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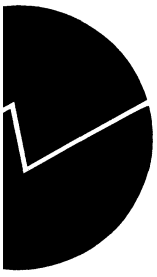

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Documents

The Energy Account in China

A Technical Documentation

Preface

This document is a product of a Partnership Agreement between the National Bureau of Statistics, China (NBS) and Statistics Norway (SN).

The project aims at:

- *Building capacity in the field of natural resource accounting.*
- *Enhancing the capacity to prepare environmental statistics.*
- *Developing analytical tools for linking natural resource use to economic activity and environmental impacts.*
- *Producing more comprehensive and widespread publications, and improving the methods of presentation.*

During a four-year period (1997-2001) NBS and SN will co-operate on an institution-to-institution basis for transfer of knowledge and sharing of experience. The project is financed by the Norwegian Agency for Development Aid (NORAD). The State Environmental Protection Agency in China (SEPA) has the overall responsibility.

NBS has written this report and is responsible for its content. SN by Sigurd Holtskog, Lisbet Høgset and Kristin Rypdal have edited the manuscript to publish it in the Documents-series.

Contents

1. Introduction

The first part of this project is, according to the arrangement of the co-operation, to make a sector-wise Energy Account. Chinese Energy Account's group started up this work in March 1998, and finished the compilation by October the same year.

During the period from March to October, we have continuously discussed with Norwegian experts how to set up such an account. Most of their advises have been adopted during this process. We have put a lot of work into getting basic data, designing the framework of the accounts, and gain the final results. However, the compilation method of Energy Account still needs improvements due to restrictions on data sources, limited special knowledge, and the condition of energy use and statistics.

1.1. Sources of data

During the work, we tried to get more data consulted as many experts as possible.

The main data sources were:
"Energy Balance Table" [1]
"Input-output Table in China 1995"
"Statistics Yearbook in China 1997"
"Energy Statistics Yearbook 1991"
Data provided by other ministries, such as Ministry of Transport, Ministry of Railway, Ministry of Agriculture, etc.

1.2. Basic organisation of the Energy Account

The sub-groups of the Energy Account are Energy Balance, Energy Supply and Energy Demand.

1.2.1. Energy Balance

This table contains the final use of energy (including commercial energy, bio-energy, waste and other) by sectors in national economy. Classification of sectors is the 33 industries of "Input-output Table in China 1995" adding rural households and urban households. There are 22 kinds of energy carriers, such as raw coal, coke, bio-energy, electricity, etc. The Energy Balance is presented in physical terms (tons, etc.) as well as in thermal term (Joule). The basic form of the table is shown in A.3.

1.2.2. Energy Supply

This table is made from the information of energy demand and supply in energy production industries. Energy supply also includes energy import and export data by energy carriers. It presents the total supply of each energy carrier. The basic form of the table is shown in A.4.

1.2.3. Energy Demand

This table describes final energy consumption in non-energy producing industries and households. The basic form is shown in A.5.

1.2.4. Purpose of Energy Use

Purpose of energy use varies between sectors. We divide the use in three main categories: Heating, Feedstock, and Transport. Thus the Energy Demand may be separated into three tables: Energy used for heating, Energy used for feedstock, and Energy used for transport. All the three tables have the same design as Energy Demand.

[1] See "Statistics Yearbook in China"(1996)

2. Compilation Steps of the Energy Account

2.1. The compilation of the Energy Balance by 1995 input-output sectors

The table is mainly based on the Energy Balance directly. The bio-energy data in the table is collected from the Ministry of Agriculture, Ministry of Forest, Economy and Trade Commission, and others. Thus it is not necessary to adjust or confirm the data.

2.1.1. Confirmation of energy carriers

Energy carriers mainly rely on the "Energy Balance" which is provided by the Industry and Transport Department of NBS. In the beginning of the compilation, it was suggested by Norwegian experts to include other coke, blast furnace gas, and marine fuels in order to describe the energy consumption by sectors in China more wholly and detailed. During the process, which was based on available material, some of the energy carriers were deleted and some incorporated after discussions with Norwegian experts. Some energy carriers were added according to the information of related ministries. For example municipal solid waste and industrial solid waste were included. The detailed description of how to deal with the matter, is as follows.

