

ANNEXURE-1

MECHANICAL	Scope Matrix between BHEL & Vendor Tender Name: NTPC Netra utilizing 25 TPD MSW-RDF/Agri-waste
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Rev 00 Date: 14.05.2024

Sr. No	Item Description	Basic Engg.	Detailed Engg.	Supply	E&C	Sup of E&C	Civil Input	Civil Design	Civil Works (i.e foundations)	Remarks
A	Mechanical									
FEED PREPARATION AND ARRANGEMENT BLOCK (1)										
1	Feed Arrangement	V1	V1	V1	V1	V1	V1	V1	V1	Items indentified under the block are minimum required. Other items may add based on actual process requirement.
2	Feed Storage									
3	MSW Shredder									
4	Feed sizing/pelletization									
5	Feed System (MSW)									
6	Statutory Clearances (PESO etc. as required)									
7	Initial fills, oils & Lubricants, Consumables									
8	Commissioning Spares, Mandatory Spares									
9	O&M for 2 Years									
GASIFIER AND SYN GAS CLEANING BLOCK (2)										
1	Gasification Unit	V1	V1	V1	V1	V1	V1	V1	V1	Items indentified under the block are minimum required. Other items may add based on actual process requirement.
2	Syngas Quenching									
3	Standard Syngas Conditioning System									
4	Syngas Conditioning System for H2 block									
5	Oxygen System as per 7.1.6.1									
6	LP Steam System as per 7.1.6.4									
7	Initial fills, oils & Lubricants, Consumables									
8	Commissioning Spares, Mandatory Spares									
9	O&M for 2 Years									
BOP										

Note:

1. V1- Gasifier Package Supplier
2. All the utilities will be supplied at one point near terminal point. Further distribution within the package is by respective package vendor.

Electrical		Scope Matrix between BHEL & Vendor Tender Name: NTPC Netra utilizing 25 TPD MSW-RDF/Agri-waste									Rev. 00; Date : 15.05.2024
Sl. No	Item Description	Discipline	BE	DE	Supply	E&C	Sup of E&C	Civil Input	Civil Design	Civil Works	Remarks
FEED PREPARATION AND ARRANGEMENT BLOCK (A1)											
1	LTMCC for Electrical loads upto 55KW	Electrical	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	BHEL shall provide 415V Power supply feeder at in corner of LT MCC. Also Vendor MCC shall be placed in BHEL Switchgear room by vendor
2	Feeder for loads above 55kW	Electrical	BHEL	BHEL	BHEL	BHEL	BHEL	BHEL	BHEL	BHEL	Electrical load list to be provided by vendor
3	Cables for Vendor loads above 55kW	Electrical	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	
4	HT Feeders (if applicable)	Electrical	BHEL	BHEL	BHEL	BHEL	BHEL	BHEL	BHEL	BHEL	Vendor to provide list of HT Load list with volatge level for considering HT cables, HT feeders in BHEL scope
5	HT cables for Vendor loads (if applicable)	Electrical	BHEL	BHEL	BHEL	BHEL	BHEL	BHEL	BHEL	BHEL	
6	Cables for Vendor loads (LT,UPS, DC, Control cables)	Electrical	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	Cables for all vendor loads is in vendor scope.
7	Cable Lugs & Glands	Electrical	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	Equipment side Lugs & Glands are in the scope of Equipment supplier
8	Earthing & Lightning protection	Electrical	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	1.BHEL shall provide 2 nos of risers ,Vendor shall connect his equipment to these risers for earthing of vendors equipment. 2. For Lightning protection , Vertical airtermination rods, Horizontal & vertical down conductors shall be by vendor.
9	Electronic earthing of vendor's equipment	Electrical	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	
10	Local Push Button Stations (LPBS)	Electrical	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	LPBS required for vendor supplied motors shall be by vendor
11	Illumination	Electrical	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	
12	VFDs, as applicable, for motors (HT & LT) pertaining to Vendor Block	Electrical	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	
13	Cable trays & supports	Electrical	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	Cable trays & supports within the Vendor block for all vendor loads is by Vendor. Cable trays from BHEL switchgear/Control building to vendor block is by BHEL .Vendor to furnish the cable details
14	Electrical for BOP items	Electrical	BHEL	BHEL	BHEL	BHEL	BHEL	BHEL	BHEL	BHEL	

