



**Expression of Interest (Eoi) for Train Sets
Addendum - 01**
Power Electronic Systems

Ref No: PES/T18/2020/01/Adden-01

Date: 14/10/2020

ADDENDUM-01
FOR
EXPRESSION OF INTEREST

FOR
Partnering with BHEL
ON

Design, Development, Manufacture, Testing and Commissioning of Propulsion System (Traction Converter, Auxiliary Converter and TCMS), and Bogie for Semi High Speed Train Sets (Train 18) of 160 Kmph

Issued by:

**Bharat Heavy Electricals Limited,
Mysore Road, Bangalore -560026 (hereinafter referred to as 'BHEL')**

also

**having registered office at
BHEL House, Siri Fort New Delhi-110049 INDIA**

A. Modified Clauses:

S N	Reference in Eoi	Existing	To be read as/Modified as
1	Point no: 5.2, Page no: 8 of 23	Reputed business entities may submit their offer in Part I & Part II (refer 5.0 above) by Post / e-mail so as to reach us on or before 16th October 2020...	Reputed business entities may submit their offer in Part I & Part II (refer 5.0 above) by Post / e-mail so as to reach us on or before 22nd October 2020...
2	Annexure-5 commercial terms: Penalty for Delay Pg.no: 18 of 23	The cumulative maximum penalty shall be limited to 20% of the billing amount.	As per Standard tender Conditions of RB tender no: WTA-515-Clause 4.2 (Pg no: 19 of 41): “Recover from the contractor as agreed Liquidated Damages and not by way of penalty, a sum equivalent to 1/2% (half percent) of the price of any stores (including elements of taxes, duties, freight, etc.) which the contractor has failed to deliver within the period fixed for delivery in the contract or as extended for each week or part of a week during which the delivery of such stores may be in arrears where delivery thereof is accepted after expiry of the aforesaid period, subject to a maximum of 10% (ten percent) of the value of the contract irrespective of delays, unless otherwise provided specifically in the contract.”
3	Annexure-5 commercial terms: Clause B- Payment Terms, Pg.no: 20 of 23	For equipment of the prototype rakes (2)	As per Corrigendum no:1 issued by Ministry of Railways in IREPS site against tender no: WTA-515.Ref No.2020/RS(WTA)-149/TENDER/515 dated 09/10/2020 (Pg no: 11 of 13) “For Equipment of the prototype rakes(02): a) 10% of the total value of the equipment(Prototype) shall be paid against submission of the following documents: 1. A copy of the letter containing approval of the design/drawing from RDSO/ICF. 2. One original and 3copies of contractor’s invoice. 3. Bank Guarantee equivalent to 10% of the value of the equipment (prototype). b) 50% of the total value of the equipment (prototype) shall be paid against submission of the following

			<p>documents. The payment is to be released for complete rake set and not for part supplies. The documents required for claiming 50% payment are as under:-</p> <ol style="list-style-type: none"> 1. Proof of receipt of material at ICF i.e. Receipted Challan duly signed by a nominated Gazetted Officer. 2. Inspection Certificate (in Original) issued by the Inspecting Officer. 3. One (1) original & three (3) copies of Contractor's invoice. 4. Contractor's certificate that the materials in the invoice are for full rake set & 5. Contractor's certificate that the amounts claimed in the invoice are correct in terms of the contract. <p>c) 20% of the total value of the equipment (Prototype) shall be paid against submission of the following documents:</p> <ol style="list-style-type: none"> 1. Certificate issued by the Principal Chief Electrical Engineer/ICF after successful rolling out of prototype rake from ICF for trial run. 2. One original and 3 copies of contractor's invoice. <p>d) Balance 20% of the total value of the equipment shall be paid after successful commissioning along with 100% value of supervision of installation and commissioning charges. The commissioning Certificate shall be issued by the Principal Chief Electrical Engineer/Integral Coach Factory, Chennai. The payment shall be subject to submission of the following documents:-</p> <ol style="list-style-type: none"> 1. One (1) original & three (3) copies of Contractor's invoice for balance 20%. 2. Commissioning Certificate issued after successful commissioning. Commissioning Certificate shall be issued by the Principal Chief Electrical Engineer/ICF. 3. Warranty Bank Guarantee equivalent to 10% value of the equipment Contractor's certificate that the amounts claimed in the invoice are correct in terms of the contract. 4. Acceptance note/Receipt note issued by the consignee. 5. RDSO certificate for successful trial run."
4	Annexure-5 commercial terms: Delivery Period Pg.no: 18 of 23	As per schedule IR	<p>As per Corrigendum no:1 issued by Ministry of Railways in IREPS site against tender no: WTA-515.Ref No.2020/RS(WTA)-149/TENDER/515 dated 09/10/2020 (Pg no: 12 of 13)</p> <p>"DELIVERY: - Delivery to be effected and completed as per the schedule of delivery indicated in the table below, from the date of placement of order. Wherever the delivery of the stores offered is to be made in a phased manner, the full details thereof should be submitted along with the offer.</p> <p><u>Schedule of Delivery</u></p>

