

**THE PRIME MINISTER OF
VIETNAM**

No. 980/QĐ-TTg

**SOCIALIST REPUBLIC OF VIETNAM
Independence – Freedom – Happiness**

Hanoi, August 22, 2023

Decision

issuing specific list of environmental industry technologies, equipment and products

THE PRIME MINISTER

Pursuant to the Law on Government Organization dated June 19, 2015; the Law on amendments to some Articles of Law on Government Organization and Law on Local Government Organization dated November 22, 2019;

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

Pursuant to Decree No. 08/2022/ND-CP dated January 10, 2022 on elaboration of several Articles of the Law on Environmental Protection.

At the request of the Minister of Industry and Trade.

HEREBY DECIDES:

Article 1. The specific list of environmental industry technologies, equipment and products is issued in the Appendix enclosed herewith.

Article 2. The Ministry of Industry and Trade shall take charge of providing guidance, monitoring and supervising the implementation of this Decision; take responsibility for assembling difficulties and obstacles during the implementation process, and promptly reporting to the Prime Minister for consideration of amendments to the List, thereby conforming to socio-economic development and requirements for state management.

Article 3. This Decision comes into force as of its date of signing.

Ministers, heads of ministerial agencies, heads of Governmental agencies, Chairpersons of People's Committees of provinces and central-affiliated cities and relevant organizations and individuals shall be responsible for the implementation of this Decision./.

**PP. PRIME MINISTER
DEPUTY PRIME MINISTER**

Tran Hong Ha

APPENDIX

SPECIFIC LIST OF ENVIRONMENTAL INDUSTRY TECHNOLOGIES, EQUIPMENT AND PRODUCTS

(Enclosed with Decision No. 980/QĐ-TTg dated August 22, 2023 of the Prime Minister)

NO.	List of groups of environmental industry technologies, equipment and products	Specific list of environmental industry technologies, equipment and products
1	Equipment and products used for treatment of flue gas	<ol style="list-style-type: none">1. Dust treatment equipment and products (fabric filters, electrostatic precipitator, wet cyclone, gravity settling chambers, centrifugal dust separators; dust suppression sprinkler vehicles; stationary and mobile dust suppression fog cannon; wet venturi separator, magnetic separator).2. Equipment for treatment of flue gas: NO_x; SO_x; H₂S; Flo, NH₃, Clo, C_xH_y, VOCs and others (gas absorbers, gas adsorbent equipment, oxygen reduction equipment).3. Heavy metal vapor treatment equipment; dioxin/furan; equipment used to absorb acid vapor and other solvents/gases.4. CO combustion equipment (oil cracking stage); flue gas heat recovery equipment.5. Deodorizing equipment; chimney deodorizers, droplet separators.6. Flue gas treatment equipment for internal combustion engines.7. Equipment for treatment of odors and flue gas of wastewater treatment plants.
2	Equipment and products used for wastewater treatment and reuse.	<ol style="list-style-type: none">1. Modular wastewater treatment equipment2. Garbage separators (garbage racks, garbage screens,

garbage rakes, garbage separation tanks, dry waste filters).

3. Equipment for wastewater treatment by physicochemical methods (flocculation, sedimentation, flotation, electrochemistry, adsorption, distillation).

4. Equipment for wastewater treatment by biological methods (anaerobic and aerobic methods).

5. Equipment for wastewater treatment by membrane filtration (microfiltration membrane, ultra filtration (UF), nano filter, reverse osmosis membrane (RO), forward osmosis membrane (FO)).

6. Advanced wastewater treatment equipment (phosphorus treatment, nitrogen treatment, treatment of heavy metal ions in water, decolorization, and removal of trace elements).

7. Equipment for wastewater treatment by advanced oxidation process (Fenton, electrochemical oxidation, ultrasound, peroxon, catazone, photofenton, UV/O₃, UV/H₂O₂, semiconductor photocatalyst).

8. Wastewater disinfection equipment (aeration of ozone, chlorine, UV light, membrane filters).

9. Generator for high-energy rays (gamma rays, electron beams) for the purpose of treatment of chlorinated cyclic organic compounds, microorganisms carrying pathogens

10. Pathogenic microorganisms and antibiotics-containing wastewater treatment equipment for hospitals and medical facilities.

11. Equipment for treatment of defense industrial wastewater containing propellants, explosives and combustible substances.

