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सत्यमेव जयते
भारत सरकार

Government of India
विद्युत मंत्रालय

Ministry of Power
केंद्रीय विद्युत प्राधिकरण

Central Electricity Authority
तापीय यांत्रिकी एवं अभियांत्रिकी विकास प्रभाग

Thermal Engineering & Technology Development Division

दिनांक: 19.02.2020

To

All Central Sector/State Sector Thermal Power Generating Cos. - संलग्न सूची अनुसार ।

विषय: Sourcing of supercritical units from indigenous manufacturers - के बारे में ।

महोदय,

Reference is invited to our letter No. CEA/TE&TD-TT/2017/D-12/94-147 dated 27th January, 2017 on the above subject, inter-alia, advising to incorporate the condition of setting up of phased indigenous manufacturing facilities in the bids to be invited for boilers and turbine-generators of supercritical projects in next three years by Central/State Sector power generating companies.

2. The period of advisory has expired on 26th January, 2020. Accordingly, the matter has been considered by MoP and it has been decided that the said advisory be extended for further period of two (02) years from date of issue. The advisory has been slightly modified to include the criteria for the bidders who have complied with setting up of manufacturing facilities in India in line with Govt. of India's approval for Phased Manufacturing Program (PMP) and as per monitoring by the Standing Committee on PMP.

3. Accordingly, you may like to incorporate the condition of setting up of phased indigenous manufacturing facilities, in the bids to be invited in next two (02) years by Central/ State sector power generating companies for boilers and turbine-generators of supercritical projects.

भवदीय,

(पी.डी. सिवाल)

सदस्य (तापीय), के.वि.प्रा.

Annexure- 1

Categories of eligible bidders for bidding for boilers and STGs

i. A foreign '**qualified**' supercritical boiler manufacturer (or a supercritical turbine manufacturer, as the case may be). Such bidder, however, should have registered a Subsidiary /JV company for manufacturing of supercritical boilers (or turbine) in India. The bidder in this case must maintain an equity participation of minimum 51% in the Subsidiary or minimum 26% in the JV company during lock in period of 7 years from the date of incorporation of the Subsidiary / JV company or upto the end of the Contract warrantee period, whichever is later.

ii. An Indian Subsidiary company of a '**qualified**' supercritical boiler (or turbine) manufacturer as per (i) above holding minimum 51% equity in the Indian Subsidiary. This equity will be maintained for a minimum lock in period of 7 years from the date of incorporation of the Subsidiary or upto the end of the Contract warrantee period, whichever is later.

iii. An Indian Joint Venture (JV) company for manufacturing of supercritical boilers (or supercritical steam turbines) in India between an Indian company and a '**qualified**' supercritical boiler manufacturer (or a '**qualified**' supercritical steam turbine manufacturer, as the case may be) as per (i) above. The '**qualified**' supercritical boiler (or turbine) manufacturer shall maintain a minimum equity of 26% in the JV company during lock in period of 7 years from the date of incorporation of the JV company or upto the end of the Contract warranty period, whichever is later.

iv. The Indian partner of JV at (iii) above having experience in execution of large turnkey projects and holding minimum 51 % equity in the JV Company during lock in period of 7 years from the date of incorporation of the JV company or upto the end of the Contract warrantee period, whichever is later.

v. "An Indian manufacturing company who has experience of 500 MW subcritical boiler(or 500 MW subcritical steam turbine, as the case may be) Such a bidder should have a valid ongoing collaboration and technology transfer agreement, including license to manufacture and supply in India, with a '**qualified**' supercritical boiler manufacturer (or a '**qualified**' supercritical steam turbine manufacturer, as the case may be), for the type, size and rating of the boiler / turbine specified, valid minimum up to the end of the warranty period of the contract;

In such case, bidder and technology provider/collaborator shall submit Deed of Joint Undertaking(s) and be made jointly and severally liable to the Procurer for successful performance of the supercritical boiler or Supercritical Steam Turbine Generator as the case may be."

vi. An Indian manufacturing company which is a '**qualified**' supercritical boiler manufacturer (or a supercritical steam turbine generator manufacturer, as the case may be) and meets the criteria specified in Note 2.

