MINISTRY OF NATURAL RESOURCES AND ENVIRONMENT	SOCIALIST REPUBLIC OF VIETNAM Independence - Freedom - Happiness
Number: 137/GPMT-BTNMT	*Ha Noi, February 26, 2025*

ENVIRONMENTAL LICENSE

MINISTRY OF NATURAL RESOURCES AND ENVIRONMENT

Pursuant to the Law on Environmental Protection dated November 17, 2020;

Pursuant to Decree No. 08/2022/ND-CP dated January 10, 2022 of the Government, providing detailed regulations on the implementation of several articles of the Law on Environmental Protection;

Pursuant to Decree No. 05/2025/ND-CP dated January 6, 2025, of the Government amending and supplementing several articles of Decree No. 08/2022/ND-CP dated January 10, 2022, of the Government detailing some provisions of the Environmental Protection Law;

Pursuant to Decree No. 68/2022/NĐ-CP dated September 22, 2022 of the Government, stipulating the functions, tasks, powers and organizational structure of the Ministry of Natural Resources and Environment;

Pursuant to Circular No. 02/2022/TT-BTNMT dated January 10, 2022, of the Minister of Natural Resources and Environment, providing detailed implementation of several articles of the Law on Environmental Protection;

Considering Document No. VAPCO/MONRE/02297 dated February 18, 2025 from Vung Ang II Thermal Power Limited Liability Company regarding the revision, supplementation, and request for the issuance of an environmental license for the Vung Ang II BOT Thermal Power Plant and the accompanying dossiers;

Upon the request of the Director of the Department of Environmental Pollution Control.

DECIDE:

Article 1: License is granted to Vung Ang II Thermal Power Limited Liability Company with address at Vung Ang Economic Zone, Ky Loi Commune, Ky Anh Town, Ha Tinh Province, to carry out environmental protection activities of the Vung Ang II BOT Thermal Power Plant, located in Ky Loi Commune, Ky Trinh Ward and Ky Long Ward, Ky Anh Town, Ha Tinh Province, with the following contents:

1. General information of the Plant:

1.1. Facility name: Vung Ang II BOT Thermal Power Plant.

1.2. Operating location: Ky Loi Commune, Ky Trinh Ward and Ky Long Ward, Ky Anh Town, Ha Tinh Province.

1.3. Business registration certificate number: 3000420169, issued by the Business Registration Office, Ha Tinh Department of Planning and Investment, first registered on October 26, 2007, and the 36th amendment registered on February 10, 2025.

1.4. Tax identification number: 3000420169.

1.5. Type of production, business, services: Production and sale of electricity (thermal power plant use coal as the main fuel; LDO is only burned for boiler start up or low load operation).

1.6. Plant scope, scale, and capacity:

- Total area: 160.45 hectares (including: 100.18 hectares of land and 60.27 hectares of sea area).

- The total area requested for the environmental permit is 120.65 hectares (including: 36.3 hectares of main plant, 6.02 hectares of cooling water area, pumping station and jetty area; 15 hectares of ash disposal site No.1; 3.06 hectares of O& M accommodation area; 60.27 hectares of marine area).

- The facility has environmental criteria equivalent to a Group I investment Plant under the Law on Environmental Protection and Decree No. 08/2022/ND-CP detailing some articles of the Law on Environmental Protection.

- Scale: The facility is categorized as a Group A Plant (according to the criteria of public investment law).

- Designed capacity: 02 units with a gross capacity of 1,330MW (02 x 665MW); net capacity of 1,200MW (02 x 600MW).

- Production process summary: Coal (LDO oil for startup and low-load operation) → Boiler (supercritical technology) → High-pressure steam → Turbine → Generator → Switchyard → National grid.

2. Environmental License contents and attached environmental protection requirements:

2.1. Permitted to discharge wastewater into the environment and requested to comply with environmental protection requirements as stipulated in Appendix 1 attached to this License.

2.2. Permitted to emit exhaust gas into the environment and requested to comply with environmental protection requirements as stipulated in Appendix 2 attached to this License.

2.3. Requested to comply with noise and vibration limits and environmental protection requirements as stipulated in Appendix 3 attached to this License.

2.4. Requirements for waste management, environmental incident prevention, and response as stipulated in Appendix 4 attached to this License.

2.5. Other environmental protection requirements stipulated in Appendix 5 attached to this License.

Article 2: Rights, duties, and responsibilities of Vung Ang II Thermal Power LLC:

1. The company holds the rights and responsibilities as stipulated in Article 47 of the Law on Environmental Protection.

2. Vung Ang II Thermal Power LLC is responsible for:

2.1. Implementing the licensed activities only after completing the respective environmental protection facilities.

2.2. Regularly and properly operating waste treatment systems, ensuring that treated waste meets environmental standards; implementing noise and vibration reduction measures to meet environmental protection requirements; managing waste in accordance with legal regulations. The company is responsible before the law once pollutants, noise, and vibration do not meet the permitted standards in this License and must immediately stop discharging wastewater, exhaust gas, noise, vibration to take corrective actions as required by law.

2.3. Strictly complying with the environmental protection requirements in this Environmental License and the provisions of the environmental protection laws.

2.4. Promptly reporting to the licensing authority and local authorities in case of environmental incidents related to waste treatment systems or other incidents leading to environmental pollution.

2.5. Reporting any changes differing from the contents specified in this License to the licensing authority promptly.

Article 3: License validity period: **07 years**.

(from Feb 26, 2025 to Feb 25, 2032).

Environmental License No. 458/GPMT-BTNMT dated October 31, 2024, issued by the Ministry of Natural Resources and Environment for the Vung Ang II BOT Thermal Power Plant (Phase 1), and Environmental License No. 2761/GPMT dated October 24, 2023, issued by the People's Committee of Ha Tinh Province for the Plant "Residential Area for Staff, Operators, and Maintenance Workers of Vung Ang II Thermal Power Plant," shall become invalid from the effective date of this Environmental License.

Điều 4. The Department of Environmental Pollution Control and Ha Tinh Department of Natural Resources and Environment are responsible for inspecting the implementation of licensed contents and environmental protection requirements for the facility according to legal regulations./.

Recipients:
- Minister (for reporting);
- Ha Tinh People's Committee (for coordination);
- Ha Tinh Department of Natural Resources and Environment;
- Ministry of Natural Resources and Environment Electronic Portal;
- Reception and Administrative Results Office, Ministry of Natural Resources and Environment;
- Vung Ang II Thermal Power LLC;
- Filed: VT, KSONMT, L_{12}.

ON BEHALF OF THE MINISTER
VICE MINISTER

Le Cong Thanh

Appendix 1

CONTENTS OF WASTEWATER DISCHARGE PERMIT AND ENVIRONMENTAL PROTECTION REQUIREMENTS FOR WASTEWATER COLLECTION AND TREATMENT

(Attached to Environmental License No. 137 /GPMT-BTNMT dated Feb 26, 2025 by the Ministry of Natural Resources and Environment)

A. CONTENTS OF WASTEWATER DISCHARGE PERMIT:

1. Sources of wastewater generation:

The sources of wastewater (industrial and domestic) phase 1 of the Plant ”Vung Ang II BOT Thermal Power Plant” (hereinaffter called Plant) include:

1.1. Sources of domestic wastewater generation:

- Source No. 01: Sanitary wastewater from the restrooms in the administration building and vehicle garage area.

- Source No. 02: Sanitary wastewater from the restrooms in the firefighting station area.

- Source No. 03: Sanitary wastewater from the restrooms in the workshop and warehouse area.

- Source No. 04: Sanitary wastewater from the restrooms at the main entrance gate.

- Source No. 05: Sanitary wastewater from the restrooms in the control building of the seawater flue gas desulfurization (SWFGD) system.

- Source No. 06: Sanitary wastewater from the restrooms in the control building of the electrostatic precipitator (ESP) system and the ash and slag handling system (ASH).

- Source No. 07: Sanitary wastewater from the restrooms in the central control building (CCB).

- Source No. 08: Sanitary wastewater from the restrooms in the seawater treatment plant for service water production.

- Source No. 09: Sanitary wastewater from the restrooms in the heavy equipment maintenance facility and coal storage area.

- Source No. 10: Sanitary wastewater from the restrooms in the coal handling system control building.

- Source No. 11: Sanitary wastewater from the restrooms in the security guardhouse at the rear entrance.

- Source No. 12: Sanitary wastewater from the restrooms in the cooling water (CW) electrical building.

- Source No. 13: Sanitary wastewater from the restrooms in the canteen facility.

- Source No. 14: Sanitary wastewater from the restrooms at Gate No. 3.

- Source No. 15: Kitchen wastewater from the food preparation area in the canteen.

- Source No. 16: Sanitary wastewater from the restrooms in the electrical control building at the coal jetty.

- Source No. 17: Sanitary wastewater from mobile toilet units located at ash disposal site No. 1.

- Source No. 18: Domestic wastewater, including sanitary effluent and kitchen wastewater, from the O&M accommodation area.

1.2. Sources of Industrial Wastewater Requiring Treatment:

1.2.1. Regularly generated wastewater sources:

- Source No. 19: Wastewater from the regeneration of the demineralized water system.

- Source No. 20: Wastewater from the boiler sampling system.

- Source No. 21: Wastewater from the laboratory.

- Source No. 22: Wastewater from floor cleaning in areas contaminated with chemicals (boiler area, turbine area, auxiliary boiler, bottom ash discharge area, fly ash area).

- Source No. 23: Wastewater from the system treating feedwater and wastewater

- Source No. 24: Wastewater from chemical dosing systems.

- Source No. 25: Wastewater from the regeneration of the CPP system in service water area, unit 1.

- Source No. 26: Wastewater from the regeneration of the CPP systen in the service water area, unit 2.

- Source No. 27: Oil-contaminated wastewater from cleaning the floors of oil-contaminated areas (main transformers, auxiliary transformers, fuel oil storage areas, oil unloading trucks, auxiliary boiler pumps, fire pump house).

- Source No. 28: Wastewater from cleaning the coal jetty and coal transportation system areas

- Source No. 29: Wastewater generated from the vehicle washing area at the main plant.

- Source No. 30: Wastewater generated from the vehicle washing area at ash disposal site No. 1.

- Source No. 31: Wastewater generated from the Seawater Flue Gas Desulfurization (SWFGD) system of Unit 1.

-Source No. 32: Wastewater generated from the Seawater Flue Gas Desulfurization (SWFGD) system of Unit 2.

1.2.2. Irregularly generated wastewater sources:

- Source No. 33: First 15-minute runoff stormwater from oil-contaminated areas (main transformer, auxiliary transformer, fuel oil storage area, oil unloading truck area, auxiliary boiler pump area, fire pump house).

