

A SYNTHESIS REPORT

# MEASURING CHINA'S ENVIRONMENTAL INDUSTRY

BASED ON ENVIRONMENTAL GOODS AND SERVICES  
SECTOR (EGSS) ACCOUNTING FRAMEWORK





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**Cover photo:** Educating children in Minhang to recycle/Huang Tianhong

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## LIST OF ACRONYMS

- AG** Adapted goods
- CAEP** Chinese Academy for Environmental Planning
- CEPA** Classification of Environmental Protection Activities
- CNKI** China National Knowledge Infrastructure
- CPA** Classification of Products by Activity
- CPC** Central Product Classification
- CRMA** Classification of Resource Management Activities
- CS** Connected Services
- EGSS** Environmental Goods and Services Sector
- EP** Environmental protection
- ET** End-of-pipe technologies
- GDP** Gross Domestic Production
- GG** Connected goods
- ISIC** International Standard Industrial Classification
- IT** Integrated technologies
- MEP** Ministry of environmental protection
- NACE** Nomenclature of Activities in the European Community
- RM** Resource Management
- RMB** Renminbi (Chinese currency)
- SS** Specific services
- UNEP** United Nations Environment Programme





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# 1 INTRODUCTION



Bridge on Yantgze River – Creative Commons/KevC6



Measuring progress towards a green economy is a vital component of green economy strategies. In this regard, the accounting framework for the environmental goods and services sector (EGSS) is considered as a key approach for quantifying the performance of the environmental sectors in the economy. It offers an opportunity to define and measure how the green sectors develop, as well as to compare statistics across countries. The framework has been piloted in several developed countries, and has been integrated into the revised System of Environmental-Economic Accounting (SEEA) 2012.<sup>1</sup>

As the world's largest emerging economy, China has been experiencing continuous growth in the environmental industries over the past decades. According to the Environmental Industry Survey 2011, the total turnover of China's environmental industry in 2011 reached more than RMB 3 trillion, which is 556 per cent higher than that in 2004.<sup>2</sup> However, the statistical basis for environmental industry in the country is still at its early development stage, where measuring the environmental industry is mainly based on sporadic research and the EGSS framework is yet to be introduced in China.

This synthesis report presents the results of a study on measuring China's environmental industry, which aims to identify the feasibility of applying the EGSS accounting framework in China. It is the first research project on EGSS framework in a developing country where the statistical standards are considerably different from the EGSS framework. The statistics on turnover, value added, employment and export provide solid data to support policymakers in their assessment of the development of environmental industry from various perspectives and thus make relevant decisions

that will facilitate the country's transition to a green economy.

The synthesis report is structured into seven sections. The introduction describes the development of China's environmental industry and its related statistics. The succeeding sections introduce the EGSS framework and compares it with China's standard statistics, along with an assessment of the linkages and challenges for the purpose of environmental industry statistics. It also explores the possibility of harmonizing the Environmental Industry Survey, which is by now the only official environmental industry statistics in China, to the EGSS framework and further illustrates it with a case study on **Wu Han** city. Based on the comparisons, the report provides a feasibility assessment of introducing EGSS into China, focusing on data collection from national regular statistics and Environmental Industry Survey. The report concludes by offering suggestions on how to apply EGSS framework in China as well as recommendations on how to further improve EGSS framework.

## 2 CHINA'S ENVIRONMENTAL INDUSTRY STATISTICS



Desulfurization facility by HUANG Tianhong

## 2.1 THE DEVELOPMENT OF CHINA'S ENVIRONMENTAL SECTOR

In China, the environmental goods and services sector generally refers to energy saving and environmental protection industry, or environmental industry for short. The development of China's environmental industry started in the 1970s, along with the country's increasing attention on environmental issues. The first Environmental Law was initiated in 1979, and the National Bureau of Environmental Protection (the predecessor of the Ministry of Environmental Protection) was founded in 1983.<sup>3</sup> Since the 1990s, the country has carried out a series of measures and policies to combat environmental pollution and ecological deterioration, which has accompanied the expansion of the environmental industry.

As illustrated in Figure 1, China's investment on pollution control has almost doubled in the last five years. Another statistics from the Ministry of Environmental Protection (MEP) indicate that the turnover of environmental industry grew more than six-fold from 2004 to 2011.<sup>4</sup> According to the National 12<sup>th</sup> Five-Year Plan for Energy Saving and Environmental Protection Industry, the total output of energy savings and environmental protection industry is expected to reach RMB 4.5 trillion by 2015, accounting for 2 per cent of the gross domestic production (GDP). Moreover, the energy savings and environmental protection industry have been listed as one of the seven National Strategic Emerging Industries by the Chinese government, which are of vital importance in the country's future economic map.

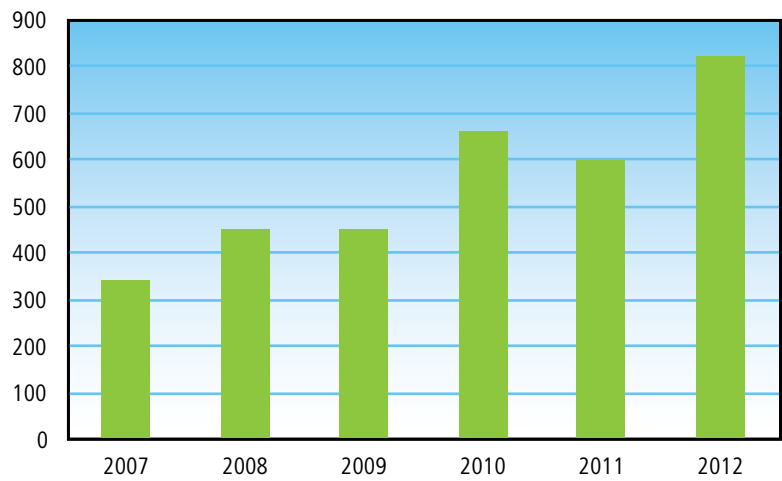
## 2.2 CHINA'S ENVIRONMENTAL INDUSTRY STATISTICS

China's environmental accounting is at a starting point, and there is no regular statistical activity specifically for environmental industry. Some of the environmental goods and services can be directly identified in the general product classification, and are measured by existing statistical practices. Some environmental products cannot be distinguished from non-environmental products and cannot be extracted from existing statistics.

Currently, the only official statistics on environmental industry is the Environmental Industry Survey led by the Ministry of Environmental Protection. Instead of a regular statistical practice, the survey has only been performed four times in the past: in 1993, 2000, 2004 and 2011. The survey aims to analyse the overall development of China's environmental industry. As the definition and classification of environmental industry in China changes over time, the survey sample and protocols vary as well. Figure 2 shows the different scopes of each survey.

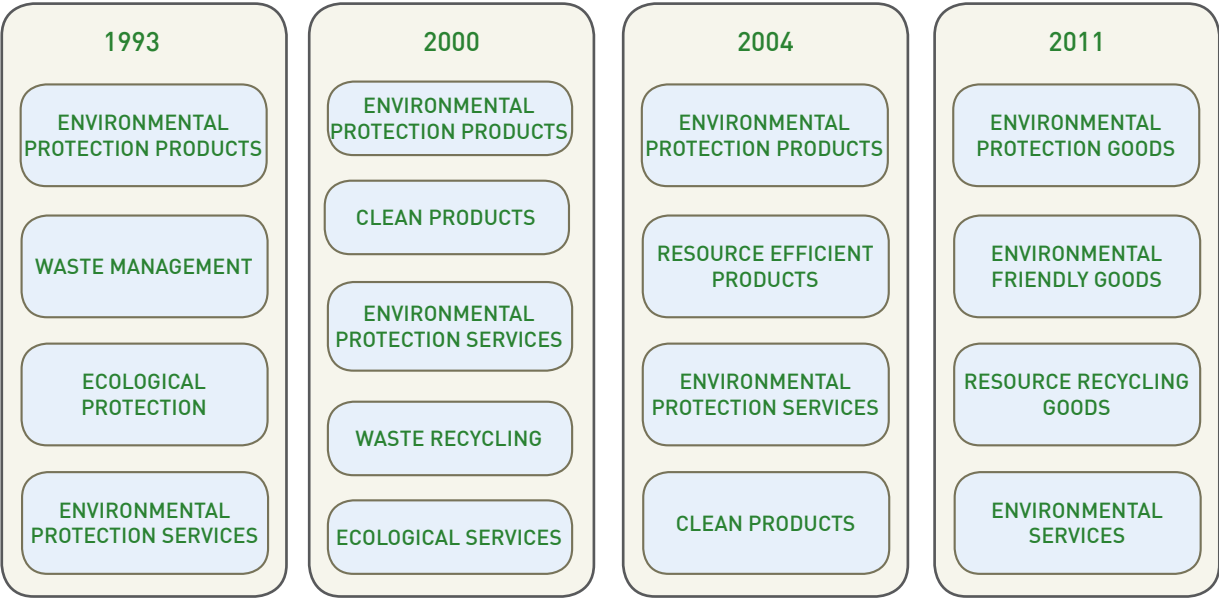
A new trend in China's environmental statistics is the statistics on national strategic emerging industries. The National Bureau of Statistics has released a product list of the seven national strategic emerging industries, which include energy efficient and environmental technologies, next generation information technology, biotechnology, high-end equipment manufacturing, new energy, new materials and new-energy vehicles, and incorporated some indicators of these industries into the Third National Economic Census in 2013. It is possible that more detailed and comprehensive statistical practices of the national strategic emerging industries will be carried out in the future.

FIGURE 1. CHINA'S INVESTMENT ON POLLUTION CONTROL (RMB BILLIONS)



Source: Ministry of Environmental Protection of China, 2008.

FIGURE 2. SCOPE OF CHINA'S ENVIRONMENTAL INDUSTRY SURVEY







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### 3 OVERVIEW OF EGSS ACCOUNTING FRAMEWORK



Workers in Karamay – HUANG Tianhong



The EGSS accounting framework, developed by Eurostat, has emerged as a critical approach to measure environmental sectors. It offers a way to define what types of investments and sectors can be considered “green”, and to calculate this “share of green economic activities” in terms of turnover, value added, employment and exports. Eurostat released a handbook with definitions and data collection methods on EGSS in 2009, and since then some European countries started regular data collection based on the handbook.

According to the EGSS handbook, the environmental goods and services sector can be classified in two main groups:

- Environmental protection (EP), which includes technologies and products of both a preventive or remedial nature for the prevention, reduction, elimination and treatment of air emissions, waste and wastewater, soil and groundwater contamination, noise and vibration as well as radiation; the prevention, reduction and elimination of soil erosion and salinity as well as other kinds of degradation; and the preservation of biodiversity and landscapes as well as the monitoring and control of the quality of environmental media and waste.
- Resource management (RM), which comprises technologies and products to manage and/or conserve the stock of natural resources against depletion phenomena including both preventive and restoration activities as well as the monitoring and control of the levels and uses of natural resource stocks.

All of the products can be classified into nine EP domains and six RM domains based on the classification of environmental protection activities

(CEPA) and the classification of resource management activities (CReMA):

- CEPA 1** Protection of ambient air and climate
- CEPA 2** Wastewater management
- CEPA 3** Waste management
- CEPA 4** Protection and remediation of soil, groundwater and surface water
- CEPA 5** Noise and vibration abatement
- CEPA 6** Protection of biodiversity and landscapes
- CEPA 7** Protection against radiation
- CEPA 8** Environmental research and development (R&D)
- CEPA 9** Other environmental protection activities
- CReMA 10** Management of water
- CReMA 10** Management of water
- CReMA 11** Management of forest resources, of which:
  - CReMA 11.A** Management of forest areas
  - CReMA 11.B** Minimisation of the intake of forest resources
- CReMA 12** Management of wild flora and fauna
- CReMA 13** Management of energy resources, of which:
  - CReMA 13A** Production of energy from renewable resources
  - CReMA 13B** Heat/energy saving and management
  - CReMA 13C** Minimisation of the use of fossil energy as raw materials
- CReMA 14** Management of minerals
- CReMA 15** Research and development (R&D) activities for resource management
- CReMA 16** Other resource management activities

Technologies, goods and services produced by the EGSS can be classified as environmental ‘specific’ services, connected products (goods and services), adapted goods, integrated technologies and end-of-pipe technologies:

- Environmental specific (or “characteristic”) products are goods and services produced in principal, secondary or ancillary activities that are typical for EP and RM.
- Connected (or environmental “sole-purpose”) products are goods or services directly serving an EP or RM purpose and having no other use than EP or RM, but not being output of characteristic EP and RM activities.
- Adapted (or “cleaner and more resource-efficient”) products are more environment-friendly or less polluting products when produced, used or scrapped than equivalent normal products furnishing a similar utility.
- End-of-pipe technologies are mainly technical installations and equipment for control, measurement, treatment of pollution, resource degradation and depletion.
- Integrated (or “cleaner” and “resource efficient”) technologies are technical processes, methods, and knowledge used in less polluting and less resource intensive technology than the equivalent average technology used by national producers.

The EGSS framework aims to measure four economic variables:

1. Turnover is the totals invoiced by the observation unit during the reference period, and corresponds to the market sales of goods or services supplied to third parties. This is a useful concept to measure the size of a sector in a particular country.
2. Value added is the difference between production and intermediate consumption. It represents the

contribution made by these activities towards gross domestic product.

3. Employment is the full-time equivalent employment engaged in the production of the environmental output. The full time equivalent is the total hours worked divided by average annual hours worked in full-time jobs.
4. Export is the sales, barter, gifts or grants, and goods and services from residents to nonresidents, which are important for evaluating the competitiveness of an economic sector in the global economy.

The data can be collected either through existing statistics or surveys and statistical estimations, and be further broken down into environmental domains (using CEPA/CRéMA) and industries (using industrial classification). Countries are encouraged to fill in the standard tables consisting of data on different dimensions for international comparison.

The EGSS framework, as a comprehensive data collection framework for environmental goods and services, is receiving growing international recognition. Many European countries, such as Austria, the Netherlands and Germany, have started regular data collection. Canada has a regular survey specifically developed for environmental goods and services sector. Eurostat is intended to legalize EGSS data collection in the future.<sup>6</sup> In 2012, EGSS framework was included in the revised System of Environmental-Economic Accounting (SEEA) 2012<sup>7</sup> by the United Nations. It is possible that, in the future, the EGSS framework would become a mainstream data collection framework for environmental goods and services.





Children in Sichuan Province – National Geographic/ Daniel Peters



## 4 CHINA'S STANDARD STATISTICS AND EGSS



Rice terrace landscape in China – National Geographic/John Qu



## 4.1 CHINA'S STANDARD STATISTICS RELATED TO EGSS FRAMEWORK

A small portion of environmental products can be identified in the general product classification system. The General Product Classification for Statistical Use, which is the product classification standard for all statistical activities in China, classified all the products in the national economy into 97 divisions. The divisions consist of 814 groups, and the groups consist of 2,753 classes. Annex 1 below shows all the environmental goods and services that can be directly identified from the system. Under each product division.

Other environmental products are mixed with non-environmental goods and services. For instance, organic agricultural products are classified as the same category as non-organic products, and cannot be directly identified in the general product classification system. Some of the items in Annex 1 can be recategorized by the statistical scopes defined in the EGSS framework. For example, **Class 800102 Services for wild animals protection** is an environmental specific service and belongs to **CReMA 12 Management of wild flora and fauna** according to EGSS scopes. However, some items, such as “other ecological protection services”, are not clear enough to be connected with specific EGSS product types and environmental domains. Some products, such as “Other pollution control services” which includes air pollution control services, noise remediation services, radiation remediation services, and lighting pollution control services, may belong to various environmental domains.

Currently there is no regular statistical database for environmental industry in China, and the data for environmental products scatter among various locations. For instance, the data for environmental

monitoring equipment can be found in the China Mechanical Statistical Yearbook, and the data for pollution control equipment can be tracked from the database of the National Bureau of Statistics of China.

## 4.2 ESTIMATING EGSS VARIABLES THROUGH PUBLISHED STATISTICAL YEARBOOKS

This study examined a comprehensive statistical database, with the aim of compiling EGSS data through published statistical yearbooks. Some variables can be directly tracked from published records, while most of the others can only be estimated.

### 4.2.1 DATA SOURCE

The data source for this research is the China Statistical Yearbooks database developed by the China National Knowledge Infrastructure (CNKI). This database is by far the largest statistical database that is based on continuous statistical yearbooks, including a broad range of national and regional statistics. It is believed that this database can be a comprehensive and reliable data source for EGSS accounting.

### 4.2.2 MEASUREMENT APPROACHES

#### 4.2.2.1 GOVERNMENTAL TURNOVER

As is suggested in the Environmental Goods and Services Sector: a Data Collection Handbook by Eurostat (EGSS Handbook), the governmental turnover is equal to the cost of production, including the sum of the personnel costs, intermediate consumption, taxes on production and the consumption of fixed capital. Some of the governmental turnover in this study was estimated through governmental budget statistics.

#### 4.2.2.2 CORPORATE VALUE ADDED

Most of the statistics on value added in China is based on the value added increasing rate, and the data on specific industries is limited. The study used the approach recommended in the EGSS Handbook, that is the value added per employee are roughly the same for every enterprise in a particular industry class. Mathematically the approximation of value added is written as:

$$VA_{EGSS} = E_{EGSS} \left( \frac{VA_{industrywide}}{E_{industrywide}} \right)$$

#### 4.2.2.3 GOVERNMENTAL VALUE ADDED

Due to the lack of data accessibility, the study did not include governmental value added in the China study.

### 4.2.3 MEASUREMENT BY SECTORS

#### 4.2.3.1 SERVICES FOR ECOLOGICAL PROTECTION

This category includes four sub-categories: services for nature reserves (CEPA 6), services for wild animals protection (CReMA 12), services for wild vegetation protection (CReMA 12), and other services for ecological protection (CEPA 9). Most of the services for ecological protection are governmental activities. The study estimated the turnovers by the costs. One of the challenges encountered was the difficulty to separate the statistics on services for wildlife protection from those the services for nature reserves, as both are often combined as one. Thus, the study divided the data on costs and employment evenly between these two parts, assuming that they have the same value. There are no statistics on value added and exports for this category.

#### 4.2.3.2 URBAN ENVIRONMENTAL MANAGEMENT SERVICES

This category includes three sub-categories: urban garbage cleaning services, urban garbage treatment services and urban sewage treatment services. The

environmental domain is CEPA 3, and the product feature is environmental specific service. The statistics on turnover and employment can be found in published yearbooks. There is no statistics on value added and exports.

#### 4.2.3.3 POLLUTION CONTROL SERVICES

This category includes services on water pollution prevention, hazardous waste management, and other pollution control (including air pollution prevention, noise remediation, and others). The statistics on turnover and employment can be found in the Statistical Yearbook of the Economic Census. The value added was estimated by the value added per employment of the social service industry. Since there are no specific data for each sub-category, the allocation was estimated by the investment ratio on each pollution control service sector.

#### 4.2.3.4 METAL RECYCLED PRODUCTS

The study considered these products as adapted goods, and the environmental domain as CReMA 14. The turnover, employment and export can be found in the Statistical Yearbook of the Economic Census. The value added was calculated based on the annual increasing rate of value added since not all the value added data were provided.

#### 4.2.3.5 NON-METAL RECYCLED PRODUCTS

This category includes recycled plastics, recycled leather, recycled paper and other non-metal recycled products. The study considered this kind of products as adapted goods with various environmental domains. The turnover, employment, and export data can be found in the Statistical Yearbook of the Economic Census. The value added was estimated based on the value added per employment of the recycling industry. Since there are no specific data for each sub-category, the study allocated the accountings evenly for each product type.



#### **4.2.3.6 POLLUTION CONTROL EQUIPMENT**

This category includes air pollution prevention equipment, water pollution prevention equipment, solid waste treatment equipment, noise abatement equipment and radiation prevention equipment. The study considered them as end-of-pipe technologies with different environmental domains. The turnover, employment and export data can be extracted from existing statistics. The value added was estimated by the value added per employment. Since there are no specific data for each sub-category, the study allocated the accountings by the production of each product type.