			<p>The delivery schedule expressed as months stipulates hereafter a delivery date which is the date of delivery at Consignee premises for 44 rakes of “16” cars –</p> <table><tr><th colspan="3">Schedule of Delivery</th></tr><tr><th>Activity</th><th>Likely time for activities (in months)</th><th>Cumulative time(in months)</th></tr><tr><td>Date of signing of contract or 30 days from date of notification of award of contract whichever is earlier</td><td>D</td><td>D</td></tr><tr><td>Submission of OGA (Overall General Arrangement) drawings by the firm to ICF</td><td>3</td><td>D+3</td></tr><tr><td>Approval of OGA drawings by ICF</td><td>1</td><td>D+4</td></tr><tr><td>Submission of schematics, design documents of propulsion equipment and Bogie by the firm to RDSO/ICF</td><td>2</td><td>D+6</td></tr><tr><td>Approval of schematics, design documents of propulsion equipment and Bogie by RDSO/ICF</td><td>2</td><td>D+8</td></tr><tr><td>Witnessing of Type tests of propulsion equipment and Bogie by RDSO/ICF</td><td>2</td><td>D+10</td></tr><tr><td>Approval of Type tests of propulsion equipment and Bogie by RDSO/ICF</td><td>3</td><td>D+13</td></tr><tr><td>Witnessing and approval of Routine tests by RDSO/ICF/RITES</td><td>3</td><td>D+16</td></tr><tr><td>Supply of propulsion equipment and Bogies for prototype rakes</td><td>4</td><td>D+20</td></tr></table>	Schedule of Delivery			Activity	Likely time for activities (in months)	Cumulative time(in months)	Date of signing of contract or 30 days from date of notification of award of contract whichever is earlier	D	D	Submission of OGA (Overall General Arrangement) drawings by the firm to ICF	3	D+3	Approval of OGA drawings by ICF	1	D+4	Submission of schematics, design documents of propulsion equipment and Bogie by the firm to RDSO/ICF	2	D+6	Approval of schematics, design documents of propulsion equipment and Bogie by RDSO/ICF	2	D+8	Witnessing of Type tests of propulsion equipment and Bogie by RDSO/ICF	2	D+10	Approval of Type tests of propulsion equipment and Bogie by RDSO/ICF	3	D+13	Witnessing and approval of Routine tests by RDSO/ICF/RITES	3	D+16	Supply of propulsion equipment and Bogies for prototype rakes	4	D+20
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			Installation and commissioning of prototype rakes at ICF	2	D+22																																																						
			Static/dynamic trials and Oscillation trials in the user railway - witness by RDSO/ICF	2	D+24																																																						
			Introduction of prototype rakes into commercial service	1	D+25																																																						
		<p>Note: (i) Two rakes will run in commercial service for three months or one lakh kms, whichever is less. ICF will then give clearance for series supply to vendor. Vendor will start the series supply after four months of ICF clearance of prototype rake.</p> <p>(ii) Rate of Supply of series equipment per quarter after written confirmation by ICF as indicated below(The present allocation of rakes to the Production units is tentative):</p> <table border="1"> <thead> <tr> <th></th><th>ICF (Rakes)</th><th>MCF (Rakes)</th><th>RCF (Rakes)</th><th>Total (Rakes)</th><th>Cumulative (Total Rakes)</th></tr> </thead> <tbody> <tr> <td>Prototype</td><td>2</td><td>0</td><td>0</td><td>2</td><td>2</td></tr> <tr> <td colspan="6">7 months :- Rake trial and start of series rake material supply</td></tr> <tr> <td>1st Quarter:</td><td>9</td><td>0</td><td>0</td><td>9</td><td>11</td></tr> <tr> <td>2nd Quarter:</td><td>3</td><td>3</td><td>3</td><td>9</td><td>20</td></tr> <tr> <td>3rd Quarter:</td><td>3</td><td>3</td><td>3</td><td>9</td><td>29</td></tr> <tr> <td>4th Quarter:</td><td>3</td><td>3</td><td>3</td><td>9</td><td>38</td></tr> <tr> <td>5th Quarter:</td><td>4</td><td>1</td><td>1</td><td>6</td><td>44</td></tr> <tr> <td>Total</td><td>24</td><td>10</td><td>10</td><td></td><td></td></tr> </tbody> </table> <p>(iii) Number of prototype rakes shall be two. Both the prototype rakes shall be manufactured at ICF.</p> <p>(iv) Special tools and essential spares are to be supplied to the ICF as per the contract within two months after the completion of the supply of main equipment for all the 44 rakes.</p> <p>2. All other terms and conditions of tender shall remain the same.</p>					ICF (Rakes)	MCF (Rakes)	RCF (Rakes)	Total (Rakes)	Cumulative (Total Rakes)	Prototype	2	0	0	2	2	7 months :- Rake trial and start of series rake material supply						1 st Quarter:	9	0	0	9	11	2 nd Quarter:	3	3	3	9	20	3 rd Quarter:	3	3	3	9	29	4 th Quarter:	3	3	3	9	38	5 th Quarter:	4	1	1	6	44	Total	24	10	10		
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5	Annexure-5 commercial terms: Clause C- Price variation clause, Pg.no: 22 of 23	<p>This will be applicable for bidder's quoted scope.</p> <p>The base date for calculation purpose shall be considered as two months prior to date of tender opening (17/11/2020). The indices used will be as per IEEMA wherever applicable. The formula and indices as applicable on base date are given</p> <p>Power electronics products including converters</p>	<p>This will be applicable for bidder's quoted scope.</p> <p>The base date for calculation purpose shall be considered as two months prior to date of tender opening (17/11/2020). The indices used will be as per IEEMA wherever applicable. The formula and indices as applicable on base date are given</p> <p>1. Power electronics products including converters</p>
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B. Additional Clauses:

