

EPC execution of Power House Electro-Mechanical Works for Heo Hydro Electric Project (240 MW), Arunachal Pradesh	 ISO: 9001, 14001,	Bid Document Vol-I, Sec-IX Price-Schedules
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Tender Inviting Authority: ED(Tech), C&P, NEEPCO, Shillong.							
Name of Work: EPC execution of Power House Electro-Mechanical Works for Heo Hydro Electric Project (240MW), Arunachal Pradesh.							
Contract No: NIB No.487 dtd 09.01.2026							
<u>PRICE SCHEDULE I</u>							
Sl. No.	Item Description	Quantity	Units	BASIC TOTAL RATE In Figures Rs. P		TOTAL AMOUNT With Taxes	TOTAL AMOUNT In Words
1	Total from Price Schedule II (SUPPLY)	1.000	Nos	0.00		0.00	INR Zero Only
2	Total from Price Schedule III (F&I)	1.000	Nos	0.00		0.00	INR Zero Only
3	Total from Price Schedule IV (ETC)	1.000	Nos	0.00		0.00	INR Zero Only
Total in Figures						0.00	INR Zero Only
Quoted Rate in Words		INR Zero Only					

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<u>PRICE SCHEDULE II (SUPPLY)</u>									
Sl. No.	Item Description	Quantity	Units	Unit Ex-Works Price for Supply in INR	Taxes and Duties in percentage(%)	Amount on which Taxes and Duties applicable	Amount of Taxes and Duties in INR	TOTAL AMOUNT including taxes and duties in Rs. P	TOTAL AMOUNT In Words
1	MECHANICAL EQUIPMENT/SYSTEM								
1.01	Vertical Shaft Francis Turbine, direct coupled, 300 rpm, capable of generating 81.20 MW at Generator terminals at rated head of 201.80 meter, complete with its associated Spiral Distributor & other accessories, including embedded and foundation parts, Instruments, Control & Safety Devices, Lube Oil System etc., complete in all respects. (TG Unit shall be capable	3.000	Sets			0.00	0.00	0.00	INR Zero Only

	of generating with 10% Continuous Overload)								
1.02	Digital microprocessor type Governor with fully redundant controllers and Governing Equipment complete in all respects for optimizing and controlling the turbines and guide vanes opening & closing mechanism etc. The system should be compatible to the use of SCADA system.	3.000	Sets			0.00	0.00	0.00	INR Zero Only
1.03	Oil Pressure system for Governor complete with Pumps, Motors, Valves, Oil Pressure Accumulators (N2 accumulators), Piping, Instruments etc.	3.000	Sets			0.00	0.00	0.00	INR Zero Only

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1.04	Oil Pressure system for MIV complete with Pumps, Motors, Valves, Oil Pressure Accumulators (N2 accumulators), Piping, Instruments etc.	3.000	Sets			0.00	0.00	0.00	INR Zero Only
1.05	Monorail with hoist located at the level below runner and used to handle Runner during maintenance, necessary platform and other accessories for maintenance of Turbine Runner, Vent Pipes etc.	3.000	Sets			0.00	0.00	0.00	INR Zero Only
1.06	Trolley with tilting Hydraulic Cylinder for Runner removal and installation during maintenance	1.000	Set			0.00	0.00	0.00	INR Zero Only
1.07	Cooling Water System complete with Cyclone Separator, Motorized Automatic Online Self-Cleaning Strainers, Valves, piping, Strainers etc., and all electrical & mechanical accessories;	3.000	Sets			0.00	0.00	0.00	INR Zero Only

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1.08	HP & LP Compressed Air System complete with Compressors, Air dryers, Air Receivers, pipes, valves, fittings, Instruments, specialties for compressed air, oil & water services and all electrical and mechanical accessories; A separate compressed air system to run the machine in synchronous condenser operation mode.	1.000	Set			0.00	0.00	0.00	INR Zero Only
1.09	Station Drainage system complete with main and stand-by Submersible Sump Pumps, Motors, Valves, Automatic Detachable Pedestal Coupling. Dismantling joint, Guide Rail Pipes, Piping, necessary Cabling, Motor Starters, Level Switches & Alarm System etc.	1.000	Lot			0.00	0.00	0.00	INR Zero Only

1.1	Unit Dewatering system complete with main and stand-by Submersible Sump Pumps, Motors, Valves, Automatic Detachable Pedestal Coupling. Dismantling joint, Guide Rail Pipes, Piping, necessary Cabling, Motor Starters, Level Switches & Alarm System etc.	1.000	Lot			0.00	0.00	0.00	INR Zero Only
1.11	Flood pumps complete with Submersible Sump Pump, Motor, Valves, Automatic Detachable Pedestal Coupling. Dismantling joint, Guide Rail Pipes, Piping, necessary Cabling, Motor Starters, Level Switches & Alarm System etc.	1.000	Lot			0.00	0.00	0.00	INR Zero Only
1.12	Monorail with hoist used to handle drainage, dewatering and flood pumps during maintenance, necessary platform and other accessories.	1.000	Lot			0.00	0.00	0.00	INR Zero Only

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1.13	Lubricating and Governor Oil Filtration set.	1.000	Set			0.00	0.00	0.00	INR Zero Only
1.14	Spherical Main Inlet Valve of 2750 mm diameter complete with actuating mechanism, transition sections and dismantling joint;	3.000	Sets			0.00	0.00	0.00	INR Zero Only
1.15	Butterfly Penstock Protection Valve of 5750 mm diameter complete with actuating mechanism, transition sections and dismantling joint;	1.000	Set			0.00	0.00	0.00	INR Zero Only
1.16	Fire Fighting system for Powerhouse, Transformer and Switchyard.	1.000	Set			0.00	0.00	0.00	INR Zero Only
1.17	HVAC System for Powerhouse	1.000	Set			0.00	0.00	0.00	INR Zero Only

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1.18	Cabin & Radio Remote Control, Indoor Double Girder Electrically Operated overhead traveling Crane (EOT) of requisite capacity, Class M3 for Powerhouse complete with, hooks, motors, electrical control panel, trolley, brakes, bumpers, crane stops, safety devices, limit switches, load limit device for MH, AH, platforms, ladders, fittings & connections and electrical accessories, complete cabling, LT Rails & DSL and their embedded parts & fixtures etc., as per Technical Specification.	1.000	Set			0.00	0.00	0.00	INR Zero Only
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1.19	Cabin & Radio Remote Control, Indoor Double Girder Electrically Operated overhead traveling Crane (EOT) of requisite capacity, Class M3 for Valve house, complete with, hooks, motors, electrical control panel, trolley, brakes, bumpers, crane stops, safety devices, limit switches, load limit device for MH, AH, platforms, ladders, fittings & connections and electrical accessories, complete cabling, LT Rails & DSL and their embedded parts & fixtures etc., as per Technical Specification.	1.000	Set			0.00	0.00	0.00	INR Zero Only
1.2	EOT crane of 10 T capacity for erection and maintenance of GIS equipment. The crane shall be capable of lifting equipment from the rails of transformer enclosure.	1.000	No			0.00	0.00	0.00	INR Zero Only

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1.21	Elevator	1.000	Set			0.00	0.00	0.00	INR Zero Only
1.22	Workshop Equipment	1.000	Set			0.00	0.00	0.00	INR Zero Only
2	Electrical Equipment								
3	GENERATOR & EXCITATION SYSTEM:								
3.01	Vertical Synchronous Generator (Salient Pole Type): Vertical Shaft Generator of rating 80 MW, suitable for 10% continuous overloading with 11 kV generation at 0.85 pf complete with static excitation system, digital AVR, shaft current measurement system and consisting of following:	3.000	Sets			0.00	0.00	0.00	INR Zero Only
3.02	Stator complete with frame, punching and windings								
3.03	Rotor complete with shaft, spider rim, poles with winding and accessories and pedestal bearings								
3.04	CO2 based fire protection system along								

	with piping and sensors etc.								
3.05	Lubricating system complete with necessary pipe work, valves, filter, pump set etc. for lubrication of the bearings.								
3.06	Oil coolers for the bearings & Air coolers for cooling of Generator Winding								
3.07	Sole plates, foundation bolts, bolts, dowels etc. required for proper erection, levelling, alignment etc. of generator.								
3.08	Generator housing door, stairs, railings, platform, convenient outlets, internal illumination, dome light etc.								
3.09	Platform, stairs, walkways, handrails etc. for access to the bearings, slip-rings etc .								
3.1	Static Excitation System and Digital AVR (2A+1M)								
3.11	Excitation Transformers								

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3.12	Hydraulic Brake System Hydraulic/ Pneumatic Brake & Jack System								
4	11kV ISOLATED PHASE BUS DUCT AND ASSOCIATED EQUIPMENT	3.000	Sets			0.00	0.00	0.00	INR Zero Only
4.01	11kV Isolated Phase Bus Duct Consisting of:								
4.02	11 kV isolated Phase Bus Duct of required length with current transformer as marked in enclosed SLD along with Generator end termination, Transformer end termination including flexible required bellows, seal off bushings for IPBD crossings at floor, separating walls etc. bends (H/V), Delta formation , potential transformers, surge protection cubicle, 0.25μF capacitor, neutral cubicle, and grounding transformer/resistor assembly cubicle								

	including bends, delta connection, seal-off bushings, tapping arrangement for UAT, ET, NGT & LAVT etc. and termination arrangement.								
4.03	LAVT Cubicle - Lightning Arrestor, Surge Capacitor, CT and PT Cubicle (LAVT) with Copper/Aluminium bus bar (3 X 1 Ph)								
4.03	NGT Cubicle - Generator Neutral Grounding Cubicle (NGT) including Neutral Isolating Switch, Single Phase Neutral Grounding Transformer, Loading Resistor, CT's & Copper/Aluminum bus bar								
5	IN TRANSFORMER YARD								

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5.01	The water connection to the isolation valves provided within the transformer enclosure including flexible and supports.	1.000	Lot			0.00	0.00	0.00	INR Zero Only
5.02	RTU Panel (TRB)	1.000	Bank			0.00	0.00	0.00	INR Zero Only
5.03	N2 Injection based Fire Protection System	1.000	Lot			0.00	0.00	0.00	INR Zero Only
6	33 kV MEDIUM VOLTAGE SWITCHGEAR :	1.000	Lot			0.00	0.00	0.00	INR Zero Only
6.01	33 kV Indoor Switchgear panel with Vacuum circuit breakers / SF6 circuit breakers (630A), 25 kA, Copper Busbar, CTs, PTs, Meters (MFM), Busbar Protection & other protections etc. consisting of : 1. Incomer from SST - 1 No. 2. Incomer from Local Supply – 2 Nos. 3. Outgoing for Station Auxiliary Transformer - 2 Nos. 4. Outgoing for Remote site - 2 Nos. 5. Outgoing for								

	Local/colony distribution – 2 Nos. 6. Bus PT panel - 1 No. 7. Spare Outgoing for future use - 1 No. 8. Earthing trolleys for maintenance – 1 No.								
7	415 V LOW VOLTAGE SWITCHGEAR :								
7.01	Station Service Board (SSB) 415 V, 3150 A, 50 kA, Metal enclosed Switchgear with Copper bus bar, interlockings, MFMs, Protections, Starters etc. which shall comprise of following panels: 1. 3150 A ACB Incomer feeder from Station Service Transformer - 2 Nos.	1.000	Set			0.00	0.00	0.00	INR Zero Only