#### **4.2.3.7 ENVIRONMENTAL EVALUATION AND MONITORING SERVICES**

This category includes air pollution monitoring service, water pollution monitoring service, solid waste monitoring service, noise-monitoring service, ecological monitoring service and others. The study considered them as connected services with different environmental domains. The statistics for this category is limited, and the study was unable to make any estimation based on current data accessibility.

#### **4.2.3.8 WATER RESOURCES PROTECTION SERVICES, WATER LOSS AND SOIL EROSION REMEDIATION SERVICES, AND WATER CONSERVANCY MANAGEMENT**

The only relevant statistics for these three categories are those on water management industry. The study considered it as environmental specific service, and the environmental domain is CReMA 10. The turnover, employment and export data can be found in the Statistical Yearbook of the Economic Census. There are no export data.

#### **4.2.3.9 SPECIFIC CHEMICAL PRODUCTS AND MATERIALS FOR POLLUTION REMEDIATION**

These products are connected goods and cover two environmental domains, CEPA 2 and CEPA 1. The turnover, employment and export data can be extracted from existing statistics. The value added was calculated by annual value added increasing rate. Since there are no specific data for each sub-category, the study allocated the accountings evenly for each product type.

#### **4.2.3.10 SPECIFIC EQUIPMENT FOR ENVIRONMENTAL MONITORING**

This category includes three sub-categories: water pollution monitoring equipment, air and smog monitoring equipment and noise monitoring equipment. The study considered them as connected goods with different environmental domains. The turnover, employment and export data can be extracted from existing statistics. The value added was calculated by annual value added increasing rate. Since there are no specific data for each sub-category, the study allocated the accountings evenly for each product type.

#### **4.2.4 DATA ANALYSIS**

As shown in Tables 2 and 3, the published Chinese statistical yearbooks can provide some data on environmental specific and connected services, connected goods, and end-of-pipe technologies that belong to the environmental protection domain. However, the data on resource management activities are very limited. Indeed, only some environmental services of CReMA 12 and some adapted goods of CReMA 11B, CReMA 13 C, and CReMA 14 can be identified in the published statistical yearbooks.

As is indicated in Figure 3, the turnover, employment and export for environmental protection activities estimated from existing statistics are much larger than those for resource management activities. The value added for resource management activities is higher because the value added for recycled metal products is extremely high. A comprehensive table showing detailed data sources is attached as Annex 1.

### 4.3 CHALLENGES AND LIMITATIONS

Even though the published statistical yearbooks can provide valuable information for EGSS accounting, it is hard to compile consistent and complete data. The major challenges and limitations include:

- It is very difficult to gather consistent data with the same statistical scope. Almost all of the variables are from different data sources. Some yearbooks are released directly by the National Bureau of Statistics, and some are from other governmental agencies. In addition, many variables are not measured on a yearly basis, and it is possible that the best available data are not from the same year. For instance, the Statistical Yearbook of the Economic Census consists of

many variables needed in the EGSS framework; however, it is published every five years and cannot provide consecutive data.

- The database may not cover everything, and the original statistical data collection forms have not been explored. Even though the database that the study used for this study is the largest online statistical database in China, it is still possible that some parts may be missed. Moreover, more of the data in the published statistical yearbooks have been aggregated, and this study does not analyze the original data collection forms due to lack of accessibility. It is possible that more precise and comprehensive data might be acquired if regrouping the original forms.

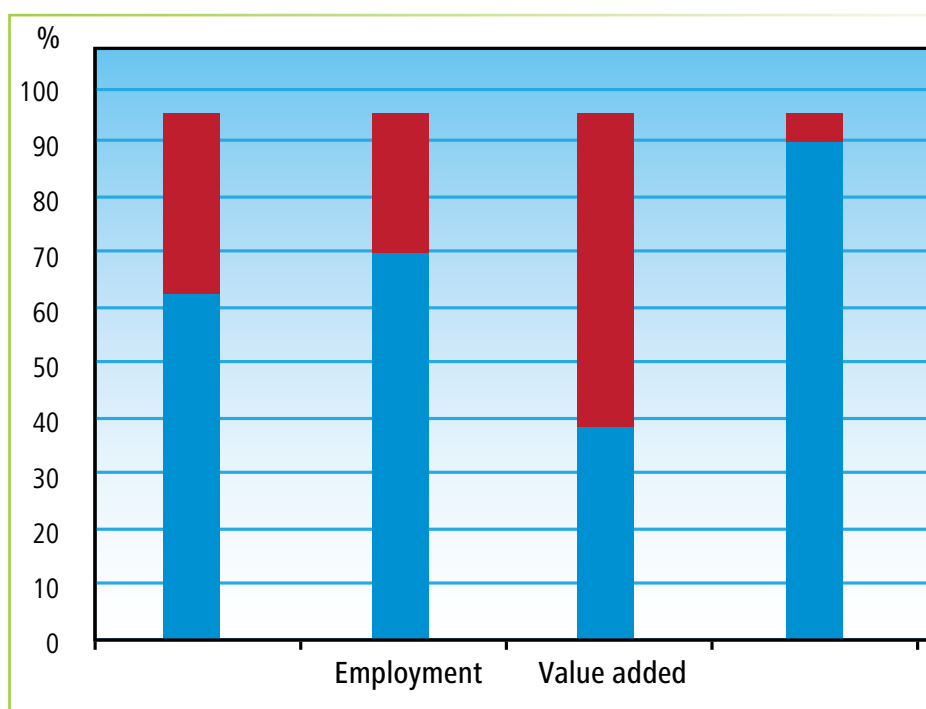
**TABLE 1. EGSS THAT CAN BE IDENTIFIED IN CHINA'S PUBLISHED STATISTICAL YEARBOOKS (ENVIRONMENTAL PROTECTION)**

	CEPA 1	CEPA 2	CEPA 3	CEPA 4	CEPA 5	CEPA 6	CEPA 7	CEPA 8	CEPA 9
Environmental specific & connected services	✓	×	✓	✓	✓	✓	✓	×	✓
Adapted goods	×	×	×	×	×	—	—	—	—
Connected goods	✓	✓	×	✓	✓	×	×	—	×
End-of-pipe technologies	✓	✓	✓	×	✓	—	✓	—	—
Integrated technologies	×	×	×	×	×	—	—	—	—

**TABLE 2. EGSS THAT CAN BE IDENTIFIED IN CHINA'S PUBLISHED STATISTICAL YEARBOOKS (RESOURCE MANAGEMENT)**

	CReMA 10	CReMA 11A	CReMA 11B	CReMA 12	CReMA 13A	CReMA 13B	CReMA 13C	CReMA 14	CReMA 15	CReMA 16
Environmental specific & connected services	×	×	×	✓		×	×	—	—	×
Adapted goods	×	—	✓	—	×	×	✓	✓	—	—
Connected goods	×	×	—	—	×	—	×	—	—	×
End-of-pipe technologies	×	×	—	×	×	×	—	—	—	—
Integrated technologies	×	×	×	—	×	×	×	×	—	—

**FIGURE 3. PROPORTION OF ENVIRONMENTAL PROTECTION AND RESOURCE MANAGEMENT PRODUCTS (%)**



## 5 CHINA'S ENVIRONMENTAL INDUSTRY SURVEY AND EGSS



Desulfurization facility – HUANG Tianhong



## 5.1 INTRODUCTION OF THE 2011 ENVIRONMENTAL INDUSTRY SURVEY

The latest Environmental Industry Survey was launched in October 2012, with the aim to acquire overall information on China's environmental industry and provide data support for environmental industry policies.

**Sample population.** All the state-owned legal entities and the non-state-owned legal entities with an annual turnover of more than RMB 2 million, which produce environmental protection related goods and services and registered in Mainland China before 31 December 2011.

**Variables.** A series of variables that can reflect the overall development of the environmental industry. The detailed survey forms are listed in the appendix.

**Survey year:** 2011

**Product classification.** The goods and services are divided into four groups:

1. **Environmental-protection goods:** equipment, materials, and chemical products for environmental pollution prevention and treatment, ecological protection, and resource recycling, as well as environmental monitoring facilities.
2. **Environmental-friendly goods:** all the products that have earned valid environmental protection labels, energy saving and water saving labels, and organic product labels.
3. **Resource recycling goods:** products that have been certified as resource efficient products.
4. **Environmental service:** pollution control service and environmental protection facilities maintenance service, environmental engineering construction service, research and development service, environmental policy and planning consulting services, environmental accounting and

certification service, environmental engineering consulting service, environmental impact assessment service, environmental monitoring service, and other related services.

**Data collection.** An exclusive online data collection system was created for the 2011 Environmental Industry Survey. It was a bottom-up approach that all the surveyed producers were required to submit their questionnaires to the local managing officials. The data were collected on each managing level, and finally summed up on the national level by the Ministry of Environmental Protection. The questionnaires of China's Environmental Industry Survey are attached in Annexes 5 to 11.

## 5.2 HARMONIZING CHINA'S ENVIRONMENTAL INDUSTRY SURVEY WITH EGSS FRAMEWORK

### 5.2.1 PRODUCT CLASSIFICATION

The Environmental Industry Survey offers a detailed product list, and each product has a unique code. As is illustrated in Appendix 2 to 4, most of the surveyed products can be re-classified into the 6 product types and 12 environmental domains as defined in the EGSS framework. The environmental protection goods are mainly connected goods and end-of-pipe technologies in the EGSS framework. The environmental-friendly goods are mainly adapted goods in the EGSS framework. The resource recycling goods mainly belongs to the group of resource management in the EGSS framework. The environmental services are generally environmental specific and connected services in the EGSS framework. The product list for environmental services is not clear enough to be broken down into different environmental domains, and no correspondence table for environmental services is attached.

The population in the Environmental Industry Survey is smaller than EGSS framework. As is shown in Tables 4 and 5, China's 2011 Environmental Industry Survey covers almost all the environmental domains in the EGSS framework except for CReMA 11 A and CReMA 15. Moreover, all the integrated technologies in the EP domains and all the end-of-pipe technologies in the RM domains are not incorporated.

## 5.2.2 DATA COMPILATION

As illustrated in Annexes 5 to 11, the questionnaires of China's Environmental Industry Survey contain most of the information needed for the EGSS framework. The EGSS data can be compiled through two approaches:

1. Through the original questionnaires of each surveyed unit. The information in the questionnaires

such as product names, economic sector, turnover, employment, export is useful in compiling EGSS data, and value added can be derived from other variables. The overall EGSS data can be acquired from the aggregation of questionnaires of all units. The case study in Wu Han, which will be discussed in the next chapter, proved the feasibility of this approach.

2. Through the aggregated data of each product. Since the products can be re-classified into EGSS scopes, the aggregated turnover, employment, export and value added-related variables of each product can also be regrouped by EGSS scopes and help generate EGSS statistics. This approach may be less accurate but easier to implement. This study does not practicalize this approach due to lack of data availability.

**TABLE 3. EGSS THAT CAN BE IDENTIFIED IN CHINA'S ENVIRONMENTAL INDUSTRY SURVEY (ENVIRONMENTAL PROTECTION)**

	CEPA 1	CEPA 2	CEPA 3	CEPA 4	CEPA 5	CEPA 6	CEPA 7	CEPA 8	CEPA 9
Environmental specific & connected services	✓	✓	✓	✓	✓	✓	✓	✓	✓
Adapted goods	✓	✓	✓	✓	×	—	—	—	—
Connected goods	✓	✓	✓	✓	✓	✓	×	—	✓
End-of-pipe technologies	✓	✓	✓	✓	✓	—	✓	—	★
Integrated technologies	×	×	×	×	×	—	—	—	—

★ Products that are included in China's Environmental Industry Survey but not listed in the EGSS framework.

**TABLE 4. EGSS THAT CAN BE IDENTIFIED IN CHINA'S ENVIRONMENTAL INDUSTRY SURVEY (RESOURCE MANAGEMENT)**

	CReMA 10	CReMA 11A	CReMA 11B	CReMA 12	CReMA 13 A	CReMA 13 B	CReMA 13 C	CReMA 14	CReMA 15	CReMA 16
Environmental specific & connected services	×	×	×	✓		×	×	—	—	×
Adapted goods	✓	—	✓	—	✓	✓	✓	✓	—	★
Connected goods	✓	×	—	—	×	—	×	—	—	×
End-of-pipe technologies	×	×	—	×	×	×	—	—	—	—
Integrated technologies	×	×	✓	—	×	×	✓	✓	—	★

★ Products that are included in China's Environmental Industry Survey but not listed in the EGSS framework.

## 5.3 CASE STUDY: WU HAN

The city of Wu Han, located in Central China, is the capital of Hubei Province and one of the 10 largest cities in China. Since the environmental industry in Wu Han is relatively well developed, and the data is relatively easy to access, the study chose Wu Han to conduct the case study. The total production of environmental industry in 2010 was RMB 35 billion, accounting for 6.3 per cent of the total GDP, which is much higher than the national average of 2.76 per cent. Wu Han is also the home to a broad range of environmental companies in various sectors including pollution control, environmental monitoring, renewable energy and others.

This case study aims to collect EGSS data mainly through the database of the Environmental Industry Survey in Wu Han. The original questionnaires of all the surveyed units were examined and useful information for EGSS framework was extracted. After reclassifying the products into EGSS scopes, the authors aggregated the data of all the units by product classification. Finally, the authors filled in the EGSS standard table and drafted relevant figures in accordance with EGSS framework.

### 5.3.1 IDENTIFYING THE POPULATION

The survey population was mainly identified by the membership list of the Wu Han Association of Environmental Protection Industry, together with searching by key words from the local Yellow Pages and the Internet. Initially, a sample of 915 units was drawn from all available units. These units were the subjects of a telephone survey to establish the nature of their business and to place them within scope or out of scope for the survey. Subsequently, all in-scope units were sampled a second time, and 315 units (above a cut-off of RMB 2 million annual production) were identified to receive the full survey.

### 5.3.2 DATA COLLECTION

Most of the information that is needed in compiling EGSS data can be extracted from the original questionnaires of the Environmental Industry Survey. The turnover, employment, and export for each organization can be directly identified and sorted by economic sector and product name. There is no variable as value added in the survey, and it is estimated by the sum of wages, net product tax, depreciation of fixed capital, and surplus from profits.

All the data were collected by organizations instead of establishments, making it hard to process data for organizations that produce more than one type of product. In particular, the data on employment and value added for small companies is very difficult to allocate to each product since the distribution of work is not quite clear. This study divided the organizational statistics evenly to each type of product.

### 5.3.3 DATA ANALYSIS

The results are presented by economic variables, environmental domain, and type of output. The proportion of RM activities may be underestimated because a large number of RM activities are not included in the Environmental Industry Survey.

### 5.3.4 TURNOVER

The total EGSS turnover of Wu Han is RMB 111 billion, among which 92 per cent is from environmental protection (EP) activities and 8 per cent is from resource management (RM) activities. The three environmental domains that share the largest part of turnover are **CRema 13 Management of energy sources**, **CEPA 1 Protection of ambient air and climate** and **CEPA 3 Waste management**. Most of the portion in CRema 13 is from two large renewable energy companies.





Chang Jiang (Yangtze) River Park – Creative Commons/ Kurt Groetsch

The proportion of adapted goods is extremely high because of the contribution of two large automobile companies and two renewable energy companies (see Figures 4 and 5).

### 5.3.5 VALUE ADDED

The total EGSS value added in Wu Han is RMB 108 billion. Similar to turnover, the percentage of EP activities is much higher than that of RM activities. Regarding environmental domain, CReMA 13, CEPA 1 and CEPA 3 are also the highest. Adapted goods contribute most to the total value added in terms of type of output (see Figures 6 and 7).

### 5.3.6 EMPLOYMENT

The total employment in Wu Han is 54 thousand full-time equivalents. The EP activities contribute to 77 per cent of the total employment and RM activities contribute to 23 per cent. Regarding environmental domain, CReMA 13, CEPA 3, CEPA 2, and CEPA 1 are the highest. The adapted goods contribute to 35 thousand full-time equivalents, which is the highest among the types of output (see Figures 8 and 9).

### 5.3.7 EXPORT

The total EGSS export in Wu Han is US\$ 184 million. The EP export is slightly higher than the RM export in this case (see Figure 10).

FIGURE 4. EP AND RM TURNOVER, PERCENTAGE OF TOTAL TURNOVER (LEFT); EGSS TURNOVER BY ENVIRONMENTAL DOMAIN, PERCENTAGE OF TOTAL TURNOVER (RIGHT)

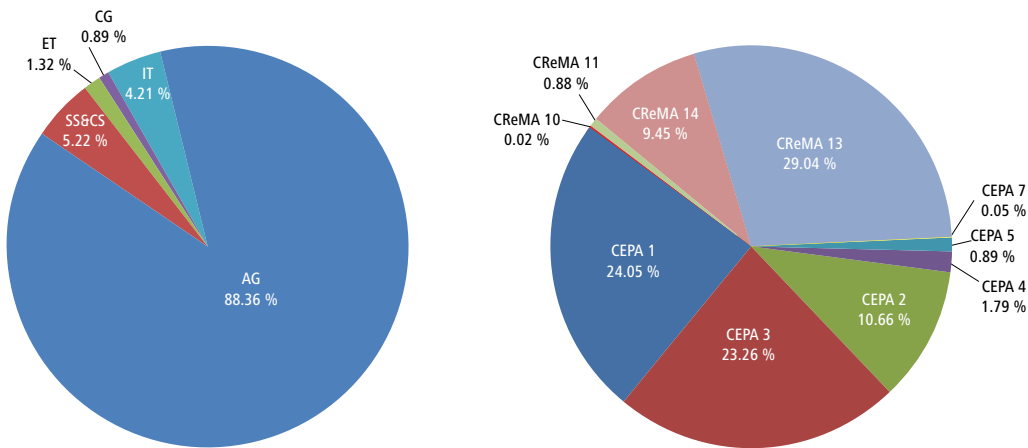


FIGURE 5. EGSS TURNOVER BY TYPE OF OUTPUT, RMB BILLIONS

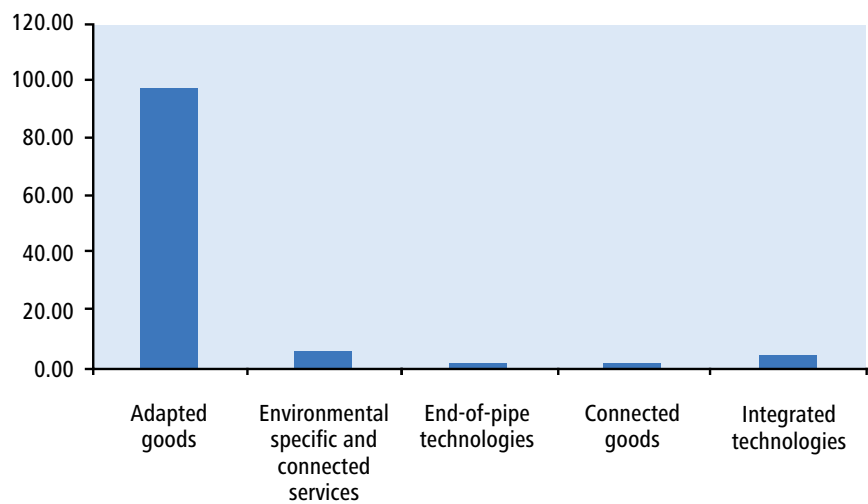


FIGURE 6. EP AND RM VALUE ADDED, PERCENTAGE OF TOTAL VALUE ADDED (LEFT); EGSS VALUE ADDED BY ENVIRONMENTAL DOMAIN, PERCENTAGE OF TOTAL VALUE ADDED (RIGHT)

