TT	Các hạng mục	ĐV	SL
5.17	Cấu trúc gõ điện từ phía trên cho hệ thống điện cực phóng (DE) (bao gồm đầy đủ các bộ phận cần thiết)	Lô	1
5.18	Cấu trúc gõ điện từ phía trên cho hệ thống tấm thu bụi (CE) (bao gồm đầy đủ các bộ phận cần thiết)	Lô	1
5.19	Giá treo điện cực phóng	Lô	1
5.20	Giá treo điện cực thu	Lô	1
5.21	Hệ thống điện cực phóng	Lô	1
5.22	Hệ thống điện cực thu	Lô	1
5.23	Hệ thống rung gõ cực thu	Lô	1
5.24	Hệ thống rung gõ cực phóng	Lô	1
5.25	Lắp thêm tấm phân luồng khói chữ"W" đầu vào ESP	Tấn	5
5.26	Tấm định hình luồng khí hệ thống phễu tro	Tấn	2
5.27	Thiết bị gõ cách ly theo từng phần	Lô	1
6	**Hệ thống PCCC**	**Hệ thống**	**1**

MINISTRY OF INDUSTRY AND TRADE
INSTITUTE OF ENERGY

No.: 0560/VNL-TT3

Regarding the equipment quotation for the upgrade and renovation of the exhaust gas treatment system of Unit 2 at Pha Lai Thermal Power Plant.

SOCIALIST REPUBLIC OF VIETNAM
Independence - Freedom - Happiness

Hanoi, March 24th, 2026

Dear: .....

We would like to extend our respectful greetings to you.

The Institute of Energy is currently preparing a report on the upgrade and renovation of the exhaust gas treatment system of Unit 2 at Pha Lai Thermal Power Plant. As part of this work, we have compiled a list of equipment with corresponding specifications and quantities, as attached.

Through this official letter, the Institute of Energy respectfully requests your esteemed company to provide quotations for the equipment items listed in the attachment.

Yours sincerely,

Recipients:
- *As above;*
- *File: Secretariat, P2, TT3.*

Attachments:
- *Appendix: List of equipment.*

Q. VIỆN TRƯỞNG

VIỆN NĂNG LƯỢNG

Tô Xuân Bảo

APPENDIX: LIST OF EQUIPMENT

(Attachments document No.: ... 0560 .../VNL-TT3 date March 24th, 2026)

No.	Item	Unit	Quantity
	Capacity 2x300MW (quantity for 2 units)		
1	**SOx Removal System**		
	Absorber Tower Specifications *Diameter: 13.68 m* *Height: 24.95 m* *Inlet flue gas flow rate (standard): 950.200 m3N/h*		
1.1	***Spray Headers and Nozzles (New installation)***		
	Number of spray headers	set	8
	Manifold pipes (Existing, to be retained)	pcs	8
	Manifold pipe material (FRP)		
	Branch pipes connecting manifolds and nozzles (To be replaced)	set	8
	Branch pipe material (FRP)		
	Spray nozzles		
	Nozzle type (Dual-fluid double-cone and single-cone, 120°)		
	Nozzle material (SiC)		
	Connection type to manifold (Adhesive bonding)		
1.2	***Flue Gas Distribution Tray (New installation)*** Material (Alloy steel)	pcs	2
1.3	***Mist Eliminator Assembly (New installation)***		
	Number of Mist Eliminator Units	set	4
	Number of Main Spray Nozzles (Upstream/Downstream)	Pc	16
	Number of Auxiliary Spray Nozzles (Upstream/Downstream)	pc	304
1.4	**Absorber Recirculation Pump (New installation)** Type: Centrifugal pump Power: 327.4 kW Pump head: 15.25 m	pc	8
1.5	***Agitator (New installation)*** Power: 22.63 kW	pc	6
1.6	***Oxidation Air Fan (New installation)*** Flow rate: 5,068 m^3/h Power: 113.2 kW	pc	4
2	**NOx Removal System**		
	Design parameters: Flue gas flow rate at standard conditions at SCR inlet: 855,036 Nm^3/h Flue gas temperature at SCR inlet: 390°C Maximum NOx concentration at SCR inlet: 1,000 mg/Nm^3	pc	

No.	Item	Unit	Quantity
	NOx concentration at SCR outlet: ≤ 120 mg/Nm³ in accordance with QCVN 19:2024/BTNMT issued in December 2024 (with provision for future requirements) Ammonia slip in flue gas: < 3 ppm		
2.1	NH_3 Storage Tank Volume: 140 m³	pc	4
2.2	Ammonia Compressor Motor power: 7.5 kW	pc	2
2.3	Ammonia Pump Motor power: 1.2 kW	pc	4
2.4	Ammonia Vaporizer	pc	4
2.5	Storage tank	pc	4
2.6	Dilution Air Fan: + Motor power 25 kW	pc	4
2.7	SCR Reactor: + Width 8.06 m; + Length 8.5 m; + Height 13,5 m	pc	4
3	**Electrical and C&I equipments**	**Sys.**	**1**
4	**ID Fan** + Capacity 380 m³/s; + Pressure 650 mmH_2O; + Motor power 3000 kW	**pc**	**4**
5	**ESP System**		
5.1	High-frequency rectifier transformer assembly with output voltage of 1.2A/72 kV DC	set	8
5.2	Transformer–Rectifier set, output 100-140 kV DC	set	8
5.3	New integrated control system	set	Complete set
5.4	Complete installation accessories for the high-frequency rectifier transformer	set	Complete set
5.5	High-voltage duct (busbar duct)	set	Complete set
5.6	High-voltage porcelain insulator suitable for the required voltage rating	pc	1
5.7	Insulation shaft	pc	Complete set
5.8	Control cabinet for high-frequency transformers	set	4
5.9	Control cabinet for pulse transformers	set	12
5.10	Insulated heating system control cabinet	set	1
5.11	Percussion system control cabinet	set	1
5.12	Ceramic dryer	set	1

No.	Item	Unit	Quantity
5.13	ETU handheld Ethernet terminal unit for monitoring and configuring the transformer, supplied together with the pulse transformer control system.	set	Complete set
5.14	Ethernet Fiber Optic Ethernet Switch		1
5.15	Grounding switch	set	Complete set
5.16	ETU Ethernet Display and Control Unit	set	1
5.17	Top-mounted electromagnetic knocking structure for the discharge electrode (DE) system (including all necessary components)	set	1
5.18	Electromagnetic tapping structure from above for dust collector panel system (CE) (including all necessary components)	set	1
5.19	Electrode mounting bracket	set	1
5.2	Collector electrode mount	set	1
5.21	Electrode discharge system	set	1
5.22	Collecting electrode system	set	1
5.23	Collector vibration system	set	1
5.24	Extreme vibration percussion system	set	1
5.25	Install an additional "W" shaped smoke deflector at the ESP inlet	ton	5
5.26	Airflow shaping plate for ash hopper system	ton	2
5.27	Partial isolated percussion device	set	1
6	**Fire protection system**	**Sys.**	**1**