	2. 1250 A ACB Incomer feeder from DG Set - 1No. 3. 3150 A ACB breaker for Bus Coupler- 1No. 4. ACB outgoing Feeders – 3 Nos + 1 No. (Spare). 5. MPCB / MCCB outgoing feeders - 1 Lot								
7.02	Unit Auxillary Board (UAB) 415 V, 1250 A, 50 kA, Metal enclosed Switchgear with Copper bus bar, interlockings, MFMs, Protections, Starters etc. which shall comprise of following panels: 1. 1250 A ACB Incomer feeder from Station Service Board - 1 No. 2. 1250 A ACB Incomer feeder from Unit Auxiliary Transformer - 1No. 3. MPCB / MCCB outgoing feeders - 1 Lot	3.000	Sets			0.00	0.00	0.00	INR Zero Only

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7.03	Gas Insulated Switchgear room AC Distribution Board (GIS-ACDB) 415 V, 400 A, 50 kA, Metal enclosed Switchgear with Copper bus bar , interlockings, MFMs, Protections etc. which shall comprise of following panels: 1. 400 A Incomer feeder (Working) from Station Service Board - 1 No. 2. 400 A Incomer feeder (Stand by) from Station Service Board - 1 No. 3. MPCB / MCCB outgoing feeders - 1 Lot	1.000	Set			0.00	0.00	0.00	INR Zero Only
7.04	Main Distribution Board (MDB) at HRT intake Location 415 V Metal enclosed Switchgear with Copper bus bar , interlockings, MFMs, Protections etc. which shall comprise of following panels: 1. One No. Incomer feeder from 160kVA, 33 /.433kV Transformer at	1.000	Set			0.00	0.00	0.00	INR Zero Only

	Intake location- 1 No. 2. One No. Incomer feeder from 200kVA DG set at Intake location - 1 No. 3. MPCB / MCCB outgoing feeders - 1 Lot								
7.05	Main Distribution Board (MDB) at Valve House Location 415 V Metal enclosed Switchgear with Copper bus bar , interlockings, MFMs, Protections etc. which shall comprise of following panels: 1. One No. Incomer feeder from 160kVA, 33 /.433kV Transformer at Valve House location- 1 No. 2. One no. feeder from DG set- 1 No. 3. MPCB / MCCB outgoing feeders - 1 Lot	1.000	Set			0.00	0.00	0.00	INR Zero Only

7.06	One Lot of distribution boards as per requirements complete with cubicles, bus bar system, circuit breaker, instruments transformers, instruments, relay, cabling and wiring and other accessories.	1.000	Lot			0.00	0.00	0.00	INR Zero Only
8	UNIT CONTROL, SCADA AND AUTOMATION								
8.01	Unit control boards (UCB), Auto synchronizing panel with redundant programmable controllers & input output modules with plant SCADA, Automation, Control (PCS) including HMI, redundant fibre optic cables for inter panel connection, transmitter/receiver, router, cabinet, Software for work stations etc. to make it complete system	3.000	Lots			0.00	0.00	0.00	INR Zero Only

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8.02	Common Control board (CCB) with redundant programmable controllers & input output modules with plant SCADA, Automation, Control (PCS) including HMI, redundant fibre optic cables for inter panel connection, transmitter/receiver, router, cabinet, Software for work stations etc. to make it complete system	1.000	Lot			0.00	0.00	0.00	INR Zero Only
8.03	Operator work stations	3.000	Nos			0.00	0.00	0.00	INR Zero Only
8.04	Engineering work station	1.000	No			0.00	0.00	0.00	INR Zero Only
8.05	Portable Engineering work station (Laptop)	1.000	No			0.00	0.00	0.00	INR Zero Only
8.06	Large Video Screen (LVS)	1.000	Set			0.00	0.00	0.00	INR Zero Only
8.07	Printers	3.000	Nos			0.00	0.00	0.00	INR Zero Only
8.08	Historian work station	1.000	No			0.00	0.00	0.00	INR Zero Only
8.09	Furniture for control room	1.000	Lot			0.00	0.00	0.00	INR Zero Only
8.1	Intake Control board	1.000	No			0.00	0.00	0.00	INR Zero Only

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8.11	Valve House Control board	1.000	No			0.00	0.00	0.00	INR Zero Only
8.12	Operator work station for remote sites	2.000	Nos			0.00	0.00	0.00	INR Zero Only
8.13	VOIP System	1.000	Lot			0.00	0.00	0.00	INR Zero Only
8.14	Fibre Optic cable (ADSS) from power house to remote sites with all accessories for complete FO communication and including all hardware for laying etc.	1.000	Lot			0.00	0.00	0.00	INR Zero Only
9	PROTECTION, AUTOMATION, METERING & COMMUNICATION SYSTEM								
9.01	Protection Board for Generator and Generator Step up Transformer (UPBs), Set of complete board comprising of a free standing 3 section Rack Mounting type cubicle, each section 750x750x2000 front (tempered glass) and back door, IP54 dust	3.000	Sets			0.00	0.00	0.00	INR Zero Only

	tight and containing the following:								
9.02	<p>Section 1: Protection A containing: (ALSTOM, Siemens, ABB, GE make relays)</p> <ul style="list-style-type: none"> • Multifunction Digital Generator Management Relay • Multifunction Digital Transformer Management Relay • Digital Communication Processor • Lockout Relays (manual Reset) [86], Tripping Relay (auto Reset) [94], Test Switches, Space heater, switch for socket, space heater and other panel supply, AC Compact LED Tube fitting complete with Door switch, DC source MCB, heavy duty terminal blocks, internal 								

	tinned copper wiring, 200°C fluoropolymer insulation etc. • Multifunction Meter • BCU								
9.03	Section 2: Protection B containing: (ALSTOM, Siemens, ABB, GE make relays) • Multifunction Digital Generator Management Relay • Multifunction Digital Overall Differential Relay • Digital Communication Processor • Lockout Relays (manual Reset) [86], Tripping Relay (auto Reset) [94], Test								

	Switches, Space heater, switch for socket, space heater and other panel supply, AC Compact LED Tube fitting complete with Door switch, DC source MCB, heavy duty terminal blocks, internal tinned copper wiring, 200°C fluoropolymer insulation etc.								
9.04	Protection Board for Station Service Transformer (SST) , Set of complete board comprising of a free standing 3 section Rack Mounting type cubicle, each section 750x750x2000 front (tempered glass) and back door, IP62 dust tight and containing the following:	2.000	Sets			0.00	0.00	0.00	INR Zero Only

9.05	<p>Section 1: Protection A containing: (ALSTOM, Siemens, ABB, GE make relays)</p> <ul style="list-style-type: none"> • Multifunction Digital Transformer Management Relay • Digital Communication Processor • Lockout Relays (manual Reset) [86], Tripping Relay (auto Reset) [94], Test Switches, Space heater, switch for socket, space heater and other panel supply, AC Compact LED Tube fitting complete with Door switch, DC source MCB, heavy duty terminal blocks, internal tinned copper wiring, 200°C fluoropolymer insulation etc. • Multifunction Meter • BCU 								
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9.06	Section 2: Protection B containing: (ALSTOM, Siemens, ABB, GE make relays) <ul style="list-style-type: none">• Multifunction Digital Overall Differential Relay• Digital Communication Processor• Lockout Relays (manual Reset) [86], Tripping Relay (auto Reset) [94], Test Switches, Space heater, switch for socket, space heater and other panel supply, AC Compact LED Tube fitting complete with Door switch, DC source MCB, heavy duty terminal blocks, internal tinned copper wiring, 200°C fluoropolymer insulation etc.								
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9.07	<p>Section 3: Common Protection and Control containing:</p> <ul style="list-style-type: none"> • Multifunction digital Overcurrent relay (50/51, 51G) for ET and UAT • Digital Ground Voltage relay (64B), Auxiliary and timed relays, common I/O rack, Pistol grip CB Control Switch, Pistol grip local distance switch, Test switches, Space heater, switch for socket, AC Compact LED Tube fitting complete with door switch, DC source MCB, heavy duty terminal blocks, internal tinned copper wiring, 200°C fluoropolymer insulation etc. • BCU • Multifunction Meter for UAT & ET. 	3.000	Sets			0.00	0.00	0.00	INR Zero Only
9.08	<p>GIS Protection Board (LPB):</p> <p>Free standing 6 section Rack Mounting type each section</p>	4.000	Sets			0.00	0.00	0.00	INR Zero Only

	750x750x2000 front (tempered glass or Lexan) and back door, IP62 dust tight and containing the following								
9.09	<p>Lines 1 and 2 Protection A containing:</p> <p>(ALSTOM, Siemens, ABB, GE make relays)</p> <ul style="list-style-type: none"> • Multifunction Digital Line Distance/ Differential Relay • Intelligent Revenue Metering system (Schneider/ Power measurement ION7700 or equivalent) • Lockout Relay (manual reset) [86], Tripping relay (auto reset) [94], Auxiliary and timed relays, Test Switches, 240V AC Space Heater c/w thermostat, 5A/15A, 240V AC MCB switch for socket, space heater and other panel supply, 20 W, 240V, AC Compact LED Tube fitting complete with Door switch, DC source 								

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	<ul style="list-style-type: none">• MCB, Fuse Blocks and fuses, Heavy duty Terminal Blocks.• BCU• Multifunction Meter (Main & Check)								
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9.1	Lines 1 and 2 Protection B containing: <ul style="list-style-type: none"> • Multifunction Digital Line Distance/ Differential Relay • Intelligent Revenue Metering system (Schneider/ Power measurement ION7700 or equivalent) • Lockout Relay (manual reset) [86], Tripping relay (auto reset) [94], Auxiliary and timed relays, Test Switches, 240V AC Space Heater c/w thermostat, 5A/15A, 240V AC MCB switch for socket, space heater and other panel supply, 20 W, 240V, AC Compact LED Tube fitting complete with Door switch, DC source • MCB, Fuse Blocks and fuses, Heavy duty Terminal Blocks. 								
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9.11	<p>Bus Protection containing: (BPB) Free standing Rack Mounting type with front (tempered glass or Lexan) and back door, IP62 dust tight and containing the following</p> <ul style="list-style-type: none"> • Each Multifunctional Digital Bus Differential Relay c/w One Central Unit, twenty Peripheral Units (20 zones) to provide Main and Check feature (Independent for Protection A & Protection B). • Breaker Failure Relay (Independent for Protection A & Protection B). • Lockout Relay (manual reset) [86], Tripping relay (auto reset) [94], Auxiliary and timed relays, Test Switches, 240V AC Space Heater c/w thermostat, 5A/15A, 240V AC MCB switch for socket, space heater and other panel supply, 20 	1.000	Lot			0.00	0.00	0.00	INR Zero Only
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	W, 240V, AC Compact fluorescent Tube fitting complete with Door switch, DC source. • MCB, Fuse Blocks and fuses, Heavy duty Terminal Blocks. • BCU • Multifunction Meter • Mimic/Indication of Unit Protection panels on GIS protection panels.								
9.12	Unit Bay Controller and Metering Board (BMB) (Units, SST Metering)	1.000	Set			0.00	0.00	0.00	INR Zero Only
9.13	Line Metering Board	4.000	Sets			0.00	0.00	0.00	INR Zero Only
9.14	Common RTU Board	1.000	Set			0.00	0.00	0.00	INR Zero Only