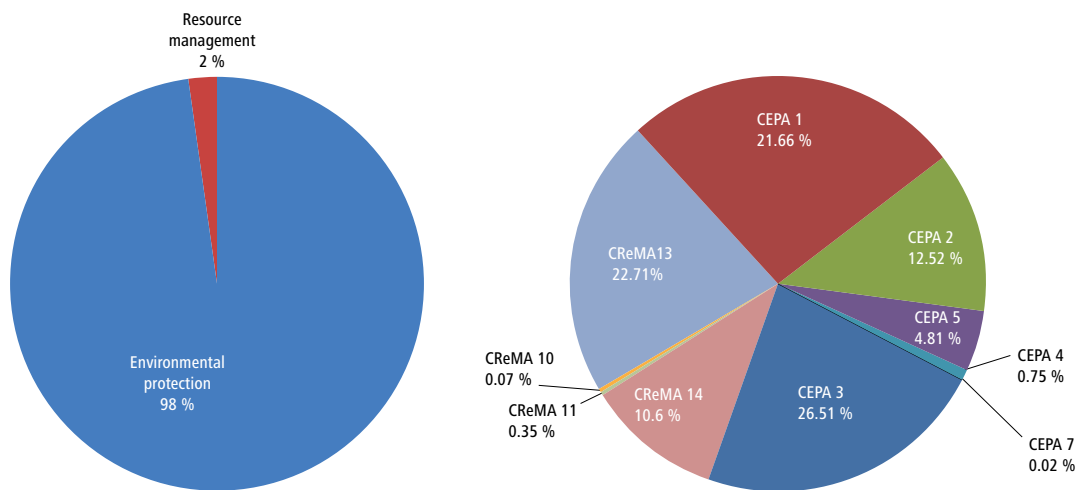


FIGURE 7. EGSS VALUE ADDED BY TYPE OF OUTPUT, RMB BILLIONS

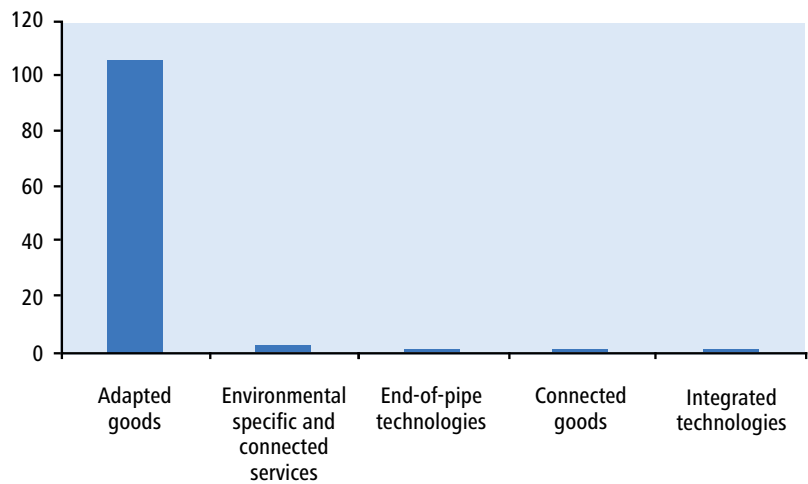




FIGURE 8. EP AND RM EMPLOYMENT, PERCENTAGE OF TOTAL EMPLOYMENT (LEFT); EGSS EMPLOYMENT BY ENVIRONMENTAL DOMAIN, PERCENTAGE OF TOTAL EMPLOYMENT (RIGHT)

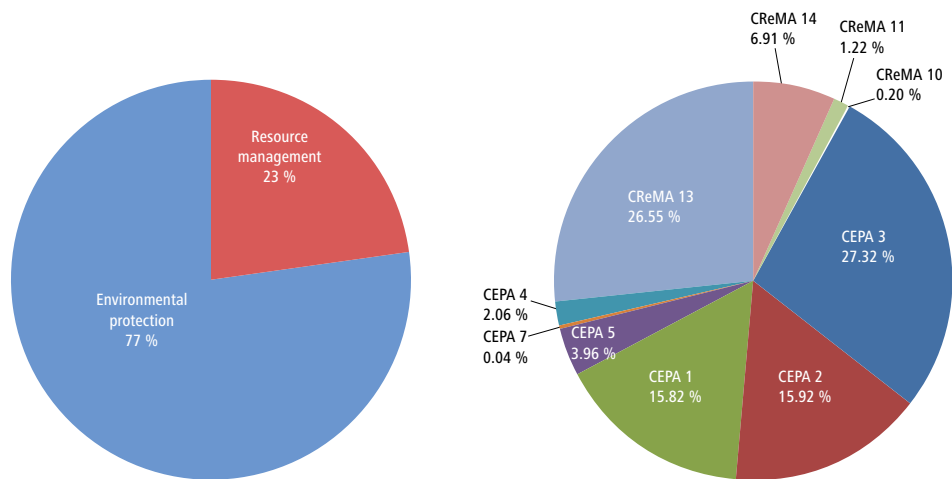


FIGURE 9. EGSS EMPLOYMENT BY TYPE OF OUTPUT, THOUSAND FULL-TIME EQUIVALENT

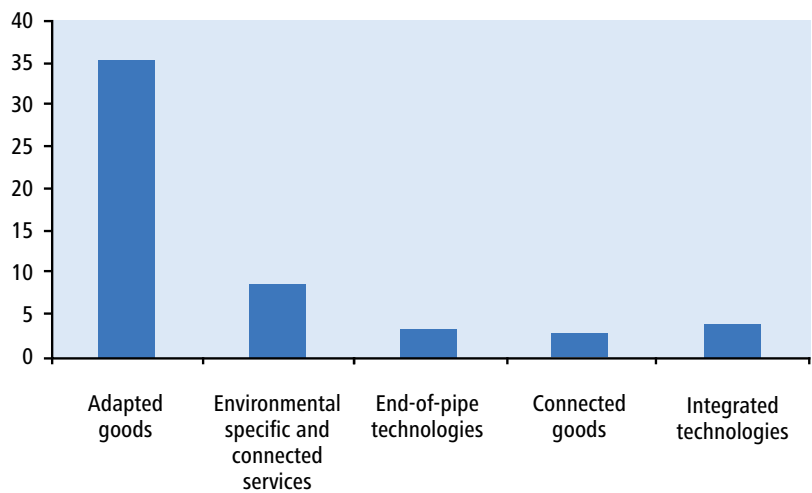
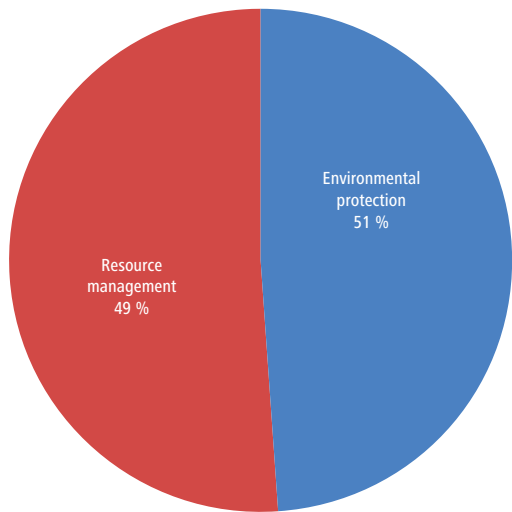


FIGURE 10. EP AND RM EXPORT, PERCENTAGE OF TOTAL EXPORT



## 6 FEASIBILITY ANALYSIS OF APPLYING EGSS FRAMEWORK IN CHINA



Workers in Karamay

## 6.1 FEASIBILITY OF COLLECTING EGSS DATA THROUGH PUBLISHED STATISTICS

Although some of the environmental goods, services and technologies can be directly identified in the General Product Classification for Statistical Use, the published statistical yearbooks can only provide limited data source for EGSS data collection. Some of the major gaps identified are:

- The published statistics can hardly provide consistent and comprehensive EGSS data. Most of the variables are measured by different statistical scope and time series. Moreover, the excessive estimations and assumptions and lack of data quality control may affect the accuracy of the results. Most of the estimations and assumptions are not based on a solid basis, and there is no standard data quality control approach in the EGSS framework. Hence, the accuracy of the estimations cannot be testified.
- It is difficult to directly identify a broader group of environmental products. Most of the environment goods and services scatter among non-environmental products and cannot be directly identified. Even for those that can be clearly identified as EGSS, each product may have various subcategories that belong to different EGSS scopes and there is no data support for these subcategories.
- Lack of capacity and institutional support has impeded the progress of environmental industry statistics. The international environmental accounting practices such as Environmental Expenditure Accounting has not been officially incorporated into the regular statistical systems in China yet, which means the capacity building and

institutional arrangement need further improvement to enhance the environmental industry statistics.

For this phase, the EGSS China study did not have the opportunity to examine the original business registration information and statistical data collection forms of each company or organization. It is therefore possible that more valuable information could be found if the original data had been acquired.

## 6.2 FEASIBILITY OF COLLECTING EGSS DATA THROUGH ENVIRONMENTAL INDUSTRY SURVEY

The Environmental Industry Survey is by far the most comprehensive statistical practice specifically on environmental industry in China, which can serve as a starting point for EGSS data collection in China for the following reasons:

- The product classification covers a broad range of environmental products and is specific enough to be re-categorized by EGSS scopes. The product classification list of the Environmental Industry Survey contains most of the environmental protection products and some resource efficient products. If this product list could be further extended in the future, a larger EGSS producer group would be identified more easily.
- Most of the EGSS variables can be extracted from the Environmental Industry Survey, even though possible estimations may affect the accuracy. The EGSS statistics can either be extracted from the original data collection forms of the Environmental Industry Survey or from the integrated data of each product code. The case study of Wu Han shows the feasibility of the first approach.



Some of the major gaps in applying EGSS framework in China are:

— The Environmental Industry Survey does not cover the entire EGSS population. The survey does not include small enterprises with an annual production below RMB 2 million since a considerable number of environmental companies are small businesses. Moreover, the survey does not measure the following areas:

- Integrated technologies;
- Environmental specific and connected services in the resource management domain;
- End-of-pipe technologies in the resource management domain;
- Connected goods in the resource management domain;
- Adapted goods in CEPA 5; and
- Connected goods in CEPA 7.

— The estimation on producers with multiple types of products may not be accurate. The survey questionnaires are targeting at organizations instead of establishment, which means the

turnover, employment, export and other variables are the sum of all the products in the organization. The case study in Wu Han shows that most of the environmental companies cannot break down their production to each product, especially those small enterprises where the organizational structure is not as clear as big firms.

— The survey is not performed on a regular basis and lacks standard protocols and long-standing support, hence cannot provide consistent statistics. Instead of a regular statistical practice led by the National Bureau of Statistics, the survey is a ministry-guided industrial survey by the Ministry of Environmental Protection. There is no strong legal or institution support for this survey, and the specific timeline of the next survey is still uncertain. The survey has conducted only four times since 1993 with no consistent protocols, which impedes the analysis by time series.



Rice terraces in Yunnan Province – National Geographic/Priyanka Sah

## 7 CONCLUSIONS AND RECOMMENDATIONS



Second bridge along the Yangtze River – Creative Commons/KevC6



## 7.1 MAJOR FINDINGS

Some of the major findings of the study are:

- China's current published statistics can hardly provide consistent, detailed, and reliable data for EGSS framework due to the lack of emphasis on environmental industry accounting and the differences in product classification and data collection approach.
- China's Environmental Industry Survey, led by the Ministry of Environmental Protection, can provide valuable information for EGSS data collection. The data can be accessed either through the original questionnaires of each unit or through the aggregated data of each product. The case study in Wu Han shows the feasibility of the first method, even though there remain many technical problems to be resolved.
- It is challenging to collect consistent and complete EGSS data in the near run. However, there is a good chance for EGSS framework in the long run since the government is intended to build the statistical system for emerging industries including environmental industry. The major problems and challenges for collecting EGSS data in China include:
  - The environmental accounting in China is at a very early stage, and the classification system and indicators are far different from international standards.
  - The population in the Environmental Industry Survey is smaller than what EGSS needs. Most of the surveyed products are environmental protection goods and services, and the products related to resource management are limited.
  - The Environmental Industry Survey is not performed on a regular basis, and lacks institution

support. The survey was conducted only in the year 1993, 2000, 2004, and 2011, and there is no clear sign of the next survey.

A three-step approach has been suggested for China to establish a comprehensive EGSS framework. The first step should identify the gaps between China's current environmental industry statistics and the EGSS framework. The second step should identify ways to bridge the gaps and integrate EGSS framework into the country's regular statistical system. The third step should try to create a routine system for EGSS data collection.

## 7.2 RECOMMENDATIONS ON HOW TO COMPREHENSIVELY APPLY EGSS FRAMEWORK IN CHINA

In recent years, China has been making significant efforts to improve its environmental industry statistics. The Environmental Industry Survey is a good example of the ministry-level efforts on exploring the development of environmental industry in the country. On a national level, China has released the *Product Classification for Strategic Emerging Industries*, which includes the environmental industry. This new classification system is a positive sign of possible statistical practices in the future. However, it requires a gradual process for China's environmental industry statistics to be harmonized with international standards. It is therefore suggested that China establish a comprehensive EGSS framework according to three steps:

**Step 1:** Undertake a study on the existing statistics and the Environmental Industry Survey and identify the major gaps between EGSS framework and China's current environmental industry survey. This study mainly focused on this step.

**Step 2:** Bridge the gaps identified in Step 1 and seek for the possibility of integrating the EGSS framework into

the regular statistical systems of China. It is suggested that the original business registration information and statistical data collection forms as well as the statistics on Strategic Emerging Industries should be analyzed so as to identify the potential approaches of integrating into China's regular statistical system.

**Step 3:** Based on the outcomes of the first two steps, create a complete blueprint for EGSS data collection in China.

### 7.3 RECOMMENDATIONS ON IMPROVING EGSS FRAMEWORK

Based on the study of China's environmental industry statistics, it is suggested that the EGSS framework be further improved in the following manner:

- Include more variables that can reflect the overall development of environmental industry. Even though the current four variables are sufficient to measure the contribution of EGSS to the overall economy, there are several others that are also crucial for assessing the industrial development

and for international comparison. For instance, the investment and financing on environmental sectors are receiving growing attention and worth measuring as well.

- Create a product classification standard of EGSS. The product classification and standards may vary in different countries. In particular, the different standards for clean and resource efficient products may mislead the comparison among different countries. Therefore, it is suggested that the future EGSS framework could provide a product classification standard, which clarifies the boundaries of identifying EGSS population worldwide.
- Provide a guideline for data quality control and assessment. The accounting scope and data collection approaches are barely similar among different countries, and a guideline for data quality control and assessment is necessary for enhancing the effectiveness and accuracy of data comparison.

## NOTES

<sup>1</sup> United Nations. System of Environmental-Economic Accounting 2012 Central Framework. 2014.

<sup>2</sup> China Environmental Industry Survey. (2011). Beijing: Ministry of Environmental Protection of China.

<sup>3</sup> Qu, G. (27 December 2013). Retrieved 19 April 2014 from [http://www.cenews.com.cn/gd/gdftx/201312/t20131227\\_754613.html](http://www.cenews.com.cn/gd/gdftx/201312/t20131227_754613.html)

<sup>4</sup> China Environmental Industry Survey. (2004). Beijing: Ministry of Environmental Protection of China.

<sup>5</sup> China Environmental Industry Survey. (2011). Beijing: Ministry of Environmental Protection of China.

<sup>6</sup> Eurostat. (2014). Available at: [http://epp.eurostat.ec.europa.eu/cache/ITY\\_SDDS/en/env\\_ac\\_egss2\\_esms.htm](http://epp.eurostat.ec.europa.eu/cache/ITY_SDDS/en/env_ac_egss2_esms.htm)

<sup>7</sup> United Nations. System of Environmental-Economic Accounting 2012 Central Framework. 2014.

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## ANNEX I. ENVIRONMENTAL GOODS AND SERVICES DIRECTLY IDENTIFIED IN THE GENERAL PRODUCT CLASSIFICATION FOR STATISTICAL USE

The symbol “—” indicates that the product cannot be connected with EGSS scopes

DIVISION	GROUP	CLASS	ITEMS IN GENERAL PRODUCT CLASSIFICATION SYSTEM	PRODUCT TYPE IN EGSS	ENVIRONMENTAL DOMAIN
80			Environmental management services		
	8001		Ecological protection services		
		800101	Ecological protection zones management	Environmental specific and connected service	CEPA 6
		800102	Services for wild animals protection	Environmental specific and connected service	CRema 12
		800103	Services for wild vegetation protection	Environmental specific and connected service	CRema 12
		800199	Other ecological protection services	—	—
	8003		Urban environmental management services		
		800301	Urban garbage cleaning services	Environmental specific and connected service	CEPA 3
		800302	Urban garbage treatment services	Environmental specific and connected service	CEPA 3
		800303	Urban sewage treatment services	Environmental specific and connected service	CEPA 3
	8004		Pollution control services		
		800401	Water pollution prevention services	Environmental specific and connected service	CEPA 4
		800402	Hazardous waste management	Environmental specific and connected service	CEPA 3
		800499	Other pollution control services	Environmental specific and connected service	CEPA 1; CEPA 5; CEPA 9; CEPA 7
43			Recycled products		
	4301		Metal recycled products		
		430101	Recycled melting scrap	Adapted goods	CRema 14
		430102	Recycled melting iron	Adapted goods	CRema 14
		430103	Recycled metals and metal compounds ash and residues	Adapted goods	CRema 14
		430104	Recycled non-ferrous metal scrap and scrap	Adapted goods	CRema 14
		430105	Recycled waste and scrap of precious metal or metal clad with precious	Adapted goods	CRema 14
		430106	Recycled waste batteries	Adapted goods	CRema 14
		4301990000	Others	—	—
	4302		Non-metal recycled products		
		430201	Recycled textile waste	Adapted goods	CRema 11B
		430202	Recycled leather waste	Adapted goods	CRema 13C
		430203	Recycled paper	Adapted goods	CRema 11B
		430204	Recycled rubber scrap	Adapted goods	CRema 13C
		430205	Recycled plastic waste	Adapted goods	CRema 13C
		4302060000	Recycled waste glass	Adapted goods	CRema 14
		4302070000	Recycled discarded appliances	Adapted goods	CRema 14
		4302990000	Others	—	—

**ANNEX I. ENVIRONMENTAL GOODS AND SERVICES DIRECTLY IDENTIFIED IN THE GENERAL PRODUCT CLASSIFICATION FOR STATISTICAL USE  
(CONTINUED)**

The symbol “—” indicates that the product cannot be connected with EGSS scopes

DIVISION	GROUP	CLASS	ITEMS IN GENERAL PRODUCT CLASSIFICATION SYSTEM	PRODUCT TYPE IN EGSS	ENVIRONMENTAL DOMAIN
36			Specific equipment		
	3650		Pollution control equipment		
		365001	Air pollution control equipment	End-of-pipe technologies	CEPA 1
		365002	Water pollution control equipment	End-of-pipe technologies	CEPA 2
		365003	Solid waste pollution control equipment	End-of-pipe technologies	CEPA 3
		365004	Noise and vibration abatement equipment	End-of-pipe technologies	CEPA 5
		365005	Radiation pollution control equipment	End-of-pipe technologies	CEPA 7
76			Profession technological services		
	7606		Environmental evaluation and monitoring services		
		7606010000	Environmental assessment services	Environmental specific and connected service	CEPA 9
		760602	Air pollution monitoring services	Environmental specific and connected service	CEPA 1
		760603	Water pollution monitoring services	Environmental specific and connected service	CEPA 2, CEPA 4
		760604	Solid waste monitoring services	Environmental specific and connected service	CEPA 3
		760605	Noise monitoring services	Environmental specific and connected service	CEPA 5
		760606	Ecological monitoring services	Environmental specific and connected service	CEPA 4; CReMA 11A; CEPA 6; CReMA 14
		760699	Others	Environmental specific and connected service	CEPA 7, CEPA 9
79			Water management		
	7904		Water resource protection services		
		7904000000	Water resource protection services	Environmental specific and connected service	CReMA 10
	7905		Water loss and soil erosion remediation services		
		7905000000	Water loss and soil erosion remediation services	Environmental specific and connected service	CEPA 4
	7906		Water conservancy management		
		7906050000	Water conservancy services	Environmental specific and connected service	CReMA 10
		7906060000	Water and soil protection consultation services	Environmental specific and connected service	CReMA 10
		790607	Water saving consultation services	Environmental specific and connected service	CReMA 10

**ANNEX I. ENVIRONMENTAL GOODS AND SERVICES DIRECTLY IDENTIFIED IN THE GENERAL PRODUCT CLASSIFICATION FOR STATISTICAL USE  
(CONTINUED)**