12. Equipment for treatment of wastewater containing radioactive substances, uranium ores, or rare earths.

13. Sludge pressing equipment (plate frame; conveyor; screw; vacuum, disc filters).

14. Water softeners.

		<p>15. Water drainage pipelines and drains that are precast (precast centrifugal concrete; other materials: UPVC, HDPE, PPR, PEX, FRP, GRP, cast iron, steel).</p> <p>16. Pumping stations and equipment involved in transport of wastewater and rainwater; rainwater/wastewater tanks; vacuum stations, gas supply equipment for transportation and treatment of wastewater.</p> <p>17. Types of wastewater treatment tanks/filters (sand settling tanks, grease removal tanks; preliminary aeration tanks; quality and flow regulation tanks; septic tanks; tanks of all kinds; aerobic filters; anaerobic filters, aero tanks; biological trickling filters/ biological roughing filters).</p> <p>18. Biomodules; microbiological buffers.</p> <p>19. Sediment treatment equipment (sludge concentration tanks or equipment, aerobic sludge stabilization tanks, anaerobic sludge stabilization tanks, sediment stabilization tanks using other methods).</p> <p>20. System for recovering waste oil from road and waterway vehicles.</p> <p>21. Electroplating and metal finishing.</p> <p>22. Livestock effluent treatment systems.</p>
3	<p>Equipment for classification, collection, transport, recycling, treatment of domestic solid waste, ordinary industrial solid waste, hazardous waste and other wastes and scrap recycling equipment.</p>	<p>1. Domestic waste bags.</p> <p>2. Hazardous medical waste bags.</p> <p>3. Garbage collection and classification bins.</p> <p>4. Garbage collection and transport vehicles.</p> <p>5. Equipment for crushing garbage, shredding garbage, washing garbage and scrap.</p> <p>6. Equipment for crushing, screening and processing construction waste.</p> <p>7. Equipment for treatment of sludge from wastewater treatment plants/stations;</p>

8. Equipment for treatment of foam, scum and supernatants;
9. Equipment and products used to recover and process fuel cells of vehicles.
10. Paper recycling equipment.
11. Plastic recycling equipment.
12. Metal recycling equipment (iron, steel, copper, lead, aluminum, etc.)
13. Steel furnace dust recycling equipment.
14. Equipment for production of unburnt building materials from waste.
15. Equipment for collection and transport of fly ash and bottom slag.
16. Equipment for treatment of gyps (PG gypsum).
17. Furnaces and equipment for recycling lead, zinc, plastic.
18. Steel rolling and heating furnaces and metallurgical furnaces applying waste co-processing method
19. Cement kilns applying waste co-processing method (according to cement).
20. Hazardous waste incinerators.
21. Medical waste incinerators.
22. Domestic solid waste incinerators.
23. Ordinary industrial solid waste incinerators.
24. Line for production and processing compost from waste.
25. Refuse derived fuel (RDF) production line
26. Waste production and processing line by gasification into syngas.

		<p>27. Rubber recycling equipment.</p> <p>28. Solid waste treatment line by incineration technology that recovers energy for power generation.</p> <p>29. Biomass solid waste chemical fuel line for power generation (super-speed micro-fermentation and drying technology for ERS).</p> <p>30. Plasma gasification technology line for treatment of solid waste.</p> <p>31. Waste pressing technology, dry-composting technology for collecting Biogas for the purpose of power generation.</p> <p>32. Food waste recycling equipment.</p>
4	Equipment used to dismantle road and waterway vehicles whose useful life expires	<p>1. Lead battery recycling machine.</p> <p>2. Scissors used to cut scrap metal.</p> <p>3. Hydraulic metal scrap balers.</p> <p>4. Plastic separation equipment (plastic separation centrifuge; solid waste screen with plastic chain).</p> <p>5. Metal recycling equipment (automatic iron cutting machine; scrap balers, scrap shredders, scrap pre-crushers; metal separators).</p> <p>6. System for recovering waste oil from road and waterway vehicles.</p> <p>7. System of asphalt concrete recycling equipment applying hot, humid and cold technology.</p>
5	Equipment and spare parts for waste treatment systems, transfer stations and other environmental protection works.	<p>1. Soil and waste rock settling tanks.</p> <p>2. Works and systems for collecting and filtering rainwater runoff.</p> <p>3. Conveyor belts used to classify waste rock and soil.</p>
6	Environmental measuring and monitoring equipment	<p>1. Microclimate and climate monitoring equipment.</p> <p>2. Gas environment monitoring equipment (flue gas; ambient air).</p>