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9.15	GIS and Pot Head Yard Protection Engineering Workstation as per Technical Specifications	1.000	Set			0.00	0.00	0.00	INR Zero Only
9.16	Portable Engineering Work Station as per Technical Specifications	1.000	Set			0.00	0.00	0.00	INR Zero Only
9.17	Protection Operating Work Station as per Technical Specifications	1.000	Set			0.00	0.00	0.00	INR Zero Only
9.18	Dispatch Work Station (DWS)With GPS Clock, antenna & IRIG-B Distribution.	1.000	Set			0.00	0.00	0.00	INR Zero Only
9.19	Energy Management Station (EMS) including all software	1.000	Set			0.00	0.00	0.00	INR Zero Only
9.2	Control and Monitoring containing : • Digital Communication Processor • Common I/O rack complete with indicating light and Control switches • LED indicating light, 220V DC, 100,000AGC hours, Pistol Grip Circuit Breaker Control Switch, Pistol Grip Local distance switch, 240V AC space	1.000	Lot			0.00	0.00	0.00	INR Zero Only

	heater c/w thermostat, 5A/15A, 240V AC 3 pin socket, 5A/15A, 240V AC MCB switch for socket, space heater and other panel supply, 20W, 240V, AC Compact LED Tube fitting complete with Door Switch, DC source MCB, Fuse Blocks and fuses etc.								
9.21	GIS SCADA (PAMS) communication with main PH SCADA (OFC Cable & Patch Panels) • Free standing 4 section Rack Mounting type each section 750x750x2000 front (tempered glass or Lexan) and back door, IP62 dust tight • Redundant multimode optical fiber cables with all the necessary accessories like Connectors, Adaptors, LIUs, Patch panels, Patch cords etc.	1.000	Lot			0.00	0.00	0.00	INR Zero Only

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9.22	Relay Testing Kit	1.000	Lot			0.00	0.00	0.00	INR Zero Only
9.23	Standalone Event Logger and Disturbance Recorder	1.000	Lot			0.00	0.00	0.00	INR Zero Only
10	DIESEL GENERATOR SET:								
10.01	415 V, 800 kVA Silent DG set (with acoustic enclosure) along-with AMF panel, inbuilt day tank and 999 Litres weekly storage tank with associated system.	1.000	Set			0.00	0.00	0.00	INR Zero Only
10.02	415 V, 250 kVA Silent DG set (with acoustic enclosure) along-with AMF panel for remote site with inbuilt day tank and 999 Litres weekly storage tank with associated system.	1.000	Set			0.00	0.00	0.00	INR Zero Only
11	COMMUNICATION SYSTEM & CCTV SYSTEM	1.000	Lot			0.00	0.00	0.00	INR Zero Only
11.01	Communication System complete with 64 telephone sets & EPABX system suitable for the same + PA System.								
11.02	CCTV System with Monitor as described in Tender Specifications								

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12	DC SYSTEM & UPS SYSTEM :	1.000	Lot			0.00	0.00	0.00	INR Zero Only
12.01	Two (2) 220 V DC 1000AH Plante/ Ni-Cd Battery bank including battery racks								
12.02	Two (2) sets of 220 V DC Battery chargers (main and standby) and all accessories								
12.03	220 V DC Battery Discharge Panel								
12.04	Two (2) 220 V DC distribution board (DCDB)								
12.05	Two (2) 220V GIS DC Distribution Board (DCDB)								
12.06	220V DC/240V AC Inverter								
12.07	240V AC Distribution Board (ACDB)								
12.08	Two (2) 48 V DC 400AH Plante/ Ni-Cd Battery bank including battery racks								
12.09	Two (2) sets 48 V DC Battery chargers and all accessories								

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12.1	Two (2) 48 V DC distribution board (DCDB)								
12.11	One (1) 220V DC/48V DC Converter								
12.12	25 kVA UPS battery, power distribution board & and all necessary accessories - 1 Set								
12.13	6 kVA UPS battery, power distribution board & and all necessary accessories - 2 Sets								
12.14	240AC/24V DC Converter with 24V DC Distribution Board - 1 Set								
13	POWER & CONTROL CABLES	1.000	Lot			0.00	0.00	0.00	INR Zero Only
13.01	HT Power Cables: 33 kV, single core, armoured, XLPE insulated, PVC sheathed, compacted stranded circular cross section, Aluminium conductor, FRLS Type, rodent proof mainly for interconnection of equipment.								

13.02	HT Power Cables: (if required) 11 kV, armoured, XLPE insulated, PVC sheathed, compacted stranded circular cross section, Aluminium conductor, FRLS Type, rodent proof mainly for interconnection of equipment.								
13.03	LT Power Cables: 1100 V grade, multi-core, HR PVC/XLPE insulated, PVC sheathed (inner and outer extruded), stranded compacted circular cross-section, FRLS Type, rodent proof, copper conductor of different sizes.								
13.04	Control Cables: Control Cables - 1100 V grade, stranded copper conductor, PVC insulated, FRLS Type, rodent proof, colour coded with inner sheathed extruded PVC								

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	over all PVC sheathed of different sizes and cores.								
13.05	Instrumentation Cables: Annealed tinned flexible copper conductor, PVC insulated, polyester taped, Twisted pairs, individual & overall shielded, FRLS Type, rodent proof.								
13.06	Cable Accessories: Termination Kits, Lugs (tinned copper Lugs), Glands, Ferrules etc.								
14	CABLE TRAYS	1.000	Lot			0.00	0.00	0.00	INR Zero Only
14.01	Perforated / Ladder Type GI Cable Trays, racks & necessary hardware with support structures & accessories.								
15	ILLUMINATION SYSTEM :	1.000	Lot			0.00	0.00	0.00	INR Zero Only

15.01	Illumination System (Normal & Emergency) for Power House area, outdoor areas around power house, pothead yard area, approach road and remote sites (HRT intake & Valve house areas), complete with LED lighting fixtures, conduits and fittings, cabling and distribution boards (MLDBs & ELDBs, LDBs). It shall also include illumination of road near Power House & the two remote sites.								
16	EARTHING SYSTEM :	1.000	Lot			0.00	0.00	0.00	INR Zero Only
10.01	Earthing System for Power house, transformer area, GIS, Pothead yard area, remote areas/sites and adjoining areas including MS rods for buried earthing grid, GI strip for equipment connection to Main Grid and GI exposed earth strip, MS								

	rods including hardware such as bolts, nuts and lock-washers.								
16.02	<p>Earthing and Surge protection of GIS & other equipment-</p> <ul style="list-style-type: none"> • Earthing Grid for GIS in GIS floor • Earthing interconnection of GIS equipment and the GIS floor grid. • Connection between GIS floor earth grid with Power House Earth grid • Earthing of Generator Transformer Neutral to treated pit • Body Earthing of GTMB, CMB ,rail etc. to P.H. earthing mat • Pot head yard earthing grid above GIS floor level , its connection to pot head yard equipment and further to PH earthing grid 								

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17	ELECTRICAL WORKSHOP	1.000	Lot			0.00	0.00	0.00	INR Zero Only
18	MISCELLANEOUS EQUIPMENT								
18.01	Field Instruments and Receiving Instruments;	1.000	Lot			0.00	0.00	0.00	INR Zero Only
18.02	Complete Monitoring and Safety Instruments pertaining to the TG set;	3.000	Sets			0.00	0.00	0.00	INR Zero Only
18.03	Vibration Monitoring System	3.000	Sets			0.00	0.00	0.00	INR Zero Only
18.04	Air Gap Monitoring System and Vibration Analyzer including Zoom Control Station (ZCS)	1.000	Set			0.00	0.00	0.00	INR Zero Only
18.05	Partial Discharge Analyzer	3.000	Sets			0.00	0.00	0.00	INR Zero Only
18.06	Turbine Flow Measurement display in SCADA (complete with all necessary differential pressure transmitter, integrated instruments, peizometer tappings, interconnecting tubes etc., and special tools for calibration at the time of installation	3.000	Sets			0.00	0.00	0.00	INR Zero Only
18.07	Surge Shaft and TWL Level Sensors	1.000	Set Each			0.00	0.00	0.00	INR Zero Only
19	OTHER								

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Tender Inviting Authority: ED(Tech), C&P, NEEPCO, Shillong.									
Name of Work: EPC execution of Power House Electro-Mechanical Works for Heo Hydro Electric Project (240MW), Arunachal Pradesh.									
Contract No: NIB No.487 dtd 09.01.2026									
PRICE SCHEDULE III (F&I)									
Sl. No.	Item Description	Quantity	Units	Unit F&I Price in INR	Taxes and Duties in percentage(%)	Amount on which Taxes and Duties applicable	Amount of Taxes and Duties in INR	TOTAL AMOUNT including taxes and duties in Rs. P	TOTAL AMOUNT In Words
1	MECHANICAL EQUIPMENT/SYSTEM								
1.01	Vertical Shaft Francis Turbine, direct coupled, 300 rpm, capable of generating 81.20 MW at Generator terminals at rated head of 201.80 meter, complete with its associated Spiral Distributor & other accessories, including embedded and foundation parts, Instruments, Control & Safety Devices, Lube Oil System etc., complete in all respects. (TG Unit shall be capable of generating with 10% Continuous Overload)	3.000	Sets			0.00	0.00	0.00	INR Zero Only

1.02	Digital microprocessor type Governor with fully redundant controllers and Governing Equipment complete in all respects for optimizing and controlling the turbines and guide vanes opening & closing mechanism etc. The system should be compatible to the use of SCADA system.	3.000	Sets			0.00	0.00	0.00	INR Zero Only
1.03	Oil Pressure system for Governor complete with Pumps, Motors, Valves, Oil Pressure Accumulators (N2 accumulators), Piping, Instruments etc.	3.000	Sets			0.00	0.00	0.00	INR Zero Only
1.04	Oil Pressure system for MIV complete with Pumps, Motors, Valves, Oil Pressure Accumulators (N2 accumulators), Piping, Instruments etc.	3.000	Sets			0.00	0.00	0.00	INR Zero Only
1.05	Monorail with hoist located at the level below runner and used to handle Runner during	3.000	Sets			0.00	0.00	0.00	INR Zero Only

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	maintenance, necessary platform and other accessories for maintenance of Turbine Runner, Vent Pipes etc.								
1.06	Trolley with tilting Hydraulic Cylinder for Runner removal and installation during maintenance	1.000	Set			0.00	0.00	0.00	INR Zero Only
1.07	Cooling Water System complete with Cyclone Separator, Motorized Automatic Online Self-Cleaning Strainers, Valves, piping, Strainers etc., and all electrical & mechanical accessories;	3.000	Sets			0.00	0.00	0.00	INR Zero Only
1.08	HP & LP Compressed Air System complete with Compressors, Air dryers, Air Receivers, pipes, valves, fittings, Instruments, specialties for compressed air, oil & water services and all electrical and mechanical accessories; A separate compressed air system to run the machine in synchronous	1.000	Set			0.00	0.00	0.00	INR Zero Only

	condenser operation mode.								
1.09	Station Drainage system complete with main and stand-by Submersible Sump Pumps, Motors, Valves, Automatic Detachable Pedestal Coupling. Dismantling joint, Guide Rail Pipes, Piping, necessary Cabling, Motor Starters, Level Switches & Alarm System etc.	1.000	Lot			0.00	0.00	0.00	INR Zero Only
1.1	Unit Dewatering system complete with main and stand-by Submersible Sump Pumps, Motors, Valves, Automatic Detachable Pedestal Coupling. Dismantling joint, Guide Rail Pipes, Piping, necessary Cabling, Motor Starters, Level Switches & Alarm System etc.	1.000	Lot			0.00	0.00	0.00	INR Zero Only