- Source No. 34: First 15-minute runoff stormwater from chemical-contaminated areas (coal jetty, Hypochlorite storage tanks, ammonia unloading truck area).

- Source No. 35: Wastewater from emergency response in the ammonia chemical storage area.

- Source No. 36: Wastewater from gas-air heater (GAH) of unit 1.

- Source No. 37: Wastewater from cleaning ESP of unit 1.

- Source No. 38: Wastewater from condenser cleaning of unit 1.

- Source No. 39: Wastewater from boiler blowdown of unit 1.

- Source No. 40: Wastewater from the cleaning process of the gas-air heater (GAH) of Unit 2.

- Source No. 41: Wastewater from the cleaning process of the electrostatic precipitator (ESP) of Unit 2.

- Source No. 42: Wastewater from the cleaning process of the condenser of Unit 2.

- Source No. 43: Wastewater from the boiler blowdown process of Unit 2.

- Source No. 44: Wastewater from the condensate polishing plant (CPP) in the boiler area using demineralized water.

- Source No. 45: Wastewater from the seawater chlorine electrolysis system.

- Source No. 46: Wastewater from the cleaning process of the bottom ash silo of Unit 1.

- Source No. 47: Wastewater from the cleaning process of the bottom ash silo of Unit 2.

- Source No. 48: Wastewater from the cleaning process of the gas-gas heater (GGH) after the flue gas desulfurization (FGD) absorber of Unit 1.

- Source No. 49: Wastewater from the cleaning process of the gas-gas heater (GGH) after the flue gas desulfurization (FGD) absorber of Unit 2.

- Source No. 50: Wastewater (mainly seawater) from the filtration process of the seawater reverse osmosis (SWRO) system.

- Source No. 51: Wastewater (mainly seawater) from the screen washing and backwashing process of the seawater pretreatment filtration system.

1.3. Cooling water generation:

- Source No. 52: Cooling water from condenser cooling, auxiliary heat exchanger system, and vacuum pump cooling for unit 1.

- Source No. 53: Cooling water from condenser cooling, auxiliary heat exchanger system, and vacuum pump cooling for unit 2.

2. **Discharge stream into the receiving water, discharge point, and wastewater discharge location:**

2.1. Wastewater receiving source:

- At the main plant: The coastal area of Vung Ang Bay, located in Hai Phong Village, Ky Loi Commune, Ky Anh Town, Ha Tinh Province.

- The O&M Accommodation area: Da Hat creek, Ky Long Ward, Ky Anh Town, Ha Tinh Province.

2.2. Wastewater discharge point:

- Wastewater stream No.01: corresponding to the combined treated effluent from the sanitary wastewater treatment facilities (Sources No. 01 to source No.15, with a maximum total flow rate of 150 m³/day-night), other industrial wastewater sources (Sources No. 19 to 27, Source No. 29, and Sources No. 33 to 47, with a maximum total flow rate of 4,650 m³/day-night); wastewater from the flue gas desulfurization (FGD) system of Unit 1 and Unit 2 (Sources No. 31 and 32, with a maximum flow rate of 796,800 m³/day-night); wastewater from the cleaning of the heat exchanger after the FGD absorber of Unit 1 and Unit 2, wastewater from the operation of the SWRO system, and wastewater from the screen washing and backwashing process of the seawater pretreatment filtration system (Sources No. 48, 49, 50, and 51, with a maximum total flow rate of 4,554 m³/day-night); cooling water from the condenser cooling process, auxiliary heat exchanger system, and vacuum pump cooling for the condenser (Sources No. 52 and 53, with a maximum flow rate of 4,174,348 m³/day-night) at the main plant, flowing into the cooling water discharge system of the Plant, which then discharges by gravity into the marine area of Vung Ang Bay, Ky Loi Commune, Ky Anh Town, Ha Tinh Province.

Coordinates of the discharge location: X = 2003603; Y = 594566.

- Wastewater stream No.02: corresponding to the wastewater stream after the centralized domestic wastewater treatment system with a capacity of 150 m3/day and night (treatment source No. 18) in O&M accommodation area, flowing into the manhole outside the facility fence, then flows into Da Hat creek in Ky Long ward, Ky Anh town, Ha Tinh province.

Coordinates of the discharge location: X=1993232; Y = 593800

(VN 2000 coordinate system, meridian $105^0 30'$, Plantion zone 3^0).

2.3. Maximum wastewater discharge flow: 4,980,652 m^3/day-night

- Wastewater stream No.01: 4,980,502 m³/day-night.

- Wastewater stream No.02: 150 m³/day-night.

2.3.1. Discharge method:

- Wastewater stream No.01: The wastewater of the main plant after treatment, the cooling water is discharged into the sea area of Vung Ang Bay by self-flowing, underground and coastal discharge method.

- Wastewater stream No.02: Treated domestic wastewater at O&M accommodation area is forced to be pumped into the manhole outside the facility fence, then flows into Da Hat creek by self-flowing, surface and coastal discharge method.

2.3.2. Discharge regime: Continuous discharge, 24 hours per day.

2.3.3. Wastewater quality before discharging into the receiving source must meet environmental protection and technical standards, specifically:

a) Treated sanitary wastewater (sources from No. 01 to No. 15) and treated industrial wastewater at the main plant (sources from No. 19 to 27, source No. 29 and sources from No. 33 to No. 47) must meet the environmental protection requirements of QCVN 40:2011/BTNMT - National Technical Regulation on Industrial Wastewater (column B; Kq=1.3; Kf=0.9) before mixing with cooling water and being discharged to the sea, specifically:

No.	Pollutant	Unit	Permissible Limit	Periodic Monitoring Frequency	Automatic Continuous Monitoring
1	Flow	-	-	Every 3 months	Installed
2	Temperature	°C	40		Installed
3	pH	-	5.5 - 9		Installed
4	COD	mg/l	175.5		Installed
5	Total Suspended Solids (TSS)	mg/l	117.0		Installed
6	Amoni (as N)	mg/l	11.7		Installed
7	Color (pH=7)	Pt/Co	150		Not applicable
8	BOD_5 (20°C)	mg/l	58.5		
9	Arsenic	mg/l	0.117		
10	Mercury	mg/l	0.0117		
11	Lead	mg/l	0.585		
12	Cadmium	mg/l	0.117		
13	Copper	mg/l	2.34		
14	Zinc	mg/l	3.51		
15	Manganese	mg/l	1.17		
16	Iron	mg/l	5.85		
17	Total Mineral Oil & Grease	mg/l	11.7		
18	Sulfur	mg/l	0.585		
19	Floride	mg/l	11.7		
20	Total Nitrogen	mg/l	46.8		
21	Total Phosphorus (as P)	mg/l	7.02		
22	Residual Chlorine	mg/l	2.34		
23	Coliform	CFU/ 100ml	5,000		

b) Wastewater from the seawater flue gas desulfurization system (SWFGD) of Unit 1 (Source No. 31) and Unit 2 (Source No. 32) must comply with environmental protection requirements and QCVN 40:2011/BTNMT - National Technical Regulation on

Industrial Wastewater (Column B, Kq = 1.3, Kf = 0.9) with total sulfite ions ≤ 1.0 mg/l, Dissolved oxygen (DO) ≥ 2 mg/l, pH: 6-9 as committed by the facility's owner, specifically:

No.	Pollutant	Unit	Permissible Limit	Periodic Monitoring Frequency	Automatic Continuous Monitoring
1	Flow rate	-	-	Not applicable	Installed for both Unit
2	Temperature	^{0}C	40		
3	pH	-	6 - 9		
4	DO	mg/l	≥2		
5	TSS	mg/l	117.0		
6	COD	mg/l	175.5		
7	Total sulfite ions	mg/l	≤1.0		

c) Condenser cooling water, auxiliary heat exchange system, condenser vacuum pump cooling (Source No.52 and Source No.53) must meet the environmental protection requirements of QCVN 40:2011/BTNMT - National Technical Regulation on Industrial Wastewater (Column B, Kq=1.3, Kf=0.9) with residual chlorine ≤ 0.2 mg/l and pH: 6-9 as committed by the facility's owner before discharging into the coastal area of Vung Ang Bay, located in Ky Loi Commune, Ky Anh Town, Ha Tinh Province. Specifically:

No.	Pollutant	Unit	Permissible Limit	Periodic Monitoring Frequency	Automatic Continuous Monitoring
1	Flow rate	-	-	Not applicable	Installed
2	Temperature	^{o}C	40		Installed
3	pH	-	6 - 9		Installed
4	Residual chlorine	mg/l	0.2		Installed

d) The treated domestic wastewater from the O&M accommodation area (Source No. 18) must comply with environmental protection requirements and meet QCVN 14:2008/BTNMT - National Technical Regulation on Domestic Wastewater (Column A; K=1.0) before being discharged into the environment. Specifically:

No.	Analytical Parameter	Unit	Permissible Limit	Periodic Monitoring Frequency	Automatic, Continuous Monitoring
1	pH	-	5-9	Every 03 months	Not applicable
2	BOD_5 (20°C)	mg/L	30		
3	Total Suspended Solids (TSS)	mg/L	50		

4	Total Dissolved Solids (TDS)	mg/L	500		
5	Sulfide (as H_2S)	mg/L	1		
6	Ammonium (as N)	mg/L	5		
7	Nitrate (NO_3^-) (as N)	mg/L	30		
8	Animal and Vegetable Oils & Fats	mg/L	10		
9	Total Surfactants	mg/L	5		
10	Phosphate (PO_4^{3-}) (as P)	mg/L	6		
11	Total Coliforms	MPN/100ml	3,000		

B. ENVIRONMENTAL PROTECTION REQUIREMENTS FOR WASTEWATER COLLECTION AND TREATMENT :

1. Wastewater collection, treatment works, and automatic, continuous monitoring systems and equipment:

1.1. Wastewater collection network from the sources to the wastewater treatment facility:

1.1.1. At main plant:

- Sanitary wastewater generated from sources No. 01 to No. 14 is collected and preliminarily treated at 14 septic tanks with three compartments (total capacity of 229 m^3), wastewater from source No. 15 is preliminarily treated through two grease traps with two compartments (total capacity of 0.72 m^3), all sanitary wastewater after preliminary treatment is directed to a centralized wastewater treatment system with a capacity of 150 m^3/day for further treatment; treated sanitary wastewater is then transferred to the primary holding pond of the centralized industrial wastewater treatment system with a capacity of 4,800 m^3/day.