The symbol “—” indicates that the product cannot be connected with EGSS scopes

DIVISION	GROUP	CLASS	ITEMS IN GENERAL PRODUCT CLASSIFICATION SYSTEM	PRODUCT TYPE IN EGSS	ENVIRONMENTAL DOMAIN
26			Chemical materials and products		
	2619		Specific chemical products and materials for pollution remediation		
		261901	Water treatment chemicals	Connected goods	CEPA 2
		261902	Wastewater treatment chemicals	Connected goods	CEPA 2
		261903	Wastewater treatment bio-chemicals	Connected goods	CEPA 2
		261904	Wastewater treatment materials	Connected goods	CEPA 2
		261905	Air pollution treatment chemicals	Connected goods	CEPA 1
41			Specific equipment making		
	4107		Specific equipment for environmental monitoring		
		410701	Water pollution monitoring equipment	Connected goods	CEPA 4
		410702	Air and smog monitoring equipment	Connected goods	CEPA 1
		410703	Noise monitoring equipment	Connected goods	CEPA 5



## ANNEX 2. MEASURING EGSS THROUGH PUBLISHED STATISTICAL YEARBOOKS

PRODUCT	INDUSTRY	PRODUCT TYPE	ENVIRONMENTAL DOMAIN	TURNOVER (RMB BILLION)	DATA SOURCE	EMPLOYMENT (10'000 FULL-TIME EQUIVALENT)	DATA SOURCE	VALUE ADDED (RMB)	DATA SOURCE	EXPORT (RMB BILLION)	DATA SOURCE
Ecological protection zones management	N77	Environmental specific and connected service	CEPA 6	0.303775	China Forestry Statistical Yearbook 2009	0.1271	China Population Census 2010	—	—	—	—
Services for wild animals and vegetation protection	N77	Environmental specific and connected service	CRema 12	0.303775	Idem.	0.1271	Idem.	—	—	—	—
Urban environmental management services	N78	Environmental specific and connected service	CEPA 3	36.6615	China Urban Construction Statistical Yearbook 2010	28.25	Idem.	—	—	—	—
Water pollution prevention services	N77	Environmental specific and connected service	CEPA 4	11.329	Statistical Yearbook of the Economic Census 2008	47.21	Statistical Yearbook of the Economic Census 2008	10.28	Estimated by value added per employment, 2008	—	—
Hazardous waste management	N77	Environmental specific and connected service	CEPA 3	1.058	Idem.	4.4105	Idem.	0.96	Idem.	—	—
Air pollution prevention services	N77	Environmental specific and connected service	CEPA 1	1.364	Idem.	5.6832	Idem.	1.237	Idem.	—	—
Noise pollution prevention services	N77	Environmental specific and connected service	CEPA 5	1.364	Idem.	5.6832	Idem.	1.237	Idem.	—	—
Light pollution prevention services	N77	Environmental specific and connected service	CEPA 9	1.364	Idem.	5.6832	Idem.	1.237	Idem.	—	—
Radiation pollution prevention services	N77	Environmental specific and connected service	CEPA 7	1.364	Idem.	5.6832	Idem.	1.237	Idem.	—	—
Natural disaster prevention services	N77	Non-EGSS	Non-EGSS	1.364	Idem.	5.6832	Idem.	1.237	Idem.	—	—
Other environmental treatment services	N77	Environmental specific and connected service	CEPA 9	1.364	Idem.	5.6832	Idem.	1.237	Idem.	—	—
Metal recycled products	C42	Adapted goods	CRema 14	105.232	Idem.	11.57	Idem.	94.646	Idem.	0.289	Statistical Yearbook of the Economic Census 2008

## ANNEX 2. MEASURING EGSS THROUGH PUBLISHED STATISTICAL YEARBOOKS (CONTINUED)

PRODUCT	INDUSTRY	PRODUCT TYPE	ENVIRONMENTAL DOMAIN	TURNOVER (RMB BILLION)	DATA SOURCE	EMPLOYMENT (10'000 FULL-TIME EQUIVALENT)	DATA SOURCE	VALUE ADDED (RMB BILLION)	DATA SOURCE	EXPORT (RMB BILLION)	DATA SOURCE
Recycled textile waste	C42	Adapted goods	CRcMA 11B	2.766	Idem.	0.33	Idem.	2.689	Statistical Yearbook of the Economic Census 2008	0.026	Idem.
Recycled leather waste	C42	Adapted goods	CRcMA 13C	2.766	Idem.	0.33	Idem.	2.689	Idem.	0.026	Idem.
Recycled paper	C42	Adapted goods	CRcMA 11B	2.766	Idem.	0.33	Idem.	2.689	Idem.	0.026	Idem.
Recycled rubber scrap	C42	Adapted goods	CRcMA 13C	2.766	Idem.	0.33	Idem.	2.689	Idem.	0.026	Idem.
Recycled plastic waste	C42	Adapted goods	CRcMA 13C	2.766	Idem.	0.33	Idem.	2.689	Idem.	0.026	Idem.
Recycled waste glass	C42	Adapted goods	CRcMA 14	2.766	Idem.	0.33	Idem.	2.689	Idem.	0.026	Idem.
Recycled discarded appliances	C42	Adapted goods	CRcMA 14	2.766	Idem.	0.33	Idem.	2.689	Idem.	0.026	Idem.
Other non-metal recycled products	C42	Adapted goods	CRcMA 16	2.766	Idem.	0.33	Idem.	2.689	Idem.	0.026	Idem.
Air pollution control equipment	C35	End-of-pipe technologies	CEPA 1	127.33	National Bureau of Statistics 2011	13.6	National Bureau of Statistics 2011	50.067	National Bureau of Statistics 2011	5.733	National Bureau of Statistics 2011
Water pollution control equipment	C35	End-of-pipe technologies	CEPA 2	46.615	Idem.	4.98	Idem.	18.329	Idem.	2.099	Idem.
Solid waste pollution control equipment	C35	End-of-pipe technologies	CEPA 3	13.662	Idem.	1.46	Idem.	5.372	Idem.	0.615	Idem.
Noise and vibration abatement equipment	C35	End-of-pipe technologies	CEPA 5	6.054	Idem.	0.65	Idem.	2.380	Idem.	0.273	Idem.
Radiation pollution control equipment	C35	End-of-pipe technologies	CEPA 7	0.939	Idem.	0.1	Idem.	0.369	Idem.	0.042	Idem.
Environmental evaluation and monitoring services	N74		CEPA 9	—	—	—	—	—	—	—	—
Air pollution monitoring services	N74		CEPA 1	—	—	—	—	—	—	—	—
Water pollution monitoring services	N74		CEPA 2, CEPA 4	—	—	—	—	—	—	—	—

## ANNEX 2. MEASURING EGSS THROUGH PUBLISHED STATISTICAL YEARBOOKS (CONTINUED)

PRODUCT	INDUSTRY	PRODUCT TYPE	ENVIRONMENTAL DOMAIN	TURNOVER (RMB BILLION)	DATA SOURCE	EMPLOYMENT (10'000 FULL-TIME EQUIVALENT)	DATA SOURCE	VALUE ADDED (RMB BILLION)	DATA SOURCE	EXPORT (RMB BILLION)	DATA SOURCE
Solid waste monitoring services	N74	Environmental specific and connected service	CEPA 3	—	—	—	—	—	—	—	—
Noise monitoring services	N74	Environmental specific and connected service	CEPA 5	—	—	—	—	—	—	—	—
Ecological monitoring services	N74	Environmental specific and connected service	CEPA 4, CReMA 11A, CEPA 6, CReMA 14	—	—	—	—	—	—	—	—
Other environmental monitoring services	N74	Environmental specific and connected service	CEPA 7, CEPA 9	—	—	—	—	—	—	—	—
Water management	N76	Environmental specific and connected service	CReMA 10	3.933	Statistical Yearbook of the Economic Census 2008	30.49	Statistical Yearbook of the Economic Census 2008	7.135	Estimated by value added per employment, 2008	—	—
Water treatment chemicals	C26	Connected goods	CEPA 2	2.552	National Bureau of Statistics 2011	0.22	National Bureau of Statistics 2011	0.6006	National Bureau of Statistics 2011	—	—
Wastewater treatment chemicals	C26	Connected goods	CEPA 2	2.552	Idem.	0.22	Idem.	0.6006	Idem.	—	—
Wastewater treatment bio-chemicals	C26	Connected goods	CEPA 2	2.552	Idem.	0.22	Idem.	0.6006	Idem.	—	—
Wastewater treatment materials	C26	Connected goods	CEPA 2	2.552	Idem.	0.22	Idem.	0.6006	Idem.	—	—
Air pollution treatment chemicals	C26	Connected goods	CEPA 1	2.552	Idem.	0.22	Idem.	0.6006	Idem.	—	—
Water pollution monitoring equipment	C40	Connected goods	CEPA 4	3.593	Idem.	0.42	China Mechanical Statistical Yearbook 2012	0.742	Estimated by value added per employment, 2011	0.416	China Mechanical Statistical Yearbook 2012
Air and smog monitoring equipment	C40	Connected goods	CEPA 1	3.593	Idem.	0.42	Idem.	0.742	Idem.	0.416	Idem.
Noise monitoring equipment	C40	Connected goods	CEPA 5	3.593	Idem.	0.42	Idem.	0.742	Idem.	0.416	Idem.

## ANNEX 3. CORRESPONDENCE TABLE OF EGSS AND THE ENVIRONMENTAL PROTECTION PRODUCTS IN CHINA'S ENVIRONMENTAL INDUSTRY SURVEY

SS Environmental specific services

CS Connected services

CG Connected goods

ET End-of-pipe technologies

AG Adapted goods

IT Integrated technologies

Code	Designation	Product type	Environmental domain
01	Water pollution control products		
01 01	Water pollution control equipment		
01 01 01	Grit removal device	CG	CEPA2
01 01 01 01 00	Vortex grit integration equipment	CG	CEPA2
01 01 01 02 00	Spiral grit-water separator	CG	CEPA2
01 01 01 03 00	Grit scraper and sucker	CG	CEPA2
01 01 01 99 00	Others	CG	CEPA2
01 01 02	Precipitation devices	CG	CEPA2
01 01 02 01 00	Silt scraper and sucker	CG	CEPA2
01 01 02 02 00	Complete set of small precipitation equipment	CG	CEPA2
01 01 02 99 00	Others	CG	CEPA2
01 01 03	Clarification device	CG	CEPA2
01 01 03 01 00	Integration clarification equipment	CG	CEPA2
01 01 03 02 00	Mechanical stirring device of clarification tank	CG	CEPA2
01 01 03 99 00	Others	CG	CEPA2
01 01 04	Oil-removing device	CG	CEPA2
01 01 04 01 00	Oil-water separator	CG	CEPA2
01 01 04 02 00	Oil-removing and -separating integration device	CG	CEPA2
01 01 04 03 00	Slag scraper	CG	CEPA2
01 01 04 99 00	Others	CG	CEPA2
01 01 05	Air flotation separation device	CG	CEPA2
01 01 05 01 00	Pressurized dissolved air flotation device	CG	CEPA2
01 01 05 02 00	Mechanical stirring air floatation device	CG	CEPA2
01 01 05 99 00	Others	CG	CEPA2
01 01 06 00 00	Magnetic separation device	CG	CEPA2
01 01 07	Sieve-filtration device	CG	CEPA2
01 01 07 01 00	Hydraulic screen	CG	CEPA2
01 01 07 02 00	Drum screen	CG	CEPA2
01 01 07 03 00	Grille decontamination machine	CG	CEPA2
01 01 07 99 00	Others	CG	CEPA2
01 01 08	Filter device	CG	CEPA2
01 01 08 01 00	Particle filter	CG	CEPA2
01 01 08 02 00	Disc filter	CG	CEPA2
01 01 08 03 00	Fiber filter	CG	CEPA2
01 01 08 04 00	Sintered micro-porous filter	CG	CEPA2
01 01 08 99 00	Others	CG	CEPA2
01 01 09	Sludge-dewatering thickener	CG	CEPA2
01 01 09 01 00	Sludge thickener	CG	CEPA2
01 01 09 02 00	Vacuum drum sludge dehydrator	CG	CEPA2
01 01 09 03 00	Belt type sludge dehydrator	CG	CEPA2
01 01 09 04 00	Van plate & frame sludge dehydrator	CG	CEPA2
01 01 09 05 00	Horizontal screw centrifugal sludge dehydrator	CG	CEPA2
01 01 09 06 00	Integration concentrated dehydrator	CG	CEPA2
01 01 09 99 00	Others	CG	CEPA2
01 01 10	Evaporation device	CG	CEPA2
01 01 10 01 00	Multiple effect evaporator	CG	CEPA2
01 01 10 02 00	Film evaporator	CG	CEPA2
01 01 10 99 00	Others	CG	CEPA2
01 01 11 00 00	Acid-alkali neutralization device (including dosing system)	CG	CEPA2
01 01 12	Oxidation-reduction device	CG	CEPA2
01 01 12 01 00	Chemical oxidation-reduction device	CG	CEPA2
01 01 12 02 00	Catalytic oxidation-reduction device	CG	CEPA2
01 01 12 99 00	Others	CG	CEPA2
01 01 13	Disinfection device	CG	CEPA2
01 01 13 01 00	Ozone generator	CG	CEPA2
01 01 13 02 00	Chlorinator	CG	CEPA2
01 01 13 03 00	Sodium hypochlorite generator	CG	CEPA2
01 01 13 04 00	Electrolysis chlorine dioxide generator	CG	CEPA2
01 01 13 05 00	Chemical chlorine dioxide generator	CG	CEPA2
01 01 13 06 00	UV sterilizer	CG	CEPA2
01 01 13 99 00	Others	CG	CEPA2
01 01 14	Coagulation device (including dosing system)	CG	CEPA2
01 01 14 01 00	Mechanical coagulation device	CG	CEPA2
01 01 14 02 00	Hydraulic coagulation device	CG	CEPA2
01 01 14 03 00	Pipeline blending coagulation device	CG	CEPA2



### ANNEX 3. CORRESPONDENCE TABLE OF EGSS AND THE ENVIRONMENTAL PROTECTION PRODUCTS IN CHINA'S ENVIRONMENTAL INDUSTRY SURVEY (CONTINUED)

SS Environmental specific services

CS Connected services

CG Connected goods

ET End-of-pipe technologies

AG Adapted goods

IT Integrated technologies

Code	Designation	Product type	Environmental domain
01 01 14 99 00	Others	CG	CEPA2
01 01 15 00 00	Dosing device	CG	CEPA2
01 01 16 00 00	Extraction device	CG	CEPA2
01 01 17 00 00	Stripping and purge device	CG	CEPA2
01 01 18	Adsorption device	CG	CEPA2
01 01 18 01 00	Activated carbon adsorption device	CG	CEPA2
01 01 18 02 00	Macro-porous resin adsorption device	CG	CEPA2
01 01 18 03 00	Molecular sieve adsorption device	CG	CEPA2
01 01 18 99 00	Others	CG	CEPA2
01 01 19 00 00	Ion exchange device	CG	CEPA2
01 01 20	Membrane separation device	CG	CEPA2
01 01 20 01 00	Ceramic membrane filtration device	CG	CEPA2
01 01 20 02 00	Microfiltration device	CG	CEPA2
01 01 20 03 00	Ultra-filtration device	CG	CEPA2
01 01 20 04 00	Nano-filtration device	CG	CEPA2
01 01 20 05 00	Reverse osmosis device	CG	CEPA2
01 01 20 06 00	Electro-dialysis device	CG	CEPA2
01 01 20 99 00	Others	CG	CEPA2
01 01 22 00 00	Integration aerobic treatment device	ET	CEPA2
01 01 22	Oxygen aeration device	ET	CEPA2
01 01 22 01 00	Micro-porous aerator	ET	CEPA2
01 01 22 02 00	Surface aerator	ET	CEPA2
01 01 22 03 00	Pump-suction type aerator	ET	CEPA2
01 01 22 04 00	Aeration brush, turntable, disc	ET	CEPA2
01 01 22 05 00	Diving aerator	ET	CEPA2
01 01 22 99 00	Others	ET	CEPA2
01 01 23	Anaerobic treatment device	ET	CEPA2
01 01 23 01 00	Upflow anaerobic sludge bed (UASB)	ET	CEPA2
01 01 23 02 00	Expanded anaerobic granular sludge bed (EGSB)	ET	CEPA2
01 01 23 03 00	Inner cycle (IC)	ET	CEPA2
01 01 23 04 00	Anaerobic continuous stirred tank reactor (CSTR)	ET	CEPA2
01 01 23 05 00	Anaerobic upflow solid reactor(USR)	ET	CEPA2
01 01 23 06 00	Anaerobic biological filter	ET	CEPA2
01 01 23 99 00	Others	ET	CEPA2
01 01 24	Sludge digestion device	ET	CEPA2
01 01 24 01 00	Mixing equipment for digester	ET	CEPA2
01 01 24 02 00	Heat exchange equipment for digester	ET	CEPA2
01 01 24 03 00	Desulfurization equipment	ET	CEPA2
01 01 24 04 00	Storage and application equipment	ET	CEPA2
01 01 24 99 00	Others	ET	CEPA2
01 01 25	Supporting equipment special for water pollution treatment	CG	CEPA2
01 01 25 01 00	Decanter	CG	CEPA2
01 01 25 99 00	Others	CG	CEPA2
01 01 26	General equipment for water pollution treatment	CG	CEPA2
01 01 26 01 00	Agitator	CG	CEPA2
01 01 26 02 00	Underwater propeller	CG	CEPA2
01 01 26 03 00	Triangle weir	CG	CEPA2
01 01 26 04 00	Adjustable weir gate	CG	CEPA2
01 01 26 05	Pump	CG	CEPA2
01 01 26 05 01	Sewage pump	CG	CEPA2
01 01 26 05 02	Screw type sludge pump	CG	CEPA2
01 01 26 05 03	Metering pump	CG	CEPA2
01 01 26 05 04	Submersible pump	CG	CEPA2
01 01 26 05 99	Others	CG	CEPA2
01 01 26 06	Gate valve	CG	CEPA2
01 01 26 06 01	Common gate, valve	CG	CEPA2
01 01 26 06 02	Electric gate, valve,	CG	CEPA2
01 01 26 06 99	Others	CG	CEPA2
01 01 26 07	Blower	CG	CEPA2
01 01 26 07 01	Centrifugal blower	CG	CEPA2
01 01 26 07 02	Roots blower	CG	CEPA2
01 01 26 07 03	Ventilator	CG	CEPA2
01 01 26 07 99	Others	CG	CEPA2
01 01 26 08	Conveyor	CG	CEPA2
01 01 26 08 01	Belt conveyor	CG	CEPA2

### ANNEX 3. CORRESPONDENCE TABLE OF EGSS AND THE ENVIRONMENTAL PROTECTION PRODUCTS IN CHINA'S ENVIRONMENTAL INDUSTRY SURVEY (CONTINUED)