Notes:

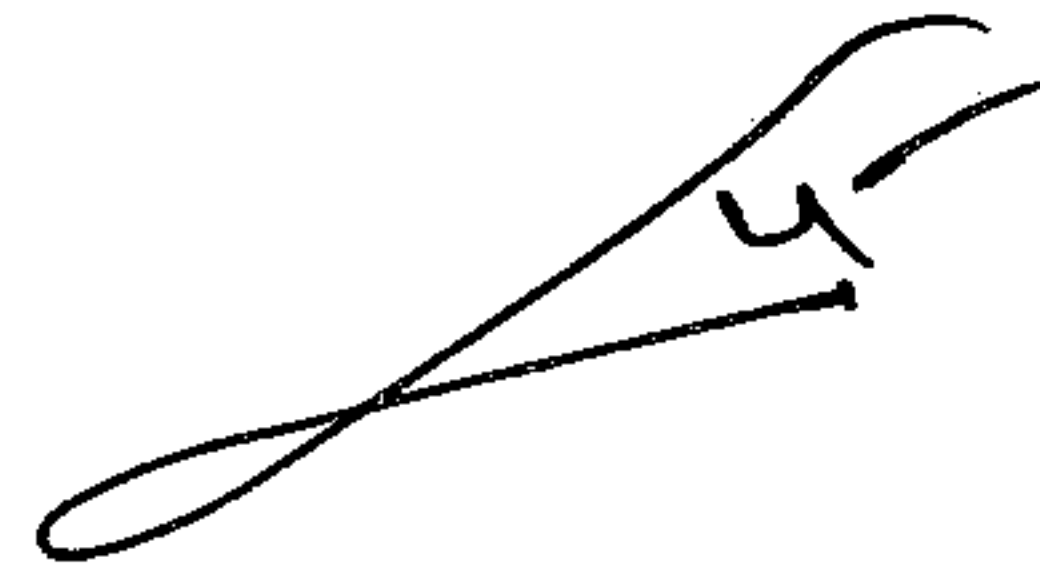
1) "The bidders participating through any of the four routes {(i) to (iv)} as above shall furnish along with the bid a deed of joint undertaking (DJU) as per format (to be enclosed in the bidding documents) in which all the executing parties (i.e. the bidder, the technology provider, the Indian Manufacturing Company and the Indian promoter of the JV - as applicable) shall be made jointly and severally liable to the procurer for successful performance of the contract.



2) However, the bidders participating through any of the five routes (i to v) as above shall NOT be required to furnish a deed of joint undertaking (DJU) in case they meet the following criteria:-

“Eight (8) Nos. supercritical boilers (or turbine generators as the case may be) manufactured/supplied in India by the Indian subsidiary/JV company/Indian manufacturing company are in commercial operation (achieved COD) out of which four (4) such boilers (or turbine generators as the case may be) should be in commercial operation for at least one year and Performance Guarantee Test should have been successfully completed in any two boilers (or turbine generators as the case may be).”

3) A qualified bidder is the one who meets the qualifying criteria specified by the utility in the bid documents.



Annexure- 2

Other pre-requisites for participation in the tender

- a. Before submission of the bid, the Subsidiary/JV company as mentioned at (i) to (iv) of Annexure- 1 should be registered in India under the Companies' Act 1956 for manufacture of supercritical boilers / turbines and should have obtained Certificate for Commencement of Business in India, as applicable.
- b. Promoters / Partners of the Subsidiary / JV Company will be required to employ a minimum subscribed and paid up capital of Rs 500 million in the Subsidiary / JV company prior to submission of bids. In case the bidder is selected for award of contract, a minimum subscribed and paid up capital of Rs 1000 million in the Subsidiary / JV company will have to be ensured by the Promoter / Partners by the date of award.
- c. The bidder shall give firm commitment to indigenize manufacturing of supercritical boiler (or turbine) in India in a phased manner as per Phased Manufacturing Program (PMP) (to be clearly identified and elaborated in the bidding documents) and submit an on demand bank guarantee depending on number of units. (Annexure- 3)
- d. Major part (minimum 75%) of the land required for setting up the manufacturing facility should be in possession with clear title, prior to submission of bid in the name of the Subsidiary/ JV company (or in the name of the Indian promoter but pledged/ leased to the Subsidiary/ JV company).
- e. The subsidiary or the JV, as the case may be, should have a valid technology transfer agreement, including license to manufacture and supply in India, with a **qualified** supercritical boiler manufacturer (or a **qualified** supercritical steam turbine manufacturer, as the case may be) for the type, size and rating of the boiler / turbine specified, valid minimum up to the end of the warranty period of the contract. The technology transfer agreement shall necessarily cover transfer of technological know-how in the form of complete design dossier, design softwares, drawings and documentation, quality system manuals and imparting relevant personnel training to the Subsidiary / JV company. Such technology transfer agreement must have provision that the transfer of technology to the Indian manufacturing company shall be complete by the time eighth 660/800 MW supercritical unit is supplied by the bidder.
- f. The Indian bidder as per (v) of Annexure- 1 should have a technology transfer agreement, including license to manufacture and supply in India, with a **qualified** supercritical boiler manufacturer (or a **qualified** supercritical steam turbine manufacturer, as the case may be) which shall necessarily cover transfer of technological know-how in the form of complete design dossier, design softwares, drawings and documentation, quality system manuals and imparting relevant personnel training to the Indian bidder. Such technology transfer agreement must have provision that the transfer of technology to the Indian manufacturing company shall be complete by the time eighth 660/800 MW supercritical unit is supplied by the bidder.
- g. The requirements at (a) to (f) above shall not be applicable for the bidders who have complied with setting up of manufacturing facilities in India in line with Govt. of India's Phased Manufacturing Programme (PMP) as per monitoring by the Standing Committee constituted under Member (Thermal), CEA.