1.11	Flood pumps complete with Submersible Sump Pump, Motor, Valves, Automatic Detachable Pedestal Coupling. Dismantling joint, Guide Rail Pipes, Piping, necessary Cabling, Motor Starters, Level Switches & Alarm System etc.	1.000	Lot			0.00	0.00	0.00	INR Zero Only
1.12	Monorail with hoist used to handle drainage, dewatering and flood pumps during maintenance, necessary platform and other accessories.	1.000	Lot			0.00	0.00	0.00	INR Zero Only
1.13	Lubricating and Governor Oil Filtration set.	1.000	Set			0.00	0.00	0.00	INR Zero Only
1.14	Spherical Main Inlet Valve of 2750 mm diameter complete with actuating mechanism, transition sections and dismantling joint;	3.000	Sets			0.00	0.00	0.00	INR Zero Only
1.15	Butterfly Penstock Protection Valve of 5750 mm diameter complete with actuating mechanism, transition	1.000	Set			0.00	0.00	0.00	INR Zero Only

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	sections and dismantling joint;								
1.16	Fire Fighting system for Powerhouse, Transformer and Switchyard.	1.000	Set			0.00	0.00	0.00	INR Zero Only
1.17	HVAC System for Powerhouse	1.000	Set			0.00	0.00	0.00	INR Zero Only
1.18	Cabin & Radio Remote Control, Indoor Double Girder Electrically Operated overhead traveling Crane (EOT) of requisite capacity, Class M3 for Powerhouse complete with, hooks, motors, electrical control panel, trolley, brakes, bumpers, crane stops, safety devices, limit switches, load limit device for MH, AH, platforms, ladders, fittings & connections and electrical accessories, complete cabling, LT Rails & DSL and their embedded parts & fixtures etc., as	1.000	Set			0.00	0.00	0.00	INR Zero Only

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	per Technical Specification.								
1.19	Cabin & Radio Remote Control, Indoor Double Girder Electrically Operated overhead traveling Crane (EOT) of requisite capacity, Class M3 for Valve house, complete with, hooks, motors, electrical control panel, trolley, brakes, bumpers, crane stops, safety devices, limit switches, load limit device for MH, AH, platforms, ladders, fittings & connections and electrical accessories, complete cabling, LT Rails & DSL and their embedded parts & fixtures etc., as	1.000	Set			0.00	0.00	0.00	INR Zero Only

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	per Technical Specification.								
1.2	EOT crane of 10 T capacity for erection and maintenance of GIS equipment. The crane shall be capable of lifting equipment from the rails of transformer enclosure.	1.000	No			0.00	0.00	0.00	INR Zero Only
1.21	Elevator	1.000	Set			0.00	0.00	0.00	INR Zero Only
1.22	Workshop Equipment	1.000	Set			0.00	0.00	0.00	INR Zero Only
2	Electrical Equipment								
3	GENERATOR & EXCITATION SYSTEM:								

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3.01	Vertical Synchronous Generator (Salient Pole Type): Vertical Shaft Generator of rating 80 MW, suitable for 10% continuous overloading with 11 kV generation at 0.85 pf complete with static excitation system, digital AVR, shaft current measurement system and consisting of following:	3.000	Sets			0.00	0.00	0.00	INR Zero Only
3.02	Stator complete with frame, punching and windings								
3.03	Rotor complete with shaft, spider rim, poles with winding and accessories and pedestal bearings								
3.04	CO2 based fire protection system along with piping and sensors etc.								
3.05	Lubricating system complete with necessary pipe work, valves, filter, pump set etc. for lubrication of the bearings.								

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3.06	Oil coolers for the bearings & Air coolers for cooling of Generator Winding								
3.07	Sole plates, foundation bolts, bolts, dowels etc. required for proper erection, levelling, alignment etc. of generator.								
3.08	Generator housing door, stairs, railings, platform, convenient outlets, internal illumination, dome light etc.								
3.09	Platform, stairs, walkways, handrails etc. for access to the bearings, slip-rings etc .								
3.1	Static Excitation System and Digital AVR (2A+1M)								
3.11	Excitation Transformers								
3.12	Hydraulic Brake System Hydraulic/ Pneumatic Brake & Jack System								
4	11kV ISOLATED PHASE BUS DUCT AND ASSOCIATED EQUIPMENT	3.000	Sets			0.00	0.00	0.00	INR Zero Only
4.01	11kV Isolated Phase Bus Duct Consisting of:								

4.02	11 kV isolated Phase Bus Duct of required length with current transformer as marked in enclosed SLD along with Generator end termination, Transformer end termination including flexible required bellows, seal off bushings for IPBD crossings at floor, separating walls etc. bends (H/V), Delta formation , potential transformers, surge protection cubicle, 0.25μF capacitor, neutral cubicle, and grounding transformer/resistor assembly cubicle including bends, delta connection, seal-off bushings, tapping arrangement for UAT, ET, NGT & LAVT etc. and termination arrangement.								
4.03	LAVT Cubicle - Lightning Arrestor, Surge Capacitor, CT and PT Cubicle (LAVT) with								

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	Copper/Aluminium bus bar (3 X 1 Ph)								
4.03	NGT Cubicle - Generator Neutral Grounding Cubicle (NGT) including Neutral Isolating Switch, Single Phase Neutral Grounding Transformer, Loading Resistor, CT's & Copper/Aluminum bus bar								
5	IN TRANSFORMER YARD								
5.01	The water connection to the isolation valves provided within the transformer enclosure including flexible and supports.	1.000	Lot			0.00	0.00	0.00	INR Zero Only
5.02	RTU Panel (TRB)	1.000	Bank			0.00	0.00	0.00	INR Zero Only
5.03	N2 Injection based Fire Protection System	1.000	Lot			0.00	0.00	0.00	INR Zero Only
6	33 kV MEDIUM VOLTAGE SWITCHGEAR :	1.000	Lot			0.00	0.00	0.00	INR Zero Only

6.01	<p>33 kV Indoor Switchgear panel with Vacuum circuit breakers / SF6 circuit breakers (630A), 25 kA, Copper Busbar, CTs, PTs, Meters (MFM), Busbar Protection & other protections etc. consisting of :</p> <ol style="list-style-type: none"> 1. Incomer from SST - 1 No. 2. Incomer from Local Supply – 2 Nos. 3. Outgoing for Station Auxiliary Transformer - 2 Nos. 4. Outgoing for Remote site - 2 Nos. 5. Outgoing for Local/colony distribution – 2 Nos. 6. Bus PT panel - 1 No. 7. Spare Outgoing for future use - 1 No. 8. Earthing trolleys for maintenance – 1 No. 								
7	415 V LOW VOLTAGE SWITCHGEAR :								

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7.01	Station Service Board (SSB) 415 V, 3150 A, 50 kA, Metal enclosed Switchgear with Copper bus bar, interlockings, MFMs, Protections, Starters etc. which shall comprise of following panels: 1. 3150 A ACB Incomer feeder from Station Service Transformer - 2 Nos. 2. 1250 A ACB Incomer feeder from DG Set - 1No. 3. 3150 A ACB breaker for Bus Coupler- 1No. 4. ACB outgoing Feeders – 3 Nos + 1 No. (Spare). 5. MPCB / MCCB outgoing feeders - 1 Lot	1.000	Set			0.00	0.00	0.00	INR Zero Only
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7.02	Unit Auxillary Board (UAB) 415 V, 1250 A, 50 kA, Metal enclosed Switchgear with Copper bus bar, interlockings, MFMs, Protections, Starters etc. which shall comprise of following panels: 1. 1250 A ACB Incomer feeder from Station Service Board - 1 No. 2. 1250 A ACB Incomer feeder from Unit Auxiliary Transformer - 1No. 3. MPCB / MCCB outgoing feeders - 1 Lot	3.000	Sets			0.00	0.00	0.00	INR Zero Only
7.03	Gas Insulated Switchgear room AC Distribution Board (GIS-ACDB) 415 V, 400 A, 50 kA, Metal enclosed Switchgear with Copper bus bar , interlockings, MFMs, Protections etc. which shall comprise of following panels: 1. 400 A Incomer feeder (Working) from Station	1.000	Set			0.00	0.00	0.00	INR Zero Only

	Service Board - 1 No. 2. 400 A Incomer feeder (Stand by) from Station Service Board - 1 No. 3. MPCB / MCCB outgoing feeders - 1 Lot								
7.04	Main Distribution Board (MDB) at HRT intake Location 415 V Metal enclosed Switchgear with Copper bus bar , interlockings, MFMs, Protections etc. which shall comprise of following panels: 1. One No. Incomer feeder from 160kVA, 33 /.433kV Transformer at Intake location- 1 No. 2. One No. Incomer feeder from 200kVA DG set at Intake location - 1 No. 3. MPCB / MCCB outgoing feeders - 1 Lot	1.000	Set			0.00	0.00	0.00	INR Zero Only

7.05	Main Distribution Board (MDB) at Valve House Location 415 V Metal enclosed Switchgear with Copper bus bar , interlockings, MFMs, Protections etc. which shall comprise of following panels: 1. One No. Incomer feeder from 160kVA, 33 /.433kV Transformer at Valve House location- 1 No. 2. One no. feeder from DG set- 1 No. 3. MPCB / MCCB outgoing feeders - 1 Lot	1.000	Set			0.00	0.00	0.00	INR Zero Only
7.06	One Lot of distribution boards as per requirements complete with cubicles, bus bar system, circuit breaker, instruments transformers, instruments, relay, cabling and wiring and other accessories.	1.000	Lot			0.00	0.00	0.00	INR Zero Only
8	UNIT CONTROL, SCADA AND AUTOMATION								

8.01	Unit control boards (UCB), Auto synchronizing panel with redundant programmable controllers & input output modules with plant SCADA, Automation, Control (PCS) including HMI, redundant fibre optic cables for inter panel connection, transmitter/receiver, router, cabinet, Software for work stations etc. to make it complete system	3.000	Lots			0.00	0.00	0.00	INR Zero Only
8.02	Common Control board (CCB) with redundant programmable controllers & input output modules with plant SCADA, Automation, Control (PCS) including HMI, redundant fibre optic cables for inter panel connection, transmitter/receiver, router, cabinet, Software	1.000	Lot			0.00	0.00	0.00	INR Zero Only

	for work stations etc. to make it complete system								
8.03	Operator work stations	3.000	Nos			0.00	0.00	0.00	INR Zero Only
8.04	Engineering work station	1.000	No			0.00	0.00	0.00	INR Zero Only
8.05	Portable Engineering work station (Laptop)	1.000	No			0.00	0.00	0.00	INR Zero Only
8.06	Large Video Screen (LVS)	1.000	Set			0.00	0.00	0.00	INR Zero Only
8.07	Printers	3.000	Nos			0.00	0.00	0.00	INR Zero Only
8.08	Historian work station	1.000	No			0.00	0.00	0.00	INR Zero Only
8.09	Furniture for control room	1.000	Lot			0.00	0.00	0.00	INR Zero Only
8.1	Intake Control board	1.000	No			0.00	0.00	0.00	INR Zero Only
8.11	Valve House Control board	1.000	No			0.00	0.00	0.00	INR Zero Only
8.12	Operator work station for remote sites	2.000	Nos			0.00	0.00	0.00	INR Zero Only
8.13	VOIP System	1.000	Lot			0.00	0.00	0.00	INR Zero Only

