should have flexibility & provision for manufacturing different types & sizes of stainless steel MEMU coaches and shall be able to deliver 400 coaches per annum by engaging approx. 250 numbers of direct manpower. These proposed facilities shall operate in 02 shifts, each shift of 08 working hours. Consultant to elaborate the type of coaches which can be manufactured in these proposed facility in addition to MEMU Coaches. Consultant would also be required to be involved during execution of project for its completion 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.



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5. DPR shall broadly cover following aspects:-

- 5.1 Plant layout covering manufacturing shops, offices, warehouse and testing etc in line with Green field requirement.
- 5.2 Detail shop layout with crange.
- 5.3 Cost of civil work including land development, survey, soil testing and time frame required to complete the civil work.
- 5.4 Requirement of Plant & Machinery with their broad specification, cost, delivery period and probable source.
- 5.5 Requirement of material handling equipments with their specification and cost.
- 5.6 Requirement of welding equipments with their specification and cost.
- 5.7 Requirement of testing facilities, including catenary test rail track & connectivity to nearest railway station.
- 5.8 Requirement of Man power for all area including administrative & working level.
- 5.9 Cost, layout of township with necessary facilities for the proposed manpower.
- 5.10 Requirement of spares, tooling, jigs and fixtures with their technical detail / specification and cost.
- 5.11 Requirement of electrical facilities for electrification with their technical detail /specification and cost.
- 5.12 Requirement of mechanical facilities for electrification with their technical detail /specification and cost.
- 5.13 Requirement of special assembling equipments with their technical detail / specification and cost.
- 5.14 Process flow chart with list of above facilities & manpower required at different stages.
- 5.15 Execution schedule which includes indenting, placement of PO/award of contract, dispatch, receipt, erection and commissioning.
- 5.16 Detailed financial analysis (Incremental and total basis) considering costs and returns calculated over the entire life of the project or over 10 years whichever is less.
- 5.17 Sensitivity analysis for major dynamic parameters.
- 5.18 The assumptions relating to financial analysis e.g. selling price, material cost, labour cost and overheads etc., working capital requirement should be clearly indicated with basis.
- 5.19 Safety and statutory and regulatory requirement.
- 5.20 Environment Clearance requirement.
- 5.21 Project & activity schedule.
- 5.22 Details of all auxiliary & utility services like power, water supply, rainwater harvesting and drainage, sewage disposal and firefighting system etc.
- 5.23 Any other requirement necessary for coach manufacturing.
- 5.24 Layout and plan for houses/ flats for different categories in the township including basic associated infrastructure facilities like hospital, community center, school etc for proposed manpower.



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- 5.25 All cost estimates must be supported by necessary document.
- 5.26 DPR to be prepared in close association with BHEL.
- 5.27 The above aspects are not exhaustive. The project report must cover other aspects also required for successful completion of the project.

6. Input required from BHEL for preparation of DPR:-

Consultant to clearly specify in its offer the input he/she requires from BHEL for preparation of DPR. Basic information available with us about the coach to be manufactured is mentioned at Cl. no 2. However any other information about the product required for finalizing the DPR can be specified.

7. Qualifying Criteria:-

Bidder must have an experience of successfully setting of a factory of 150 coaches or more & must have provided the total consultancy as per Para 5. The factory must be running successfully. The complete reference of factory should be provided along with the contact person & details of facility. If required, the factory visit should be arranged for BHEL team. 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 Copies of PAN Card, Service Tax Registration and last three years balance sheets (year 2010-11, 11-12, 12-13) and profit and loss account, attested by Chartered 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.



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- 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.

8. 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.

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 (U. P.)
PH NO: 0510 2412655, 9453001076
Email id: vinodkumar@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. The tenders received after due date and time of opening are liable to be rejected. Telegraphic offers and offers received by telex/fax may not be considered unless confirmed in writing by a detailed offer. The decision of acceptance of such offers solely rests with BHEL. **THE SEALED EOI TENDERS CAN ALSO BE DROPPED IN THE TENDER BOX PLACED AT CISF ROOM OF ADM. BUILDING GATE AT BHEL JHANSI, BEFORE 01:15PM ON THE DUE DATE OF OPENING.**

3. EOI Tenders shall be opened by authorized employees of BHEL in that tender room of MM department at the time and date as specified in the tender notice in the presence of such of those bidders or their authorized representative who may be present.
4. 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



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any portion of the Tender Specifications or find discrepancies / omissions in the drawings or 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.

5. Before tendering, 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.
6. 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.
7. 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.

All entries in the tender shall either be typed or be written in ink. Erasures and overwriting are not permitted and may render such tenders liable to summary rejection. The bidder shall duly attest all cancellations and insertions prior to submission of tender.