11.3 Air Pollution Control Law

11.3.1 Overview

The Air Pollution Control Law was established in 1968, based on the Smoke and Soot Regulation Law, which was passed by the 40th session on the Diet in May 1962, and it has been amended several times since its enactment.

The Air Pollution Control Law was enacted to promote the public health and preserve the living environment with respect to air pollution through regulating the emission of smoke and soot (sulfur oxides, soot and dust, and other toxic substances) arising from industrial plants or business establishments as a result of industrial activities, and establishing the maximum permissible limits of motor vehicle exhausts.

Subsequently, against the background of the progress of air pollution brought about by the increased consumption of petroleum-based fuels, photochemical smog, air contamination caused by toxic substances such as hydrogen fluoride, cadmium and lead, and the problem of fumigation by automobile exhaust gas, efforts were made to tighten control. These efforts included the introduction of the system of absolute liability of enterprises and regulation of total emission on sulfur oxides and nitrogen oxides, and a series of emission standards revises and addition of controlled substances.

The Law was further revised in 1996 to include provisions that require implementation of measures necessary for the prevention of undesirable effects on people's health, with respect to benzene and other harmful air pollutants that are feared to adversely affect human health by long-term exposure to low concentrations. The structure of the Air Pollution Control Law is given in Table 11.3.1.
To promote public health and preserve the living environment with respect to air pollution through:
1) Regulating the emission of soot, smoke and dust arising from industrial plants/businesses as a result of industrial activity or the demolition of buildings.
2) Promoting implementation of measures to control harmful air pollutants.
3) Establishing the maximum limits on vehicle exhaust gas
4) Protecting victims by making provisions for the liability of enterprises to compensate for damages where such enterprises cause air pollution which damages human health.

**Purpose**

*Smoke and Soot Control*  
See Chapter 4 for emergency measures.

*Dust*  
See Chapter 2-2.
<Chapter II-3, supplementary provisions>

- Harmful air pollutants (2.9)
  - Guidelines for the implementation of measures (18-20)
    (Improvement of scientific knowledge, prevention)
  - Responsibilities of enterprises (18-21)
    (Grasping emission status, discharging period)
  - Responsibilities of the state (18-22)
    (Examination of atmospheric conditions, improvement of scientific knowledge, assessment and public announcement of toxicity, collection and dissemination of information on emission control technologies)
  - Responsibilities of local governments (18-23)
    (Examination of local atmospheric conditions, provision of information, dissemination of knowledge)
  - Efforts by the people (18-24)

- Designated substances (supplementary provision 9)
  - Designated substance emitting facility (supplementary provision 9)
  - Designated substance control standards (supplementary provision 9)
  - Recommendation (supplementary provision 10)
  - Report hearing (supplementary provision 11)

<Chapter III>

- Motor vehicle exhaust gas regulations (2.10)
  - Motor vehicle exhaust gas (2.10)
    (Motor vehicles and motorcycles designated by order of the Prime Minister's Office)
  - Maximum permissible limits (19)
    - Consideration by the Ministry of Transport (19.3)
  - Maximum permissible limits concerning fuel (19.2)
    - Consideration by the METI Minister and the Ministry of Transport (19.2.2)
  - Measurement of pollutants concentration in motor vehicle exhausts (20)
    - Request based on measurement (21.1)
    - Opinion based on measurement (21.2)
  - Emergency measures (23)
    - Request for cooperation upon emergency (23.1)
    - Request for action to the prefectural public safety commission upon emergency (23.4)
  - Efforts by the people (21.2)

<Chapter IV>

- Air Pollution Monitoring (22)
  - Monitoring and surveillance by prefectural governors (24)

<Others>

- Absolute liability for compensation damages (25 to 25-6)
- Report and inspection (26)
- Demand for data submission (28)
- National assistance (29)
- Research promotion (30)
- Intern measures (30.2)
- Administrative duty delegation (31)
- Law-Loc. Ordinance relationship (32)