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8.14	Fibre Optic cable (ADSS) from power house to remote sites with all accessories for complete FO communication and including all hardware for laying etc.	1.000	Lot			0.00	0.00	0.00	INR Zero Only
9	PROTECTION, AUTOMATION, METERING & COMMUNICATION SYSTEM								
9.01	Protection Board for Generator and Generator Step up Transformer (UPBs), Set of complete board comprising of a free standing 3 section Rack Mounting type cubicle, each section 750x750x2000 front (tempered glass) and back door, IP54 dust tight and containing the following:	3.000	Sets			0.00	0.00	0.00	INR Zero Only

9.02	<p>Section 1: Protection A containing: (ALSTOM, Siemens, ABB, GE make relays)</p> <ul style="list-style-type: none"> • Multifunction Digital Generator Management Relay • Multifunction Digital Transformer Management Relay • Digital Communication Processor • Lockout Relays (manual Reset) [86], Tripping Relay (auto Reset) [94], Test Switches, Space heater, switch for socket, space heater and other panel supply, AC Compact LED Tube fitting complete with Door switch, DC source MCB, heavy duty terminal blocks, internal tinned copper wiring, 200°C fluoropolymer insulation etc. • Multifunction Meter • BCU 								
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9.03	<p>Section 2: Protection B containing: (ALSTOM, Siemens, ABB, GE make relays)</p> <ul style="list-style-type: none"> • Multifunction Digital Generator Management Relay • Multifunction Digital Overall Differential Relay • Digital Communication Processor • Lockout Relays (manual Reset) [86], Tripping Relay (auto Reset) [94], Test Switches, Space heater, switch for socket, space heater and other panel supply, AC Compact LED Tube fitting complete with Door switch, DC source MCB, heavy duty terminal blocks, internal tinned copper wiring, 200°C fluoropolymer insulation etc. 								
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9.04	Protection Board for Station Service Transformer (SST) , Set of complete board comprising of a free standing 3 section Rack Mounting type cubicle, each section 750x750x2000 front (tempered glass) and back door, IP62 dust tight and containing the following:	2.000	Sets			0.00	0.00	0.00	INR Zero Only
9.05	Section 1: Protection A containing: (ALSTOM, Siemens, ABB, GE make relays) • Multifunction Digital Transformer Management Relay • Digital Communication Processor • Lockout Relays (manual Reset) [86], Tripping Relay (auto Reset) [94], Test Switches, Space heater, switch for socket, space heater and other panel supply, AC Compact LED Tube fitting complete with Door								

	switch, DC source MCB, heavy duty terminal blocks, internal tinned copper wiring, 200°C fluoropolymer insulation etc. • Multifunction Meter • BCU								
9.06	Section 2: Protection B containing: (ALSTOM, Siemens, ABB, GE make relays) • Multifunction Digital Overall Differential Relay • Digital Communication Processor • Lockout Relays (manual Reset) [86], Tripping Relay (auto Reset) [94], Test Switches, Space heater, switch for socket, space heater and other panel supply, AC Compact LED Tube fitting complete with Door								

	switch, DC source MCB, heavy duty terminal blocks, internal tinned copper wiring, 200°C fluoropolymer insulation etc.								
9.07	<p>Section 3: Common Protection and Control containing:</p> <ul style="list-style-type: none"> • Multifunction digital Overcurrent relay (50/51, 51G) for ET and UAT • Digital Ground Voltage relay (64B), Auxiliary and timed relays, common I/O rack, Pistol grip CB Control Switch, Pistol grip local distance switch, Test switches, Space heater, switch for socket, AC Compact LED Tube fitting complete with door switch, DC source MCB, heavy duty terminal blocks, internal tinned copper wiring, 	3.000	Sets			0.00	0.00	0.00	INR Zero Only

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	200°C fluoropolymer insulation etc. • BCU • Multifunction Meter for UAT & ET.								
9.08	GIS Protection Board (LPB): Free standing 6 section Rack Mounting type each section 750x750x2000 front (tempered glass or Lexan) and back door, IP62 dust tight and containing the following	4.000	Sets			0.00	0.00	0.00	INR Zero Only

9.09	<p>Lines 1 and 2 Protection A containing:</p> <p>(ALSTOM, Siemens, ABB, GE make relays)</p> <ul style="list-style-type: none"> • Multifunction Digital Line Distance/ Differential Relay • Intelligent Revenue Metering system (Schneider/ Power measurement ION7700 or equivalent) • Lockout Relay (manual reset) [86], Tripping relay (auto reset) [94], Auxiliary and timed relays, Test Switches, 240V AC Space Heater c/w thermostat, 5A/15A, 240V AC MCB switch for socket, space heater and other panel supply, 20 W, 240V, AC Compact LED Tube fitting complete with Door switch, DC source • MCB, Fuse Blocks and fuses, Heavy duty Terminal Blocks. • BCU 								
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	• Multifunction Meter (Main & Check)								
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9.1	<p>Lines 1 and 2 Protection B containing:</p> <ul style="list-style-type: none"> • Multifunction Digital Line Distance/ Differential Relay • Intelligent Revenue Metering system (Schneider/ Power measurement ION7700 or equivalent) • Lockout Relay (manual reset) [86], Tripping relay (auto reset) [94], Auxiliary and timed relays, Test Switches, 240V AC Space Heater c/w thermostat, 5A/15A, 240V AC MCB switch for socket, space heater and other panel supply, 20 W, 240V, AC Compact LED Tube fitting complete with Door switch, DC source • MCB, Fuse Blocks and fuses, Heavy duty Terminal Blocks. 								
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9.11	<p>Bus Protection containing: (BPB) Free standing Rack Mounting type with front (tempered glass or Lexan) and back door, IP62 dust tight and containing the following</p> <ul style="list-style-type: none"> • Each Multifunctional Digital Bus Differential Relay c/w One Central Unit, twenty Peripheral Units (20 zones) to provide Main and Check feature (Independent for Protection A & Protection B). • Breaker Failure Relay (Independent for Protection A & Protection B). • Lockout Relay (manual reset) [86], Tripping relay (auto reset) [94], Auxiliary and timed relays, Test Switches, 240V AC Space Heater c/w thermostat, 5A/15A, 240V AC MCB switch for socket, space heater and other panel supply, 20 W, 	1.000	Lot			0.00	0.00	0.00	INR Zero Only
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	240V, AC Compact fluorescent Tube fitting complete with Door switch, DC source. • MCB, Fuse Blocks and fuses, Heavy duty Terminal Blocks. • BCU • Multifunction Meter • Mimic/Indication of Unit Protection panels on GIS protection panels.								
9.12	Unit Bay Controller and Metering Board (BMB) (Units, SST Metering)	1.000	Set			0.00	0.00	0.00	INR Zero Only
9.13	Line Metering Board	4.000	Sets			0.00	0.00	0.00	INR Zero Only
9.14	Common RTU Board	1.000	Set			0.00	0.00	0.00	INR Zero Only

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9.15	GIS and Pot Head Yard Protection Engineering Workstation as per Technical Specifications	1.000	Set			0.00	0.00	0.00	INR Zero Only
9.16	Portable Engineering Work Station as per Technical Specifications	1.000	Set			0.00	0.00	0.00	INR Zero Only
9.17	Protection Operating Work Station as per Technical Specifications	1.000	Set			0.00	0.00	0.00	INR Zero Only
9.18	Dispatch Work Station (DWS)With GPS Clock, antenna & IRIG-B Distribution.	1.000	Set			0.00	0.00	0.00	INR Zero Only
9.19	Energy Management Station (EMS) including all software	1.000	Set			0.00	0.00	0.00	INR Zero Only
9.2	Control and Monitoring containing : • Digital Communication Processor • Common I/O rack complete with indicating light and Control switches • LED indicating light, 220V DC, 100,000AGC hours, Pistol Grip Circuit Breaker Control Switch, Pistol Grip Local distance switch, 240V AC space	1.000	Lot			0.00	0.00	0.00	INR Zero Only

	heater c/w thermostat, 5A/15A, 240V AC 3 pin socket, 5A/15A, 240V AC MCB switch for socket, space heater and other panel supply, 20W, 240V, AC Compact LED Tube fitting complete with Door Switch, DC source MCB, Fuse Blocks and fuses etc.								
9.21	GIS SCADA (PAMS) communication with main PH SCADA (OFC Cable & Patch Panels) • Free standing 4 section Rack Mounting type each section 750x750x2000 front (tempered glass or Lexan) and back door, IP62 dust tight • Redundant multimode optical fiber cables with all the necessary accessories like Connectors, Adaptors, LIUs, Patch panels, Patch cords etc.	1.000	Lot			0.00	0.00	0.00	INR Zero Only

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9.22	Relay Testing Kit	1.000	Lot			0.00	0.00	0.00	INR Zero Only
9.23	Standalone Event Logger and Disturbance Recorder	1.000	Lot			0.00	0.00	0.00	INR Zero Only
10	DIESEL GENERATOR SET:								
10.01	415 V, 800 kVA Silent DG set (with acoustic enclosure) along-with AMF panel, inbuilt day tank and 999 Litres weekly storage tank with associated system.	1.000	Set			0.00	0.00	0.00	INR Zero Only
10.02	415 V, 250 kVA Silent DG set (with acoustic enclosure) along-with AMF panel for remote site with inbuilt day tank and 999 Litres weekly storage tank with associated system.	1.000	Set			0.00	0.00	0.00	INR Zero Only
11	COMMUNICATION SYSTEM & CCTV SYSTEM	1.000	Lot			0.00	0.00	0.00	INR Zero Only
11.01	Communication System complete with 64 telephone sets & EPABX system suitable for the same + PA System.								
11.02	CCTV System with Monitor as described in Tender Specifications								

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12	DC SYSTEM & UPS SYSTEM :	1.000	Lot			0.00	0.00	0.00	INR Zero Only
12.01	Two (2) 220 V DC 1000AH Plante/ Ni-Cd Battery bank including battery racks								
12.02	Two (2) sets of 220 V DC Battery chargers (main and standby) and all accessories								
12.03	220 V DC Battery Discharge Panel								
12.04	Two (2) 220 V DC distribution board (DCDB)								
12.05	Two (2) 220V GIS DC Distribution Board (DCDB)								
12.06	220V DC/240V AC Inverter								
12.07	240V AC Distribution Board (ACDB)								
12.08	Two (2) 48 V DC 400AH Plante/ Ni-Cd Battery bank including battery racks								
12.09	Two (2) sets 48 V DC Battery chargers and all accessories								

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12.1	Two (2) 48 V DC distribution board (DCDB)								
12.11	One (1) 220V DC/48V DC Converter								
12.12	25 kVA UPS battery, power distribution board & and all necessary accessories - 1 Set								
12.13	6 kVA UPS battery, power distribution board & and all necessary accessories - 2 Sets								
12.14	240AC/24V DC Converter with 24V DC Distribution Board - 1 Set								
13	POWER & CONTROL CABLES	1.000	Lot			0.00	0.00	0.00	INR Zero Only
13.01	HT Power Cables: 33 kV, single core, armoured, XLPE insulated, PVC sheathed, compacted stranded circular cross section, Aluminium conductor, FRLS Type, rodent proof mainly for interconnection of equipment.								