- Sanitary wastewater from the restrooms in the jetty electrical control building (source No. 16) is transferred to a service unit with the function of collection and treatment; it is not discharged into the environment.

- Sanitary wastewater from portable restrooms at ash disposal site No. 1 (source No. 17) is transferred to a service unit with the function of collection and treatment, not discharged into the environment.

- Wastewater from sources No. 19, 20, 21, 22, 23, 24, 25, 26 and source No. 29 is collected in preliminary holding tanks and sent to the centralized industrial wastewater treatment system with a capacity of 4,800 m^3/day for treatment.

- Oil-contaminated wastewater from sources No. 27 and 33 is collected and treated in an oil-contaminated wastewater treatment system with a capacity of 25 m^3/hour, then transferred to the final pH adjustment tank of the centralized industrial wastewater treatment system (capacity 4,800 m^3/day).

-Wastewater from the cleaning process of the jetty area and coal transportation system (source No. 28) is collected to the coal settling tank with a capacity of 8,000 m3, then pumped for the dust suppression, cleaning the jetty and trestle, coal transportation system, not discharged into the environment.

- Wastewater from car washing in the ash disposal site No. 1 (source No. 30) is collected to the car washing water tank, led through a 3-compartment oil separator tank (capacity of 2.96 m^3) for treatment, the treated water flows to ash disposal site, not discharged into the environment.

- Wastewater from production sources No. 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46 and No. 47 is collected in irregular wastewater holding pond and sent to the centralized industrial wastewater treatment system with a capacity of 4,800 m^3/day-night for treatment.

- Wastewater from sources No. 31, 32, 48, 49, 50, 51, 52 and source No. 53 is collected and sent through an Aeration basin of Unit 1& Unit 2 and then to the cooling water discharge culvert and discharged to the sea at Vung Ang Bay.

- Wastewater after the industrial wastewater treatment system of 4,800 m3/day-night; cooling water for the condenser of Unit 1 and Unit 2; wastewater from the SWFGD system of Unit 1 and Unit 2; wastewater from the cleaning process of the gas - gas heater (GGH) after the sulfur absorption tower of Unit 1 and Unit 2; wastewater from the seawater treatment system into fresh water, the seawater pretreatment system are collected and discharged into the cooling water discharge culvert of the facility, then discharged into the sea area of Vung Ang Bay.

1.1.2. O&M accommodation area:

Domestic wastewater from Source No. 18 is collected and treated in 30 three-compartment septic tanks (total capacity of 132 m3), 1 three-compartment grease trap (total capacity of 15 m3) and then treated in a domestic wastewater treatment system with a capacity of 150 m3/day- night before being discharged into Da Hat creek through the area's drainage system.

1.2. Wastewater treatment facilities and equipment:

1.2.1 Main plant area:

1.2.1.1. Three-compartment septic tanks:

- Number: 14 tanks

- Total design capacity: 229 m^3

- Technology process summary: Wastewater → Holding compartment → Settling compartment → Filtering compartment → Sanitary wastewater system (150 m^3/day-night)

- Chemicals and materials used: None

1.2.1.2. Two-compartment oil & grease traps:

- Number: 2 traps

- Total design capacity: 0.72 m^3

- Technology process summary: Wastewater → Oil & Grease trap 1 → Oil & Grease trap 2 → Sanitary wastewater system (150 m^3/day-night)

- Chemicals and materials used: None

1.2.1.3. Centralized sanitary wastewater treatment system:

- Number: 1 system

- Design capacity: 150 m^3/day

- Technology process summary: Sanitary wastewater, after preliminary treatment in the three-compartment septic tanks or oil & grease traps → Trash screen → Equalization tank → Anoxic tank → Aerobic tank → Settling tank → Disinfection tank → Holding tank → Centralized industrial wastewater treatment system (capacity 4,800 m^3/day)

- Chemicals and materials used: NaOCl (or equivalent chemicals that ensure treated wastewater quality meets the requirements and does not generate additional pollutants as specified in Section 2.3.3, Part A of this Appendix).

1.2.1.4. Oil-contaminated wastewater treatment system :

- Number: 1 system

- Design capacity: 25 m^3/hour

- Technology process summary: Oil-contaminated wastewater → Oil-contaminated wastewater holding tank (two compartments) with oil skimmer → Oil separator → Final pH adjustment tank of the centralized industrial wastewater treatment system (capacity 4,800 m^3/day)

- Chemicals and materials used: Oil-absorbent belts

1.2.1.5. Centralized industrial wastewater treatment system:

- Number: 1 system

- Design capacity: 4,800 m^3/day

- Technology process summary: Sanitary wastewater from the 150 m^3/day treatment system + regularly and irregularly generated industrial wastewater → Primary holding pond → pH adjustment ponnd → Coagulation pond → Flocculation pond → Settling pond → Intermediate pond → Pressure filtration pond→ Activated carbon filtration pond → Final pH adjustment pond → Treated water holding pond→ Cooling water discharge culvert → Vung Ang Bay

- Chemicals and materials used: NaOH, HCl, $FeCl_3$, Polymer, activated carbon (or equivalent chemicals that ensure treated wastewater quality meets the requirements and does not generate additional pollutants as specified in Section 2.3.3, Part A of this Appendix).

1.2.1.6. Seawater flue gas desulfurization (SWFGD) wastewater treatment system for Unit 1:

- Technology process summary: Wastewater from SWFGD unit 1+ cooling water of unit 1→ Aeration basin for unit 1 → Cooling water discharge culvert → Vung Ang Bay

- Design capacity: 2,487,851 m^3/day

- Chemicals and materials used: None

1.2.1.7 Seawater flue gas desulfurization (SWFGD) wastewater treatment system for Unit 2:

- Technology process summary: Wastewater from SWFGD unit 2+ cooling water unit 2 → Aeration basin for unit 2 → Cooling water discharge culvert → Vung Ang Bay

- Design capacity: 2,487,851 m^3/day

- Chemicals and materials used: None

1.2.1.8 Vehicle wash wastewater treatment system at ash disposal site No. 1:

- Number: 1 system

- Design capacity: 10 m^3/day

- Technology process summary: Vehicle wash wastewater →manhole → Vehicle wash wastewater holding tank → Three-compartment oil separator → Treated water flows to ash disposal site, no discharge into the environment.

- Chemicals and materials used: Oil separation plastic pipes.

1.2.2. O&M Accommodation Area

1.2.2.1. Three-Compartment Septic Tanks:

- Quantity: 30 tanks

- Total designed capacity: 132 m^3

- Technology process summary: Wastewater → Holding compartment → Sedimentation compartment → Filtration compartment → Centralized domestic wastewater treatment system (150 m^3/day-night).

- Chemicals and materials used: None

1.2.2.2. Oil and Grease Separator Tank:

- Quantity: 01 tank

- Designed capacity: 15 m^3

- Technology process summary: Wastewater → Oil and grease separator tank (03 baffles) → Centralized domestic wastewater treatment system (150 m^3/day-night).

- Chemicals and materials used: None

1.2.2.3. Centralized Domestic Wastewater Treatment System:

- Quantity: 01 system

- Designed capacity: 150 m^3/day-night

- Technology process summary: Pre-treated domestic wastewater from the three-compartment septic tanks/oil and grease separator tank → Collection tank → Equalization tank → Anoxic tank → Aerobic tank → Sedimentation tank → Disinfection tank → Receiving body.

- Chemicals and materials used: NaOCl, Methanol, NaOH (or other equivalent chemicals ensuring treated wastewater meets the required standards and does not generate additional pollutants as specified in Point d, Section 2.3.3, Part A of this Appendix).

1.3. Cooling water discharge system :

1.3.1 Cooling water discharge system for unit 1

- Technology process summary: Cooling water from unit 1 +wastewater from SWFGD system of unit 1 → Aeration basin for unit 1 → Cooling water discharge culvert → Vung Ang Bay

- Design capacity: 2,487,851 m^3/day

- Chemicals and materials used: None.

1.3.2 Cooling water discharge system for unit 2:

- Technology process summary: Cooling water from unit 2+ wastewater from SWFGD system of unit 2 → Aeration basin for unit 2 → Cooling water discharge culvert → Vung Ang Bay

- Design capacity: 2,487,851 m^3/day

- Chemicals and materials used: None.

1.4. Automatic, continuous wastewater monitoring systems and equipment:

1.4 .1. Automatic, continuous monitoring system for industrial wastewater after treatment:

- Number: 1 station

- Monitoring location: Industrial wastewater after treatment before discharge into the common cooling water discharge culvert.

- Installed parameters: Flow rate (inlet and outlet), pH, temperature, TSS, COD, Ammonia

- Automatic sampling equipment: Installed

- Surveillance camera: Installed

- Data connection and transmission: connected and transmitted to the Ha Tinh Department of Natural Resources and Environment.

1.4.2. Automatic, continuous monitoring system for wastewater at the end of aeration basin for Unit 1:

- Number: 1 station

- Monitoring location: At the end of the Aeration basin for unit 1, before discharging to the cooling water discharge culvert.

- Installed parameters: Flow rate, temperature, pH, TSS, DO, COD, Total sulfite ions (HSO_3^- and SO_3^{2-})

- Automatic sampling equipment: Installed

- Surveillance camera: Installed

- Data connection and transmission: Connected and transmitted to the Ha Tinh Department of Natural Resources and Environment.

1.4.3. Automatic, continuous monitoring system for wastewater at the end of aeration basin for Unit 2:

- Number: 1 station

- Monitoring location: At the end of the Aeration basin for unit 2, before discharging to the cooling water discharge culvert.

- Installed parameters: Flow rate, temperature, pH, TSS, DO, COD, Total sulfite ions (HSO_3^- and SO_3^{2-})

- Automatic sampling equipment: Installed

- Surveillance camera: Installed

- Data connection and transmission: connected and transmitted to the Ha Tinh Department of Natural Resources and Environment.

1.4.4. Automatic, continuous monitoring system for cooling water (outlet)

- Number: 1 station

- Monitoring location: At the inlet of the cooling water discharge culvert

- Monitoring parameters: Flow rate, temperature, pH, residual chlorine

- Automatic sampling equipment: Installed

- Surveillance camera: Installed

- Data connection and transmission: connected and transmitted to the Ha Tinh Department of Natural Resources and Environment.

1.5. Prevention and emergency response systems, facilities, and equipment:

- Operate wastewater treatment systems according to proper procedures and perform regular maintenance, implement management and monitoring measures for wastewater treatment systems to ensure timely response to emergencies.

- Install backup pumps and aerators in the seawater flue gas desulfurization (SWFGD) systems.

- Operate the installed automatic and continuous monitoring system, ensuring inspection, calibration, and verification of measuring equipment in accordance with regulations.