Notes:
1. The Law does not apply to mines (2.2) and air pollution caused by radioactive materials.
2. Items marked by [ ] are not applicable to electric and gas installations, which are subject to corresponding provisions in the Electricity Utility Industry Law and the Gas Utility Industry Law.
### 11.3.2 Smoke and Soot

(1) Smoke and Soot and Smoke and Soot Emitting Facilities

In the Air Pollution Control Law, “smoke and soot” means (i) sulfur oxides, (ii) soot and dust, and (iii) toxic substances designated by Cabinet Order (cadmium and its compounds; chlorine and hydrogen chloride; fluorine and its compounds; lead and its compounds; and nitrogen oxides), that are generated as a result of combustion of fuel and other materials. “Smoke and soot emitting facilities” mean any facility that meets the following three conditions: (i) that it is installed in an industrial plant or a business establishment (excluding mines); (ii) that it generates and emits smoke and soot; and (iii) that the smoke and soot so emitted cause air pollution. More specifically, boilers, heating furnaces, roasting furnaces, blast furnaces, drying furnaces, waste incinerator, gas turbines, diesel engines, gasoline engines and so on that are over a certain size are designated as such facilities by Cabinet Order (Table 11.3.1).

| Table 11.3.1 (1) Smoke and Soot Emitting Facilities Targeted by the Air Pollution Control Law |
|---|---|---|
| | Facility | Size |
| 1 | Boiler | Heating area of 10 square meters and over  
Combustion ability of 50 liters/hour and over |
| 2 | Gas generating furnace, heating furnace | Raw material treatment ability of 20 tons/day  
Combustion ability of 50 liters/hour and over |
| 3 | Roasting furnace, sintering furnace (machine) | Raw material treatment ability of 1 ton/day and Over |
| 4 | (Metal refining use)  
Blast furnace, converter, open-hearth furnace |  |
| 5 | (Metal refining and casting use)  
Smelting furnace | Fire grid area of 1 square meter and over  
Tuyere area of 0.5 square meters and over  
Combustion ability of 50 liters/hour and over  
Transformer nominal capacity of 200 kva and Over |
| 6 | (Metal forging, rolling and heat treatment use)  
Heating furnace |  |
| 7 | (Petroleum product, petrochemical product, and coal tar product manufacturing use)  
Heating furnace |  |
| 8 | (Petroleum refining use)  
Fluid contact disintegration device- catalytic converter | Ability to heat the carbon adhering to the catalyst of 200 kg/hour and over  
Combustion ability of 6 liters/hour and over |
| 8-2 | Sulfur collecting facility attached to the oil gas cleansing device |  |
| 9 | (Ceramics manufacturing use)  
Klin, smelting furnace | Fire grid area of 1 square meter and over  
Combustion ability of 50 liters/hour and over  
Transformer nominal capacity of 200 kva and over |
| 10 | (Inorganic chemical industry product and foodstuff industry use)  
Reaction furnace (including carbon black manufacturing fuel burning device), direct heating furnace | Fire grid area of 2 square meters and over  
Incineration ability of 200 kg/hour and over |
| 11 | Drying furnace |  |
| 12 | (Iron, steel, alloyed iron, carbide manufacturing use)  
Electric furnace | Transformer nominal capacity of 1.000 kva and over |
<p>| 13 | Waste incinerator |  |</p>
<table>
<thead>
<tr>
<th>No.</th>
<th>Facility</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>(Copper, lead, zinc refining use)</td>
<td>· Raw material treatment ability of 0.5 tons/hour and over</td>
</tr>
<tr>
<td></td>
<td>Roasting furnace, sintering furnace (including pellet sintering furnace), blast furnace, converter, drying furnace</td>
<td>· Fire grid area of 0.5 square meters and over</td>
</tr>
<tr>
<td></td>
<td></td>
<td>· Tuyere area of 0.2 square meters and over</td>
</tr>
<tr>
<td></td>
<td></td>