13.02	HT Power Cables: (if required) 11 kV, armoured, XLPE insulated, PVC sheathed, compacted stranded circular cross section, Aluminium conductor, FRLS Type, rodent proof mainly for interconnection of equipment.								
13.03	LT Power Cables: 1100 V grade, multi-core, HR PVC/XLPE insulated, PVC sheathed (inner and outer extruded), stranded compacted circular cross-section, FRLS Type, rodent proof, copper conductor of different sizes.								
13.04	Control Cables: Control Cables - 1100 V grade, stranded copper conductor, PVC insulated, FRLS Type, rodent proof, colour coded with inner sheathed extruded PVC over all PVC sheathed of different sizes and cores.								

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13.05	Instrumentation Cables: Annealed tinned flexible copper conductor, PVC insulated, polyester taped, Twisted pairs, individual & overall shielded, FRLS Type, rodent proof.								
13.06	Cable Accessories: Termination Kits, Lugs (tinned copper Lugs), Glands, Ferrules etc.								
14	CABLE TRAYS	1.000	Lot			0.00	0.00	0.00	INR Zero Only
14.01	Perforated / Ladder Type GI Cable Trays, racks & necessary hardware with support structures & accessories.								
15	ILLUMINATION SYSTEM :	1.000	Lot			0.00	0.00	0.00	INR Zero Only
15.01	Illumination System (Normal & Emergency) for Power House area, outdoor areas around power house, pothead yard area, approach road and remote sites (HRT intake & Valve house areas), complete with LED lighting fixtures,								

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	conduits and fittings, cabling and distribution boards (MLDBs & ELDBs, LDBs). It shall also include illumination of road near Power House & the two remote sites.								
16	EARTHING SYSTEM :	1.000	Lot			0.00	0.00	0.00	INR Zero Only
10.01	Earthing System for Power house, transformer area, GIS, Pothead yard area, remote areas/sites and adjoining areas including MS rods for buried earthing grid, GI strip for equipment connection to Main Grid and GI exposed earth strip, MS rods including hardware such as bolts, nuts and lock-washers.								

16.02	<p>Earthing and Surge protection of GIS & other equipment-</p> <ul style="list-style-type: none"> • Earthing Grid for GIS in GIS floor • Earthing interconnection of GIS equipment and the GIS floor grid. • Connection between GIS floor earth grid with Power House Earth grid • Earthing of Generator Transformer Neutral to treated pit • Body Earthing of GTMB, CMB ,rail etc. to P.H. earthing mat • Pot head yard earthing grid above GIS floor level , its connection to pot head yard equipment and further to PH earthing grid 								
17	ELECTRICAL WORKSHOP	1.000	Lot			0.00	0.00	0.00	INR Zero Only
18	MISCELLANEOUS EQUIPMENT								
18.01	Field Instruments and Receiving Instruments;	1.000	Lot			0.00	0.00	0.00	INR Zero Only

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18.02	Complete Monitoring and Safety Instruments pertaining to the TG set;	3.000	Sets			0.00	0.00	0.00	INR Zero Only
18.03	Vibration Monitoring System	3.000	Sets			0.00	0.00	0.00	INR Zero Only
18.04	Air Gap Monitoring System and Vibration Analyzer including Zoom Control Station (ZCS)	1.000	Set			0.00	0.00	0.00	INR Zero Only
18.05	Partial Discharge Analyzer	3.000	Sets			0.00	0.00	0.00	INR Zero Only
18.06	Turbine Flow Measurement display in SCADA (complete with all necessary differential pressure transmitter, integrated instruments, peizometer tapplings, interconnecting tubes etc., and special tools for calibration at the time of installation	3.000	Sets			0.00	0.00	0.00	INR Zero Only
18.07	Surge Shaft and TWL Level Sensors	1.000	Set Each			0.00	0.00	0.00	INR Zero Only
19	OTHER								
19.01	First fill of Oil for all equipment supplied, with 10% extra;	1.000	Lot			0.00	0.00	0.00	INR Zero Only

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Tender Inviting Authority: ED(Tech), C&P, NEEPCO, Shillong.									
Name of Work: EPC execution of Power House Electro-Mechanical Works for Heo Hydro Electric Project (240MW), Arunachal Pradesh.									
Contract No: NIB No.487 dtd 09.01.2026									
PRICE SCHEDULE IV (ETC)									
Sl. No.	Item Description	Quantity	Units	Unit Erection, Testing & Commissioning Price in INR	Taxes and Duties in percentage(%)	Amount on which Taxes and Duties applicable	Amount of Taxes and Duties in INR	TOTAL AMOUNT including taxes and duties in Rs. P	TOTAL AMOUNT In Words
1	MECHANICAL EQUIPMENT/SYSTEM								
1.01	Vertical Shaft Francis Turbine, direct coupled, 300 rpm, capable of generating 81.20 MW at Generator terminals at rated head of 201.80 meter, complete with its associated Spiral Distributor & other accessories, including embedded and foundation parts, Instruments, Control & Safety Devices, Lube Oil System etc., complete in all respects. (TG Unit shall be	3.000	Sets			0.00	0.00	0.00	INR Zero Only

	capable of generating with 10% Continuous Overload)								
1.02	Digital microprocessor type Governor with fully redundant controllers and Governing Equipment complete in all respects for optimizing and controlling the turbines and guide vanes opening & closing mechanism etc. The system should be compatible to the use of SCADA system.	3.000	Sets			0.00	0.00	0.00	INR Zero Only
1.03	Oil Pressure system for Governor complete with Pumps, Motors, Valves, Oil Pressure Accumulators (N2 accumulators), Piping, Instruments etc.	3.000	Sets			0.00	0.00	0.00	INR Zero Only

1.04	Oil Pressure system for MIV complete with Pumps, Motors, Valves, Oil Pressure Accumulators (N2 accumulators), Piping, Instruments etc.	3.000	Sets			0.00	0.00	0.00	INR Zero Only
1.05	Monorail with hoist located at the level below runner and used to handle Runner during maintenance, necessary platform and other accessories for maintenance of Turbine Runner, Vent Pipes etc.	3.000	Sets			0.00	0.00	0.00	INR Zero Only
1.06	Trolley with tilting Hydraulic Cylinder for Runner removal and installation during maintenance	1.000	Set			0.00	0.00	0.00	INR Zero Only
1.07	Cooling Water System complete with Cyclone Separator, Motorized Automatic Online Self-Cleaning Strainers, Valves, piping, Strainers etc., and all electrical &	3.000	Sets			0.00	0.00	0.00	INR Zero Only

	mechanical accessories;								
1.08	HP & LP Compressed Air System complete with Compressors, Air dryers, Air Receivers, pipes, valves, fittings, Instruments, specialties for compressed air, oil & water services and all electrical and mechanical accessories; A separate compressed air system to run the machine in synchronous condenser operation mode.	1.000	Set			0.00	0.00	0.00	INR Zero Only
1.09	Station Drainage system complete with main and stand-by Submersible Sump Pumps, Motors, Valves, Automatic Detachable Pedestal Coupling. Dismantling joint, Guide Rail Pipes,	1.000	Lot			0.00	0.00	0.00	INR Zero Only

	Piping, necessary Cabling, Motor Starters, Level Switches & Alarm System etc.								
1.1	Unit Dewatering system complete with main and stand-by Submersible Sump Pumps, Motors, Valves, Automatic Detachable Pedestal Coupling. Dismantling joint, Guide Rail Pipes, Piping, necessary Cabling, Motor Starters, Level Switches & Alarm System etc.	1.000	Lot			0.00	0.00	0.00	INR Zero Only
1.11	Flood pumps complete with Submersible Sump Pump, Motor, Valves, Automatic Detachable Pedestal Coupling. Dismantling joint, Guide Rail Pipes, Piping, necessary Cabling, Motor Starters, Level Switches & Alarm System etc.	1.000	Lot			0.00	0.00	0.00	INR Zero Only

1.12	Monorail with hoist used to handle drainage, dewatering and flood pumps during maintenance, necessary platform and other accessories.	1.000	Lot			0.00	0.00	0.00	INR Zero Only
1.14	Lubricating and Governor Oil Filtration set.	1.000	Set			0.00	0.00	0.00	INR Zero Only
1.15	Conducting Model Test of the Turbine	1.000	Lot			0.00	0.00	0.00	INR Zero Only
1.16	Spherical Main Inlet Valve of 2750 mm diameter complete with actuating mechanism, transition sections and dismantling joint;	3.000	Sets			0.00	0.00	0.00	INR Zero Only
1.17	Butterfly Penstock Protection Valve of 5750 mm diameter complete with actuating mechanism, transition sections and dismantling joint;	1.000	Set			0.00	0.00	0.00	INR Zero Only
1.18	Fire Fighting system for Powerhouse, Transformer and Switchyard.	1.000	Set			0.00	0.00	0.00	INR Zero Only

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1.19	HVAC System for Powerhouse	1.000	Set			0.00	0.00	0.00	INR Zero Only
1.2	Cabin & Radio Remote Control, Indoor Double Girder Electrically Operated overhead traveling Crane (EOT) of requisite capacity, Class M3 for Powerhouse complete with, hooks, motors, electrical control panel, trolley, brakes, bumpers, crane stops, safety devices, limit switches, load limit device for MH, AH, platforms, ladders, fittings & connections and electrical accessories, complete cabling, LT Rails & DSL and their embedded parts & fixtures etc., as per Technical Specification.	1.000	Set			0.00	0.00	0.00	INR Zero Only

1.21	Cabin & Radio Remote Control, Indoor Double Girder Electrically Operated overhead traveling Crane (EOT) of requisite capacity, Class M3 for Valve house, complete with, hooks, motors, electrical control panel, trolley, brakes, bumpers, crane stops, safety devices, limit switches, load limit device for MH, AH, platforms, ladders, fittings & connections and electrical accessories, complete cabling, LT Rails & DSL and their embedded parts & fixtures etc., as per Technical Specification.	1.000	Set			0.00	0.00	0.00	INR Zero Only
1.22	EOT crane of 10 T capacity for erection and maintenance of GIS equipment. The crane shall be capable of lifting equipment	1.000	No			0.00	0.00	0.00	INR Zero Only

	from the rails of transformer enclosure.								
1.23	Elevator	1.000	Set			0.00	0.00	0.00	INR Zero Only
1.24	Workshop Equipment	1.000	Set			0.00	0.00	0.00	INR Zero Only
2	Electrical Equipment								
3	GENERATOR & EXCITATION SYSTEM:								
3.01	Vertical Synchronous Generator (Salient Pole Type): Vertical Shaft Generator of rating 80 MW, suitable for 10% continuous overloading with 11 kV generation at 0.85 pf complete with static excitation system, digital AVR, shaft current measurement system and consisting of following:	3.000	Sets			0.00	0.00	0.00	INR Zero Only
3.02	Stator complete with frame, punching and windings								
3.03	Rotor complete with shaft, spider rim, poles								

	with winding and accessories and pedestal bearings								
3.04	CO2 based fire protection system along with piping and sensors etc.								
3.05	Lubricating system complete with necessary pipe work, valves, filter, pump set etc. for lubrication of the bearings.								
3.06	Oil coolers for the bearings & Air coolers for cooling of Generator Winding								
3.07	Sole plates, foundation bolts, bolts, dowels etc. required for proper erection, levelling, alignment etc. of generator.								
3.08	Generator housing door, stairs, railings, platform, convenient outlets, internal illumination, dome light etc.								
3.09	Platform, stairs, walkways, handrails								

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	etc. for access to the bearings, slip-rings etc .								
3.1	Static Excitation System and Digital AVR (2A+1M)								
3.11	Excitation Transformers								
3.12	Hydraulic Brake System Hydraulic/ Pneumatic Brake & Jack System								
4	11kV ISOLATED PHASE BUS DUCT AND ASSOCIATED EQUIPMENT	3.000	Sets			0.00	0.00	0.00	INR Zero Only
4.01	11kV Isolated Phase Bus Duct Consisting of:								