- In case of malfunction in the wastewater treatment systems or if the treated wastewater quality does not meet the requirements specified in Section 2.3.3, Part A of this Appendix, the Company will cease wastewater discharge into the receiving body and implement corrective measures to ensure compliance with the standards before resuming

discharge.

- In the event of a serious and prolonged failure of the centralized industrial wastewater treatment system, the Company will temporarily suspend production operations for inspection and remediation. Wastewater will be stored in the preliminary wastewater storage tank (with a capacity of approximately 1,732.5 m^3) and the intermittent wastewater storage tank (with a capacity of approximately 4,511 m^3) to facilitate necessary corrective actions and treatment. After remediation, the wastewater will be recycled for further treatment to meet discharge standards before being released into the environment.

- Regularly inspect pipelines and equipment to promptly address any leaks or blockages.

- Implement management and monitoring measures for the operation of treatment facilities to ensure timely emergency response.

- Post operational procedures for the centralized wastewater treatment system at the treatment area.

- Maintain operation logs and records for the treatment systems.

-Regularly inspect, maintain, and service equipment, machinery, treatment facilities, and the wastewater collection and drainage system.

2. Commissioning Plan:

2.1. Commissioning period:

- Commissioning duration: No more than 06 months after the Environmental License is granted.

2.2. The wastewater treatment facilities and equipment will continue to undergo commissioning:

2.2.1. The wastewater treatment facilities and equipment at the main plant:

(1) Centralized sanitary wastewater treatment system capacity 150 m^3/day.

- Sampling locations:

+ Inlet wastewater: Equilization pond of the sanitary wastewater treatment system.

+ Outlet wastewater: Treated sanitary wastewater holding tank.

- Pollutants: pH, BOD_5, TSS, Ammonia (as N), total phosphorus (as P), Coliform.

- Permissible pollutant limits: As specified in item a, Section 2.3.3 Part A of this Appendix.

(2) Oil-contaminated wastewater treatment system capacity 25 m^3/hour;

- Sampling locations:

+ Inlet wastewater: Oil-contaminated wastewater holding tank before treatment.

+ Outlet wastewater: Wastewater after oil-contaminated wastewater treatment system.

- Pollutants: Total mineral oil and grease.

- Permissible pollutant limits: As specified in item a, Section 2.3.3 – Part A of this Appendix.

(3) Centralized industrial wastewater treatment system capacity 4,800 m^3/day.

- Sampling locations:

+ Inlet wastewater: Primary holding tank of the industrial wastewater treatment system.

+ Outlet wastewater: Treated wastewater holding tank of the industrial wastewater treatment system.

- Pollutants and permissible pollutant limits: As specified in item a, Section 2.3.3, Part A of this Appendix.

(4) Wastewater treatment system generated from the SWFGD system for Unit 1

- Sampling locations:

+ Inlet wastewater: Wastewater before entering the Aeration basin of unit 1.

+ Outlet wastewater: Wastewater at the end of the Aeration basin of unit 1.

- Pollutants and permissible pollutant limits: As specified in item b, Section 2.3.3, Part A of this Appendix.

2.2.2. The wastewater treatment facilities and equipment at the O&M accommodation area

Domestic wastewater treatment system (150 m^3/day-night) at the O&M accommodation area:

- Sampling locations:

- Influent: Equalization tank of the domestic wastewater treatment system.

- Effluent: At the discharge point (manhole near the Northwest fence) before discharging into the receiving body.

- Pollutants: pH, BOD_5, Total Suspended Solids (TSS), Total Dissolved Solids (TDS), Sulfide (H_2S), Ammonium (as N), Nitrate (NO_3^-) (as N), Animal and Vegetable Oil & Grease, Total Surfactants, Phosphate (PO_4^{3-}) (as P), Coliforms.

- Pollutant limit values: As specified in Point d, Section 2.3.3, Part A of this Appendix.

2.2.3. Vehicle wash wastewater treatment system at ash disposal site no.1 (10 m^3/day-night capacity): This system is not subject to commissioning as per Article 31 of Decree No. 08/2022/ND-CP dated January 10, 2022 detailing a number of articles of the Law on Environmental Protection amended and supplemented in Clause 13, Article 1 of Decree No. 05/2025/ND-CP dated January 6, 2025 of the Government.

2.2.4. Sampling frequency

Conduct monitoring during the commissioning of wastewater treatment systems according to the provisions of Clause 1, Article 21 of Circular No. 02/2022/TT-BTNMT and at the request of the facility owner, specifically as follows:

- Efficiency adjustment phase: Continue to carry out additional sampling sessions at least once every 15 days (measure, collect and analyze combined input and output samples of wastewater treatment works) for at least 75 days from the date of starting the commissioning of Unit 1 (including the time the Company conducts sampling sessions according to Environmental License No. 458/GPMT-BTNMT dated October 31, 2023).

- Stable operation phase: At least 01 day/time (measure, collect and analyze single samples of 01 input wastewater sample and at least 07 output wastewater samples in 07 consecutive days of the wastewater treatment plant) after the effective adjustment phase

2.3. Wastewater treatment facilities and equipment requiring additional commissioning:

2.3.1. Wastewater treatment system for SWFGD system of unit 2:

- Sampling locations:

+ Influent: Before entering the aeration basin of Unit 2.

+ Effluent: At the end of aeration basin of Unit 2.

- Pollutants and permissible limits: As specified in Point b, Section 2.3.3, Part A of this Appendix.

2.3.2. Sampling frequency:

Monitoring of pollutants during the commissioning of wastewater treatment systems must comply with Clause 1, Article 21 of Circular No. 02/2022/TT-BTNMT, specifically:

- Efficiency adjustment phase: At least 15 days/time (measure, collect and analyze combined samples of input and output of wastewater treatment works) for at least 75 days from the date of starting commissioning.

- Stable operation phase: At least 01 day/time (measure, collect and analyze single samples of 01 input wastewater sample and at least 07 output wastewater samples in 07 consecutive days of the wastewater treatment works) after the efficiency adjustment phase.

3. Environmental protection requirements:

3.1. Collect and treat wastewater generated from the operation of the facility (except sources No. 16, No. 17, No. 28 and No. 30) to ensure that it meets the requirements on wastewater quality specified in Section 2.3.3 Part A of this Appendix before discharging into the environment; implement solutions to collect and treat foam effectively before discharging into the sea in the Vung Ang Bay area. In particular, wastewater sources (sources No. 16 and No. 17) are collected and transferred to competent treatment units according to regulations, meeting the requirements on environmental protection as prescribed in Clause 4, Article 74 of Decree No. 08/2022/ND-CP amended and supplemented in Clause 31, Article 1 of Decree No. 05/2025/ND-CP dated January 6, 2025 of the Government. Waste sources No. 28 and No. 30 are collected and treated to meet environmental protection requirements before being recycled; not discharged into the environment.

3.2. Ensure that the wastewater collection and treatment system operates stably, effectively and continuously when the unit is operating before being combined with cooling water and rainwater.

3.3. Have an operation log book, recording full information of the wastewater treatment plant operation process.

3.4. Ensure sufficient resources, equipment, and chemicals are available to consistently and effectively operate the wastewater collection and treatment systems.

3.5. The automatic and continuous wastewater monitoring system must ensure regular and stable data transmission to the Department of Natural Resources and Environment of Ha Tinh Province. The automatic and continuous wastewater monitoring equipment must be tested, inspected, and calibrated in compliance with legal regulations on standards, measurement, and quality control. The connection and data transmission of the automatic and continuous wastewater monitoring system must follow the provisions of Decree No. 08/2022/ND-CP and Circular No. 10/2021/TT-BTNMT dated June 30, 2021, issued by the Minister of Natural Resources and Environment, which establishes technical regulations on environmental monitoring and the management of environmental quality monitoring information and data. The automatic and continuous wastewater monitoring system must undergo quality control checks at least once per year in accordance with Circular No. 10/2021/TT-BTNMT. If the system meets regulatory requirements, the Company is exempt from periodic wastewater monitoring for the parameters that are already monitored automatically and continuously.

3.6. During the commissioning, the Company is responsible for seriously and fully implementing the contents specified in Clause 7 and Clause 8, Article 31 of Decree No. 08/2022/ND-CP. In case of any change in the commissioning plan according to this Environmental License, it must perform the responsibilities specified in Clause 5, Article 31 of Decree No. 08/2022/ND-CP, amended and supplemented in Clause 13, Article 1 of Decree No. 05/2025/ND-CP dated January 6, 2025 of the Government.

3.7 Synthesize and evaluate wastewater monitoring data, classify waste and prepare a report on the results of the wastewater treatment commissioning to send to the Ministry of Natural Resources and Environment and the Department of Natural Resources and Environment of Ha Tinh province 20 days before the end of the wastewater treatment commissioning.

3.8. Vung Ang II Thermal Power LLC is fully responsible for wastewater discharge that does not comply with the standards outlined in Section 2.3.3, Part A of this Appendix and must immediately cease discharging wastewater to take corrective measures.

Appendix 2

CONTENTS OF EMISSIONS DISCHARGE PERMIT AND ENVIRONMENTAL PROTECTION REQUIREMENTS FOR EMISSIONS COLLECTION AND TREATMENT

(Attached to Environmental License No137/GPMT-BTNMT dated Feb 26, 2025 by the Ministry of Natural Resources and Environment)

A. CONTENTS OF THE EMISSIONS DISCHARGE PERMIT:

1. Emission sources:

1.1. Emission sources requiring treatment:

- Source No. 01: Emissions generated from the operation of Boiler of Unit 1.

- Source No. 02: Emissions generated from the operation of Boiler of Unit 2.

- Source No. 03: Dust emissions generated from the operation of Coal Transfer Tower TT-01 .

- Source No. 04: Dust emissions generated from the operation of Coal Transfer Tower TT-02.

- Source No. 05: Dust emissions generated from the operation of Coal Transfer Tower TT-03.

- Source No. 06: Dust emissions generated from the operation of Coal Transfer Tower TT-04.

- Source No. 07: Dust emissions generated from the operation of Coal Distribution Tripper Conveyor TTR-1A.

- Source No. 08: Dust emissions generated from the operation of Coal Distribution Tripper Conveyor TTR-1B.

- Source No. 09: Dust emissions generated from the operation of Coal Bunker of Unit 1.

- Source No. 10: Dust emissions generated from the operation of Fly Ash Silo No. 1.

- Source No. 11: Dust emissions generated from the operation of Fly Ash Silo No. 2.

- Source No. 12: Dust emissions generated from the operation of Fly Ash Silo No. 3.