S N	Reference in Eoi	Added Clauses
	<p>Annexure-5 commercial terms: Clause C- Price variation clause, Pg.no: 22 of 23</p> <p>2. Microprocessor based Train Control and Management System (TCMS) with Brake interface unit including fault diagnosis and display system in the driving cab and multiplexing system</p>	<p>As per Bid document of RB tender no: WTA-515-Clause 10.4 (Pg no: 22 of 80):</p> <p>"Microprocessor based Train Control and Management System (TCMS) with Brake interface unit including fault diagnosis and display system in the driving cab and multiplexing system for relevant control & other signals (as per clause 4.1.1 (v) and 4.1.1(vii)) of RDSO specification, Wheel slip/slide protection & anti-skid controls (as per clause no. 4.1.1 (xxi))</p>

		<p>& 4.24 of RDSO specification), including integration with TCMS of automatic door closure and Brake system, as per clause 4.1.1(xiii).</p> <p>Switch Gear and Control Gear $P = P_o/100[19 + 17(IS/IS_o) + 17(C/Co) + 13(Al/Alo) + 19(In/I_no) + 15(W/W_o)]$ Wherein, P - Price Payable as adjusted in accordance with the variation clause P_o - Price quoted / confirmed. IS - Whole sale price index of Iron & steel C - Average LME settlement price of copper wire bars Al - Price of bus bar grade Aluminium In - IEEMA Index for Insulator W - Consumer Price Index.”</p>
2	<p>Annexure-5 commercial terms: Clause C- Price variation clause, Pg.no: 22 of 23</p> <p>3. Bogie</p>	<p>As per Annexure-5A of Corrigendum no:1 issued by Ministry of Railways in IREPS site against tender no: WTA-515.Ref No.2020/RS(WTA)-149/TENDER/515 dated 09/10/2020</p> <p>ICF PVC Formula for Bogie Frame $“PI = P_0 + ((WPI_1 - WPI_0) / WPI_0) \times P_0 \times k$ Where, P₁ = Revised basic price of Product. P₀ = Quoted basic price of Product. WPI₀ = Wholesale Price Index for “Mild Steel – Flat Products” as published by Office of Economic Adviser in Website www.eaindstry.nic in 3 weeks prior to tender opening date. WPI₁ = Whole sale Price Index for “Mild Steel – Flat Products” as published by Office of Economic Adviser in Website www.eaindstry.nic in 6 to 8 weeks preceding the date of Inspection Certificate in case of pre-inspected items; consignee inspection & acceptance of material on firm’s WTC/MTC; Date of Dispatch – where no pre-inspection is involved. k = 0.27 (Factor indicating the contribution of raw-material to total-cost & other related costs). The final prices will increase/reduce/remains unchanged as per above formula.”</p>