4.02	11 kV isolated Phase Bus Duct of required length with current transformer as marked in enclosed SLD along with Generator end termination, Transformer end termination including flexible required bellows, seal off bushings for IPBD crossings at floor, separating walls etc. bends (H/V), Delta formation , potential transformers, surge protection cubicle, 0.25μF capacitor, neutral cubicle, and grounding transformer/resistor assembly cubicle including bends, delta connection, seal-off bushings, tapping arrangement for UAT, ET, NGT & LAVT etc. and termination arrangement.								
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4.03	LAVT Cubicle - Lightning Arrestor, Surge Capacitor, CT and PT Cubicle (LAVT) with Copper/Aluminium bus bar (3 X 1 Ph)								
4.03	NGT Cubicle - Generator Neutral Grounding Cubicle (NGT) including Neutral Isolating Switch, Single Phase Neutral Grounding Transformer, Loading Resistor, CT's & Copper/Aluminum bus bar								
5	IN TRANSFORMER YARD								
5.01	The water connection to the isolation valves provided within the transformer enclosure including flexible and supports.	1.000	Lot			0.00	0.00	0.00	INR Zero Only
5.02	RTU Panel (TRB)	1.000	Bank			0.00	0.00	0.00	INR Zero Only
5.03	N2 Injection based Fire Protection System	1.000	Lot			0.00	0.00	0.00	INR Zero Only

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6	33 kV MEDIUM VOLTAGE SWITCHGEAR :	1.000	Lot			0.00	0.00	0.00	INR Zero Only
6.01	33 kV Indoor Switchgear panel with Vacuum circuit breakers / SF6 circuit breakers (630A), 25 kA, Copper Busbar, CTs, PTs, Meters (MFM), Busbar Protection & other protections etc. consisting of : 1. Incomer from SST - 1 No. 2. Incomer from Local Supply – 2 Nos. 3. Outgoing for Station Auxiliary Transformer - 2 Nos. 4. Outgoing for Remote site - 2 Nos. 5. Outgoing for Local/colony distribution – 2 Nos. 6. Bus PT panel - 1 No. 7. Spare Outgoing for future use - 1 No. 8. Earthing trolleys for maintenance – 1 No.								

7	415 V LOW VOLTAGE SWITCHGEAR :								
7.01	Station Service Board (SSB) 415 V, 3150 A, 50 kA, Metal enclosed Switchgear with Copper bus bar, interlockings, MFMs, Protections, Starters etc. which shall comprise of following panels: 1. 3150 A ACB Incomer feeder from Station Service Transformer - 2 Nos. 2. 1250 A ACB Incomer feeder from DG Set - 1No. 3. 3150 A ACB breaker for Bus Coupler- 1No. 4. ACB outgoing Feeders – 3 Nos + 1 No. (Spare). 5. MPCB / MCCB outgoing feeders - 1 Lot	1.000	Set			0.00	0.00	0.00	INR Zero Only

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7.02	Unit Auxillary Board (UAB) 415 V, 1250 A, 50 kA, Metal enclosed Switchgear with Copper bus bar, interlockings, MFMs, Protections, Starters etc. which shall comprise of following panels: 1. 1250 A ACB Incomer feeder from Station Service Board - 1 No. 2. 1250 A ACB Incomer feeder from Unit Auxiliary Transformer - 1No. 3. MPCB / MCCB outgoing feeders - 1 Lot	3.000	Sets			0.00	0.00	0.00	INR Zero Only
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7.03	Gas Insulated Switchgear room AC Distribution Board (GIS-ACDB) 415 V, 400 A, 50 kA, Metal enclosed Switchgear with Copper bus bar , interlockings, MFMs, Protections etc. which shall comprise of following panels: 1. 400 A Incomer feeder (Working) from Station Service Board - 1 No. 2. 400 A Incomer feeder (Stand by) from Station Service Board - 1 No. 3. MPCB / MCCB outgoing feeders - 1 Lot	1.000	Set			0.00	0.00	0.00	INR Zero Only
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7.04	Main Distribution Board (MDB) at HRT intake Location 415 V Metal enclosed Switchgear with Copper bus bar , interlockings, MFMs, Protections etc. which shall comprise of following panels: 1. One No. Incomer feeder from 160kVA, 33 /.433kV Transformer at Intake location- 1 No. 2. One No. Incomer feeder from 200kVA DG set at Intake location - 1 No. 3. MPCB / MCCB outgoing feeders - 1 Lot	1.000	Set			0.00	0.00	0.00	INR Zero Only
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7.05	Main Distribution Board (MDB) at Valve House Location 415 V Metal enclosed Switchgear with Copper bus bar , interlockings, MFMs, Protections etc. which shall comprise of following panels: 1. One No. Incomer feeder from 160kVA, 33 /.433kV Transformer at Valve House location- 1 No. 2. One no. feeder from DG set- 1 No. 3. MPCB / MCCB outgoing feeders - 1 Lot	1.000	Set			0.00	0.00	0.00	INR Zero Only
7.06	One Lot of distribution boards as per requirements complete with cubicles, bus bar system, circuit breaker, instruments transformers, instruments, relay,	1.000	Lot			0.00	0.00	0.00	INR Zero Only

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	cabling and wiring and other accessories.								
8	UNIT CONTROL, SCADA AND AUTOMATION								
8.01	Unit control boards (UCB), Auto synchronizing panel with redundant programmable controllers & input output modules with plant SCADA, Automation, Control (PCS) including HMI, redundant fibre optic cables for inter panel connection, transmitter/receiver, router, cabinet, Software for work stations etc. to make it complete system	3.000	Lots			0.00	0.00	0.00	INR Zero Only

8.02	Common Control board (CCB) with redundant programmable controllers & input output modules with plant SCADA, Automation, Control (PCS) including HMI, redundant fibre optic cables for inter panel connection, transmitter/receiver, router, cabinet, Software for work stations etc. to make it complete system	1.000	Lot			0.00	0.00	0.00	INR Zero Only
8.03	Operator work stations	3.000	Nos			0.00	0.00	0.00	INR Zero Only
8.04	Engineering work station	1.000	No			0.00	0.00	0.00	INR Zero Only
8.05	Portable Engineering work station (Laptop)	1.000	No			0.00	0.00	0.00	INR Zero Only
8.06	Large Video Screen (LVS)	1.000	Set			0.00	0.00	0.00	INR Zero Only
8.07	Printers	3.000	Nos			0.00	0.00	0.00	INR Zero Only
8.08	Historian work station	1.000	No			0.00	0.00	0.00	INR Zero Only
8.09	Furniture for control room	1.000	Lot			0.00	0.00	0.00	INR Zero Only

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8.1	Intake Control board	1.000	No			0.00	0.00	0.00	INR Zero Only
8.11	Valve House Control board	1.000	No			0.00	0.00	0.00	INR Zero Only
8.12	Operator work station for remote sites	2.000	Nos			0.00	0.00	0.00	INR Zero Only
8.13	VOIP System	1.000	Lot			0.00	0.00	0.00	INR Zero Only
8.14	Fibre Optic cable (ADSS) from power house to remote sites with all accessories for complete FO communication and including all hardware for laying etc.	1.000	Lot			0.00	0.00	0.00	INR Zero Only
9	PROTECTION, AUTOMATION, METERING & COMMUNICATION SYSTEM								
9.01	Protection Board for Generator and Generator Step up Transformer (UPBs), Set of complete board comprising of a free standing 3 section Rack Mounting type cubicle, each section 750x750x2000 front	3.000	Sets			0.00	0.00	0.00	INR Zero Only

	(tempered glass) and back door, IP54 dust tight and containing the following:								
9.02	<p>Section 1: Protection A containing:</p> <p>(ALSTOM, Siemens, ABB, GE make relays)</p> <ul style="list-style-type: none"> • Multifunction Digital Generator Management Relay • Multifunction Digital Transformer Management Relay • Digital Communication Processor • Lockout Relays (manual Reset) [86], Tripping Relay (auto Reset) [94], Test Switches, Space heater, switch for socket, space heater and other panel supply, AC Compact LED Tube fitting complete with Door switch, DC source 								

	MCB, heavy duty terminal blocks, internal tinned copper wiring, 200°C fluoropolymer insulation etc. • Multifunction Meter • BCU								
9.03	Section 2: Protection B containing: (ALSTOM, Siemens, ABB, GE make relays) • Multifunction Digital Generator Management Relay • Multifunction Digital Overall Differential Relay • Digital Communication Processor • Lockout Relays (manual Reset) [86],								

	Tripping Relay (auto Reset) [94], Test Switches, Space heater, switch for socket, space heater and other panel supply, AC Compact LED Tube fitting complete with Door switch, DC source MCB, heavy duty terminal blocks, internal tinned copper wiring, 200°C fluoropolymer insulation etc.								
9.04	Protection Board for Station Service Transformer (SST) , Set of complete board comprising of a free standing 3 section Rack Mounting type cubicle, each section 750x750x2000 front (tempered glass) and back door, IP62 dust tight and containing the following:	2.000	Sets			0.00	0.00	0.00	INR Zero Only



9.05	<p>Section 1: Protection A containing:</p> <p>(ALSTOM, Siemens, ABB, GE make relays)</p> <ul style="list-style-type: none"> • Multifunction Digital Transformer Management Relay • Digital Communication Processor • Lockout Relays (manual Reset) [86], Tripping Relay (auto Reset) [94], Test Switches, Space heater, switch for socket, space heater and other panel supply, AC Compact LED Tube fitting complete with Door switch, DC source MCB, heavy duty terminal blocks, internal tinned copper wiring, 200°C fluoropolymer insulation etc. • Multifunction Meter • BCU 								
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9.06	Section 2: Protection B containing: (ALSTOM, Siemens, ABB, GE make relays) • Multifunction Digital Overall Differential Relay • Digital Communication Processor • Lockout Relays (manual Reset) [86], Tripping Relay (auto Reset) [94], Test Switches, Space heater, switch for socket, space heater and other panel supply, AC Compact LED Tube fitting complete with Door switch, DC source MCB, heavy duty terminal blocks, internal tinned copper wiring, 200°C fluoropolymer insulation etc.								
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9.07	<p>Section 3: Common Protection and Control containing:</p> <ul style="list-style-type: none"> • Multifunction digital Overcurrent relay (50/51, 51G) for ET and UAT • Digital Ground Voltage relay (64B), Auxiliary and timed relays, common I/O rack, Pistol grip CB Control Switch, Pistol grip local distance switch, Test switches, Space heater, switch for socket, AC Compact LED Tube fitting complete with door switch, DC source MCB, heavy duty terminal blocks, internal tinned copper wiring, 200°C fluoropolymer insulation etc. • BCU • Multifunction Meter for UAT & ET. 	3.000	Sets			0.00	0.00	0.00	INR Zero Only
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9.08	GIS Protection Board (LPB): Free standing 6 section Rack Mounting type each section 750x750x2000 front (tempered glass or Lexan) and back door, IP62 dust tight and containing the following	4.000	Sets			0.00	0.00	0.00	INR Zero Only
9.09	Lines 1 and 2 Protection A containing: (ALSTOM, Siemens, ABB, GE make relays) • Multifunction Digital Line Distance/ Differential Relay • Intelligent Revenue Metering system (Schneider/ Power measurement ION7700 or equivalent) • Lockout Relay (manual reset) [86], Tripping relay (auto reset) [94], Auxiliary and timed relays, Test Switches, 240V AC								