- Source No. 13: Dust emissions generated from the operation of Bag Filter System of Pyrite Silo of Unit 1.

- Source No. 14: Dust emissions generated from activities in the area between Fly Ash Silo No. 2 and Fly Ash Silo No. 3.

- Source No. 15: Dust emissions generated from the operation of Coal Bunker of Unit 2.

- Source No. 16: Dust emissions generated from the operation of Bag Filter System of Pyrite Silo of Unit 2.

Source No. 07 and Source No. 08: The emissions from these sources are collected and treated through 02 bag filter systems installed on the coal distribution tripper conveyors inside the coal bunkers and are discharged at the coal distribution tripper conveyor system).

1.2. Emission sources not requiring treatment:

- Source No. 17: Emissions generated from the operation of the auxiliary boiler.

- Source No. 18: Emissions generated from the operation of the backup generator in the main plant area.

- Source No. 19: Emissions generated from the operation of the backup generator in the O&M accommodation area.

2. Emission flow and discharge location:

2.1. Emission discharge location, maximum flow rate, and discharge method:

- Emission discharge location at the main plant: Hai Phong Village, Ky Loi Commune, Ky Anh Town, Ha Tinh Province.

- Emission discharge location at the O&M accommodation area: Lien Minh residential group, Ky Long ward, Ky Anh town, Ha Tinh province.

2.2. Emission flow, location, and maximum discharge rate:

No.	**Emissions Flow**	**Corresponding Exhaust Pipe**	**Emissions Discharge Coordinates** *(VN 2000 Coordinate System, Central Meridian 105030', Zone 30)*	**Maximum Emissions Flow Rate (m^3/hour)**
1	Exhaust Gas Stream No. 01	Corresponding to the stack of the boiler flue gas treatment system of Unit 1 (treating Source No. 01).	X = 2001863; Y = 593947	3,100,000
2	Exhaust Gas Stream No. 02	Corresponding to the stack of the boiler flue gas treatment system of Unit 2 (treating Source No. 02).	X = 2001861; Y = 593954	3,100,000
3	Exhaust Gas Stream No. 03	Corresponding to the dust collection system (DCS-01) at Coal Transfer Tower TT-01 (treating Source No. 03).	X = 2002029; Y = 593561	26,460
4	Exhaust Gas Stream No. 04	Corresponding to the dust collection system (DCS-02) at Coal Transfer Tower TT-02 (treating Source No. 04).	X = 2001984; Y = 593679	26,460
5	Exhaust Gas Stream No. 05	Corresponding to the dust collection system (DCS-03) at Coal Transfer Tower TT-03 (treating Source No. 05).	X = 2001964; Y = 593760	26,640
6	Exhaust Gas Stream No. 06	Corresponding to the dust collection system (DCS-04) at Coal Transfer Tower TT-04 (treating Source No. 06).	X = 2001764; Y = 593692	14,100

No.	Emissions Flow	Corresponding Exhaust Pipe	Emissions Discharge Coordinates *(VN 2000 Coordinate System, Central Meridian 105030', Zone 30)*	Maximum Emissions Flow Rate (m^3/hour)
7	Exhaust Gas Stream No. 07	Corresponding to the dust collection system (DCS-07) at Coal Bunker of Unit 1 (treating Source No. 09).	X = 2001727; Y = 593804	7,380
8	Exhaust Gas Stream No. 08	Corresponding to the dust collection system at Fly Ash Silo No. 1 (treating Source No. 10).	X = 2001845; Y = 594046	7,500
9	Exhaust Gas Stream No. 09	Corresponding to the dust collection system at Fly Ash Silo No. 1 (treating Source No. 10).	X = 2001844; Y = 594049	7,500
10	Exhaust Gas Stream No. 10	Corresponding to the dust collection system at Fly Ash Silo No. 1 (treating Source No. 10).	X = 2001447; Y = 594140	7,500
11	Exhaust Gas Stream No. 11	Corresponding to the dust collection system at Fly Ash Silo No. 1 (treating Source No. 10).	X = 2001835; Y = 594048	2,000
12	Exhaust Gas Stream No. 12	Corresponding to the dust collection system at Fly Ash Silo No. 2 (treating Source No. 11).	X = 2001838; Y = 594067	7,500
13	Exhaust Gas Stream No. 13	Corresponding to the dust collection system at Fly Ash Silo No. 2 (treating Source No. 11).	X = 2001838; Y = 594068	7,500
14	Exhaust Gas Stream No. 14	Corresponding to the dust collection system at Fly Ash Silo No. 2 (treating Source No. 11).	X = 2001830; Y = 594069	7,500
15	Exhaust Gas Stream No. 15	Corresponding to the dust collection system at Fly Ash Silo No. 2 (treating Source No. 11).	X = 2001832; Y = 594061	2,000
16	Exhaust Gas Stream No. 16	Corresponding to the dust collection system at Fly Ash Silo No. 3 (treating Source No. 12).	X = 2001832; Y = 594086	7,500
17	Exhaust	Corresponding to the dust	X = 2001831;	7,500

No.	Emissions Flow	Corresponding Exhaust Pipe	Emissions Discharge Coordinates *(VN 2000 Coordinate System, Central Meridian 105030', Zone 30)*	Maximum Emissions Flow Rate (m^3/hour)
	Gas Stream No. 17	collection system at Fly Ash Silo No. 3 (treating Source No. 12).	Y = 594088	
18	Exhaust Gas Stream No. 18	Corresponding to the dust collection system at Fly Ash Silo No. 3 (treating Source No. 12).	X = 2001822; Y = 594086	7,500
19	Exhaust Gas Stream No. 19	Corresponding to the dust collection system at Fly Ash Silo No. 3 (treating Source No. 12).	X = 2001821; Y = 594087	2,000
20	Exhaust Gas Stream No. 20	Corresponding to the dust collection system at Pyrite Silo of Unit 1 (treating Source No. 13).	X = 2001820; Y = 594068	2,000
21	Exhaust Gas Stream No. 21	Corresponding to the dust collection system between Fly Ash Silo No. 2 and Fly Ash Silo No. 3 (treating Source No. 14).	X = 2001830; Y = 594073	2,000
22	Exhaust Gas Stream No. 22	Corresponding to the dust collection system between Fly Ash Silo No. 2 and Fly Ash Silo No. 3 (treating Source No. 14).	X = 2001829; Y = 594077	2,000
23	Exhaust Gas Stream No. 23	Corresponding to the dust collection system (DCS-08) at Coal Bunker of Unit 2 (treating Source No. 15).	X = 2001731; Y = 593805	7,380
24	Exhaust Gas Stream No. 24	Corresponding to the dust collection system at Pyrite Silo of Unit 2 (treating Source No. 16).	X = 2001818; Y = 594076	2,000
25	Exhaust Gas Stream No. 25	Corresponding to the stack of the auxiliary boiler (emission source No.17)	X = 2001665; Y = 594034	55,560
26	Exhaust Gas Stream No. 26	Corresponding to the stack of the backup generator in the main plant area (emission source No.18)	X = 2001768; Y = 593911	7,500
27	Exhaust Gas	Corresponding to the stack of the backup generator in the O&M	X = 1993285; Y = 593880	2,500

No.	Emissions Flow	Corresponding Exhaust Pipe	Emissions Discharge Coordinates *(VN 2000 Coordinate System, Central Meridian 105030', Zone 30)*	Maximum Emissions Flow Rate (m^3/hour)
	Stream No. 27	accommodation area (emission source No.19).		

2.2.1. Emission discharge method:

- Emission flow No. 01 and 02: Treated emissions are discharged into the environment through the chimney, with continuous discharge 24 hours/day.

- Emission flows from No. 03 to No. 27: Treated emissions are discharged into the environment through exhaust pipes, with intermittent discharge according to the operating schedule of the emission source.

2.2.2. Emission quality before discharge into the environment must meet the following environmental protection requirements:

a) For emission flow No. 01 and No. 02:

The quality of exhaust gas before being discharged into the air environment must ensure that it meets the requirements for environmental protection according to QCVN 22:2009/BTNMT - National technical regulation on industrial emissions from thermal power plants (Column B; Kp = 0.7; Kv =0.8); QCVN 19:2009/BTNMT - National technical regulation on industrial emissions for dust and inorganic substances (Column B, Kp = 0.8; Kv = 0.8) for CO parameters; for the following parameters: Total dust ≤ 50 mg/Nm^3, SO2 ≤ 200 mg/Nm^3, NOx ≤ 300 mg/Nm^3 according to the proposal and commitment of the facility owner, specifically as follows :

No.	Pollutant	Unit	Permissible Limit	Periodic Monitoring Frequency	Automatic Continuous Monitoring
1	Total Dust	mg/Nm^3	50	Every 3 months	Installed
2	Sulfur Dioxide, SO_2	mg/Nm^3	200		Installed
3	Nitrogen Oxides, NO_x (tính theo NO_2)	mg/Nm^3	300		Installed
4	Cacbon oxit, CO	mg/Nm^3	640		Installed

b) For emission flows No. 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23 and No. 24:

The quality of exhaust gas before being discharged into the air environment must ensure that it meets the requirements for environmental protection according to QCVN 22:2009/BTNMT - National technical regulation on industrial emissions from thermal power plants (Column B, Kp = 0.7; Kv = 0.8), specifically:

No.	Pollutant	Unit	Permissible Limit	Periodic Monitoring Frequency	Automatic Continuous Monitoring
1	Total Dust	mg/Nm^3	112	Not applicable	Not applicable

c) For emission flows No. 25, 26 and No. 27:

Emissions from emergency generators and auxiliary boilers are only used intermittently in case of power outage, auxiliary boilers are only used when starting the main boiler, and do not require an exhaust gas treatment system; the LDO fuel used must meet quality requirements according to regulations of law on product and goods quality; the quality of exhaust gas before being discharged into the air environment must meet the requirements specified in item a, Section 2.2.2, Part A of this Appendix.

** From January 1, 2032, the allowable limit values of pollution parameters in industrial emissions when discharged into the air environment must meet the provisions of QCVN 19:2024/BTNMT - National technical regulations on industrial emissions and in accordance with the proposal and commitment of the Facility Owner.*

B. ENVIRONMENTAL PROTECTION REQUIREMENTS FOR EMISSIONS COLLECTION AND TREATMENT:

1. Emission collection, treatment systems, and automatic continuous emission monitoring devices:

1.1. Emission collection network for dust and gas emission from sources to treatment systems:

- Emission from source No. 01 are collected through a pipeline leading to the emission treatment system of boiler unit 1 with a capacity of 3,100,000 m^3/hour before being discharged into the environment through the chimney.