1. Blast furnace gas: According to the definition, blast furnace gas is the coal gas given out from the top of a blast furnace. It is a kind of by-product from smelting of iron. There are no other sectors but smelting of iron which produces this gas. Thus, we did not try to split it from other gases since it is difficult to get the separated data.
2. Marine fuels: This energy carrier is not separated out in the Energy Account. There are two main reasons. First, fishing industry in China consumes very little marine fuels, because most of the fish are bred in freshwater and fishing in the sea is very limited. Second, in the current statistics, marine fuels are incorporated in fuel oils for both the production side and the consumption side. Furthermore, the output of it accounts for a very small percentage of the total output of fuel oil, only 1.28%. On the consumption side there is no separate data for marine fuels. When considering the development of fishing industry further, we recommend that the statistics cover this carrier separately in the Energy Account.
3. Dung: In the grassland of China, rural households combust part of dry cattle dung for heating and cooking. Because households live far apart and because dung isn't considered commercial energy, it is difficult to collect the data and there is no special survey for it. Therefore, we did not get any data on burning of dung.
4. "Others": The Energy Balance consists of three such carriers: Other oil products, other coking products and other energy. Most of the former two carriers are not used as energy. At the same time, there is a little amount of "other energy" that is made from many energy carriers. Thus, we did not show them in the Energy Balance.
5. Solid waste: Based on the material provided by related institutes, industrial solid waste is listed in the Energy Balance. Another part of solid waste, municipal solid waste, is also listed in the Energy Balance due to its significance. There is, as far as we know, only one commercial plant which generates electricity by incinerating urban waste, the plant is in Shenzhen City of Guangdong Province.

There are 22 kinds of energy carriers in the Energy Account after the adjustments showed above.

2.1.2. Adjustment of sector classification

In fact, the classification of 1995 input-output industries is based on the old standard made in 1984. The classification of Energy Balance sectors is organised and incorporated to match the classification of 1995 input-output industries. The job of adjusting the sectors will not need to be done after the Energy Account has been based on the 1997 input-output table. Both special statistics and national accounts, has adopted or tried to adopt the same new classification standard made in 1994.
The sector classification is based on 1995 input-output table, consisting of 33 sectors including rural and urban households. Furthermore, the freight transport and communication sector of the 33 sectors is

divided into seven sub-sectors: railway, highway, air, etc. The Passenger transport sector is divided into five sub-sectors: railway, highway, water, air, and others.

2.1.2.1. Coal mining and coal cleaning

Originally we wanted to split the data for coal mining and coal cleaning, because the impact on the environment is very different. Cleaned coal emits less SO_2 and particles when burnt, compared to raw coal. This split may be done based on plants' costs and production method. However, there is currently not enough information to do this split. We hope this can be worked out in the future.

2.1.2.2. Petroleum refineries and Coking, manufacture of gas and coal products

In the 1995 input-output table, petroleum refineries is a single sector. Coking, manufacture of gas and coal products is another single sector. On the other hand, in the Energy Balance provided by Industry and transport department of NBS, petroleum refineries and coking is a single sector, while manufacture of gas is another single sector, and coal products belongs to manufactures not elsewhere classified.

Manufacture of coal products is an energy transformation sector where most of the energy is used as feedstock. The amount of energy used for heating is small. The output of coal products accounts for a small percentage of the sector manufactures not elsewhere classified. The final use of energy is therefore omitted here.

In order to get the separate amount of energy consumption in the two sectors of petroleum refineries and coking, manufacture of gas and coal products, "1991 Energy Statistics Yearbook in China" is used. The amount of energy consumption by the two sectors can be found in the yearbook. It is then easy to get the consumption rates of the two sectors according to the amount of each kind of energy consumed. The total amount of energy consumed by the two sectors can be obtained from the "Energy Balance". Split the total amount by each rate and the coal used of energy consumption by each sector is gained. The following example illustrates this:

CPY is the coal consumption by petroleum refineries in the yearbook, while CCY is the amount of coal used for coking, manufacture of gas and coal products in the yearbook. The amount of coal consumption by the two sectors in "Energy Balance" is CPB and CCB. Then the coal consumption by Petroleum refineries in the Energy Account is (CPB+CCB)*[CPY/(CPY+CCY)]. The amount for the other sector in the Energy Account is (CPB+CCB)*[CCY/(CPY+CCY)].