SS Environmental specific services  
CS Connected services  
CG Connected goods

ET End-of-pipe technologies  
AG Adapted goods  
IT Integrated technologies

Code					Designation	Product type	Environmental domain
01	01	26	08	02	Screw conveyor (normal, press)	CG	CEPA2
01	01	26	08	99	Others	CG	CEPA2
01	01	26	09	00	Automatic control system (including the central processing system)	CG	CEPA2
01	01	26	99	00	Others	CG	CEPA2
01	01	99	00	00	Others		
01	02				Agent for water pollution control		
01	02	01	00	00	Polymer flocculant	CG	CEPA2
01	02	02	00	00	Inorganic coagulant	CG	CEPA2
01	02	03	00	00	Biological flocculant	CG	CEPA2
01	02	04	00	00	Scale inhibitor	CG	CEPA2
01	02	05	00	00	Antiseptic agent (sterilization, alga killing)	CG	CEPA2
01	02	99	00	00	Others		
01	03				Material for water pollution prevention		
01	03	01			Apparatus	CG	CEPA2
01	03	01	01	00	Carrier	CG	CEPA2
01	03	01	02	00	Inclined tube plate	CG	CEPA2
01	03	01	99	00	Others	CG	CEPA2
01	03	02			Packing	CG	CEPA2
01	03	02	01	00	Fixed bio-film packing	CG	CEPA2
01	03	02	02	00	Suspension bio-film packing	CG	CEPA2
01	03	02	03	00	Hanging bio-film packing	CG	CEPA2
01	03	02	99	00	Others	CG	CEPA2
01	03	03			Filtering material	CG	CEPA2
01	03	03	01	00	Natural filtering material	CG	CEPA2
01	03	03	02	00	Sintering filtering material	CG	CEPA2
01	03	03	03	00	Fiber filtering material	CG	CEPA2
01	03	03	99	00	Others	CG	CEPA2
01	03	04			Separation membrane	CG	CEPA2
01	03	04	01	00	Ceramic membrane	CG	CEPA2
01	03	04	02	00	Microfiltration membrane	CG	CEPA2
01	03	04	03	00	Ultra-filtration membrane	CG	CEPA2
01	03	04	04	00	Nano-filtration membrane	CG	CEPA2
01	03	04	05	00	Reverse osmosis membrane	CG	CEPA2
01	03	04	06	00	Electro-dialysis membrane	CG	CEPA2
01	03	04	99	00	Others	CG	CEPA2
01	03	05			Adsorption material	CG	CEPA2
01	03	05	01	00	Diatomite adsorbent	CG	CEPA2
01	03	05	02	00	Bentonite absorbent	CG	CEPA2
01	03	05	03	00	Molecular sieve adsorbent	CG	CEPA2
01	03	05	04	00	Macro-porous adsorption resin	CG	CEPA2
01	03	05	05	00	Activated carbon adsorbent	CG	CEPA2
01	03	05	99	00	Others	CG	CEPA2
01	03	06			Ion exchange resin	CG	CEPA2
01	03	06	01	00	Anion exchange resin	CG	CEPA2
01	03	06	02	00	Cation exchange resin	CG	CEPA2
01	03	06	03	00	Macro-porous chelating resin	CG	CEPA2
01	03	06	99	00	Others	CG	CEPA2
01	03	07	00	00	Sludge dewatering material	CG	CEPA2
01	03	99	00	00	Others		
02					Air pollution control product		
02	01				Atmospheric pollution control equipment		
02	01	01			Dust (mist or oil)-removing equipment	ET	CEPA1
02	01	01	01		Mechanical dust (mist or oil)-removing device	ET	CEPA1
02	01	01	01	01	Gravity precipitator	ET	CEPA1
02	01	01	01	02	Inertia precipitator	ET	CEPA1
02	01	01	01	03	Centrifugal precipitator	ET	CEPA1
02	01	01	01	99	Others	ET	CEPA1
02	01	01	02		Wet dust (mist or oil)-removing device	ET	CEPA1
02	01	01	02	01	Spray wet precipitator	ET	CEPA1
02	01	01	02	02	Vortex board wet precipitator	ET	CEPA1
02	01	01	02	03	Centrifugal wet precipitator	ET	CEPA1
02	01	01	02	99	Others	ET	CEPA1
02	01	01	03	00	Filter layer dust removal device	ET	CEPA1
02	01	01	04		Bag dust removal device	ET	CEPA1

### ANNEX 3. CORRESPONDENCE TABLE OF EGSS AND THE ENVIRONMENTAL PROTECTION PRODUCTS IN CHINA'S ENVIRONMENTAL INDUSTRY SURVEY (CONTINUED)

SS Environmental specific services

CS Connected services

CG Connected goods

ET End-of-pipe technologies

AG Adapted goods

IT Integrated technologies

Code	Designation	Product type	Environmental domain
02 01 01 04 01	Mechanical vibration type bag filter	ET	CEPA 1
02 01 01 04 02	Counter blowing bag filter	ET	CEPA 1
02 01 01 04 03	Injection type pulse bag filter	ET	CEPA 1
02 01 01 04 04	Rotary blowback bag filter	ET	CEPA 1
02 01 01 04 99	Others	ET	CEPA 1
02 01 01 05	Accessories of bag filter	CG	CEPA 1
02 01 01 05 01	Soot cleaning device	CG	CEPA 1
02 01 01 05 02	Filter bag	CG	CEPA 1
02 01 01 05 03	Filter bag framework	CG	CEPA 1
02 01 01 05 04	Electromagnetic pulse valve	CG	CEPA 1
02 01 01 05 05	Pulse injection controlling instrument	CG	CEPA 1
02 01 01 05 99	Others	CG	CEPA 1
02 01 01 06	Electrostatic dust removal device	ET	CEPA 1
02 01 01 06 01	Plate type electrostatic precipitator (ESP)	ET	CEPA 1
02 01 01 06 02	Tubular type electrostatic precipitator (ESP)	ET	CEPA 1
02 01 01 06 03	Wet electrostatic precipitator (ESP)	ET	CEPA 1
02 01 01 06 99	Others	ET	CEPA 1
02 01 01 07 00	Compound electricity bag dust removal device	ET	CEPA 1
02 01 01 08	ESP accessories	CG	CEPA 1
02 01 01 08 01	HV power supply	CG	CEPA 1
02 01 01 08 02	LV power supply	CG	CEPA 1
02 01 01 08 99	Others	CG	CEPA 1
02 01 01 99 00	Others		
02 01 02 00 00	Wet desulfurization dust removal integration device	ET	CEPA 1
02 01 03	Supporting equipment for flue gas desulfurization (FGD)	ET	CEPA 1
02 01 03 01 00	Limestone-gypsum method	ET	CEPA 1
02 01 03 02 00	Flue gas circulating fluidized bed	ET	CEPA 1
02 01 03 03 00	Spray-to-dry method	ET	CEPA 1
02 01 03 04 00	Spraying-calcium-inside-the-furnace-for-tail-flue-humidification activation method	ET	CEPA 1
02 01 03 05 00	Novel integrated desulfurization (NID)	ET	CEPA 1
02 01 03 06 00	Seawater desulfurization	ET	CEPA 1
02 01 03 07 00	Ammonia desulphurization	ET	CEPA 1
02 01 03 08 00	Dry activated-carbon desulphurization	ET	CEPA 1
02 01 03 99 00	Others	ET	CEPA 1
02 01 04	Supporting equipment for flue gas denitration	ET	CEPA 1
02 01 04 01 00	Selective catalytic reduction (SCR)	ET	CEPA 1
02 01 04 02 00	Selective non-catalytic reduction (SNCR)	ET	CEPA 1
02 01 04 03 00	SNCR + SCR co-denitration	ET	CEPA 1
02 01 04 04 00	Low nitrogen burner	ET	CEPA 1
02 01 04 05 00	Ammonia generator	ET	CEPA 1
02 01 04 99 00	Others	ET	CEPA 1
02 01 05	Motor vehicle purification device	ET	CEPA 1
02 01 05 01	Motor vehicle engine purification device	ET	CEPA 1
02 01 05 01 01	Forced ventilation device for auto crankcase	ET	CEPA 1
02 01 05 01 02	Fuel evaporative recovery device	ET	CEPA 1
02 01 05 01 99	Others	ET	CEPA 1
02 01 05 02	Motor vehicle exhaust purification device	ET	CEPA 1
02 01 05 02 01	Gasoline vehicle exhaust catalytic converter	ET	CEPA 1
02 01 05 02 02	Diesel exhaust catalytic converter	ET	CEPA 1
02 01 05 02 03	Motorcycle exhaust catalytic converter	ET	CEPA 1
02 01 05 02 99	Others	ET	CEPA 1
02 01 05 99 00	Others	ET	CEPA 1
02 01 06	Harmful industrial gas purification equipment	ET	CEPA 1
02 01 06 01	Adsorption device	ET	CEPA 1
02 01 06 01 01	Fixed bed absorber	ET	CEPA 1
02 01 06 01 02	Moving bed absorber	ET	CEPA 1
02 01 06 01 03	Fluidized bed absorber	ET	CEPA 1
02 01 06 01 99	Others	ET	CEPA 1
02 01 06 02	Absorption device	ET	CEPA 1
02 01 06 02 01	Spray type absorber	ET	CEPA 1
02 01 06 02 02	Cyclone plate absorber	ET	CEPA 1
02 01 06 02 03	Packing type absorber	ET	CEPA 1
02 01 06 02 04	Spray-drying type absorber	ET	CEPA 1
02 01 06 02 05	Bubble absorber	ET	CEPA 1

### ANNEX 3. CORRESPONDENCE TABLE OF EGSS AND THE ENVIRONMENTAL PROTECTION PRODUCTS IN CHINA'S ENVIRONMENTAL INDUSTRY SURVEY (CONTINUED)

SS Environmental specific services  
CS Connected services  
CG Connected goods

ET End-of-pipe technologies  
AG Adapted goods  
IT Integrated technologies

Code	Designation	Product type	Environmental domain
02 01 06 02 99	Others	ET	CEPA 1
02 01 06 03	REDOX purification device (industrial)	ET	CEPA 1
02 01 06 03 01	High-temperature oxidation purification device	ET	CEPA 1
02 01 06 03 02	Catalytic oxidation purification device	ET	CEPA 1
02 01 06 03 03	Direct reduction purification device	ET	CEPA 1
02 01 06 03 04	Catalytic reduction purification device	ET	CEPA 1
02 01 06 03 05	Catalytic oxidation - reduction purification device	ET	CEPA 1
02 01 06 03 99	Others	ET	CEPA 1
02 01 06 04 00	Condensate purification device	ET	CEPA 1
02 01 06 05 00	Biological purification device	ET	CEPA 1
02 01 06 06 00	Irradiation purification device	ET	CEPA 1
02 01 06 07 00	Plasma purification device	ET	CEPA 1
02 01 06 08	Combined purification device	ET	CEPA 1
02 01 06 08 01	Adsorption concentration + combustion	ET	CEPA 1
02 01 06 08 99	Others	ET	CEPA 1
02 01 06 99 00	Others		
02 01 07	Universal equipment for atmospheric pollution control	CG	CEPA 1
02 01 07 01 00	Booster fan	CG	CEPA 1
02 01 07 02 00	Solid-liquid separator	CG	CEPA 1
02 01 07 03 00	Vacuum dehydrater	CG	CEPA 1
02 01 07 04 00	Explosion-proof fan	CG	CEPA 1
02 01 07 05 00	Explosion-proof vacuum pump	CG	CEPA 1
02 01 07 06 00	Explosion-proof valve	CG	CEPA 1
02 01 07 07 00	Flame arrester	CG	CEPA 1
02 01 07 08 00	Desulfurization liquid circulating pump	CG	CEPA 1
02 01 07 09 00	Agitator	CG	CEPA 1
02 01 07 10 00	Nozzle	CG	CEPA 1
02 01 07 11 00	Flue valve	CG	CEPA 1
02 01 07 12 00	Automatic control system and device	CG	CEPA 1
02 01 07 13 00	Spray device	CG	CEPA 1
02 01 07 14 00	Gas-gas (vapor) heat exchanger	CG	CEPA 1
02 01 07 99 00	Others	CG	CEPA 1
02 01 99 00 00	Others		
02 02	Medicament and materials for atmospheric pollution treatment		
02 02 01	Filtering material	CG	CEPA 1
02 02 01 01	Glass fiber filtering material	CG	CEPA 1
02 02 01 01 01	Glass fiber paper	CG	CEPA 1
02 02 01 01 02	Glass fiber cloth	CG	CEPA 1
02 02 01 01 03	Glass fiber needled felt	CG	CEPA 1
02 02 01 01 99	Others	CG	CEPA 1
02 02 01 02	Synthetic fiber filtering material	CG	CEPA 1
02 02 01 02 01	Polyamide fiber filtering material (P84)	CG	CEPA 1
02 02 01 02 02	Polyphenylene sulfide (PPS) fiber filtering material	CG	CEPA 1
02 02 01 02 03	Polytetrafluoroethylene (PTFE) fiber filtering material	CG	CEPA 1
02 02 01 02 04	Non-woven fabric	CG	CEPA 1
02 02 01 02 99	Others	CG	CEPA 1
02 02 01 03 00	Membrane filtering material	CG	CEPA 1
02 02 01 99 00	Others		
02 02 02	Anti-corrosion materials for desulfurization equipment	CG	CEPA 1
02 02 02 01 00	Rubber lining	CG	CEPA 1
02 02 02 02 00	Glass flake	CG	CEPA 1
02 02 02 99 00	Others	CG	CEPA 1
02 02 03 00 00	Desulfurizing agent	CG	CEPA 1
02 02 04 00 00	Desulfurization activated carbon	CG	CEPA 1
02 02 05 00 00	Denitration catalyst	CG	CEPA 1
02 02 06 00 00	Denitration catalyst carrier	CG	CEPA 1
02 02 07 00 00	Automobile-exhaust ternary catalyst	CG	CEPA 1
02 02 08	Adsorption material	CG	CEPA 1
02 02 08 01 00	Activated carbon	CG	CEPA 1
02 02 08 02 00	Activated carbon fiber	CG	CEPA 1
02 02 08 03 00	Molecular sieve	CG	CEPA 1
02 02 08 99 00	Others	CG	CEPA 1
02 02 09 00 00	Oxidation catalyst	CG	CEPA 1
02 02 10 00 00	Oxidation catalyst carrier	CG	CEPA 1
02 02 11 00 00	Heat accumulator	CG	CEPA 1



# ANNEX 3. CORRESPONDENCE TABLE OF EGSS AND THE ENVIRONMENTAL PROTECTION PRODUCTS IN CHINA'S ENVIRONMENTAL INDUSTRY SURVEY (CONTINUED)

SS Environmental specific services

CS Connected services

CG Connected goods

ET End-of-pipe technologies

AG Adapted goods

IT Integrated technologies

Code	Designation	Product type	Environmental domain
02 02 99 00 00	Others		
03	Items for solid waste disposal		
03 01	Solid waste disposal equipment		
03 01 01	Collection and transportation equipment	CG	CEPA3
03 01 01 01	Collecting device	CG	CEPA3
03 01 01 01 01	Device for living garbage classified collection	CG	CEPA3
03 01 01 01 02	Device for medical waste classified collection	CG	CEPA3
03 01 01 01 03	Device for hazardous waste classified collection	CG	CEPA3
03 01 01 01 04	Classification marks of dangerous waste and medical waste	CG	CEPA3
03 01 01 01 05	Solid waste-weighing device	CG	CEPA3
03 01 01 01 99	Others	CG	CEPA3
03 01 01 02	Transport vehicles	CG	CEPA3
03 01 01 02 01	Urban garbage truck	CG	CEPA3
03 01 01 02 02	Special vehicle for medical wastes	CG	CEPA3
03 01 01 02 03	Special vehicle for hazardous wastes	CG	CEPA3
03 01 01 03	Transfer station device	CG	CEPA3
03 01 01 03 01	Weighing device	CG	CEPA3
03 01 01 03 02	Compression equipment	CG	CEPA3
03 01 01 03 03	Transshipment & transport facilities	CG	CEPA3
03 01 01 03 99	Others	CG	CEPA3
03 01 01 99 00	Others		
03 01 02	Pretreatment equipment	ET	CEPA3
03 01 02 01	Mechanical separation devices	ET	CEPA3
03 01 02 01 01	Drum screen	ET	CEPA3
03 01 02 01 02	Gravity separation device	ET	CEPA3
03 01 02 01 03	Oscillating table separator	ET	CEPA3
03 01 02 01 99	Others	ET	CEPA3
03 01 02 02	Electromagnetic separation device	ET	CEPA3
03 01 02 02 01	Electric separation device	ET	CEPA3
03 01 02 02 02	Magnetic separation device	ET	CEPA3
03 01 02 03	Crushing device	ET	CEPA3
03 01 02 03 01	Jaw crusher	ET	CEPA3
03 01 02 03 02	Shear crusher	ET	CEPA3
03 01 02 03 99	Others	ET	CEPA3
03 01 02 04 00	Drying equipment	ET	CEPA3
03 01 02 05 00	Compression, forming device	ET	CEPA3
03 01 02 99 00	Others	ET	CEPA3
03 01 03	Curing stabilization device	ET	CEPA3
03 01 03 01 00	Curing equipment	ET	CEPA3
03 01 03 02 00	Stabilization device	ET	CEPA3
03 01 03 99 00	Others	ET	CEPA3
03 01 04	Incineration equipment	ET	CEPA3
03 01 04 01	Garbage incinerator	ET	CEPA3
03 01 04 01 01	Garbage grate incinerator	ET	CEPA3
03 01 04 01 02	Garbage fluidized bed incinerator	ET	CEPA3
03 01 04 01 03	Waste pyrolysis incinerator	ET	CEPA3
03 01 04 01 99	Others	ET	CEPA3
03 01 04 02	Medical waste incinerator	ET	CEPA3
03 01 04 02 01	Rotary kiln incinerator	ET	CEPA3
03 01 04 02 02	A and B pyrolysis type incinerator	ET	CEPA3
03 01 04 02 99	Others	ET	CEPA3
03 01 04 03	Hazardous waste incinerator	ET	CEPA3
03 01 04 03 01	Rotary kiln incinerator	ET	CEPA3
03 01 04 03 99	Others	ET	CEPA3
03 01 04 04	Incinerator auxiliary equipment	ET	CEPA3
03 01 04 04 01	Garbage grab crane	ET	CEPA3
03 01 04 04 02	Combustion engine	ET	CEPA3
03 01 04 04 03	Oil tank	ET	CEPA3
03 01 04 04 04	Slag remover	ET	CEPA3
03 01 04 04 05	Waste heat recovery equipment	ET	CEPA3
03 01 04 04 06	Automatic control system	ET	CEPA3
03 01 04 04 99	Others	ET	CEPA3
03 01 04 05	Flue gas treatment device	ET	CEPA3
03 01 04 05 01	Dry and semi-dry method deacidification device	ET	CEPA3

### ANNEX 3. CORRESPONDENCE TABLE OF EGSS AND THE ENVIRONMENTAL PROTECTION PRODUCTS IN CHINA'S ENVIRONMENTAL INDUSTRY SURVEY (CONTINUED)

SS Environmental specific services  
CS Connected services  
CG Connected goods

ET End-of-pipe technologies  
AG Adapted goods  
IT Integrated technologies

Code	Designation	Product type	Environmental domain
03 01 04 05 02	Activated carbon injection device	ET	CEPA 3
03 01 04 05 03	Bag dust removal device	ET	CEPA 3
03 01 04 05 04	SCR/SNCR denitration device	ET	CEPA 3
03 01 04 05	Others	ET	CEPA 3
03 01 04 99 00	Others	ET	CEPA 3
03 01 05	Biological treatment equipment	ET	CEPA 3
03 01 05 01	Composting equipment	ET	CEPA 3
03 01 05 01 01	Bin composting equipment	ET	CEPA 3
03 01 05 01 02	Strip-composting equipment	ET	CEPA 3
03 01 05 01 03	Uppender	ET	CEPA 3
03 01 05 01 04	Belt conveyor	ET	CEPA 3
03 01 05 01 05	Ventilation equipment	ET	CEPA 3
03 01 05 01 99	Others	ET	CEPA 3
03 01 05 02	Anaerobic digestion device	ET	CEPA 3
03 01 05 02 01	Digestion tank	ET	CEPA 3
03 01 05 02 02	Gas holder	ET	CEPA 3
03 01 05 02 99	Others	ET	CEPA 3
03 01 05 99 00	Others		
03 01 06	Landfill treatment equipment	ET	CEPA 3
03 01 06 01	Landfill machinery	ET	CEPA 3
03 01 06 01 01	Bulldozer	ET	CEPA 3
03 01 06 01 02	Compactor	ET	CEPA 3
03 01 06 01 99	Others	ET	CEPA 3
03 01 06 02	Leachate treatment equipment	ET	CEPA 3
03 01 06 03	Equipment for landfill gas purification & utilization	ET	CEPA 3
03 01 06 03 01	Landfill gas collection device	ET	CEPA 3
03 01 06 03 02	Landfill gas purification device	ET	CEPA 3
03 01 06 03 03	Landfill gas utilization equipment	ET	CEPA 3
03 01 06 03 99	Others	ET	CEPA 3
03 01 06 99 00	Others		
03 01 07 00 00	Heat-temperature sterilization & detoxification device for medical waste	ET	CEPA 3
03 01 08 00 00	Microwave sterilization device for medical waste	ET	CEPA 3
03 01 09 00 00	Chemical disinfection facility for medical waste	ET	CEPA 3
03 01 10	Waste-recycling use equipment	ET	CEPA 3
03 01 10 01 00	Waste processing device	ET	CEPA 3
03 01 10 02 00	Waste recycling device	ET	CEPA 3
03 01 10 99 00	Others	ET	CEPA 3
03 01 99 00 00	Others		
03 02	Reagent and material for solid waste disposal & processing		
03 02 01	Reagent and material for landfill	CG	CEPA 3
03 02 01 01 00	Geo-membrane	CG	CEPA 3
03 02 01 02 00	Bentonite liner	CG	CEPA 3
03 02 01 03 00	Geo-textile	CG	CEPA 3
03 02 01 04 00	Leachate collection pipe	CG	CEPA 3
03 02 01 05 00	Deodorant	CG	CEPA 3
03 02 01 06 00	Fly bane	CG	CEPA 3
03 02 01 99 00	Others	CG	CEPA 3
03 02 02	Materials for incineration flue gas treatment	CG	CEPA 3
03 02 02 01 00	Acidic gas absorption material	CG	CEPA 3
03 02 02 02 00	Activated carbon adsorption material	CG	CEPA 3
03 02 02 03 00	Filter bag material	CG	CEPA 3
03 02 02 99 00	Others	CG	CEPA 3
03 02 03	Reagent and material for curing and stabilization	CG	CEPA 3
03 02 03 01 00	Cement	CG	CEPA 3
03 02 03 02 00	Chelating agent	CG	CEPA 3
03 02 03 99 00	Others	CG	CEPA 3
03 02 04	Material for garbage leachate treatment	CG	CEPA 3
03 02 04 01 00	Flocculating material	CG	CEPA 3
03 02 04 02 00	Membrane filtration material	CG	CEPA 3
03 02 04 33 00	Others	CG	CEPA 3
03 02 99 00 00	Others		
04	Items for noise and vibration control		