- Emission from Source No. 02 are collected through piping and directed to the flue gas treatment system of Unit 2, with a capacity of 3,100,000 m^3/hour, for treatment before being released into the environment through the chimney.

- Dust emissions from Source No. 03 are collected and treated using bag filter system DCS-01 before being discharged into the environment through one exhaust duct.

- Dust emissions from Source No. 04 are collected and treated using bag filter system DCS-02 before being discharged into the environment through one exhaust duct.

- Dust emissions from Source No. 05 are collected and treated using bag filter system DCS-03 before being discharged into the environment through one exhaust duct.

- Dust emissions from Source No. 06 are collected and treated using bag filter system DCS-04 before being discharged into the environment through one exhaust duct.

- Dust emissions from Source No. 07 are collected and treated using bag filter system DCS-05, not discharged into the environment.

- Dust emissions from Source No. 08 are collected and treated using bag filter system DCS-06, not discharged into the environment.

- Dust emissions from Source No. 09 are collected and treated using bag filter system DCS-07 before being discharged into the environment through one exhaust duct.

- Dust emissions from Source No. 10 are collected and treated using four bag filter units before being discharged into the environment through four exhaust ducts corresponding to the four filter units.

- Dust emissions from Source No. 11 are collected and treated using four bag filter units before being discharged into the environment through four exhaust ducts corresponding to the four filter units.

- Dust emissions from Source No. 12 are collected and treated using four bag filter units before being discharged into the environment through four exhaust ducts corresponding to the four filter units.

- Dust emissions from Source No. 13 are collected and treated using the bag filter system of the pyrite silo of Unit 1 before being discharged into the environment through one exhaust duct.

- Dust emissions from Source No. 14 are collected and treated using two bag filter units before being discharged into the environment through two exhaust ducts corresponding to the two filter units.

- Dust emissions from Source No. 15 are collected and treated using bag filter system DCS-08 before being discharged into the environment through one exhaust duct.

- Dust emissions from Source No. 16 are collected and treated using the bag filter system of the pyrite silo of Unit 2 before being discharged into the environment through one exhaust duct.

- Sources No. 17, 18, and 19: Emissions are discharged into the environment through the exhaust stacks of the respective equipment and systems..

1.2. Dust and emissions treatment systems:

1.2.1. Flue gas treatment system for boiler unit 01 and unit 02:

- Process summary: Boiler emission → NO_x catalytic reduction system (SCR) → Electrostatic precipitator (ESP) → Induced draft fan → Seawater flue gas desulfurization (SWFGD) → Chimney. Details:

+ NOx catalytic reduction system (SCR): Boiler emissions → SCR system (using a catalyst) → Heat exchanger → Electrostatic precipitator (ESP).

+ Electrostatic precipitator (ESP): Emissions from SCR → ESP (4 dust collection fields) → SWFGD system.

+ SWFGD process: Emissions from ESP → Induced draft fan→ Heat exchanger (first stage) → Absorption tower → Dehumidifier → Heat exchanger (second stage) → Chimney.

- Designed capacity: 3,100,000 m^3/hour/system.

- Chemicals/materials used: Ammonia (NH_3), catalysts (TiO_2), cooling water (or other equivalent chemicals that do not produce additional pollutants as specified in Section 2.2.2, Part A of this Appendix).

1.2.2. Dust collection and treatment systems (sources No. 03, 04, 05, 08, 09, 10, 11, 12, 13, 14, 15, 16):

- Common process summary: Dust generated → Bag filter system →fan blower → Exhaust pipe.

- Number of systems: 22 systems.

- Designed capacities:

+ Bag filter system DCS-01 for coal transfer tower TT-01: 26,460 m³/hour.

+ Bag filter system DCS-02 for coal transfer tower TT-02: 26,460 m³/hour.

+ Bag filter system DCS-03 for coal transfer tower TT-03: 26,640 m³/hour.

+ Bag filter system DCS-04 for coal transfer tower TT-04: 14,100 m³/hour.

+ Bag filter system DCS-07 for coal bunker No. 1: 7,380 m³/hour.

+ Bag filter system No. 1 for fly ash silo No. 1: 7,500 m³/hour.

+ Bag filter system No. 2 for fly ash silo No. 1: 7,500 m³/hour.

+ Bag filter system No. 3 for fly ash silo No. 1: 7,500 m³/hour.

+ Bag filter system No. 4 for fly ash silo No. 1: 2,000 m³/hour.

+ Bag filter system No. 1 for fly ash silo No. 2: 7,500 m³/hour.

+ Bag filter system No. 2 for fly ash silo No. 2: 7,500 m³/hour.

+ Bag filter system No. 3 for fly ash silo No. 2: 7,500 m³/hour.

+ Bag filter system No. 4 for fly ash silo No. 2: 2,000 m³/hour.

+ Bag filter system No. 1 for fly ash silo No. 3: 7,500 m³/hour.

+ Bag filter system No. 2 for fly ash silo No. 3: 7,500 m³/hour.

+ Bag filter system No. 3 for fly ash silo No. 3: 7,500 m³/hour.

+ Bag filter system No. 4 for fly ash silo No. 3: 2,000 m³/hour.

+ Bag filter system for pyrite silo of unit 1: 2,000 m³/hour.

+ Bag filter system No. 1 between fly ash silos No. 2 and 3: 2,000 m³/hour.

+ Bag filter system No. 2 between fly ash silos No. 2 and 3: 2,000 m³/hour.

+ Bag filter system DCS-08 of Bunker No. 2: 7,380 m³/hour.

+ Bag filter system of the pyrite silo of Unit 2: 2,000 m³/hour.

- Materials used: Dust collection filter bags.

1.2.3. Dust collection and treatment systems (sources No. 07 and 08):

- Common process summary: Dust generated → Bag filter system → Exhaust fan.

- Number of systems: 02 systems.

- Designed capacities:

+ Bag filter system DCS-05 for travelling tripper TTR-1A: 5,400 m³/hour.

+ Bag filter system DCS-06 for travelling tripper TTR-1B: 5,400 m³/hour.

- Materials used: Dust collection filter bags.

1.3. Automatic continuous emissions monitoring system:

- Number of stations: 02 stations.

- Installation location:

+ 01 location on the chimney body of the emission treatment system of boiler unit 1.

+ 01 location on the chimney body of the emission treatment system of boiler unit 2.

- Monitored parameters: Flow rate, pressure, temperature, O_2, total dust, SO_2, NOx (as NO_2), CO.

- Monitoring camera: Installed.

- Data connection and transmission:

+ Automatic and continuous emission monitoring system and equipment of unit 1: Connected and transmitted data to the Department of Natural Resources and Environment of Ha Tinh province.

+ Automatic and continuous emission monitoring system and equipment of unit 2: Connect and transmit data to the Department of Natural Resources and Environment of Ha Tinh province before the commissioning of unit 2 according to regulations.

1.4. Preventive measures, emergency response systems:

- Equip protection systems for boilers, turbines and generators. The equipped protection system must be highly reliable and avoid false shutdowns through the use of backup signals.

- Install an automatic continuous emission monitoring system for the boiler chimney of unit 01 and unit 02 to control the concentration of dust and emissions, promptly detect incidents.

- When the dust and emission treatment systems of production lines and equipment have problems or the quality of the treated emissions does not meet the requirements specified in Section 2.2.2 Part A of this Appendix, the discharge of emissions into the air environment must be immediately stopped and remedial and handling measures must be taken.

- Post the operating procedures of the emission treatment system in the treatment area; operate the emission treatment system according to the procedure.

- Periodically inspect, maintain and service equipment and machinery of the emission treatment system.

2. Commissioning Plan:

2.1. Commissioning period:

- The Commissioning period must not exceed 6 months after the Environmental License is issued.

2.2. Flue gas treatment facilities and equipment continuing commissioning :

2.2.1. Flue gas treatment system for boiler of Unit 01

- Sampling location: On the chimney of the flue gas treatment system of Boiler Unit 01.

- Pollutants and permissible limit values: As specified in Point a, Section 2.2.2, Part A of this Appendix.

2.2.2. Dust treatment systems generated from conveyor belts, silos containing raw materials, materials, and fuels are not subject to commissioning as prescribed in Article 31 of Decree No. 08/2022/ND-CP dated January 10, 2022, amended and supplemented in Clause 13, Article 1 of Decree No. 05/2025/ND-CP dated January 6, 2025 of the Government.

2.2.3. Sampling frequency:

Conduct waste monitoring during the commissioning of the flue gas treatment systems in accordance with Clause 2, Article 21 of Circular No. 02/2022/TT-BTNMT and at the request of the facility owner, specifically as follows:

- Efficiency adjustment phase: Continue to carry out additional sampling at least once every 15 days (measure, collect and analyze combined output samples of dust and gas treatment facilities) for at least 75 days from the date of starting the commissioning of Unit 1 (including the time the Company carries out sampling according to Environmental License No. 458/GPMT-BTNMT dated October 31, 2023).

- Stable operation phase: At least once a day (measure, collect and analyze single samples or samples taken by continuous sampling equipment before discharging into the environment of the facility, dust and gas treatment equipment) for at least 07 consecutive days after the efficiency adjustment phase.

2.3. Flue gas treatment facilities and equipment requiring additional commissioning:

2.3.1. Flue gas treatment system for boiler of unit 2

- Sampling location: On the chimney of the flue gas treatment system of Boiler Unit 2.

- Pollutants and permissible limit values: As specified in Point a, Section 2.2.2, Part A of this Appendix.

2.3.2. Sampling frequency:

Conduct waste monitoring during the commissioning of the flue gas treatment systems in accordance with Clause 2, Article 21 of Circular No. 02/2022/TT-BTNMT, specifically as follows:

- Efficiency adjustment phase: At least 15 days/time (measure, collect and analyze combined output samples of dust and exhaust gas treatment works) for at least 75 days from the date of starting the commissioning.

- Stable operation phase: At least 01 day/time (measure, collect and analyze single samples or samples taken by continuous sampling equipment before discharging or discharging into the environment of the works, dust and exhaust gas treatment equipment) for at least 07 consecutive days after the efficiency adjustment phase..

3. Environmental protection requirements:

3.1. Collect and treat flue gas emissions generated from the Plant's operations to ensure compliance with the permissible pollutant limit values specified in Section 2.2.2, Part A of this Appendix before discharging into the environment.

3.2. Ensure the availability of sufficient resources, equipment, and chemicals for the continuous and effective operation of dust and flue gas collection and treatment systems. Operate the boiler flue gas treatment systems (SCR, ESP, absorption tower) before boiler startup. Assign dedicated personnel to inspect the operation of the flue gas treatment system, maintain daily monitoring records, and ensure the system operates in compliance with the transferred technology process.

