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**NATIONAL STANDARD OF THE  
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**Technical Guidelines for Eco-environmental Damage Appraisal  
and Assessment Basic Methods - Part 1: Virtual Control Cost  
Method of Air Pollution**

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### Foreword

To implement the Civil Code of the People's Republic of China, the Environmental Protection Law of the People's Republic of China, and the Air Pollution Prevention and Control Law of the People's Republic of China

And the "Eco-environmental Damage Compensation System Reform Plan" to protect the atmospheric ecological environment, protect public health, and improve the ecological environment identification and assessment technology

The technical system provides technical basis for ecological environment management and environmental justice, and this standard is formulated.

This standard specifies the applicable circumstances, working procedures and evaluation methods of the virtual treatment cost method for air pollution.

This standard is issued for the first time.

This standard is organized and formulated by the Ministry of Ecology and Environment.

Drafting organization of this standard. Environmental Planning Institute of Ministry of Ecology and Environment.

This standard will be implemented on January 1, 2021. For the identification and assessment of ecological environmental damage that occurred before the implementation of this standard, continue to refer to the "About

Explanation of the Application Situation and Calculation Method of Virtual Governance Cost Method" (Huanbanzhengfahan [2017] No. 1488) was launched, but the damage continued until the

Except for standard implementation.

This standard is interpreted by the Ministry of Ecology and Environment.

Basic method of ecological environment damage assessment technical guide

Part 1.Virtual Control Cost Method of Air Pollution

## 1 Scope of application

This standard specifies the applicable circumstances, working procedures and evaluation methods of the virtual treatment cost method for air pollution.

This standard applies to the fact that the pollutant discharge facts are clear, but the damage facts are not clear or the atmospheric ecological environmental damage cannot be determined at a reasonable cost.

The scope, extent and amount of damage. This standard does not apply to emergency treatment costs or governance costs actually incurred in environmental emergencies.

The identification and assessment of ecological environmental damage that can be determined through investigation and evaluation.

The air pollution damage assessment of explosion, incineration, etc. can refer to this standard.

## 2 Normative references

This standard quotes the following documents or their clauses. For dated reference documents, only the dated version applies to this standard.

For undated references, the latest version (including all amendments) applies to this standard.

GB 30000.18 Rules for Classification and Labeling of Chemicals Part 18.Acute Toxicity

GB 30000.19 Rules for Classification and Labeling of Chemicals Part 19.Skin corrosion irritation

GB 30000.20 Chemical Classification and Labeling Specification Part 20.Serious eye damage or eye irritation

GB 30000.21 Rules for Classification and Labeling of Chemicals Part 21.Respiratory Tract or Skin Sensitization

GB 30000.27 Rules for Classification and Labeling of Chemicals Part 27.Inhalation Hazard

### 3 Terms and definitions

The following terms and definitions apply to this standard.

#### 3.1

##### Unit abatement cost

The costs incurred by industrial production enterprises or professional pollution control enterprises in the treatment of unit volume or quality of waste gas generally include energy consumption,

Equipment maintenance, personnel wages, management fees, pharmaceutical fees and other treatment facility operating costs, fixed asset depreciation costs, and waste generated in the treatment process

Related expenses such as waste disposal do not include the benefits generated by the comprehensive utilization of solid waste.

#### 3.2

##### Pollutant amount

Excessive or total amount of air pollutants and other emissions caused by violation of relevant laws and regulations. For air pollution without emission standards

The amount of pollutants and air pollutants refers to the total amount of pollutants discharged.

#### 3.3

##### Adjustment coefficient

A coefficient determined to adjust the gap between the cost of air pollution control and the value of damage caused by environmental pollution, reflecting the impact of air pollutants

Based on the comprehensive impact of the surrounding population's health and air quality, the value is related to the hazards of atmospheric pollutants, sensitive points in the surrounding environment, and pollutants exceeding standards.

It is related to the environmental function category of the affected area.

### 4 Working procedures

The working procedure of the air pollution virtual treatment cost method is shown in Figure 1. The specific steps include.

a) Analysis of method suitability. Through on-site surveys, data verification, file review, etc., the facts of air pollutant emissions are clarified, and the

The source or industry of air pollutants, emission rules, emission destination, emission location, emission quantity, emission concentration and discharge

Atmospheric environmental functions, etc., analyze the applicability of the virtual governance cost method.

b) Determine the amount of air pollutants. Based on environmental monitoring, production accounts, experiments and other information, on-site investigations, personnel interviews, etc.

Formula to determine the amount of air pollutants;

c) Determine the unit cost of governance. Use actual survey method, cost function method and other methods to quantify industrial enterprises or professional pollution control

Costs incurred by enterprises to reduce emissions or control air pollutants of units;

d) Determine the adjustment factor. According to environmental sensitive points, pollutants exceeding the standard, the environmental air function zoning category of the discharge area, etc.

Element, determine the adjustment coefficient, including hazard coefficient, receptor sensitivity coefficient, over-standard coefficient and environmental function coefficient;

e) Calculate the amount of atmospheric environmental damage. According to the quantity of air pollutants, unit treatment cost, adjustment coefficient, adopt virtual treatment

Calculation formula of cost method to calculate the amount of atmospheric ecological environmental damage.

## 5.1 Basic method

Based on the cost of the current technical methods to treat the same amount of air pollutants, comprehensive consideration of the hazards of air pollutants, surrounding sensitive points,

The amount of damage is calculated based on factors such as excessive pollutants and the category of environmental functions in the affected area, see formula (1) and formula (2).

$D = \sum_{i=1}^n C_i \cdot E_i \cdot \gamma_i \cdot \alpha_i \cdot t$  (2)

In the formula. D- atmospheric pollution ecological environmental damage, yuan;

E- the number of air pollutants, t;

C- unit treatment cost of air pollutants, yuan/t;

gamma-Adjustment factor;

alpha-hazard factor;