<td>· Combustion ability of 20 liters/hour and over</td>
</tr>
<tr>
<td>15</td>
<td>(Cadmium-based pigments and cadmium carbonate manufacturing use)</td>
<td>· Capacity of 0.1 cubic meters and over</td>
</tr>
<tr>
<td></td>
<td>Drying facilities</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>(Chlorinated ethylene manufacturing use)</td>
<td>· Chlorine treatment ability of 50 kg/hour and over</td>
</tr>
<tr>
<td></td>
<td>Chlorine quick cooling facility</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>(Ferric chloride manufacturing use)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Smelting furnace</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>(Activated charcoal [limited to the method which uses zinc chloride] manufacturing use)</td>
<td>· Combustion ability of 3 liters/hour and over</td>
</tr>
<tr>
<td></td>
<td>Reaction furnace</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>(Chemical product manufacturing use)</td>
<td>· Chlorine treatment ability of 50 kg/hour and over</td>
</tr>
<tr>
<td></td>
<td>Chlorine reaction facilities, hydrogen chloride reaction facilities, hydrogen chloride absorbing facilities</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>(Aluminum refining use)</td>
<td>· Electric current capacity of 30 ka and over</td>
</tr>
<tr>
<td></td>
<td>electrolytic furnace</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>(Phosphorus, phosphoric acid, phosphoric acid fertilizer, compound fertilizer [products which use phosphorus as a raw material] manufacturing use)</td>
<td>· Mineral phosphate treatment ability of 80 kg/hour and over</td>
</tr>
<tr>
<td></td>
<td>Reaction furnace, enrichment facilities, Kiln, smelting furnace</td>
<td>· Combustion ability of 50 liters/hour and over</td>
</tr>
<tr>
<td></td>
<td></td>
<td>· Transformer nominal capacity of 200 kva and over</td>
</tr>
<tr>
<td>22</td>
<td>(Hydrofluoric acid manufacturing use)</td>
<td>· Heating area of 10 square meters and over</td>
</tr>
<tr>
<td></td>
<td>Enrichment facilities, absorption facilities, distillation facilities</td>
<td>· Pumping power of 1kw and over</td>
</tr>
<tr>
<td>23</td>
<td>Sodium tripoli phosphate manufacturing use [products which use phosphorus as a raw material])</td>
<td>· Raw material treatment ability of 80 kg/hour and over</td>
</tr>
<tr>
<td></td>
<td>Reaction furnace, drying furnace, Kiln</td>
<td>· Fire grid area of 1 square meter and over</td>
</tr>
<tr>
<td></td>
<td></td>
<td>· Combustion ability of 50 liters/hour and over</td>
</tr>
<tr>
<td>24</td>
<td>(Secondary lead refining [lead alloy manufacturing], lead piping, sheeting and line manufacturing use)</td>
<td>· Combustion ability of 10 liters/hour and over</td>
</tr>
<tr>
<td></td>
<td>Smelting furnace</td>
<td>· Transformer nominal capacity of 40 kva and over</td>
</tr>
<tr>
<td>25</td>
<td>(Lead storage battery manufacturing use)</td>
<td>· Combustion ability of 4 liters/hour and over</td>
</tr>
<tr>
<td></td>
<td>Smelting furnace</td>
<td>· Transformer nominal capacity of 20 kva and over</td>
</tr>
<tr>
<td>26</td>
<td>(Lead-based pigments manufacturing use)</td>
<td>· Capacity of 0.1 cubic meters and over</td>
</tr>
<tr>
<td></td>
<td>Smelting furnace, reverberatory furnace, reaction furnace, drying facilities</td>
<td>· Combustion ability of 4 liters/hour and over</td>
</tr>
<tr>
<td></td>
<td></td>
<td>· Transformer nominal capacity of 20 kva and over</td>
</tr>
<tr>
<td>27</td>
<td>(Nitric acid manufacturing use)</td>
<td>· Nitric acid synthesis, bleaching, enrichment abilities of 100 kg/hour and over</td>
</tr>
<tr>
<td></td>
<td>Absorption facilities, bleaching facilities, enrichment facilities</td>
<td></td>
</tr>
</tbody>
</table>
### Table 11.3.1 (3) Smoke and Soot Emitting Facilities Targeted by the Air Pollution Control Law