Instrumentation		Scope Matrix between BHEL & Vendor									Rev. 00; Date : 15.05.2024
		Tender Name: NTPC Netra utilizing 25 TPD MSW-RDF/Agri-waste									
Sl. No	Item Description	Discipline	BE	DE	Supply	E&C	Sup of E&C	Civil Input	Civil Design	Civil Works	Remarks
FEED PREPARATION AND ARRANGEMENT BLOCK (A1)											
1	Complete Field instruments (PG, PT, TG, LG, TT, TE, FE, FT, LT, LS, DPT, DPG, Rotameter etc.) within package battery limit.	Instrumentation	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	
2	Gas Analyzers	Instrumentation	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	
3	Instrument mounting, hook up material for bidder supplied instruments	Instrumentation	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	
4	Signal Cables & JB's - Branch Cable, Multi pair Cable, RTD Cable, T/C cable upto Junction Box for the Vendor Block	Instrumentation	Vendor	Vendor	Vendor	Vendor	Vendor	NA	NA	NA	
5	Signal Cables & JB's - Branch Cable, Multi pair Cable, RTD Cable, T/C cable from Junction Box to Package PLC/Central PLC for Vendor Block.	Instrumentation	Vendor	Vendor	Vendor	Vendor	Vendor	NA	NA	NA	
6	Special Cable - Fiber optic cables, serial interface cables, Network Cables etc., (If applicable)	Instrumentation	Vendor	Vendor	Vendor	Vendor	Vendor	NA	NA	NA	
7	Package PLC's for Vendor Block(as applicable)	Instrumentation	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	
8	OWS & EWS for Vendor Block	Instrumentation	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	
9	Central Integartion PLC of GH2-PREGS	Instrumentation	Vendor/BHEL	Vendor/BHEL	BHEL	BHEL	BHEL	BHEL	BHEL	BHEL	Bidder to submit PLC IO count if applicable during tendering and other PLC inputs like IO list, JB grouping, cable schedule, Auto control loop/complex loop/closed loop & logics (as per BHEL format) to BHEL during project execution stage
10	Interface of 's Vendor Block Package PLC's with Central Integartion PLC of GH2-PREGS	Instrumentation	Vendor	Vendor	Vendor	Vendor	Vendor	NA	NA	NA	Vendor to coordinate with BHEL for smooth interface with Central Integartion PLC. Necessary support shall be extended by BHEL to Vendor for their scope. For Central Integartion PLC interface, complete terminaling accessories at PLC end shall be by Vendor for their scope.
11	Training for Package PLC (as applicable)	Instrumentation	Vendor	Vendor	Vendor	NA	NA	NA	NA	NA	
12	Cable trays & supports	Electrical	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	Cable trays & supports within the vendor block for all vendor loads is by Vendor
13	Special tools & tackles	Instrumentation	Vendor	Vendor	Vendor	Vendor	Vendor	NA	NA	NA	
14	Mandatory Spares, Recommended spares, O&M and maintenance spare as per specification	Instrumentation	Vendor	Vendor	Vendor	NA	NA	NA	NA	NA	
15	Cable Glands, Lugs, cable Ferrules, fasteners as required for Vendor Block	Instrumentation	Vendor	Vendor	Vendor	Vendor	Vendor	NA	NA	NA	
16	Control room furniture for mounting of all consoles, printers, chairs for operators, operator's desk, and file racks etc.	Instrumentation	Vendor	BHEL	BHEL	BHEL	BHEL	BHEL	BHEL	BHEL	
17	Laboratory Instruments	Instrumentation	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	
18	C&I for BOP items	Instrumentation	BHEL	BHEL	BHEL	BHEL	BHEL	BHEL	BHEL	BHEL	

GASIFIER AND SYN GAS CLEANING BLOCK (A2)											
1	Complete Field instruments (PG, PT, TG, LG, TT, TE, FE, FT, LT, LS, DPT, DPG, Rotameter etc.) within package battery limit.	Instrumentation	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	
2	Gas Analyzers	Instrumentation	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	
3	Instrument mounting, hook up material for bidder supplied instruments	Instrumentation	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	
4	Signal Cables & JB's - Branch Cable, Multi pair Cable, RTD Cable, T/C cable upto Junction Box for the Vendor Block	Instrumentation	Vendor	Vendor	Vendor	Vendor	Vendor	NA	NA	NA	
5	Signal Cables & JB's - Branch Cable, Multi pair Cable, RTD Cable, T/C cable from Junction Box to Package PLC/Central PLC for Vendor Block.	Instrumentation	Vendor	Vendor	Vendor	Vendor	Vendor	NA	NA	NA	
6	Special Cable - Fiber optic cables, serial interface cables, Network Cables etc., (If applicable)	Instrumentation	Vendor	Vendor	Vendor	Vendor	Vendor	NA	NA	NA	
7	Package PLC's for Vendor Block(as applicable)	Instrumentation	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	
8	OWS & EWS for Vendor Block	Instrumentation	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	
9	Central Integration PLC of GH2-PREGS	Instrumentation	Vendor/BHEL	Vendor/BHEL	BHEL	BHEL	BHEL	BHEL	BHEL	BHEL	Bidder to submit PLC IO count if applicable during tendering and other PLC inputs like IO list, JB grouping, cable schedule, Auto control loop/complex loop/closed loop & logics (as per BHEL format) to BHEL during project execution stage
10	Interface of 's Vendor Block Package PLC's with Central Integration PLC of GH2-PREGS	Instrumentation	Vendor	Vendor	Vendor	Vendor	Vendor	NA	NA	NA	Vendor to coordinate with BHEL for smooth interface with Central Integration PLC. Necessary support shall be extended by BHEL to Vendor for their scope. For Central Integration PLC interface, complete terminaling accessories at PLC end shall be by Vendor for their scope.
11	Training for Package PLC (as applicable)	Instrumentation	Vendor	Vendor	Vendor	NA	NA	NA	NA	NA	
12	Cable trays & supports	Electrical	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	Cable trays & supports within the vendor block for all vendor loads is by Vendor
13	Special tools & tackles	Instrumentation	Vendor	Vendor	Vendor	Vendor	Vendor	NA	NA	NA	
14	Mandatory Spares, Recommended spares, O&M and maintenance spare as per specification	Instrumentation	Vendor	Vendor	Vendor	NA	NA	NA	NA	NA	
15	Cable Glands, Lugs, cable Ferrules, fasteners as required for Vendor Block	Instrumentation	Vendor	Vendor	Vendor	Vendor	Vendor	NA	NA	NA	
16	Control room furniture for mounting of all consoles, printers, chairs for operators, operator's desk, and file racks etc.	Instrumentation	Vendor	BHEL	BHEL	BHEL	BHEL	BHEL	BHEL	BHEL	
17	Laboratory Instruments	Instrumentation	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	Vendor	
18	C&I for BOP items	Instrumentation	BHEL	BHEL	BHEL	BHEL	BHEL	BHEL	BHEL	BHEL	