Annexure- 3

'Roadmap' proposed for ensuring absorption of technology and indigenization of manufacturing

- i. Firm commitment for, first, establishing manufacturing base in India and secondly, technology transfer from the technology provider to the Indian manufacturing company, shall be sought from the bidders in the bid in the form of an undertaking supported by a Board Resolution.
- ii. The phased manufacturing program will be clearly specified in the tender with provision of liquidated damages (LD) for failure to meet various milestones of manufacturing. The total LD to be levied on this account will be upto 5% of the total contract value. This 5% amount will be distributed over various major milestones.
- iii. The bidders will be required to submit an on demand Bank Guarantee in case of award as security for default against specified PMP. In case the bidder does not implement the PMP even by the overall completion date, the Procurer will encash the bank guarantee.
- iv. LD for each milestone shall be proportionate to weightage factor assigned to various manufacturing processes.
- v. Total LD for a milestone shall be recovered within 10 weeks delay from the respective milestone target dates. LD to be calculated for each week delay or part thereof
- vi. Various major milestones identified for the phased manufacturing program, their completion schedule and the weightage factor for the purpose of levying LDs in case of delay in completion are as per Table A (for boilers) and Table B (for STGs).
- vii. The requirements at (i) to (vi) above shall not be applicable for the bidders who have complied with setting up of manufacturing facilities in India in line with Govt. of India's Phased Manufacturing Programme (PMP) as per monitoring by the Standing Committee constituted under Member (Thermal), CEA.



Table A of Annexure- 3

Sl. No.	Equipment	Indicative Facilities Requirement	To be established latest by (Months from Date of Award)	Weightage factor (%age) for LIQUIDATE DAMAGES
1.	Pressure Parts (straight water wall & spiral water wall)	<ul style="list-style-type: none"> • Straight tube butt welding facility • Automatic welding facility for panel processing • NDT facilities • Hydro testing • Continuous heat treatment furnace • Gang/panel bending facility (for straight water wall & spiral water wall tube panels) 	36	35
2	Pressure Parts (economiser, superheater and reheater coils and panels)	<ul style="list-style-type: none"> • System bend facility • Welding facility for coils • NDT facilities • Hydro testing • Continuous heat treatment furnace • Jigs & fixtures for assembly and layout checking facility • Portable equipment for material/grade identification 	42	30
3.	Pressure Parts (headers)	<ul style="list-style-type: none"> • Welding • Machining & drilling • Heat treatment • Hydraulic testing • NDT facilities • Pressing facility for end caps & tees • Material identification facility • Facility for high alloy (P5 and above) continuous welding 	42	20
4.	Separator (shell and dished ends)	<ul style="list-style-type: none"> • Rolling facility / pressing Facility • Machining & drilling • Welding • Heat treatment • Hydraulic testing • NDT facilities • Pressing arrangement for dished ends 	48	15

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Table B of Annexure- 3

Sl. No.	Equipment	Indicative Facilities Requirement	To be established latest by (Months from Date of Award)	Weightage factor (%age) for LD
1	Turbine Casings and Vaives machining	<ul style="list-style-type: none"> • LP outer Casing fabrication • HP / IP / LP Casing Machining & blading • Heat Treatment / Stress Relieving • Turbine valve machining & assembly testing 	36	20
2	Turbine Rotor machining	<ul style="list-style-type: none"> • Rotor machining including grooves & Fir Tree machining, • Rotor assembly and balancing • Turbine assembly 	42	20
3	Rotating blades machining	<ul style="list-style-type: none"> • Rotating Blade machining & finishing 	52	20
4	Generator Core and stator manufacturing	<ul style="list-style-type: none"> • Core stamping, fabrication facility, Heat Treatment / Stress Relieving. • Generator Stator Fabrication and Core building facility • Stator bar manufacturing and heavy machining facility for fabricated items. 	40	20
5	Generator Rotor	<ul style="list-style-type: none"> • Rotor machining including slotting • Rotor assembly and balancing • Exciter manufacturing & testing • Rotor winding facility 	42	15
6	Generator Assembly	<ul style="list-style-type: none"> • Generator assembly and testing 	48	5

Special provisions applicable to the indigenous manufacturers of supercritical units

1. The following special provision shall be applicable for the indigenous manufacturer(s) who have already been awarded order(s) for supercritical boilers package or turbine generators package under earlier/ this Advisory:

"Such bidders, having already undertaken commitment for PMP in the first order under earlier/ this Advisory and submitted bank guarantees for security for default against specified PMP shall not be required to furnish further bank guarantee for subsequent order(s) for security for default against specified PMP as indicated in Annexure-3. Rest will be required to submit & follow the requirements.