		<p>3. Water environment monitoring equipment (wastewater, surface water, underground water, sea water, aquaculture water).</p> <p>4. Soil environment monitoring equipment.</p> <p>5. Noise measuring equipment.</p> <p>6. Vibration measuring equipment.</p> <p>7. Light measuring equipment.</p> <p>8. Radioactivity measuring equipment.</p> <p>9. Ultrasonic wave measuring equipment.</p> <p>10. Equipment for taking samples, preserving samples, analyzing samples (sediment, groundwater, surface water, wastewater, soil, air, and flue gas).</p> <p>11. Automatic and continuous environmental monitoring system (air, water, soil) (including measuring devices, data collectors and auxiliary devices).</p> <p>12. Environmental surveillance cameras.</p> <p>13. Equipment and products for monitoring of flue gas, wastewater and treatment of waste (flue gas, wastewater, and solid waste) installed on vehicles.</p> <p>14. Ambient air quality monitoring stations (AQMS); automatic wastewater and surface water quality monitoring stations.</p>
7	Equipment and products used to produce energy from waste.	<p>1. Equipment for circulating and recovering residual heat of fuel burners (boilers, gas turbines).</p> <p>2. Heat recovery incinerators, electricity generation incinerators.</p> <p>3. Equipment for recovering biogas (from sludge of septic tanks, livestock waste, agricultural by-products).</p>
8	Chemical substances, biological products, materials and substitutes serving waste treatment and	<p>1. Chemical substances, biological products, water treatment materials. (Chlorine, potassium alum $KAl(SO_4)_2$, PAC sedimentation aids, water treatment buffer materials and</p>

	<p>environmental protection.</p>	<p>products).</p> <ol style="list-style-type: none"> 2. Chemical substances, biological products, materials for treatment of flue gas (NH_4NO_3, NH_3, Pt, CaCO_3, CaO, and $\text{Ca}(\text{OH})_2$). 3. Chemical substances, biological products, materials for treatment of solid waste. 4. Domestic waste treatment products. 5. Adsorbent materials (activated carbon). 6. Polytetrafluoroethylen (PTFE) and Polyvinylidene fluoride (PVDF). 7. Additives and chemicals for coagulation and flocculation in wastewater treatment. 8. Standard gases serving environmental monitoring systems. 9. Catalyst (V_2O_5). 10. Filter media (Filox, Manganese Greensand). 11. Water softener resin. 12. Ion exchange resin.
<p>9</p>	<p>Equipment and products used for biodiversity conservation.</p>	<ol style="list-style-type: none"> 1. Infrared trail cameras 2. Satellite locators (GPS/GNSS) 3. Thematic map of species, habitat/environment, ecosystem diversity. 4. Image processing equipment. 5. Remote sensing equipment; satellite images 6. Biodiversity stations. 7. Nurseries. 8. Wildlife Care and Rescue Centers

		<p>9. Conservation equipment and supplies for museums, libraries, galleries and archives used to preserve biodiversity products.</p>
10	Equipment and products used for environmental remediation.	<ol style="list-style-type: none"> 1. Oil-only absorbent booms. 2. Dikes. 3. Spill containment floor. 4. Spill containment floor for heavy machinery and equipment. 5. Anti-spill pallets, modular spill containment unit. 6. Oil absorbent pads; oil absorbent pillows, chemical absorbent pads 7. Drums containing hazardous waste. 8. Oil spill recovery vessel 9. Limestone (CaCO_3), Lime (CaO), Na_2CO_3, NaOH. 10. Protective equipment, including gloves, eyeglasses, gas masks, brooms - buckets, waste bags. 11. Equipment and products used to absorb, decompose and filter oil/chemicals (sand, oil-absorbent sawdust). 12. Equipment used to recover oil in water and air. 13. Flood shelters.
11	Other equipment and products that meet environmental protection requirements.	<ol style="list-style-type: none"> 1. Ion gas generators. 2. Household vacuum cleaners. 3. Industrial vacuum cleaners. 4. Solar water heater; environmentally friendly vehicles (electric vehicles, gas-powered vehicles). 5. Water purifiers, air purifiers, germ filters, sterilization equipment. 6. Energy-saving equipment (compact lamps, inverter air

	<p>conditioners, energy-saving furnaces).</p> <p>7. Equipment using wind energy, solar energy, and other renewable energy resources.</p> <p>8. Solar powered lights.</p> <p>9. High-efficiency burners.</p> <p>10. Microwave dryers.</p>
12	Technology for manufacturing and producing equipment and products specified in this Appendix.

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