### ANNEX 3. CORRESPONDENCE TABLE OF EGSS AND THE ENVIRONMENTAL PROTECTION PRODUCTS IN CHINA'S ENVIRONMENTAL INDUSTRY SURVEY (CONTINUED)

SS Environmental specific services  
CS Connected services  
CG Connected goods

ET End-of-pipe technologies  
AG Adapted goods  
IT Integrated technologies

Code	Designation	Product type	Environmental domain
04 01	Noise and vibration control equipment		
04 01 01	Noise control device	ET	CEPA5
04 01 01 01	Sound absorption device	ET	CEPA5
04 01 01 01 01	Perforated plate acoustical device	ET	CEPA5
04 01 01 01 02	Micro-porous plate sound-absorbing device	ET	CEPA5
04 01 01 01 03	Resonance sound-absorbing device	ET	CEPA5
04 01 01 01 04	Sheet sound-absorbing device	ET	CEPA5
04 01 01 01 05	Membrane sound-absorbing device	ET	CEPA5
04 01 01 01 99	Others	ET	CEPA5
04 01 01 02	Sound arrester	ET	CEPA5
04 01 01 02 01	Acoustic shield	ET	CEPA5
04 01 01 02 02	Sound insulation member, door and window	ET	CEPA5
04 01 01 02 03	Sound-proof chamber	ET	CEPA5
04 01 01 02 04	Sound-proof curtain	ET	CEPA5
04 01 01 02 05	Shading acoustic screen	ET	CEPA5
04 01 01 02 06	Light-transmitting acoustic screen	ET	CEPA5
04 01 01 02 99	Others	ET	CEPA5
04 01 01 03	Muffler device	ET	CEPA5
04 01 01 03 01	Dissipative muffler	ET	CEPA5
04 01 01 03 02	Resistance muffler	ET	CEPA5
04 01 01 03 03	Impedance muffler	ET	CEPA5
04 01 01 03 04	Gas diffusing muffler	ET	CEPA5
04 01 01 03 05	Micro perforated plate muffler	ET	CEPA5
04 01 01 03 06	Silencing shutter	ET	CEPA5
04 01 01 03 07	Electronic active sound attenuation device	ET	CEPA5
04 01 01 03 08	Motor vehicle exhaust muffler	ET	CEPA5
04 01 01 03 99	Others	ET	CEPA5
04 01 02	Vibration control devices	ET	CEPA5
04 01 02 01	Vibration isolation device	ET	CEPA5
04 01 02 01 01	Vibration isolation cushion	ET	CEPA5
04 01 02 01 02	Vibration isolator	ET	CEPA5
04 01 02 01 03	Flexible connector, soft joint	ET	CEPA5
04 01 02 01 04	Elastic supports and hangers	ET	CEPA5
04 01 02 01 99	Others	ET	CEPA5
04 01 02 02	Damping device	ET	CEPA5
04 01 02 02 01	Conventional damper	ET	CEPA5
04 01 02 02 02	Tuned mass damper	ET	CEPA5
04 01 02 02 03	Damping energy dissipator	ET	CEPA5
04 01 02 02 99	Others	ET	CEPA5
04 01 02 99 00	Others	ET	CEPA5
04 01 99 00 00	Others		
04 02	Noise and vibration control material		
04 02 01 00 00	Sound-absorbing material	CG	CEPA5
04 02 02 00 00	Sound insulating material	CG	CEPA5
04 02 03 00 00	Vibration isolation material	CG	CEPA5
04 02 99 00 00	Others		
05	Radiation protection product		
05 01 00 00 00	Radioactive pollution protection product	ET	CEPA7
05 02 00 00 00	Electromagnetic wave pollution protection product	ET	CEPA7
05 99 00 00 00	Others		
06 00 00 00 00	Product for soil pollution control and restore	ET	CEPA4
07	Environmental monitoring instrument & equipment		
07 01	Laboratory equipment		
07 01 01	General instrument & equipment	CG	CEPA9
07 01 01 01 00	Atomic absorption spectrophotometer	CG	CEPA9
07 01 01 02 00	High performance liquid chromatography (HPLC)	CG	CEPA9
07 01 01 03 00	Gas chromatography	CG	CEPA9
07 01 01 04 00	Liquid chromatograph/mass spectrometer (LC-MS)	CG	CEPA9
07 01 01 05 00	Gas chromatography-Mass spectrometry (GC-MS)	CG	CEPA9
07 01 01 06 00	Atomic fluorescence analyzer	CG	CEPA9
07 01 01 07 00	Atomic absorption spectrometer	CG	CEPA9
07 01 01 08 00	Inductively coupled plasma mass spectrometer	CG	CEPA9
07 01 01 99 00	Others		
07 01 02	Special device for environmental monitoring	ET	
07 01 02 01 00	Water sampler	ET	CEPA4

### ANNEX 3. CORRESPONDENCE TABLE OF EGSS AND THE ENVIRONMENTAL PROTECTION PRODUCTS IN CHINA'S ENVIRONMENTAL INDUSTRY SURVEY (CONTINUED)

SS Environmental specific services  
CS Connected services  
CG Connected goods

ET End-of-pipe technologies  
AG Adapted goods  
IT Integrated technologies

Code					Designation	Product type	Environmental domain
07	01	02	02	00	Atmospheric sampler	ET	CEPA 1
07	01	02	03	00	COD digestion instrument	ET	CEPA 2
07	01	02	04	00	TOC detector	ET	CEPA 2
07	01	02	05	00	Infrared oil meter	ET	CEPA 2
07	01	02	99	00	Others	ET	CEPA 2
07	01	99	00	00	Others		
07	02				Portable emergency instrument & equipment		
07	02	01			Water tester	ET	CEPA 4
07	02	01	01	00	Gas chromatography-Mass spectrometry (GC-MS)	ET	CEPA 4
07	02	01	02	00	Organochlorine tester	ET	CEPA 4
07	02	01	03	00	COD tester	ET	CEPA 4
07	02	01	04	00	Multi-parameter water quality analyzer	ET	CEPA 4
07	02	01	05	00	Heavy metal tester	ET	CEPA 4
07	02	01	06	00	Biological toxicity tester	ET	CEPA 4
07	02	01	99	00	Others	ET	CEPA 4
07	02	02			Gaseous mass tester	ET	CEPA 1
07	02	02	01	00	Multi-parameter gas detector	ET	CEPA 1
07	02	02	02	00	CO analyzer	ET	CEPA 1
07	02	02	03	00	Formaldehyde tester	ET	CEPA 1
07	02	02	04	00	TVOC detector	ET	CEPA 1
07	02	02	05	00	Ozonograph	ET	CEPA 1
07	02	02	06	00	CO <sub>2</sub> analyzer	ET	CEPA 1
07	02	02	07	00	Fourier infrared gas detector	ET	CEPA 1
07	02	02	08	00	C16 tester	ET	CEPA 1
07	02	02	99	00	Others	ET	CEPA 1
07	02	03			Noise & vibration tester	ET	CEPA 5
07	02	03	01	00	Noise tester	ET	CEPA 5
07	02	03	02	00	Vibration tester	ET	CEPA 5
07	02	03	99	00	Others	ET	CEPA 5
07	02	04			Soil tester	ET	CEPA 4
07	02	04	01	00	Fourier infrared chemical detector	ET	CEPA 4
07	02	04	99	00	Others	ET	CEPA 4
07	02	05			Radioactive & electromagnetic wave tester	ET	CEPA 7
07	02	05	01	00	Multi-purpose radiometer	ET	CEPA 7
07	02	05	02	00	Electromagnetic wave meter	ET	CEPA 7
07	02	05	99	00	Others	ET	CEPA 7
07	02	06	00	00	Complete instrument and equipment for emergency vehicle	ET	CEPA 9
07	02	99	00	00	Others		
07	03				Online monitoring instrument		
07	03	01			Water quality analyzer	ET	CEPA 4
07	03	01	01	00	Five-parameter analyzer	ET	CEPA 4
07	03	01	02	00	COD analyzer	ET	CEPA 4
07	03	01	03	00	Ammonia nitrogen analyzer	ET	CEPA 4
07	03	01	04	00	Total-phosphorus analyzer	ET	CEPA 4
07	03	01	05	00	Total nitrogen analyzer	ET	CEPA 4
07	03	01	06	00	Oil analyzer	ET	CEPA 4
07	03	01	07	00	Heavy-metal analyzer	ET	CEPA 4
07	03	01	08	00	TOC analyzer	ET	CEPA 4
07	03	01	09	00	VOC detector	ET	CEPA 4
07	03	01	99	00	Others	ET	CEPA 4
07	03	02			Flue gas analyzer	ET	CEPA 1
07	03	02	01	00	CEMS	ET	CEPA 1
07	03	02	02	00	SO <sub>2</sub> analyzer	ET	CEPA 1
07	03	02	03	00	NOx analyzer	ET	CEPA 1
07	03	02	04	00	Particle analyzer	ET	CEPA 1
07	03	02	05	00	Mercury CEMS	ET	CEPA 1
07	03	02	06	00	Ozone analyzer	ET	CEPA 1
07	03	02	07	00	VOC analyzer	ET	CEPA 1
07	03	02	08	00	Dioxin analyzer	ET	CEPA 1
07	03	02	99	00	Others	ET	CEPA 1
07	03	03			Air analyzer	ET	CEPA 1
07	03	03	01	00	Automatic air monitoring system	ET	CEPA 1
07	03	03	02	00	SO <sub>2</sub> analyzer	ET	CEPA 1
07	03	03	03	00	NOx analyzer	ET	CEPA 1
07	03	03	04	00	CO analyzer	ET	CEPA 1
07	03	03	05	00	Ozone analyzer	ET	CEPA 1
07	03	03	06	00	Particle analyzer	ET	CEPA 1
07	03	03	07	00	Benzo [a] pyrene analyzer	ET	CEPA 1



# ANNEX 3. CORRESPONDENCE TABLE OF EGSS AND THE ENVIRONMENTAL PROTECTION PRODUCTS IN CHINA'S ENVIRONMENTAL INDUSTRY SURVEY (CONTINUED)

SS Environmental specific services  
CS Connected services  
CG Connected goods

ET End-of-pipe technologies  
AG Adapted goods  
IT Integrated technologies

Code	Designation	Product type	Environmental domain
07 03 03 08 00	Dioxin analyzer	ET	CEPA 1
07 03 03 99 00	Others	ET	CEPA 1
07 03 04	Sampler	CG	
07 03 04 01 00	Water sampler	CG	CEPA 4
07 03 04 02 00	Dust sampler	CG	CEPA 1
07 03 04 03 00	Flue gas sampler	CG	CEPA 1
07 03 04 04 00	Precipitation sampler	CG	CReMA 10
07 03 04 05 00	Soil sampler	CG	CEPA 4
07 03 04 99 00	Others		
07 03 05 00 00	Data acquisition instrument	CG	CEPA 9
07 03 06	Flow meter	CG	CEPA 4
07 03 06 01 00	Electromagnetic flowmeter	CG	CEPA 4
07 03 06 02 00	Liquid level meter	CG	CEPA 4
07 03 06 99 00	Others		
07 03 99 00 00	Others		
07 04 00 00 00	Sensor	CG	CEPA 9
07 05 00 00 00	Remote sensing monitoring equipment	CG	CEPA 6
07 06 00 00 00	Ecological monitoring system	CG	CEPA 6
07 99 00 00 00	Others		
08	Equipment to manufacture the resource-recycling product		
08 01	Equipment to manufacture the mineral resource-recycling product		
08 01 01 00 00	Equipment to manufacture the energy resource-recycling product	IT	CReMA 14
08 01 02 00 00	Equipment to manufacture the metallic mineral-recycling product	IT	CReMA 14
08 01 03 00 00	Equipment to manufacture the non-metallic mineral-recycling product	IT	CReMA 14
08 01 99 00 00	Others	IT	CReMA 14
08 02	Equipment to manufacture the industrial "three wastes"-recycling product		
08 02 01	Equipment to manufacture the solid waste-recycling product	ET	CEPA 3
08 02 01 01 00	Equipment to manufacture the industrial waste-recycling product	ET	CEPA 3
08 02 01 02 00	Equipment to manufacture the construction and road waste-recycling product	ET	CEPA 3
08 02 01 03 00	Equipment to manufacture the agricultural waste-recycling product	ET	CEPA 3
08 02 01 04 00	Equipment to manufacture the forestry waste-recycling product	ET	CEPA 3
08 02 01 05 00	Equipment to manufacture the domestic garbage-recycling product	ET	CEPA 3
08 02 01 06 00	Equipment to manufacture the sewage-treatment-plant-sludge-recycling product	ET	CEPA 2
08 02 01 07 00	Equipment to manufacture the marine/aquatic-product-processing-waste-recycling product	ET	CEPA 3
08 02 01 99 00	Others		
08 02 02 00 00	Equipment to manufacture the waste-gas-recycling product	ET	CEPA 1
08 02 03 00 00	Equipment to manufacture the wastewater (solution)-recycling product	ET	CEPA 2
08 03	Equipment to manufacture the renewable resource-recycling product		
08 03 01 00 00	Equipment to manufacture the waste metal-recycling product	IT	CReMA 14
08 03 02 00 00	Equipment to manufacture the waste electronics & appliance-recycling product	IT	CReMA 14
08 03 03 00 00	Equipment to manufacture the waste paper-recycling product	IT	CReMA 11B
08 03 04 00 00	Equipment to manufacture the waste plastic-recycling product	IT	CReMA 13C
08 03 05 00 00	Equipment to manufacture the junked tire-recycling product	IT	CReMA 13C
08 03 06 00 00	Equipment to manufacture the waste timber-recycling product	IT	CReMA 11B
08 03 07 00 00	Equipment to manufacture the waste textile-recycling product	IT	CReMA 16
08 03 08 00 00	Equipment to manufacture the cullet-recycling product	IT	CReMA 14
08 03 09 00 00	Equipment to manufacture the waste ceramics-recycling product	IT	CReMA 14
08 03 99 00 00	Others		
08 99 00 00 00	Others		
99 00 00 00 00	Others		

## ANNEX 4. CORRESPONDENCE TABLE OF EGSS AND THE ENVIRONMENT-FRIENDLY PRODUCTS IN CHINA'S ENVIRONMENTAL INDUSTRY SURVEY

SS Environmental specific services  
CS Connected services  
CG Connected goods

ET End-of-pipe technologies  
AG Adapted goods  
IT Integrated technologies

Code	Designation	Product type	Environmental domain
01	Environment label product		
01 01	Category of product to protect human health	Non-EGSS	
01 01 01	Microwave oven	Non-EGSS	
01 01 02	Architectural plastic tubing	Non-EGSS	
01 01 03	Lightweight wall board	Non-EGSS	
01 01 04	Building block	Non-EGSS	
01 01 05	Water nozzle	Non-EGSS	
01 01 06	Wool textiles	Non-EGSS	
01 01 07	Footwear	Non-EGSS	
01 01 08	Ecological textile	Non-EGSS	
01 01 09	Mosquito coils	Non-EGSS	
01 01 10	Air incense stick	Non-EGSS	
01 01 11	Stationery	Non-EGSS	
01 01 12	Inkjet cartridge	Non-EGSS	
01 01 13	Toner cartridge	Non-EGSS	
01 01 14	Inkjet ink	Non-EGSS	
01 01 15	Offset ink	Non-EGSS	
01 01 16	Gravure ink and flexo ink	Non-EGSS	
01 01 17	Insecticidal aerosol	Non-EGSS	
01 01 18	Mothproof agent	Non-EGSS	
01 01 19	Planographic product	Non-EGSS	
01 02	Category of product for environmental protection	AG	CEPA9
01 02 01	Industrial & commercial refrigeration equipment	AG	CEPA9
01 02 02	Light-duty vehicle	AG	CEPA9
01 02 03	Dry type transformer	AG	CEPA9
01 02 04	Wire and cable	AG	CEPA9
01 02 05	Dry battery	AG	CEPA9
01 02 06	Digital camera	AG	CEPA9
01 02 07	Waterproofing coils	AG	CEPA9
01 02 08	Pre-mixed concrete	AG	CEPA9
01 02 09	Rigid waterproof material	AG	CEPA9
01 02 10	Non-asbestos building product	AG	CEPA9
01 02 11	Leather	AG	CEPA9
01 02 12	Luggage, bag, pocket	AG	CEPA9
01 02 13	Copy paper	AG	CEPA9
01 02 14	Adhesive	AG	CEPA9
01 02 15	Detergent	AG	CEPA9
01 03	Category of product for climate change response	AG	CEPA1.1.2
01 03 01	Printer, fax machine and multi-function printer	AG	CEPA1.1.2
01 03 02	Digital multi-function photocopying facility	AG	CEPA1.1.2
01 03 03	Digital integration stenograph	AG	CEPA1.1.2
01 03 04	Rechargeable battery	AG	CEPA1.1.2
01 03 05	Household refrigerating appliance	AG	CEPA1.1.2
01 03 06	Microcomputer, display	AG	CEPA1.1.2
01 03 07	Mobile hard disk	AG	CEPA1.1.2
01 03 08	Server	AG	CEPA1.1.2
01 03 09	Color TV broadcast receiver	AG	CEPA1.1.2
01 03 10	Aerosol	AG	CEPA1.1.2
01 03 11	Fire extinguishing agent	AG	CEPA1.1.2
01 03 12	Ozone-depleting substances alternatives	AG	CEPA1.1.2
01 04	Category of product to protect room environment	Non-EGSS	
01 04 01	Indoor air conditioner	Non-EGSS	
01 04 02	Household electric washing machine	Non-EGSS	
01 04 03	Man-made board and its products	Non-EGSS	
01 04 04	Wooden door	Non-EGSS	
01 04 05	Furniture	Non-EGSS	
01 04 06	Kitchen cabinet	Non-EGSS	
01 04 07	Wallpaper	Non-EGSS	
01 04 08	Sanitary ceramics	Non-EGSS	
01 04 09	Ceramic tile	Non-EGSS	
01 04 10	Water-based paint	Non-EGSS	
01 04 11	Solvent wood coating for indoor decoration	Non-EGSS	
01 04 12	Waterproof coatings	Non-EGSS	
01 05	Category of clean energy product	AG	CRMA 13A
01 05 01	Solar thermal collector	AG	CRMA 13A

# ANNEX 4. CORRESPONDENCE TABLE OF EGSS AND THE ENVIRONMENT-FRIENDLY PRODUCTS IN CHINA'S ENVIRONMENTAL INDUSTRY SURVEY (CONTINUED)

SS Environmental specific services  
CS Connected services  
CG Connected goods

ET End-of-pipe technologies  
AG Adapted goods  
IT Integrated technologies.