2.1.2.3. Freight transport and communication, and passenger transport

In the Energy Balance, energy consumption for transport sector and communication sector is known. The main problem is to split the amount for transport into freight and passenger transport.

Work out the total amount for both transport and communication first, according to the Energy Balance. Then estimate the volumes separately by Freight transport and communication, and Passenger transport in value terms, according to the 1995 input-output table. The amounts by Freight transport and Passenger transport can be calculated in physical terms separately by splitting the total amount from the Energy Balance according to the rates between the relevant amounts in the 1995 input-output table. It is assumed that the price of each energy carrier is the same in this table.

Second, subtract the amount transported by pipeline from the amount for freight transport because all the energy used for pipeline belongs to freight transport. Then, use the rate gotten from the Energy Balance to split the energy used for freight transport or passenger transport, each amount can be calculated for railway, highway, water, etc.
Third, adjust the amounts estimated above by comparing the data provide by the Ministry of Railway and other agencies. For example, electricity consumption by railway is replaced by the data provided by Ministry of Railway.

2.1.2.4. Maintenance and repair of machinery and equipment
The energy consumption by this sector is included in other sectors due to restrictions of data resources and statistical range. So all the data in the sector is equal to naught.

2.1.2.5. Commerce and restaurants
In Energy Balance, commerce and restaurants is a single sector. In order to split them, according to 1995 input-output table, get the rate of energy use by commerce or restaurants to the total energy use by commerce and restaurants. Then, split the total energy consumption in Energy Balance by this rate to get the energy use by each sector. Moreover, the energy consumption by commerce should include the energy stored, because storage belongs to commerce according the classification in the 1995 input-output sectors.

2.1.2.6. Public utilities and services to households, Cultural, educational, health and scientific research institutions, Finance and insurance, and Public administration
There is only one single sector others for these four sectors in Energy Balance. Use the rate of energy consumption by the four sectors in value term in the 1995 input-output table to split the total energy consumption of others in Energy Balance. Then calculate the energy use by each sector in physical term.

2.2. The compilation and checkout of Energy Demand and Energy Supply

Based on the adjusted Energy Balance it is necessary to finish compiling Energy Demand and Energy Supply and checking the data.

2.2.1. Confirmation of reasonable table form
Many scenarios were tried out, but after testing and discussions with Norwegian experts, we accept the advice given and adopted the table form described below. This design makes it easy to analyse the production and consumption of energy carriers.

Keep the basic form of Energy Balance. Energy Supply contains primary energy output, import and export, stock changes, and energy transformation. Energy Demand contains all the data of final energy consumption by all the sectors excluding energy producing sectors.

2.2.2. Energy Supply
The data of energy used for transformation in the Energy Balance is shown as negative figures in the Energy Supply sheet. The energy produced is shown as positive figures in the same matrix.

The final energy use by energy producing sectors is shown as negative data of energy use by corresponding sectors in Energy Balance.

All the data of energy output both primary energy and transformed energy is shown as energy products of corresponding sectors in Energy Supply.

Then, list out energy import and export, net purchases abroad, stock changes, transport loss and errors in Energy Supply, sum up all the data of each energy carrier and the total supply of each energy carrier is gained.

2.2.3. Energy Demand
Subtract the corresponding data in Energy Supply from the adjusted Energy Balance to get Energy Demand.

2.2.4. Check the data

Check the balance between Energy Supply and Energy Demand, and try to find calculating errors and system errors. Correct all the errors.

2.3. Energy Demand and Energy Supply in PJ

Both Energy Demand and Energy Supply are shown in physical terms. Now change the term from physical to thermal and show the tables in PJ. The transition coefficients mainly depend on the Chinese situation based on national standards. Originally, the coefficients adopted, had one valid digit. Later, four valid digits were adopted based on energy statistics in NBS. This improves the results.