2. After completion of time periods indicated in Table-A or Table-B (as applicable) of Annexure-3 from the date of award of first order under this Advisory, such bidders, shall be required to undertake manufacturing activities as indicated in Table-A or Table-B of Annexure-3 (as applicable) in the indigenous manufacturing facilities set up under the PMP for the supplies made to the project. The same shall be demonstrated to the entire satisfaction of the owner.
3. The requirement of minimum local content for the boiler package (or turbine generator package, as the case may be) indicated in MoP's Order No. 11/05/2018- Coord dated 27.12.2018 issued pursuant to DIPP Notification No. P-45021/2/2017-PP (BE-II) dated 29.5.2018 shall not be applicable till completion of the phase wise manufacturing facilities.



To,

1. Chairman & Managing Director, NTPC Ltd., NTPC Bhawan, Scope Complex, 7, Institutional Area, Lodi Road, New Delhi-110003
2. Chairman, Damodar Valley Corporation, DVC Towers, V.I.P Road, Kolkatta- 700054
3. Chairman and Managing Director, North Eastern Electric Power Corpn. Ltd. Brookland Compound, Lower New Colony Shillong-793003 Meghalaya .
4. Chairman cum Managing Director Neyveli Lignite Corporation Ltd. Corporate Office, Block-1 Nevely 607801 , Cuddalore District Tamil Nadu
5. Managing Director, Andhra Pradesh Power Generation Corporation Limited, Vidyut Soudha, Hyderabad – 500049.
6. Managing Director, Assam Power Generation Corporation Limited, Bijulee Bhawan, 4th Floor, Paltan Bazar, Guwahati – 781 001
7. Managing Director, Bihar State Power Generation Company Ltd., 1st Floor, Vidyut Bhawan, Bailey Road, Patna – 800 021.
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9. Managing Director, Durgapur Projects Ltd., Dr. BC Roy Avenue, District Burdwan, Durgapur -713201, West Bengal
10. Managing Director, Gujarat State Electricity Corporation Ltd., Vidyut Bhawan, Race Course, Vadodara – 390007 Gujarat .
11. Managing Director, Gujarat Urja Vikas Nigam Ltd., Sardar Patel Vidyut Bhawan, Race Course, Vadodara 390 007, Gujarat.
12. Managing Director, Haryana Power Generation Corporation. Ltd., Room No. 411, 3rd floor, Urja Bhawan, C-7, Sector 6, Panchkula, Haryana
13. Chairman cum Managing Director, Jharkhand Urja Vikas Nigam Limited, Engineering Building HEC, Dhurwa Ranchi 834 004.
14. Managing Director Karnataka Power Corporation Ltd. No. 82, Shakti Bhavan, Race Course Road, Bangaluru - 560001.
15. Managing Director, Maharashtra State Power Generation Corporation Limited, Prakashgad, Plot No. G-9, Bandra (East), Mumbai-400051
16. Managing Director, Madhya Pradesh Power Generation Co. Ltd. Shakti Bhawan, Vidyutnagar, Rampur, P.O. Jabalpur- 482008.
17. Managing Director, Odisha Power Generation Corporation Ltd. Zone-A, 7th Floor, Fortune Towers, Chandrasekharpur, Bhubaneswar-751023, Odisha.
18. Chairman & Managing Director, Punjab State Power Corporation Limited, The Mall, Patiala - 147 001.
19. Chairman & Managing Director Rajasthan Rajya Vidyut Utpadan Nigam Ltd. Vidyut Bhawan, R.C. Dave Marg, Jyoti Nagar Janpath, Jaipur , Rajasthan - 302005.
20. Chairman & Managing Director, Tamil Nadu Generation and Distribution Corporation Limited, 10th Floor, NPKRR Maaligai, 144, Anna Salai, Chennai – 600 002
21. Chairman & managing Director, Telangana State Power Generation Corporation Limited, Vidyut Soudha, Khairatabad, Hyderabad – 500082 Fax No. 040- 23499166
22. Managing Director, UP Rajya Vidyut Utpadan Nigam Ltd. 7th Floor, Shakti Bhawan, 14, Ashok Marg, Lucknow- 226001.

23. Chairman & Managing Director, West Bengal Power Development Corporation Ltd., Bidyut Unnayan Bhaban, Block-LA, Plot No. 3/C, Sector-III, Salt Lake City, Kolkata- 700098.

Copy to :

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27. Vice President, Thermax Babcock & Wilcox Energy Solutions Private Limited, Energy House, D-2 Block, Plot No. 38 & 39, MIDC Area, R.D. Aga Road, Chinchwad, Pune- 411 019.

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