Code	Designation	Product type	Environmental domain
01 05 02	Household solar water-heating system	AG	CReMA 13A
01 99	Others		
01 99 01	Plastic door and window	AG	CReMA 11B
01 99 02	Steel door	AG	CReMA 11B
01 99 03	Heating radiator	AG	CReMA 13B
01 99 04	Renewable toner cartridges	AG	CReMA 13C
01 99 05	Recycled paper product	AG	CReMA 11B
02	Energy-saving product	AG	CReMA 13B
02 01	Office facilities	AG	CReMA 13B
02 01 01	Computer	AG	CReMA 13B
02 01 02	Fax machine	AG	CReMA 13B
02 01 03	Printer	AG	CReMA 13B
02 01 04	Digital multifunctional office facilities	AG	CReMA 13B
02 01 05	Photocopier	AG	CReMA 13B
02 01 06	Display	AG	CReMA 13B
02 01 07	Scanner	AG	CReMA 13B
02 01 08	Server	AG	CReMA 13B
02 01 09	Digital projector	AG	CReMA 13B
02 02	Electrical appliances	AG	CReMA 13B
02 02 01	Household microwave oven	AG	CReMA 13B
02 02 02	Water-storage type electric water heater	AG	CReMA 13B
02 02 03	Household automatic electric cooker	AG	CReMA 13B
02 02 04	Household electromagnetic range	AG	CReMA 13B
02 02 05	Unitary air conditioner	AG	CReMA 13B
02 02 06	Water chiller	AG	CReMA 13B
02 02 07	LiBr absorption chiller	AG	CReMA 13B
02 02 08	Water dispenser	AG	CReMA 13B
02 02 09	Split type air conditioning (heat pump) unit	AG	CReMA 13B
02 02 10	Water source heat pump unit	AG	CReMA 13B
02 02 11	Color TV broadcast receiver	AG	CReMA 13B
02 02 12	Household refrigerator	AG	CReMA 13B
02 02 13	Indoor air conditioner	AG	CReMA 13B
02 02 14	Household instantaneous gas water heater and gas water heater for heating	AG	CReMA 13B
02 02 15	Speed-adjustable indoor air conditioner	AG	CReMA 13B
02 02 16	Refrigerating compressor for air conditioner	AG	CReMA 13B
02 02 17	Commercial, industrial or equivalent air-source-heat-pump (ASHP) water heater	AG	CReMA 13B
02 02 18	Energy-saving product for AC fan	AG	CReMA 13B
02 02 19	Unitary air conditioner for computer and data-processing room	AG	CReMA 13B
02 02 20	Flat-panel TV	AG	CReMA 13B
02 02 21	Digital TV receiver (STB)	AG	CReMA 13B
02 02 22	Commercial water boiler	AG	CReMA 13B
02 02 23	Commercial electromagnetic range	AG	CReMA 13B
02 02 24	Household range hood	AG	CReMA 13B
02 02 25	Computer-controlled high-speed lockstitch sewing machine	AG	CReMA 13B
02 03	Lighting product	AG	CReMA 13B
02 03 01	Road lighting system	AG	CReMA 13B
02 03 02	Common self-ballast fluorescent lamp	AG	CReMA 13B
02 03 03	Common double-capped fluorescent lamp	AG	CReMA 13B
02 03 04	Single-capped fluorescent lamp	AG	CReMA 13B
02 03 05	High pressure sodium lamp	AG	CReMA 13B
02 03 06	Metallic halide lamp	AG	CReMA 13B
02 03 07	Ballast of tube-type fluorescent lamp	AG	CReMA 13B
02 03 08	Ballast of high-pressure sodium lamp	AG	CReMA 13B
02 03 09	Ballast of metallic halide	AG	CReMA 13B
02 03 10	Road/tunnel LED lighting product	AG	CReMA 13B
02 03 11	LED down lamp	AG	CReMA 13B
02 03 12	Reflective self-ballasted LED lamp	AG	CReMA 13B
02 03 13	Common non-directional self-ballasted LED lamp	AG	CReMA 13B
02 04	Mechanical & electrical product and power transmission & transformation equipment	AG	CReMA 13B
02 04 01	Single output AC-DC and AC-AC external power	AG	CReMA 13B

## ANNEX 4. CORRESPONDENCE TABLE OF EGSS AND THE ENVIRONMENT-FRIENDLY PRODUCTS IN CHINA'S ENVIRONMENTAL INDUSTRY SURVEY (CONTINUED)

SS Environmental specific services  
CS Connected services  
CG Connected goods

ET End-of-pipe technologies  
AG Adapted goods  
IT Integrated technologies

Code	Designation	Product type	Environmental domain
02 04 02	Switching power supply for microcomputer	AG	CReMA 13B
02 04 03	Cable tray	AG	CReMA 13B
02 04 04	Electric power fittings	AG	CReMA 13B
02 04 05	LV distribution power-saving device	AG	CReMA 13B
02 04 06	Uninterruptible power supply	AG	CReMA 13B
02 04 07	Variable-frequency-speed-control power-saving device for loads, such as fan and pump	AG	CReMA 13B
02 04 08	Positive displacement type air compressor	AG	CReMA 13B
02 04 09	Ventilator	AG	CReMA 13B
02 04 10	Small and medium sized three-phase asynchronous motor	AG	CReMA 13B
02 04 11	Centrifugal water pump	AG	CReMA 13B
02 04 12	3-phase distribution transformer	AG	CReMA 13B
02 04 13	Centrifugal anti-corrosion pump	AG	CReMA 13B
02 04 14	Intensive-type insulated bus duct	AG	CReMA 13B
02 04 15	Power socket and converter	AG	CReMA 13B
02 04 16	3-phase permanent magnet synchronous motor	AG	CReMA 13B
02 04 17	Oil-immersed power transformer	AG	CReMA 13B
02 04 18	AC contactor	AG	CReMA 13B
02 04 19	Small power motor	AG	CReMA 13B
02 04 20	Micro hydro power-generating equipment	AG	CReMA 13B
02 05	Building energy-saving product	AG	CReMA 13B
02 05 01	Building door and window	AG	CReMA 13B
02 05 02	Hollow glass	AG	CReMA 13B
02 05 03	Al-alloy construction profiles	AG	CReMA 13B
02 05 04	Inorganic insulation product	AG	CReMA 13B
02 06 00	Vehicle	AG	CReMA 13B
02 07	New-energy product	AG	CReMA 13B
02 07 01	Solar water-heating system	AG	CReMA 13B
02 99	Others	AG	CReMA 13B
02 99 01	Gas cooking appliance	AG	CReMA 13B
03	Water-saving product	AG	CReMA 10
03 01	Industrial water-saving product	AG	CReMA 10
03 01 01	Water resources management system	AG	CReMA 10
03 01 02	Cooling tower	AG	CReMA 10
03 01 03	Plumbing internal-threaded joint	AG	CReMA 10
03 01 04	Air-cooled heat exchanger	AG	CReMA 10
03 01 05	Tubular product	AG	CReMA 10
03 01 06	2- phosphoric acid group, 1, 2, 4-trihydroxy butane	AG	CReMA 10
03 01 07	Acrylic acid/acrylic ester copolymer	AG	CReMA 10
03 01 08	Isothiazolinone derivate	AG	CReMA 10
03 01 09	IC card cold-water meter	AG	CReMA 10
03 01 10	Spraying condenser for ammonia refrigeration unit	AG	CReMA 10
03 01 11	Butterfly valve	AG	CReMA 10
03 01 12	Joint sealing ring of supply, drainage and sewage pipe	AG	CReMA 10
03 02	Agricultural water-saving product	AG	CReMA 10
03 02 01	Rotary nozzle	AG	CReMA 10
03 02 02	Non-rotary nozzle	AG	CReMA 10
03 02 03	Drip irrigation belt (tube)	AG	CReMA 10
03 02 04	Small light sprinkler	AG	CReMA 10
03 02 05	Large electric sprinkler	AG	CReMA 10
03 02 06	Automatic self-cleaning screen filter	AG	CReMA 10
03 03	Unconventional water resource product	AG	CReMA 10
03 03 01	Hollow fiber ultra-filtration membrane module	AG	CReMA 10
03 03 02	Reverse osmosis desalination device	AG	CReMA 10
03 03 03	Reclaimed water utilization device	AG	CReMA 10
03 03 04	Rotary decantation washer	AG	CReMA 10
03 03 05	Grille decontamination machine	AG	CReMA 10
03 04	Urban life (services) water-saving product	AG	CReMA 10
03 04 01	Water nozzle	AG	CReMA 10
03 04 02	Constant temperature water nozzle	AG	CReMA 10
03 04 03	Unit bathroom	AG	CReMA 10
03 04 04	Cistern fittings	AG	CReMA 10
03 04 05	Toilet flush valve	AG	CReMA 10
03 04 06	Shower	AG	CReMA 10



# ANNEX 4. CORRESPONDENCE TABLE OF EGSS AND THE ENVIRONMENT-FRIENDLY PRODUCTS IN CHINA'S ENVIRONMENTAL INDUSTRY SURVEY (CONTINUED)

SS Environmental specific services  
CS Connected services  
CG Connected goods

ET End-of-pipe technologies  
AG Adapted goods  
IT Integrated technologies.

Code	Designation	Product type	Environmental domain
03 04 07	Toilet appliance	AG	CRMA 10
03 04 08	Industrial washing machine	AG	CRMA 10
03 04 09	Household electric washing machine	AG	CRMA 10
03 04 10	Shower room	AG	CRMA 10
03 04 11	Laundry detergent	AG	CRMA 10
03 04 12	Sprinkler	AG	CRMA 10
03 04 13	Liquid detergent	AG	CRMA 10
03 04 14	Fabric rinsing product	AG	CRMA 10
04	Organic product	AG	CEPA 4
04 01	Organic product production	AG	CEPA 4
04 01 01	Plants (including wild plant acquisition)	AG	CEPA 4
04 01 02	Livestock and poultry product	AG	CEPA 4
04 01 03	Aquatic product	AG	CEPA 4
04 02	Organic product processing	AG	CEPA 4
04 02 01	Meat product and by-product processing	AG	CEPA 4
04 02 02	Aquatic product processing	AG	CEPA 4
04 02 03	Processing or storage of vegetables	AG	CEPA 4
04 02 04	Fruit juice and vegetable juice	AG	CEPA 4
04 02 05	Processing and preservation of fruit and nut	AG	CEPA 4
04 02 06	Vegetable oil processing	AG	CEPA 4
04 02 07	Vegetable oil processing by-product	AG	CEPA 4
04 02 08	Processed liquid milk or cream	AG	CEPA 4
04 02 09	Other dairy	AG	CEPA 4
04 02 10	Grain grinding	AG	CEPA 4
04 02 11	Starch and starch product	AG	CEPA 4
04 02 12	Processing feed	AG	CEPA 4
04 02 13	Baked goods	AG	CEPA 4
04 02 14	Grain powder products, such as noodles	AG	CEPA 4
04 02 15	Food without definite classification	AG	CEPA 4
04 02 16	Liquor	AG	CEPA 4
04 02 17	The Other natural fiber for spinning	AG	CEPA 4
04 02 18	Garment	AG	CEPA 4

## ANNEX 5. CORRESPONDENCE TABLE OF EGSS AND THE RESOURCE-RECYCLING PRODUCTS IN CHINA'S ENVIRONMENTAL INDUSTRY SURVEY

SS Environmental specific services  
CS Connected services  
CG Connected goods

ET End-of-pipe technologies  
AG Adapted goods  
IT Integrated technologies

Code	Designation	Description	Product type	Environmental domain
01	Comprehensive utilization of mineral resources		AG	
01 01 00	Comprehensive utilization of energy sources	Including development & utilization of coal seam gas, mine gas, coal -bearing oil shale, coal -bearing kaolin associated and remnant ore; r ecycling of oil -field associated gas and acid gases; utilization of oil sands and oil shale; comprehensive utilization of sulfur in natural gas; comprehensive exploitation and utilization of shale gas and tight sandstone gas, etc	AG	CReMA 13C
01 02 00	Comprehensive utilization of metallic minerals	Including comprehensive utilization of ferrous metallic mineral, non -ferrous metallic mineral, precious metal metallic mineral, rare and rare earth metals	AG	CReMA 14
01 03 00	Comprehensive utilization of nonmetallic minerals	Including comprehensive utilization of non-metallic minerals for chemical industry, such as phosphorus mineral, pyrite and paigeite; comprehensive utilization of non -metallic minerals for building materials, such as graphite, kaolin, benton ite, talc and fluorite	AG	CReMA 14
01 99 00	Others			
02	Comprehensive utilization of industrial "three wastes"			
02 01	Comprehensive utilization of solid waste			
02 01 01	Comprehensive utilization of industrial waste	Including comprehensive u tilization of tailings, gangue, fly ash, desulfuration gypsum, phosphogypsum, red mud, chemical residues, smelting slag and industrial wastes	AG	CEPA 3
02 01 02	Comprehensive utilization of building and road waste	Including utilization of construction an d road waste to produce building materials, pavement materials and backfill	AG	CEPA 3
02 01 03	Agricultural waste recycling utilization	Including straw recycling, breeding waste to compost and make feedstuff, methane, etc	AG	CEPA 3 & CReMA 13A
02 01 04	Forestry waste recycling utilization	Including recycling of forestry residues, secondary fuelwood, bagasse and so on	AG	CReMA 11B & CReMA 13A
02 01 05	Domestic garbage recycling utilization	Including harmless treatment and utilization of waste packaging, kitchen waste, garden waste and manure, etc	AG	CEPA 3
02 01 06	Comprehensive utilization of sludge from wastewater treatment plant	Including harmless disposal and recycling of sludge,	AG	CEPA 2
02 01 07	Comprehensive utilization of waste from marine a nd aquatic product processing	Including comprehensive utilization of waste from marine and aquatic product processing, such as chitin and chitin	AG	CEPA 3
02 01 99	Others			

# **ANNEX 5. CORRESPONDENCE TABLE OF EGSS AND THE RESOURCE-RECYCLING PRODUCTS IN CHINA'S ENVIRONMENTAL INDUSTRY SURVEY (CONTINUED)**

SS Environmental specific services  
CS Connected services  
CG Connected goods

ET End-of-pipe technologies  
AG Adapted goods  
IT Integrated technologies.

Code	Designation	Description	Product type	Environmental domain
02 02 00	Comprehensive utilization of waste gas	Including recycling of coke oven gas, blast furnace gas and converter gas; recycling and comprehensive utilization of useful components in the waste gas from the electric power, petroleum, and chemical industry, etc; power generation with waste heat and pressure from the industrial kiln, and utilization of waste heat from low temperature wastewater, etc	AG	CEPA 1, CReMA 13A
02 03 00	Comprehensive utilization of waste water (solution)	Including recycling of industrial waste water and urban sewage, reclamation of mine water, waste engine oil, oil - extraction wastewater, waste vegetable oil, waste acid, and waste alkali solution	AG	CEPA 2
03	Renewable resources recycling			
03 01 00	Scrap metal recycling	Including dismantling, crushing and processing of waste or old vehicle, vessel, agriculture and engineering machinery; dismantling, crushing and separation of waste power battery and lead -acid battery, and recycling of waste solution; remanufacturing of auto parts, engineering machinery, machine tools, etc	AG	CReMA 14
03 02 00	Recycling of waste electric and electronic products	Including recycling, sorting and dismantling of waste electric and electronic products for full utilization and harmless treatment; disassembling of complete machine and circuit board recycling	AG	CReMA 14
03 03 00	Waste paper recycling	Including waste paper recycling, sorting, deinking, processing and utilization	AG	CReMA 11B
03 04 00	Waste plastics recycling	Including waste plastics recycling, sorting, cleaning, sorting and utilization	AG	CReMA 13C
03 05 00	Junked tire recycling	Including junked tire refurbishing, utilizing rubber powder to produce the modified asphalt, etc	AG	CReMA 13C
03 06 00	Waste wood recycling	Including recycling of waste wood and wood products	AG	CReMA 11B
03 07 00	Waste textile recycling	Including old textile recycling, sorting, processing and utilization	AG	CReMA 16
03 08 00	Waste glass recycling	Including waste glass recycling, sorting, processing and utilization	AG	CReMA 14
03 09 00	Ceramic waste recycling	Including ceramic waste recycling, sorting, processing and utilization	AG	CReMA 14
03 99 00	Others			
99 00 00	Others			

# ANNEX 6. QUESTIONNAIRE OF CHINA'S ENVIRONMENTAL INDUSTRY SURVEY: THE BASIC INFORMATION ON LEGAL ENTITY OF ENVIRONMENTAL PROTECTION INDUSTRY (HCHJ 1-1)

Form No.: HCHJ 1- 1

Prepared by: Ministry of Environmental Protection National  
Development and Reform Commission

Approval authority: National Bureau of Statistics

Approval No.: GTZH [2012] No. 37

2011 Date of expiry: March 31st, 2013

01	Organization Code <input type="text"/>	02	Full name (Stamp)
03	Legal representative (Principal)	04	Starting year of the environmental protection and related industries : <input type="text"/>
05	Registered address <input type="text"/>	Administrative division code of registered address <input type="text"/>	
06	Registered capital (RMB ten thousand)		
07	Location of the entity: <input type="text"/>	Administrative division code of the entity <input type="text"/>	
08	Name of the park located <input type="text"/>	Reported code of category of such park <input type="text"/>	
09	<div> <div> Contacts: <div> Area code <input type="text"/></div> <div> Tel: <input type="text"/></div> <div> Ext.: <input type="text"/></div> <div> obile <input type="text"/></div> <div> Fax <input type="text"/></div> <div> Fax ext. <input type="text"/></div> <div> Post code <input type="text"/></div> </div> </div> <div> Email: <input type="text"/></div> <div> Website: <input type="text"/></div>		



**ANNEX 6. QUESTIONNAIRE OF CHINA'S ENVIRONMENTAL INDUSTRY SURVEY: THE BASIC INFORMATION ON LEGAL ENTITY OF ENVIRONMENTAL PROTECTION INDUSTRY (HCHJ 1-1)  
(CONTINUED)**