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	Space Heater c/w thermostat, 5A/15A, 240V AC MCB switch for socket, space heater and other panel supply, 20 W, 240V, AC Compact LED Tube fitting complete with Door switch, DC source <ul style="list-style-type: none">• MCB, Fuse Blocks and fuses, Heavy duty Terminal Blocks.• BCU• Multifunction Meter (Main & Check)								
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9.1	<p>Lines 1 and 2 Protection B containing:</p> <ul style="list-style-type: none"> • Multifunction Digital Line Distance/ Differential Relay • Intelligent Revenue Metering system (Schneider/ Power measurement ION7700 or equivalent) • Lockout Relay (manual reset) [86], Tripping relay (auto reset) [94], Auxiliary and timed relays, Test Switches, 240V AC Space Heater c/w thermostat, 5A/15A, 240V AC MCB switch for socket, space heater and other panel supply, 20 W, 240V, AC Compact LED Tube fitting complete with Door switch, DC source • MCB, Fuse Blocks and fuses, Heavy duty Terminal Blocks. 								
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9.11	<p>Bus Protection containing: (BPB) Free standing Rack Mounting type with front (tempered glass or Lexan) and back door, IP62 dust tight and containing the following</p> <ul style="list-style-type: none"> • Each Multifunctional Digital Bus Differential Relay c/w One Central Unit, twenty Peripheral Units (20 zones) to provide Main and Check feature (Independent for Protection A & Protection B). • Breaker Failure Relay (Independent for Protection A & Protection B). • Lockout Relay (manual reset) [86], Tripping relay (auto reset) [94], Auxiliary and timed relays, Test Switches, 240V AC Space Heater c/w thermostat, 5A/15A, 	1.000	Lot			0.00	0.00	0.00	INR Zero Only
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	240V AC MCB switch for socket, space heater and other panel supply, 20 W, 240V, AC Compact fluorescent Tube fitting complete with Door switch, DC source. • MCB, Fuse Blocks and fuses, Heavy duty Terminal Blocks. • BCU • Multifunction Meter • Mimic/Indication of Unit Protection panels on GIS protection panels.								
9.12	Unit Bay Controller and Metering Board (BMB) (Units, SST Metering)	1.000	Set			0.00	0.00	0.00	INR Zero Only
9.13	Line Metering Board	4.000	Sets			0.00	0.00	0.00	INR Zero Only

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9.14	Common RTU Board	1.000	Set			0.00	0.00	0.00	INR Zero Only
9.15	GIS and Pot Head Yard Protection Engineering Workstation as per Technical Specifications	1.000	Set			0.00	0.00	0.00	INR Zero Only
9.16	Portable Engineering Work Station as per Technical Specifications	1.000	Set			0.00	0.00	0.00	INR Zero Only
9.17	Protection Operating Work Station as per Technical Specifications	1.000	Set			0.00	0.00	0.00	INR Zero Only
9.18	Dispatch Work Station (DWS)With GPS Clock, antenna & IRIG-B Distribution.	1.000	Set			0.00	0.00	0.00	INR Zero Only
9.19	Energy Management Station (EMS) including all software	1.000	Set			0.00	0.00	0.00	INR Zero Only

9.2	Control and Monitoring containing : • Digital Communication Processor • Common I/O rack complete with indicating light and Control switches • LED indicating light, 220V DC, 100,000AGC hours, Pistol Grip Circuit Breaker Control Switch, Pistol Grip Local distance switch, 240V AC space heater c/w thermostat, 5A/15A, 240V AC 3 pin socket, 5A/15A, 240V AC MCB switch for socket, space heater and other panel supply, 20W, 240V, AC Compact LED Tube fitting complete with Door Switch, DC source MCB, Fuse Blocks and fuses etc.	1.000	Lot			0.00	0.00	0.00	INR Zero Only
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9.21	GIS SCADA (PAMS) communication with main PH SCADA (OFC Cable & Patch Panels) • Free standing 4 section Rack Mounting type each section 750x750x2000 front (tempered glass or Lexan) and back door, IP62 dust tight • Redundant multimode optical fiber cables with all the necessary accessories like Connectors, Adaptors, LIUs, Patch panels, Patch cords etc.	1.000	Lot			0.00	0.00	0.00	INR Zero Only
9.22	Relay Testing Kit	1.000	Lot			0.00	0.00	0.00	INR Zero Only
9.23	Standalone Event Logger and Disturbance Recorder	1.000	Lot			0.00	0.00	0.00	INR Zero Only
10	DIESEL GENERATOR SET:								
10.01	415 V, 800 kVA Silent DG set (with acoustic enclosure) along-with AMF panel, inbuilt day tank and 999 Litres	1.000	Set			0.00	0.00	0.00	INR Zero Only

	weekly storage tank with associated system.								
10.02	415 V, 250 kVA Silent DG set (with acoustic enclosure) along-with AMF panel for remote site with inbuilt day tank and 999 Litres weekly storage tank with associated system.	1.000	Set			0.00	0.00	0.00	INR Zero Only
11	COMMUNICATION SYSTEM & CCTV SYSTEM	1.000	Lot			0.00	0.00	0.00	INR Zero Only
11.01	Communication System complete with 64 telephone sets & EPABX system suitable for the same + PA System.								
11.02	CCTV System with Monitor as described in Tender Specifications								
12	DC SYSTEM & UPS SYSTEM :	1.000	Lot			0.00	0.00	0.00	INR Zero Only
12.01	Two (2) 220 V DC 1000AH Plante/ Ni-Cd								

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	Battery bank including battery racks								
12.02	Two (2) sets of 220 V DC Battery chargers (main and standby) and all accessories								
12.03	220 V DC Battery Discharge Panel								
12.04	Two (2) 220 V DC distribution board (DCDB)								
12.05	Two (2) 220V GIS DC Distribution Board (DCDB)								
12.06	220V DC/240V AC Inverter								
12.07	240V AC Distribution Board (ACDB)								
12.08	Two (2) 48 V DC 400AH Plante/ Ni-Cd Battery bank including battery racks								
12.09	Two (2) sets 48 V DC Battery chargers and all accessories								
12.1	Two (2) 48 V DC distribution board (DCDB)								
12.11	One (1) 220V DC/48V DC Converter								

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12.12	25 kVA UPS battery, power distribution board & and all necessary accessories - 1 Set								
12.13	6 kVA UPS battery, power distribution board & and all necessary accessories - 2 Sets								
12.14	240AC/24V DC Converter with 24V DC Distribution Board - 1 Set								
13	POWER & CONTROL CABLES	1.000	Lot			0.00	0.00	0.00	INR Zero Only
13.01	HT Power Cables: 33 kV, single core, armoured, XLPE insulated, PVC sheathed, compacted stranded circular cross section, Aluminium conductor, FRLS Type, rodent proof mainly for interconnection of equipment.								

13.02	HT Power Cables: (if required) 11 kV, armoured, XLPE insulated, PVC sheathed, compacted stranded circular cross section, Aluminium conductor, FRLS Type, rodent proof mainly for interconnection of equipment.								
13.03	LT Power Cables: 1100 V grade, multi-core, HR PVC/XLPE insulated, PVC sheathed (inner and outer extruded), stranded compacted circular cross-section, FRLS Type, rodent proof, copper conductor of different sizes.								
13.04	Control Cables: Control Cables - 1100 V grade, stranded copper conductor, PVC insulated, FRLS Type, rodent proof, colour coded with inner sheathed extruded								

	PVC over all PVC sheathed of different sizes and cores.								
13.05	Instrumentation Cables: Annealed tinned flexible copper conductor, PVC insulated, polyester taped, Twisted pairs, individual & overall shielded, FRLS Type, rodent proof.								
13.06	Cable Accessories: Termination Kits, Lugs (tinned copper Lugs), Glands, Ferrules etc.								
14	CABLE TRAYS	1.000	Lot			0.00	0.00	0.00	INR Zero Only
14.01	Perforated / Ladder Type GI Cable Trays, racks & necessary hardware with support structures & accessories.								
15	ILLUMINATION SYSTEM :	1.000	Lot			0.00	0.00	0.00	INR Zero Only

15.01	Illumination System (Normal & Emergency) for Power House area, outdoor areas around power house, pothead yard area, approach road and remote sites (HRT intake & Valve house areas), complete with LED lighting fixtures, conduits and fittings, cabling and distribution boards (MLDBs & ELDBs, LDBs). It shall also include illumination of road near Power House & the two remote sites.								
16	EARTHING SYSTEM :	1.000	Lot			0.00	0.00	0.00	INR Zero Only
10.01	Earthing System for Power house, transformer area, GIS, Pothead yard area, remote areas/sites and adjoining areas including MS rods for buried earthing grid, GI strip for equipment								

	connection to Main Grid and GI exposed earth strip, MS rods including hardware such as bolts, nuts and lock-washers.								
16.02	<p>Earthing and Surge protection of GIS & other equipment-</p> <ul style="list-style-type: none"> • Earthing Grid for GIS in GIS floor • Earthing interconnection of GIS equipment and the GIS floor grid. • Connection between GIS floor earth grid with Power House Earth grid • Earthing of Generator Transformer Neutral to treated pit • Body Earthing of GTMB, CMB ,rail etc. to P.H. earthing mat • Pot head yard earthing grid above GIS floor level , its connection to pot 								

	head yard equipment and further to PH earthing grid								
17	ELECTRICAL WORKSHOP	1.000	Lot			0.00	0.00	0.00	INR Zero Only
18	MISCELLANEOUS EQUIPMENT								
18.01	Field Instruments and Receiving Instruments;	1.000	Lot			0.00	0.00	0.00	INR Zero Only
18.02	Complete Monitoring and Safety Instruments pertaining to the TG set;	3.000	Sets			0.00	0.00	0.00	INR Zero Only
18.03	Vibration Monitoring System	3.000	Sets			0.00	0.00	0.00	INR Zero Only
18.04	Air Gap Monitoring System and Vibration Analyzer including	1.000	Set			0.00	0.00	0.00	INR Zero Only

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Tender Inviting Authority: ED(Tech), C&P, NEEPCO, Shillong.										
Name of Work: EPC execution of Power House Electro-Mechanical Works for Heo Hydro Electric Project (240MW), Arunachal Pradesh.										
Contract No: NIB No.487 dtd 09.01.2026										
PRICE SCHEDULE V (OTHER)										
Sl. No.	Item Description	Quantity	Units	Unit Ex-Works Price for Supply in INR	Taxes and Duties in percentage(%)	Amount on which Taxes and Duties applicable	Amount of Taxes and Duties in INR	TOTAL AMOUNT including taxes and duties in Rs. P	TOTAL AMOUNT With Taxes	TOTAL AMOUNT In Words
1	Any Additional Spares required for 5-year trouble free operation period as recommended by Bidder over and above Mandatory Spares. List to be furnished along with price for consideration of the Employer.	1.000	Lot			0.00	0.00	0.00	0.00	INR Zero Only
Total in Figures								0.00	0.00	INR Zero Only

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Quoted Rate in Words		INR Zero Only
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Notes: 1. The Above PRICE SCHEDULE V will not be considered for evaluation of L1 price.

2. The above price schedule shall also be submitted along with Techno-Commercial offer without indicating the prices.

3. Details of item description(without Price) at Sl.No.1 shall be submitted with Techno-Commercial Offer.