<table>
<thead>
<tr>
<th>Facility</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>28 Cokes oven</td>
<td>Raw material treatment ability of 20 tons/hour and over</td>
</tr>
<tr>
<td>29 Gas turbine</td>
<td>Combustion ability of 50 liters/hour and over</td>
</tr>
<tr>
<td>30 Diesel engine</td>
<td></td>
</tr>
<tr>
<td>31 Gas engine</td>
<td>Combustion ability of 35 liters/hour and over</td>
</tr>
<tr>
<td>32 Gasoline engine</td>
<td></td>
</tr>
</tbody>
</table>

Note: • When the facilities are of a number of different sizes, each one can be categorized appropriately as a smoke and soot generating facility.
• "Combustion ability" refers to the combustion capacity per hour when calculating fuel on the basis of heavy oil.

(2) Smoke and Soot Emission Control

Means and methods of control applicable to smoke and soot can be roughly divided into the following four categories:

1) General emission standards

Emission standards established by the State as the national minimum according to the type of smoke and soot emitting facility.

2) Special emission standards

These special emission standards, which are stricter than general one, are applicable to new smoke and soot emitting facilities established in areas where location of smoke and soot emitting facilities, which emit smoke and soot containing sulfur oxides, soot and dust or specific toxic substances, are concentrated (an area with a heavy concentration of facilities).

3) Strict emission standards

These are stringent emission standards which are established by prefectures according to their respective ordinances, to take the place of general emission standards, when it is recognized that existing general or special emission standards are inadequate to protect public health or conserve the living environment in an area under their jurisdiction. Prefectures are authorized to issue strict standards for the emission of toxic substances other than soot and dust and sulfur oxides. Twenty-one prefectures have these standards at present.

4) Regulation of total emission standard

These standards are applicable to specified factories emitting designated smoke and soot in designated areas where it is recognized to be difficult to attain the prescribed environmental quality standards solely with the emission standards referred to from clauses 1 to 3 above.

Unlike emission standards, the regulation of total emission standards are not standards which are applied to each unit of a facility, but they are concerned with the total mass emission of designated smoke and soot generated at all the smoke and soot emitting facilities at specified factories. The governor of the prefecture prescribes this standard
based on relevant total mass emissions reduction plan. Sulfur oxides and nitrogen oxides are designated smoke and soot substances at present, and regulation of total emission standards are prescribed for these substances. Twenty-four areas (accounting for about 33 percent of the total population and about 56 percent of the national fuel consumption) are designated by the regulation of total emission standards for sulfur oxides, and these have been subject to full control since May 1978. Standards for nitrogen oxides have been designated for three areas (Tokyo, Osaka, and Kanagawa Prefectures) and have been in effect since 1982.

In an area where emission standards alone do not provide adequate control over sulfur oxides, the governor of the prefecture may prescribe a fuel standard for the sulfur contents of fuels used in such an area and may recommend or order enterprises and other persons in the area to observe the said fuel standard. Fuel standards may be divided into those applicable for a prescribed period to cope with air pollution caused by things like the heating of buildings in city centers and those applicable to any person who establishes a factory or business, other than a specified factory, within an area designated for sulfur oxides.