	1. Environmental protection and related product production & operation	2. Environmental services
20	Environmental protection and related product category (multiple choice available): <input type="checkbox"/> 1. Environmental protection product (including equipment to produce the resource-recycling product); 2. Environment-friendly product; 3. Resource-recycling product	
21	Environmental services: 1. Service category (multiple choice available): <input type="checkbox"/> <input type="checkbox"/> 01 Pollution control services and environmental protection facility operation; 02 Environmental engineering construction; 03 Environmental technology research, development and promotion; 04 Environmental policy planning consultation; 05 Environmental audit and audit certification; 06 Environmental engineering consultation; 07 Environmental assessment and evaluation; 08 Environmental supervision; 09 Environmental education and training; 10 Environmental information services; 11 Environmental monitoring; 12 Environmental trade services; 13 Environmental financial services; 14 Ecological restoration and ecological protection; 15 Other environment services 2. Services field (multiple choice available): <input type="checkbox"/> <input type="checkbox"/> 01 Water pollution treatment; 02 Atmospheric pollution control; 03 Solid waste disposal; 04 Noise & vibration control; 05 Protection of radiation pollution; 06 Soil pollution control & restoration 07 Cleaner production; 08 Resource recycling; 09 Environment-friendly service; 10 Other (please specify _____)	
22	Qualification for general contracting enterprise engaged in the municipal utilities engineering: <input type="checkbox"/> 1. Premium; 2. Level I; 3. Level II; 4. Level III; Certificate No.:	
23	Qualification for professional contracting enterprise engaged in the environmental protection engineering: <input type="checkbox"/> 1. Premium; 2. Level I; 3. Level II; 4. Level III; Certificate No.:	
24	Qualification for environmental impact assessment of construction project: <input type="checkbox"/> 1. Class A; 2. Class B; Certificate No.:	
25	Qualification for special project of environmental engineering design: (multiple choice available): <input type="checkbox"/> <input type="checkbox"/> 1. Water pollution control engineering: <input type="checkbox"/> <input type="checkbox"/> 01 Class A 02 Class B Certificate No.: 2. Atmosphere pollution control engineering: <input type="checkbox"/> <input type="checkbox"/> 01 Class A 02 Class B Certificate No.: 3. Solid waste disposal project: <input type="checkbox"/> <input type="checkbox"/> 01 Class A 02 Class B Certificate No.: 4. Physical pollution control engineering: <input type="checkbox"/> <input type="checkbox"/> 01 Class A 02 Class B Certificate No.: 5. Pollution restoration project: <input type="checkbox"/> <input type="checkbox"/> 01 Class A 02 Class B Certificate No.:	
26	Qualification for environmental engineering consultation (ecological construction and environmental engineering): <input type="checkbox"/> 1 Class A 2 Class B 3 Class C Certificate No.:	
27	Qualification for operation of the environmental pollution control facilities: (multiple choice available): <input type="checkbox"/> <input type="checkbox"/> 1. Domestic sewage: <input type="checkbox"/> <input type="checkbox"/> 01 Class A 02 Class B Certificate No.: 2. Industrial wastewater: <input type="checkbox"/> <input type="checkbox"/> 01 Class A 02 Class B Certificate No.: 3. Dust removal, desulfurization and denitration: <input type="checkbox"/> <input type="checkbox"/> 01 Class A 02 Class B Certificate No.: 4. Industrial waste gas: <input type="checkbox"/> <input type="checkbox"/> 01 Class A 02 Class B Certificate No.: 5. Industrial solid waste: <input type="checkbox"/> <input type="checkbox"/> 01 Class A 02 Class B Certificate No.: 6. Household garbage: <input type="checkbox"/> <input type="checkbox"/> 01 Class A 02 Class B Certificate No.: 7. Automatic continuous monitoring: <input type="checkbox"/> <input type="checkbox"/> 01 Water Certificate No.: _____ 02 Gas Certificate No.:	
28	Qualification for engineering supervision enterprise (municipal utility engineering) (multiple choice available) 1. Water Supply and drainage: <input type="checkbox"/> <input type="checkbox"/> 01 Class A 02 Class B 03 Class C Certificate No.: 2. Garbage disposal: <input type="checkbox"/> <input type="checkbox"/> 01 Class A 02 Class B 03 Class C Certificate No.: 3. Others (Details _____) <input type="checkbox"/> <input type="checkbox"/> 01 Class A 02 Class B 03 Class C Certificate No.:	
29	Hazardous waste operation license: <input type="checkbox"/> Certificate No.: 1. Comprehensive collection, storage and disposal of hazardous waste operation license; 2. Collection of hazardous waste operation license	

Principal of division:

Principal for statistics:

Prepared by:

Date:

Note:

1. All legal entities engaged in production and business of the environmental-protection and related products and environmental service listed in the investigation scope of this questionnaire must fill in this form.
2. Except for items indicated with (multiple choice available), all items in the form just have a single option.

## ANNEX 7. QUESTIONNAIRE OF CHINA'S ENVIRONMENTAL INDUSTRY SURVEY: EMPLOYMENT OF THE ENVIRONMENTAL PROTECTION INDUSTRY (HCHJ 1-2)

Form No.: HCHJ 1- 2

Prepared by: Ministry of Environmental Protection National  
Development and Reform Commission

Organization Code:

□□□□□□□□-□

Approval authority: National Bureau of Statistics

Approval No.: GTZH [2012] No. 37

Date of expiry: March 31st, 2013

Full name (Stamp): 2011

Unit: person

Name of indicator	Code	Actual value in this year
A	B	1
1. Total employees of the environmental protection and related industry	01	
Among them: Female	02	
R&D staff	03	
Management	04	
Technical staff	05	
Workers	06	
Classify according to the professional and technical titles:		
Staff with senior technical title	07	
Staff with middle technical title	08	
Staff with primary technical title	09	
Classify according to the technical grade:		
Senior technician	10	
Technician	11	
Advanced worker	12	
Intermediate worker	13	
2. Employees engaged in production and operation of the environmental protection and related product	14	
Among them: Employees engaged in production and operation of the environmental protection product	15	
Employees engaged in production and operation of the environment-friendly product	16	
Employees engaged in production and operation of the resource recycling product	17	
1. Employees engaged in environmental services	18	
Among them: Employees with certificates engaged in operation of the pollution control facilities	19	
Environmental impact assessment engineers	20	
Registered consulting engineers (ecological construction and environmental engineering)	21	
Registered supervision engineer (municipal utilities engineering)	22	
Registered environment engineer	23	
Registered utility equipment engineer (water supply and drainage)	24	
Registered construction engineering (municipal utilities)	25	

Principal of division:

Principal for statistics:

Prepared by:

Date:

Note:

1. All legal entities engaged in production and business of the environmental-protection and related products and environmental service listed in the investigation scope of this questionnaire must fill in this form.
2. The statistics on Items 07, 08 and 09 shall be conducted according to the highest professional and technical titles of staff owned (once statistics on each person).
3. The statistics on Items 10, 11, 12 and 13 shall be conducted according to the highest technical grade of staff owned (once statistics on each person).

## ANNEX 8. QUESTIONNAIRE OF CHINA'S ENVIRONMENTAL INDUSTRY SURVEY: OPERATION OF THE ENVIRONMENTAL PROTECTION INDUSTRY (HCHJ 1-3)

Form No.: HCHJ 1- 3  
Prepared by: Ministry of Environmental Protection  
National Development and Reform Commission  
Approval authority: National Bureau of Statistics  
Approval No.: GTZH [2012] No. 37  
Date of expiry: March 31st, 2013

Organization Code:  
□□□□□□□□-□

Full name (Stamp): 2011

Name of indicator	Unit	Code	Actual value of this year
A	B	C	I
1. Assets and liabilities	—	—	
Original value of fixed assets	RMB 10 000	01	
Newly-increased investment in fixed assets in this year	RMB 10 000	02	
Accumulated depreciation	RMB 10 000	03	
Including: depreciation of this year	RMB 10 000	04	
Total assets	RMB 10 000	05	
Total liabilities	RMB 10 000	06	
2. Business cost and taxes	—	—	
Operating cost	RMB 10 000	07	
Business tax and additional	RMB 10 000	08	
Sales expense	RMB 10 000	09	
Overhead expense	RMB 10 000	10	
Including: tax	RMB 10 000	11	
Expense for business trip	RMB 10 000	12	
Financial cost	RMB 10 000	13	
Including: interest expense	RMB 10 000	14	
Gains on the fair value change	RMB 10 000	15	
Return on investment	RMB 10 000	16	
Employee compensation payable	RMB 10 000	17	
Income tax payable	RMB 10 000	18	
VAT payable	RMB 10 000	19	
3. Total product-sales value of this year	RMB 10 000	20	
Among them: sales value of environmental protection product	RMB 10 000	21	
Sales value of environment-friendly product	RMB 10 000	22	
Sales value of resource recycling product	RMB 10 000	23	
1. Total revenue of this year	RMB 10 000	24	
Among them: sales revenue of environmental protection products	RMB 10 000	25	
Sales revenue of environment-friendly product	RMB 10 000	26	
Sales revenue of resource-recycling product	RMB 10 000	27	
Business income of r environment service	RMB 10 000	28	
5. Business profit of this year	RMB 10 000	29	
Among them: sales profit of environmental protection product	RMB 10 000	30	
Sales profit of environment-friendly product	RMB 10 000	31	
Sales profit of resource-recycling product	RMB 10 000	32	
Business profit of environment services	RMB 10 000	33	
6. Total foreign exchange earning of this year	USD 10 000	34	
Export contract amount of environmental protection product	USD 10 000	35	
Export contract amount of environment-friendly product	USD 10 000	36	
Export contract amount of resource-recycling product	USD 10 000	37	
Foreign contract amount of resource-recycling product	USD 10 000	38	

Principal of division:

Principal for statistics:

Prepared by:

Date:

Note:

- All legal entities of which selected "1. Enterprises accounting system" in the Column 12 of "Category of applicable accounting system" (including the public institutions with the enterprise management and enterprise accounting system practiced) must fill in this form.
- For by-business environmental protection entities, some data on the environmental protection and related industry shall be filled for each item.
- The audit relationship: 21+22+23=20; 25+26+27+28=24; 30+31+32+33=29; 35+36+37+38=34

## ANNEX 9. QUESTIONNAIRE OF CHINA'S ENVIRONMENTAL INDUSTRY SURVEY: PRODUCTION AND OPERATION OF THE ENVIRONMENTAL-PROTECTION PRODUCTS (HCHJ 2-1)

Organization Code: -  
 Full name (Stamp):   
 Product name:   
 Registered product code :   
 Applicable standard:   
 Exported country code:  2011

Form No.: HCHJ 2- 1  
 Prepared by: Ministry of Environmental Protection  
 National Development and Reform Commission  
 Approval authority: National Bureau of Statistics  
 Approval No.: GTZH [2012] No. 37  
 Date of expiry: March 31st, 2013

Name of indicator	Unit	Code	Actual value of this year
A	B	C	1
Product output		01	
Number of product of this model (series)	Each	02	
Number of the environmental protection product with national certification	Each	03	
Industrial sales value	RMB 10000	04	
Product sales revenue	RMB 10000	05	
Product sales profit	RMB 10000	06	
Export contract amount	USD 10000	07	

Principal of division:  Principal for statistics:  Prepared by:  Date:

### Note:

1. This form shall be filled in by the entities engaged in production and business of the environmental protection products (including equipment to produce the resource recycling product). Each form only reflects production and operation of certain (series of) environmental protection product. In event that the entity has produced many (series of) environmental protection products in this year, the corresponding quantity of forms shall be filled in.
2. "Product name" is the name of (series of) environmental protection product given by certain entity.
3. "Registered product code" shall be filled in according to a code of 10 digitals as in Appendix "(3) the directory and code for filling in the environmental protection product".
4. The column of "Applicable standard" shall be filled in with "National Standard" and "Industrial Standard", "Enterprise Standard", "Others" or "Non Standard" according to the actual situation. In event that a variety of standards have been adopted, only the highest standard shall be filled in.
5. The column of "Exported country (or area) code" shall be filled in according to Appendix "(2) Country (Area) code".
6. For the column of "Actual value of this year", value of each index shall be filled in corresponding to the (series) environmental protection product.
7. The unit of "01 Product output" shall be filled in on the basis of the product characteristics, such as: each, set, and ton.
8. For the column of "02 Number of product of this model (series)", total amount of the (series of) environmental protection products in different specifications shall be filled in.
9. The logic relationship:  $03 \leq 02$  ; The sum of all Item 04 of this kind of forms  $\leq$  Item 21 in the Form HCHJ 1-3; the sum of all Item 05 of this kind of forms  $\leq$  Item 25 in the Form HCHJ 1-3; the sum of all Item 07 of this kind of forms  $\leq$  Item 35 in the Form HCHJ 1-3.



## ANNEX 10. QUESTIONNAIRE OF CHINA'S ENVIRONMENTAL INDUSTRY SURVEY: PRODUCTION AND OPERATION OF THE ENVIRONMENT-FRIENDLY PRODUCTS (HCHJ 2-2)

Organization Code:

□□□□□□□□□□

Full name (Stamp):

Product name:

Registered product code :

Applicable standard:

Exported country code:

2011

Form No.: HCHJ 2- 2

Prepared by: Ministry of Environmental Protection

National Development and Reform Commission

Approval authority: National Bureau of Statistics

Approval No.: GTZH [2012] No. 37

Date of expiry: March 31st, 2013

Name of indicator	Unit	Code	Actual value of this year
A	B	C	1
Number of product of this model (series)	Each	01	
Received national certification or not	—	—	
Among them: environment label product	Each	02	
Energy-saving product	Each	03	
Water saving product	Each	04	
Organic product	Each	05	
Product output		06	
Government procurement amount	RMB 10000	07	
Industrial sales value	RMB 10000	08	
Product sales revenue	RMB 10000	09	
Product sales profit	RMB 10000	10	
Export contract amount	USD 10000	11	

Principal of division:

Principal for statistics:

Prepared by:

Date:

Principal of division:

Principal for statistics:

Prepared by:

Date:

Note:

1. This form shall be filled in by the entities engaged in production and business of the environment-friendly products with environment mark certification, energy-saving & water-saving certification or organic product certification. All products to be filled in are limited the those with environment mark certification, energy-saving & water-saving certification or organic product certification from the certain certification body approved or authorized by the state. Each form only reflects production and operation of certain (series of) environment-friendly product. In event that the entity has produced many (series of) environment-friendly products in this year, the corresponding quantity of forms shall be filled in.
2. "Product name" is the name of (series of) environment-friendly product given by certain entity.
3. "Registered product code" shall be filled in according to a code of 6 digitals as in Appendix "(4) the directory and code for filling in the environment-friendly product".
4. The column of "Applicable standard" shall be filled in with "National Standard" and "Industrial Standard", "Enterprise Standard", "Others" or "Non Standard" according to the actual situation. In event that a variety of standards have been adopted, only the highest standard shall be filled in.
5. The column of "Exported country (or area) code" shall be filled in according to Appendix "(2) Country (Area) code".
6. For the column of "Actual value of this year", value of each index shall be filled in corresponding to the (series of) environment-friendly product.
7. For the column of "01 Number of product of this model (series)", total amount of the (series of) environment-friendly products in different specifications shall be filled in.
8. The unit of "06 Product output" shall be filled in on the basis of the product characteristics, such as: each, set, and ton.
9. The logic relationship:  $02+03+04+05>0$ ; The sum of all Item 08 of this kind of forms  $\leq$  Item 22 in the Form HCHJ 1-3; the sum of all Item 09 of this kind of forms  $\leq$  Item 26 in the Form HCHJ 1-3; the sum of all Item 11 of this kind of forms  $\leq$  Item 36 in the Form HCHJ 1-3.

## ANNEX 11. QUESTIONNAIRE OF CHINA'S ENVIRONMENTAL INDUSTRY SURVEY: PRODUCTION AND OPERATION OF THE RESOURCE-RECYCLING PRODUCTS (HCHJ 2-3)

Organization Code:

□□□□□□□□□□

Full name (Stamp):

Name of resource-recycling product:

Registration code of resource  
product: -recycling

Exported country code:

Name of waste resource to be disposed 2011

Form No.: HCHJ 2- 2

Prepared by: Ministry of Environmental Protection  
National Development and Reform Commission

Approval authority: National Bureau of Statistics

Approval No.: GTZH [2012] No. 37

Date of expiry: March 31st, 2013

Name of indicator	Unit	Code	Actual value of this year
A	B	C	1
Investment in production equipment	RMB 10000	01	
Output of resources-recycling product		02	
Industrial sales value	RMB 10000	03	
Product sales revenue	RMB 10000	04	
Product sales profit	RMB 10000	05	
Export contract amount	USD 10000	06	
Amount of waste resources utilized		07	
Proportion of waste resources mixed	%	08	

Principal of division:

Principal for statistics:

Prepared by:

Date:

Note:

1. This form shall be filled in by the entities engaged in production and business of the resources-recycling product. The equipment to produce resource-recycling product shall be included in the statistics on the environmental protection product (HCHJ 2-1), instead of this form. Each form only reflects production and operation of certain (series of) resources-recycling product. In event that the entity has produced many (series of) resources-recycling products in this year, the corresponding quantity of forms shall be filled in.
2. "Name of resource-recycling product" is the name of (series of) resources-recycling product given by certain entity.
3. "Registration code of resource-recycling product" shall be filled in according to a code of 6 digitals as in Appendix "(5) the directory and code for filling in the resources-recycling product".
4. The column of "Exported country (or area) code" shall be filled in according to Appendix "(2) Country (Area) code".
5. "Name of waste resource to be disposed" is the name of main waste resource as raw materials to produce this (series of) resource-recycling product.
6. For the column of "Actual value of this year", value of each index shall be filled in corresponding to the (series of) resource-recycling product.
7. For the column of "01 Investment in production equipment", the entity shall fill in with actual total expenditure on procurement, repair and maintenance special equipment to produce this (series of) resource-recycling product in this year.
8. The unit of "02 Output of resources-recycling product" and "07 Amount of waste resources utilized" shall be filled in on the basis of the product characteristics; for example, solid and liquid shall be measured in "10000 tons"; while gas shall be measured in "Nm<sup>3</sup>".
9. For the column of "08 Proportion of waste resources mixed Investment in production equipment", the entity shall fill in with the percentage of main wastes weight to total weight of production raw materials.
10. The logic relationship: the sum of all Item 03 of this kind of forms ≤ Item 23 in the Form HCHJ 1-3; the sum of all Item 04 of this kind of forms ≤ Item 27 in the Form HCHJ 1-3; the sum of all Item 06 of this kind of forms ≤ Item 37 in the Form HCHJ 1-3.

## ANNEX 12. QUESTIONNAIRE OF CHINA'S ENVIRONMENTAL INDUSTRY SURVEY: PRODUCTION AND OPERATION OF THE ENVIRONMENTAL SERVICE INDUSTRY (HCHJ 4-1)

Organization Code:

□□□□□□□□-□

Full name (Stamp):

2011

Form No.: HCHJ 2- 2

Prepared by: Ministry of Environmental  
Protection National Development and  
Reform Commission

Approval authority: National Bureau of Statistics

Approval No.: GTZH [2012] No. 37

Date of expiry: March 31st, 2013

Item	Code	Qty. of item	Contract amount (RMB 10000)	Gross revenue (RMB 10000)	Total profit (RMB 10000)	Foreign service contract amount (USD 10000)
A	B	1	2	3	4	5
Pollution control service and operation of environmental protection facility	01					
Among them: operation of environmental protection facility	02					
Environmental engineering construction	03					
Research, development and promotion of the environmental technology	04					
Among them: environmental technology R & D	05					
Environmental technology popularization	06					
Environmental policy planning and consulting	07					
Environmental audit and audit certification	08					
Among them: audit certification and consultation of the environmental management system	09					
Audit and consultation of the cleaner production	10					
Certification and consultation of the environment mark	11					
Certification and consultation of the environmental protection product	12					
Certification and consultation of the energy-saving product	13					
Certification and consultation of the water-saving product	14					
Certification and consultation of the organic product	15					
Environmental engineering consulting	16					
Environmental assessment and evaluation	17					
Among them: the environmental impact assessment	18					
Environmental technology assessment	19					
Environmental risk and damage assessment	20					
Evaluation of the product life cycle	21					
Environmental supervision	22					
Environmental education and training	23					
Environmental information service	24					
Environmental monitoring	25					
Environmental trade service	26					
Including: sales agent of environmental protection products	27					
Environment financial services	28					
Including: environmental investment and financing services	29					
Ecological restoration and ecological protection services	30					
Among them: ecological restoration and ecological protection engineering	31					
Nature reserve monitoring and management	32					
Ecological protection consulting services	33					
Protection and breeding services for the endangered species	34					
Other environmental services	35					

Principal of division:

Principal for statistics:

Prepared by:

Date:

Note:

1. This form shall be filled in by the entities engaged in the environmental services.

2. The logic relationship: except for the 4th column,  $02 \leq 01$ ,  $05+06 \leq 04$ ,  $09+10+11+12+13+14+15 \leq 08$ ,  $18+19+20+21 \leq 17$ ,  $27 \leq 26$ ,  $29 \leq 28$ ,  $31+32+33+34 \leq 30$ ; the sum of each level of item of Line 3 under Column A = Item 28 in the Form HCHJ 1-3, or Item 07 in the Form HCHJ 1-4 or Item 08 in the Form HCHJ 1-5; the sum of each level of item of Line 4 under Column A = Item 33 in the Form HCHJ 1-3, or Item 30 in the Form HCHJ 1-4 or Item 03 in the Form HCHJ 1-5; the sum of each level of item of Line 5 under Column A = Item 38 in the Form HCHJ 1-3, or Item 31 in the Form HCHJ 1-4 or Item 23 in the Form HCHJ 1-5.









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