

Amendment – VII dated 10.01.2024 to RFP documents for selection of bidder as Transmission Service Provider to establish Inter-State Transmission system for “Transmission system for evacuation of power from REZ in Rajasthan (20 GW) under Phase-III Part I” through tariff based competitive bidding process

Sl. No.	Clause No.	Existing Clause	New/Revised Clause
1.	Clause A.8.0 of specific technical specification of RfP (page no. 206)	A.8.0 The required pole to pole spacing shall be governed by the tower design as well as minimum live metal clearances under different insulator swing angles. However, the spacing between Pole and DMR shall not be less than 9.7 m and pole to pole clearance shall not be less than 22.0 m.	A.8.0 The required pole to pole spacing shall be governed by the tower design as well as minimum live metal clearances under different insulator swing angles. However, the spacing between Pole and DMR shall not be less than 9.7 m and pole to pole clearance shall not be less than 22.0 m. <u>Also, DMR line shall be placed above the Pole.</u>
2.		<p>19. Converter Station AC Yard, Transformer yard and valve hall</p> <p>(iv) Performance Requirement</p> <p>A. The individual harmonic distortion, Dn, shall not exceed 1.5%</p> <p>B. The total effective distortion, Deff, shall not exceed 3.0%.</p> <p>C. The Telephone Influence Factor (TIF) shall not exceed 50.</p>	<p>19. Converter Station AC Yard, Transformer yard and valve hall</p> <p>(iv) Performance Requirement</p> <p>A. The individual harmonic distortion, Dn, shall not exceed 1.5% <u>individual harmonic distortion, Dn, = Vn/V1</u></p> <p>B. The total effective distortion, Deff, shall not exceed 3.0%. <u>Total effective distortion, Eff = $\sqrt{(\sum (Vn*100/V1)^2)}$</u></p> <p>C. The Telephone Influence Factor (TIF) shall not exceed 50. <u>Telephone Influence Factor, TIF = $\sqrt{(\sum (Vn*Fn/V1)^2)}$</u></p> <p><u>Where Fn: Weighting factor for nth harmonic according to EEI publication -60-68(1960) corrected to 50HZ operation by graphical interpolation.</u></p>
3.	Clause 21 of specific technical specification of	<p>21. Converter Station DC Outdoor Yard</p> <p>(h) Fundamental frequency blocking filter:</p>	<p>21. Converter Station DC Outdoor Yard</p> <p>(h) Fundamental frequency blocking filter:</p>

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	RfP (page no. 161)	<p>For design purpose, TSP shall provide details of parallel lines with the HVDC line within a radial distance of 70 meters to consider any possible inductive and capacitive coupling between these lines.</p> <p>.....</p>	<p>.....</p> <p><u>For design purpose, 50 km of parallel un-transposed 765KV AC Double Circuit line and 50 km of parallel un-transposed 400KV AC Double circuit line within a radial distance of 70 m to be considered by the TSP to consider any possible inductive and capacitive coupling between the lines. The parallel section of AC lines shall be considered to be located at a point that results in maximum fundamental frequency current at each converter station.</u></p> <p>.....</p>																		
4.	Clause 4 of specific technical specification of RfP (page no. 128)	<p>4. Design Consideration</p> <table border="1" data-bbox="383 703 1227 903"> <tr> <td>10</td> <td>--</td> <td>--</td> </tr> <tr> <td>11.</td> <td>Reverse power rating</td> <td><u>100% of rated Forward direction power transfer rating (with inherent overloads, if any)</u></td> </tr> <tr> <td>12</td> <td>--</td> <td>--</td> </tr> </table>	10	--	--	11.	Reverse power rating	<u>100% of rated Forward direction power transfer rating (with inherent overloads, if any)</u>	12	--	--	<p>4. Design Consideration</p> <table border="1" data-bbox="1285 703 2168 903"> <tr> <td>10</td> <td>--</td> <td>--</td> </tr> <tr> <td>11.</td> <td>Reverse power rating</td> <td><u>100% of rated Forward direction power transfer rating (with 1.33 pu overload for 5 second only).</u></td> </tr> <tr> <td>12</td> <td>--</td> <td>--</td> </tr> </table>	10	--	--	11.	Reverse power rating	<u>100% of rated Forward direction power transfer rating (with 1.33 pu overload for 5 second only).</u>	12	--	--
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5.	Clause 19 (C) of specific technical specification of RfP (page no. 149)	<p>New Clause Inserted</p>	<p>(iv) (a) <u>SYSTEM CONTRIBUTION</u></p> <p><u>Bidder may suitably model nearby different RE generators as all these generators are required to meet harmonics requirement under “CEA Technical standards for Connectivity to the grid” regulations. Models provided by RE developers will be shared with selected TSP.</u></p> <p><u>At Converter station ac bus, combined converter and static compensator (if used) harmonic currents as calculated for rating</u></p>																		

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			<p><u>purposes shall be increased to allow for harmonic currents from the ac system in following manner:</u></p> <p><u>a) At 3rd and 5th Harmonics the increase in current to be allowed shall be calculated based on the assumption that the existing distortion shall be considered as 2% with respect to nominal voltage at converter Bus. This is to be considered for 3rd and 5th harmonic Filter component rating.</u></p> <p><u>b) At all even order harmonics and at all other non-characteristic or theoretically cancelled harmonics the increase in current to be allowed shall be not less than 50 (fifty) percent provided that the contribution of the harmonic in question to any rating parameter, in the absence of the above increase, is not greater then 10 (ten) percent of the total harmonic rating.</u></p> <p><u>c) At all characteristic harmonics or at any other harmonic which is effectively filtered (i.e. the harmonic contributes more than 10% of the total harmonic rating of a component in the absence of the increase) the increase in current to be allowed shall not be below 20 (twenty) percent.</u></p>