3.3. The automatic continuous emissions monitoring system must regularly and stably transmit monitoring data to the Ha Tinh Department of Natural Resources and Environment. Automatic continuous dust and emissions monitoring equipment must be tested, verified, and calibrated according to legal standards on measurements and quality. The connection and transmission of automatic continuous emissions monitoring data must comply with the provisions of Decree No. 08/2022/ND-CP and Circular No. 10/2021/TT-BTNMT. The automatic continuous emissions monitoring system must undergo annual quality control in accordance with Circular No. 10/2021/TT-BTNMT. In case the automatic and continuous emission monitoring system has met the requirements as prescribed, the Company is exempted from performing periodic emission monitoring for parameters that have been automatically and continuously monitored.

3.4. Have an operation logbook, fully recording information of the commissioning process, official operation of the exhaust gas treatment facility. During the commissioning process, the Company is responsible for strictly and fully implementing the contents specified in Clause 7 and Clause 8, Article 31 of Decree No. 08/2022/ND-CP. In case of any change in the commissioning plan according to this Environmental License, it must perform the responsibilities as prescribed in Clause 5, Article 31 of Decree No. 08/2022/ND-CP amended and supplemented in Clause 13, Article 1 of Decree No. 05/2025/ND-CP dated January 6, 2025 of the Government.

3.5. Synthesize and evaluate emission monitoring data, classify waste and prepare a report on the results of the commissioning of emission treatment to send to the Ministry of Natural Resources and Environment and the Department of Natural Resources and Environment of Ha Tinh province 20 days before the end of the commissioning of the emission treatment facility.

3.6. Vung Ang II Thermal Power LLC is fully responsible for discharging dust and emissions into the environment that do not meet the requirements of this License..

Appendix 3

ENSURING LIMIT VALUES FOR NOISE, VIBRATION, AND ENVIRONMENTAL PROTECTION REQUIREMENTS

((Attached to Environmental License No. ... /GPMT-BTNMT dated ....., 2025 by the Ministry of Natural Resources and Environment)

A. NOISE AND VIBRATION PERMIT CONTENT:

1. Noise and Vibration Sources:

- Location of noise and vibration generation:

+ BOT Vung Ang II Thermal Power Plant, Hai Phong Hamlet, Ky Loi Commune, Ky Anh Town, Ha Tinh Province.

+ O&M accommodation area located in Lien Minh Residential Group, Ky Long Ward, Ky Anh Town, Ha Tinh Province.

No.	Source	Coordinates *(VN 2000 coordinate system, 105°30' longitude, 3° Plantion zone)*	
		X	Y
1	Source No.01: Turbine area of unit 1	2001671	593840
2	Source No.02: Turbine area of unit 2	2001636	593945
3	Source No.03: Boiler area of unit 1	2001761	593858
4	Source No.04: Boiler area of unit 2	2001726	593963
5	Source No.05: Electrostatic precipitator area of unit 1	2001818	593877
6	Source No.06: Electrostatic precipitator area of unit 2	2001782	593982
7	Source No.07: SOx absorption tower area of unit 1	2001840	593885
8	Source No.08: SOx absorption tower area of unit 2	2001804	593990
9	Source No.09: Seawater pumping station area	2002311	593236
10	Source No.10: Coal unloading jetty area	2003803	594213
11	Source No.11: Emergency diesel generator station (main plant area)	1940257	652500
12	Source No.12: Auxiliary boiler area	2001665	594034
13	Source No.13: Sanitary wastewater treatment system area (main plant)	2001837	593760

No.	Source	Coordinates *(VN 2000 coordinate system, 105°30' longitude, 3° Plantion zone)*	
		X	Y
14	Source No.14: Industrial wastewater treatment system area (main plant)	2001809	593765
15	Source No.15: Domestic wastewater treatment system area (O&M Accommodation area)	1993410	593762
16	Source No.16: Emergency diesel generator station (O&M Accommodation area)	1993280	593881

2. Noise and vibration: must comply with environmental protection requirements and adhere to QCVN 26:2010/BTNMT - National Technical Regulation on Noise, and QCVN 27:2010/BTNMT - National Technical Regulation on Vibration, as follows:

2.1. Noise:

No.	Time of Day and Permissible Noise Level (dBA)		Periodic Monitoring Frequency	Note
	From 6 am to 9 pm	From 9 pm to 6 am		
1	70	55	-	General area

2.2. Vibration:

No.	Time of Day and Permissible Vibration Level (dBA)		Periodic Monitoring Frequency	Note
	From 6 am to 9 pm	From 9 pm to 6 am		
1	70	60	-	General area

B. ENVIRONMENTAL PROTECTION REQUIREMENTS FOR NOISE AND VIBRATION:

1. Noise and Vibration Mitigation Measures:

1.1. Noise Reduction Measures:

Equip steam discharge systems with silencers and install enclosures for equipment generating high noise levels, as follows:

- Boiler safety valve discharge pipes: Silencers are installed at the end of the discharge pipes of the safety valves (on top of the boiler) to reduce noise during safety valve discharges.

- Other noisy rotating equipment such as the feed pump, generator turbine, aerator fan and SWFGD system circulation pump are all covered with soundproof panels or placed in the reinforced concrete structure building area.

- Regular maintenance (lubrication, early repair of abnormalities) ensures stable operation of rotating equipment and limits noise generation.

- Personal protective equipment (PPE), such as earplugs, is provided to workers in high-noise areas.

1.2. Vibration Reduction Measures:

To mitigate vibration from large rotating equipment, foundations are designed with wide and deep bases, and vibration dampers are installed.

2. Environmental Protection Requirements:

2.1. Noise and vibration sources must be mitigated to ensure they remain within the permissible limits specified in Section 2, Part A of this Appendix.

2.2. Regular maintenance and lubrication of equipment must be performed to minimize noise and vibration generation.

Appendix 4

WASTE MANAGEMENT REQUIREMENTS, ENVIRONMENTAL INCIDENT PREVENTION AND RESPONSE

(Attached to Environmental License No. 137/GPMT-BTNMT dated 26, 2025 by the Ministry of Natural Resources and Environment)

A. Waste Management:

1. Types and volume of generated waste:

1.1. Types and volumes of regularly generated hazardous waste (HW) and industrial waste requiring control:

No.	Waste Type	Waste Code	Annual Generation (kg/year)
I.	**Main Plant Area**		**746,660**
1	Asbestos-containing insulating material waste	11 06 01	1,100
2	Sludge from industrial wastewater treatment system	12 06 05	402,360
3	Hazardous sludge and residues from water treatment process	12 09 03	199,740
4	Infectious waste (including sharp items)	13 01 01	50
5	Used oil filters	15 01 02	50
6	Used brake parts containing asbestos	15 01 06	20
7	Fluorescent lamps and other waste containing hazardous glass	16 01 06	100
8	Waste batteries and accumulators	16 01 12	100
9	Waste electrical and electronic equipment (WEEE)	16 01 13	100
10	Used hydraulic fluid	17 01 06	100

11	Used motor oils, gear oils, and other lubricants	17 02 04	50,000
12	Used thermal and insulating oils (e.g., transformer oils)	17 03 05	50,000
13	Used fuel oils and diesel	17 06 01	30,000
14	Used waxes and greases	17 07 04	200
15	Rigid plastic packaging (classified as hazardous waste upon disposal)	18 01 03	500
16	Other rigid packaging materials (e.g., composites)	18 01 04	4,000
17	Absorbents, filter materials (including used oil filters), rags, and protective clothing contaminated with hazardous substances	18 02 01	8,000
18	Soft packaging waste	18 01 01	40
19	Hazardous chemicals and chemical mixtures from laboratories	19 05 02	200
II.	**O&M Accommodation area**		**252**
1	Fluorescent lamps and other mercury-containing waste	16 01 06	24
2	Waste lead-acid batteries	19 06 01	60
3	Absorbents, filter materials (including used oil filters), rags, and protective clothing contaminated with hazardous substances	18 02 01	24

4	Paints, inks (printing ink), adhesives, and plastics containing hazardous components	16 01 09	24
5	Other used oils	17 07 03	96
6	Infectious waste, including sharp items (hazardous medical waste)	13 01 01	24
Total Waste Generation		**746,912**	

1.2. Volume and types of common industrial solid waste generated:

No.	**Waste Type**	**Annual Generation (kg/year)**
I.	**Main Plant Area**	**472,504,000**
1	Fly ash from coal combustion process (excluding fly ash and boiler dust with oil)	401,440,000
2	Bottom ash, waste pyrite	70,950,000
3	Sludge from domestic wastewater treatment system	9,000
4	Sludge from stormwater collection and drainage system	5,000
5	Other industrial solid waste (plastics, rubber, cardboard, glass, wood, metals, packaging, damaged bag filters, etc.)	100,000
II.	**O&M Accommodation area**	**12,000**
1	Sludge from domestic wastewater treatment system	12,000
Total (I+II)		**472,516,000**

1.3. Volume of generated household solid waste: 334.8 tons/year.

- Main plant area: 208.8 tons/year.

- Operators and Maintenance accommodation area: 126.0 tons/year.

2. Environmental protection requirements for storage of household solid waste, common industrial solid waste, and hazardous waste:

2.1. Equipment, system, and facilities for hazardous waste storage:

2.1.1. Storage equipment: Specialized containers with lids, capacity 100-150 liters.

2.1.2. Storage Warehouse:

- Number of warehouses: 05.

- Warehouse area:

+ Main plant area: 01 warehouse with an area of 200 m^2.

+ O&M Accommodation area: 04 warehouses, each with an area of 4.7 m^2.

- Design and structure: Brick walls, reinforced concrete roof, sealed concrete flooring with an elevated surface to prevent rainwater from flowing in; equipped with fire prevention and control systems, spill collection trenches and pits; warning signs and preventive measures as per regulations.

- The hazardous waste storage warehouse must be equipped with the following tools, devices, and materials: Fire prevention and control equipment per legal regulations; absorbent materials (such as dry sand, rags) and shovels for use in the event of liquid hazardous waste spills or leaks; appropriate labels, codes, warning signs, and prevention measures for the type of hazardous waste stored.

2.2. Equipment, system, and facilities for common industrial solid waste storage:

2.2.1. Fly ash and bottom ash collection and storage system:

- Storage Equipment:

+ 03 Fly ash silos, each with a capacity of 1,301 m^3 (shared by both units).

+ 01 Bottom ash ilo for Unit 1 with a capacity of 384 m^3.