2.4. The compilation of Energy Use Purpose

According to different purposes, the energy use is broken down into three parts: heating, feedstock and transport.

2.4.1. Primary splitting of data

Based on available data, energy use is broken down according to primary purpose of use. Most of the energy is used for single purpose or mainly for single purpose. Some of the energy used for secondary purposes may be omitted. The following cases are rather difficult:

(1) Is coal used by water transport? Is coal used in boats?
(2) Is coal used for feedstock by primary metal manufacturing? What about coke?
(3) Is each energy carrier used for feedstock by chemical industry? For example natural gas, refinery gas, LPG, crude oil, and fuel oil.
(4) Is crude oil used for feedstock by manufacture of building materials and other non-metallic mineral products?
(5) The amount of crude oil used by agriculture is too large, is it used by fishing powerboats?
(6) Is most of fuel oil used by water transport actually used for transport? Is the fuel oil by powerboats for fishing?
(7) How much of diesel oil is used for transport and how much for feedstock? Is it used for feedstock or heating by chemical industry, manufacture of building materials and other non-metallic mineral products, and primary metal manufacturing?
(8) Is electricity used only for transport by railway and highway transport?
(9) Is natural gas used for transport?

2.4.2. Further adjustment and confirmation

In order to finish the breakdown of energy use by purpose, we visited related ministries and agencies. Then, adjusted and confirmed the data for energy use by purpose.

1. Feedstock

According to experts' advice, energy is, besides the energy sectors, only used for feedstock by chemical industry, primary metal manufacturing, and manufacture of building materials and other non-metallic mineral products.

In primary metal manufacturing, only coal and coke is used for feedstock in the iron refinery production. Some of them are also used for heating. We split the coke used for feedstock according to the iron output 1995 and the contents of iron ore. We omit the coal used for feedstock.
The energy data used by chemical industry mainly derives from the data for feedstock by industry in the Energy Balance provided by Industry and Transport Department of NBS and the data provided by the Ministry of Chemistry Industry.

Energy used for feedstock by Manufacture of building materials and other non-metallic mineral products mainly derives from the data calculated by related Ministries.

2. Transport
All the coal and diesel oil used by railway transport is assumed used for transport purposes. Coal and diesel oil used by freight or passenger railway transport is adjusted according to the material provided by the Ministry of Railway. Electricity used by railway companies for transportation purpose is collected from Ministry of Railway.

All the fuel oil consumed by water transport is assumed used for purpose of transport. Other energy carriers used by the sector water transport are assumed used for heating except diesel oil and gasoline.

All the kerosene used by air transport is considered for transport. The amount used by freight or passenger air traffic is adjusted according to the data from the Bureau of Civil Aviation.

All the gasoline and diesel oil is considered for transport except part of them used by chemical industry for feedstock.

Because electricity used by highway transport is little and there is not enough statistics, we omit this part of electricity.

Most of fuel oil used by agriculture is used for transport by fishing powerboats. Because of restrictions of material, we did not split and all the fuel oil used by agriculture is considered for transport. We recommend this part to be incorporated in water transport.

Crude oil used by agriculture is probably used in small industrial plants owned by villages or privates. Thus, we incorporated this part to the part used by chemical industry.

The amount of natural gas used by highway transport is regarded as a bit too large, the reason may be that natural gas used for heating is put into the part used for transport in statistics. We therefore consider this part to be used by urban households.

3. Heating
Subtract the part of energy used for feedstock and for transport from Energy Demand, and we get the part of energy used for heating.

After having done all of the above, we get three tables: Energy for Heating, Energy for Transport, and Energy for Feedstock according to the different purposes of energy use.

3. Problems and Advice

3.1. Distinguish of coal mining and coal cleaning

There is a great difference between raw coal and cleaned coal, considering the impact on environment. We distinguished them as energy carriers this time, while we didn't distinguish them by sector, coal mining and coal cleaning. In fact, there is also a great difference between the technology and production process of coal mining and coal cleaning. Thus, some errors may occur when we link the data of input-output table and the Energy Account. Therefore, it is useful to find a way to distinguish the two sectors.