Regarding actions at the time of an accident, the person who installed a smoke and soot emitting facility or specified facility (a facility which generates any of the 28 specified substances, including ammonia and benzene, which are designated by Cabinet Order as substances liable to adversely affect human health or the living environment, and is not a smoke and soot emitting facility) is required to take emergency measures promptly to restore normal conditions upon mechanical failure or any other accident that causes discharge of a large quantity of smoke and soot or specified substances, and notify the governor of the prefecture of the occurrence.
Fig. 11.3.2 Regulation of Total Emission Structure Outline
11.3.3 Particulate dust

In the Air Pollution Control Law, the term "particulate dust" means any substance discharged or scattered as a result of crushing, sorting or any other mechanical treatment of materials, or the piling up of materials. Regulations on general particulate dust are prescribed in the form of standards for the structure, use and management of general particulate dust emitting facilities. Asbestos is designated as specified particulate dust liable to adversely affect human health, and the maximum permissible level of its concentration in the ambient air along the boundary line of the premises of a factory or business establishment is prescribed. Other control measures are also in place such as work standards designed to prevent the scattering of asbestos from building demolition sites.

11.3.4 Motor Vehicle Exhausts

With the rapid progress of motorization from the late 1950s, motor vehicles have become an important means of transportation for economic activity as well as in people's daily lives. On the other hand, they have also caused serious air and noise pollution, vibration and other environmental pollution and have raised major social problems. In response to this, regulations on motor vehicle exhausts were introduced from the late 1960s, and these have been strengthened gradually.

To control motor vehicle exhaust gas in Japan, the Director General of the Environment Agency establishes the maximum permissible amounts of substances causing air pollution discharged by motor vehicles based on the results of air pollution monitoring and future prospects for technologies to reduce motor vehicle exhausts. The Minister of Transport in turn establishes necessary measures to control motor vehicle exhausts, in the form of safety standards, under the Road Transport and Motor Vehicle Law, to ensure that the said maximum permissible limits are maintained. Controls on new-model and existing-model vehicles are secured by vehicle inspection. The maximum permissible limits were formerly established for standard-, small-, and mini-sized motor vehicles with respect to carbon monoxide, hydrocarbons, nitrogen oxides, particulates (for diesel-powered vehicles only) and diesel smoke. Motorcycles will be subject to control starting from 1998.

11.3.5 Controls on Harmful Air Pollutants

The amendment of the Air Pollution Control Law in May 1996 called for the implementation of measures necessary for the prevention of undesirable effects on human health with respect to harmful air pollutants that are feared to adversely affect human health by long-term exposure to low concentrations.

Of the harmful air pollutants, benzene, trichloroethylene and tetrachloroethylene have been specified as designated substances whose emission or scattering must be prevented immediately. Facilities that discharge or scatter these substances are designated as designated substance discharging facilities and are subject to substance control standards established for each facility. (Fig.11.3.3)
Primary provisions

Harmful air pollutants: Substances which are liable to adversely affect human health after continuous intake and cause air pollution (excluding smoke and soot other than soot, dust and specified dust).

[Guidelines for the implementation of measures]

- Improvement of scientific knowledge
- Prevention of health damage

(18-20)

[Concrete measures]

Local governments

- Air pollution level investigation (18-23(1))

Dissemination of knowledge (18-23(2) latter paragraph)

Provision of information (18-23(2) former paragraph)

Residents

- Efforts of residents (18-24)

Enterprises

- Responsibilities of enterprises (18-21)

State

Air pollution level investigation, improvement of scientific knowledge, assessment and public announcement of health risk, collection and organization of technical information, and public announcement of results

Supplementary provisions (immediate measures)

- Designated substances → Substances requiring immediate control measures (designated by Cabinet Order)
- Designated substance emitting facility → A facility installed in a factory, etc. that emits or scatters designated substances (designated by Cabinet Order)

Implementation of emission control measures

- Establishment of designated substance emission control standards (Proclaimed by the Director General of the Environment Agency)

Recommendation to or report from one who installed a designated substance emitting facility (prefectural governor)

Provision for further examination

The Government shall examine schemes for the furtherance of measures to control harmful air pollutants and take necessary measures on the basis of the results of such examination with a target date of three years from the enforcement of this Law.

Fig. 11.3.3 Outlines of measures to control harmful air pollutants under the revised Air Pollution Control Law

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