+ 01 Bottom ash ilo for Unit 2 with a capacity of 384 m^3.

+ 01 Waste pyrite silo for Unit 1 with a capacity of 30 m^3.

+ 01 Waste pyrite silo for Unit 2 with a capacity of 30 m^3.

- Ash disposal site No.1:

+ Number of storage yard: 01.

+ Storage yard area: 15 hectares. The maximum height is +23.0 m.

+ Design and structure of the storage yard: The ash disposal site No.1 includes compacted earth embankment with a geotextile and HDPE liner for waterproofing; the bottom is lined with geotextile and HDPE liner to prevent leachate from contaminating the environment.

2.2.2. Other common industrial solid waste collection and storage system:

- Storage equipment: Specialized containers.

- Storage Area: Not designated.

2.3. Equipment, system, and facilities for household solid waste storage:

2.3.1. Storage Equipment: Specialized containers with lids, capacity ranging from 50 liters to 240 liters..

2.3.2. Storage Warehouse:

- Main plant area: Not designated.

- O&M accommodation area:

+ Number of storage yard: 04 warehouses

+ Area: each with an area of 6.3 m^2.

+ Warehouse design and structure: Surrounded by brick walls, reinforced concrete roof, tightly sealed concrete floor, higher than surrounding areas to prevent rainwater from flowing in from outside.

2.4. General requirements for equipment, system, and facilities for storing hazardous waste, common industrial solid waste, and household solid waste:

The storage equipment, systems, and facilities for hazardous waste, common industrial solid waste, and household solid waste must fully comply with the regulations outlined in Circular No. 02/2022/TT-BTNMT.

B. ENVIRONMENTAL INCIDENT PREVENTION AND RESPONSE REQUIREMENTS

1. Implement plans to prevent and respond to chemical leaks, oil spills, incidents with thermal power plant exhaust gas treatment systems (SCR, ESP, absorption towers) and other incidents according to the provisions of law..

2. Fulfill the responsibilities for preventing environmental incidents, preparing for environmental incident response, organizing the response, and restoring the environment after an incident as stipulated in Articles 122, 124, 125, and 126 of the Environmental Protection Law.

3. It is the responsibility to issue and implement an environmental incident prevention and response plan in accordance with the Environmental Protection Law, Decree No. 08/2022/ND-CP, and consistent with the prevention and response measures outlined in this Environmental License. In cases where the environmental incident response plan is integrated and approved alongside other incident response plans, as stipulated in point b, clause 6, Article 124 of the Environmental Protection Law, it must fully comply with the provisions of clause 2, Article 108 of Decree No. 08/2022/ND-CP.

4. Comply with the design and operating procedures of ash disposal site according to the plan approved by the competent authority to ensure environmental safety. Regularly check the drainage system of the ash disposal site, especially during the rainy and stormy season; promptly remedy any unusual phenomena that affect the safety of the ash disposal site.

5. Invest in procuring equipment, materials, and preparing personnel for waste incident prevention and response at the Plant site, conduct regular inspections, and apply management and technical measures to eliminate or minimize the risk of incidents.

6. Periodically conduct training sessions, drills, and exercises on waste incident response to ensure readiness when incidents occur.

Appendix 5

OTHER ENVIRONMENTAL PROTECTION REQUIREMENTS

(Attached to Environmental License No. 137 /GPMT-BTNMT dated Feb 26, 2025 by the Ministry of Natural Resources and Environment)

A. REQUIREMENTS FOR ENVIRONMENTAL REHABILITATION AND RESTORATION:

Not subject to environmental rehabilitation and restoration.

B. REQUIREMENTS FOR BIODIVERSITY OFFSETTING

Not subject to biodiversity offsetting.

C. ITEMS TO BE CONTINUED BY THE PLANT OWNER AS PER THE ENVIRONMENTAL IMPACT ASSESSMENT APPROVAL:

1. The production facilities and environmental protection requirements of the Plant shall continue to be implemented in accordance with the approval content of Decision No. 2142/QD-BTNMT dated August 2, 2024, on the approval of the Environmental Impact Assessment (EIA) report for the "Vung Ang II BOT Thermal Power Plant" Project by Vung Ang Thermal Power LLC, conducted in Ky Loi commune, Ky Trinh ward, and Ky Long ward, Ky Anh town, Ha Tinh province, after being issued this Environmental License, which includes the following contents:

1.1. Environmental protection infrastructure

- Ash disposal site No. 2 with an area of 34.4 ha.

- Pipeline system for transporting ash and slag to ash disposal site No. 2 with an area of 5.4 ha.

1.2. Design, construct, operate, and store slag ensuring safety and environmental hygiene requirements according to the operational regulations.

1.3. Environmental protection measures:

- Collect and treat all wastewater, household waste, industrial waste, and hazardous waste generated during construction, ensuring compliance with environmental hygiene requirements and regulations on environmental protection, including Decision No. 2142/QĐ-BTNMT dated August 2, 2024, by the Minister of Natural Resources and Environment; sources of noise and vibration must be minimized within the permissible limits.

- During construction and operation of the entire Plant, technical measures should be fully implemented to minimize negative impacts and address emission sources that could affect nearby factories and surrounding communities.

- Plant trees and grass at planned locations to reduce dust, odors, and noise, and to improve the environmental landscape.

- Implement an environmental management, monitoring, and observation program during the construction phase in accordance with Decision No. 2142/QĐ-BTNMT dated August 2, 2024, by the Minister of Natural Resources and Environment.

2. After completing the installation of the above infrastructure and facilities, the company must report to the Ministry of Natural Resources and Environment to request an environmental permit before conducting commissionings in compliance with legal requirements.

D. OTHER ENVIRONMENTAL PROTECTION REQUIREMENTS:

1. Minimize solid waste generation through the application of solutions to increase production efficiency; continue implementing measures for handling and utilizing ash, slag, and gypsum in accordance with Decision No. 452/QD-TTg dated April 12, 2017, by the Prime Minister approving the Plan to Promote the Treatment and Use of Ash, Slag, and Gypsum from Thermal Power Plants, Chemical and Fertilizer Plants as Raw Materials for Construction Material Production, and Directive No. 08/CT-TTg dated March 26, 2021, by the Prime Minister on promoting the treatment and use of ash, slag, and gypsum from thermal power plants, chemical and fertilizer plants as raw materials for construction material production.

2. Manage the waste generated during operations in accordance with environmental hygiene requirements and comply with environmental protection laws. Segregate and classify household waste, industrial solid waste, and hazardous waste according to the Environmental Protection Law 2020, Decree No. 08/2022/ND-CP, Decree No.05/2025/ND-CP and Circular No. 02/2022/TT-BTNMT. The storage areas for hazardous waste, regular industrial solid waste, and household waste must meet the requirements of Circular No. 02/2022/TT-BTNMT. Regularly transfer household waste, regular industrial solid waste, and hazardous waste to authorized entities with the capacity for collection, transportation, and treatment according to regulations.

3. Ensure the efficient operation of the boiler gas treatment systems, and boiler emissions must meet environmental protection standards before being released into chimneys. LDO fuel used for backup generators and auxiliary boilers must meet quality standards as stipulated by product and goods quality laws.

4. Comply with legal regulations on traffic safety, occupational safety, fire prevention and firefighting, and chemical management. Implement plans and measures for chemical incident prevention and response, as well as other incidents in accordance with the law.

5. Establish and implement an oil spill response plan approved by a competent state management agency as prescribed. Invest in necessary means and equipment and have a plan to closely coordinate with relevant authorities and port enterprises in the area to prevent, respond to and overcome incidents caused by oil spills, fires, explosions and other risks related to oil spills and other environmental incidents in all activities of the facility as prescribed.

6. Take responsibility for researching and applying the best available techniques as per the schedule stipulated in Article 53 of Decree No. 08/2022/ND-CP, supplemented at Clause 22, Article 1 of Decree No. 05/2025/ND-CP dated January 6, 2025 of the Government.

7. Maintain an environmental management system in accordance with the national standard TCVN ISO 14001 as stipulated in point e, clause 1, Article 53 of the Environmental Protection Law.

8. Implement a periodic environmental monitoring program during facility operation phases, specifically:

- Ambient air environment: 09 locations (01 location at the intersection of Tay Yen village, 01 location at the intersection along Quyen river, 01 location in Tay Yen village, 01 location in the area south of the 15-hectare ash disposal site, 05 locations in the residential area of Hai Phong village north of the 15-hectare ash disposal site); monitoring frequency: 03 months/time; monitoring parameters: Total suspended dust (TSP), PM10 dust, NO_2, SO_2, CO; Noise and Vibration comparison standards: QCVN 05:2023/BTNMT - National technical regulation on air quality, QCVN 26:2010/BTNMT - National technical regulation on noise, QCVN 27:2010/BTNMT - National technical regulation on vibration.

- Surface water environment: 02 locations on the creek next to the 15-hectare ash disposal site; monitoring frequency: 03 months/time; monitoring parameters: pH, BOD5, COD, DO, TSS, Total Nitrogen (Total N), Total Phosphor (Total P), Total Coliform; comparison standard: QCVN 08:2023/BTNMT - National technical regulation on surface water quality.

- Groundwater environment: 01 location at a well near the 15-hectare ash disposal site; monitoring frequency: 06 months/time; monitoring parameters: pH, Total Coliform, Nitrate (NO3- calculated as Nitrogen), Ammonium (NH_4^+ calculated as Nitrogen), Permanganate Index, Total Dissolved Solids (TDS), Hardness (calculated as CaCO3), Arsenic (As), Chloride (Cl^-), Lead (Pb), Mercury (Hg), Iron (Fe), Copper (Cu); comparison standards: QCVN 09:2023/BTNMT - National technical regulation on groundwater quality.

- River sediment environment: 02 locations on the creek next to the 15-hectare ash disposal site; monitoring frequency: 03 months/time; monitoring parameters: Arsenic (As), Cadmium (Cd), Lead (Pb), Zinc (Zn), Mercury (Hg), Total Chromium (Cr), Copper (Cu), Total Hydrocarbons.

9. Submit periodic or ad hoc environmental protection reports; disclose environmental information and the environmental incident response plan as required by law, including updated information on the volume and type of waste generated.

10. Fulfill the responsibility to purchase environmental liability insurance for compensation for damage caused by environmental incidents in accordance with the law.

11. Complete the internal road system and green spaces according to the design, ensuring compliance with construction regulations before official operation.

12. Fulfill all responsibilities in accordance with environmental protection laws and other relevant regulations. In the event that any legal documents, environmental technical standards, or regulations mentioned in this Environmental Permit are amended, supplemented, or replaced, compliance will be in accordance with the new documents./.