3.2. Further improve the data of transport and bio-energy

At present, it seems to be lack of statistics in transport agencies. The data on bio-energy is even more difficult to find. The data on transport and bio-energy have to be improved if the Energy Account is to be better.

3.3. Enhance energy statistics

In order to estimate the impacts of energy use on environment, energy carriers should be more detailed and data in the energy statistics should be better.

3.4. Very important to accumulate special knowledge

When compiling the Energy Account, far-ranging knowledge like statistics, economic theories, physics, chemistry, and environment, is beneficial. Knowledge about the situation of our country is also necessary. So, it is very useful to have knowledge in many related fields when compiling the Energy Account.

3.5. Needed improvements on purpose of energy use

Some important factors or data may have been omitted during the process of compilation due to limited knowledge and data sources. These have to be considered and added to the Energy Account in the future, to improve its' quality step by step.

Appendix A

A1. Sectors

Sectors
01 Agriculture
02 Coal mining
03 Crude petroleum and natural gas production
04 Metal ore mining
05 Other mining
06 Food manufacturing
07 Manufacture textiles
08 Manufacture of wearing apparel, leather and products of leather and fur
09 Sawmills and manufactucture of furniture
10 Manufacture of paper, cultural and educational articles
11 Electricity, steam and hot water production and supply
12 Petroleum refineries
13 Coking, manufacture of gas and coal products
14 Chemical industries
15 Manufacture of building materials and other non-metallic mineral products
16 Primary metal manufacturing
17 Manufacture of metal products
18 Manufacture of machinery
19 Manufacture of transport equipment
20 Manufacture of electric machinery and instruments
21 Manufacture of electronic and communication equipment
22 Manufacture of instruments, meters and other measuring equipment
23 Maintenance and repair of machinery and equipment
24 Industries not elsewhere cassified
25 Construction
26 Freight transport and communication
Railway
Highway
Water
Air
Pipeline
Others
Communications
27 Commerce
28 Resturants
29 Passenger transport
Railway
Highway
Water
Air
Others
30 Public utilities and services to housholds
31 Cultural, educational, health and scientific research institutions
32 Finance and insurance
33 Public administration
RH Rural households
UH Urban households

A2. Energy Carriers

Energy carrier		Unit
Coal	Raw coal	Tonnes
	Cleaned coal	Tonnes
	Other washed coal	Tonnes
	Briquettes	Tonnes
	Coke	Tonnes
Waste	Municipal waste	Tonnes
	Industrial waste	Tonnes
Bio-energy	Crop residuals	Tonnes
	Wood	Tonnes
	Biogas	m^3
Gas	Natural gas	m^3
	Coke-oven gas	m^3
	Refinery gas	Tonnes
	Other gas	m^3
Liquids	Crude oil	Tonnes
	LPG	Tonnes
	Gasoline	Tonnes
	Fuel oil	Tonnes
	Diesel oil	Tonnes
	Kerosene	Tonnes
Electricity		kWh
Heat		TJ

A3. Energy Balance

ENERGY BALANCE(WT)

UNIT: 10^4 TONNES

		Energy carriers																									
		Solids								Bioenergy			Gas				Liquids										
			Coal																								
Sectors		TOTAL	Total	Raw coal	Cleaned coal	Other washed coal	Briquettes	Coke	Municipal waste	Industrial waste	Crop residuals	Wood	Biogas (10^4m^3)	Natural gas (10^4m^3)	Coke-oven gas (10^4m^3)	Refinery gas	Other gas (10^4m^3)	Crude oil	LPG	Gasoline	Fuel oil	Diesel oil	Kerosene	Electricity (10^8kwh)	Heat (10TJ)
01	Agriculture	7400.8	1856.7	1824.4	5.1	27.3		128.6				2727.1	896.2	0.0					0.1	179.7	8.4	1001.4	3.6	582.4	16.6
02	Coal mining	3247.6	2555.6	2246.9	68.1	240.5		40.9							0.1		0.0		0.0	37.9	1.2	31.6	1.6	392.4	186.5
03	Crude petroleum and natural gas production	2102.2	220.0	219.7		0.4		1.2						41.6		25.1		175.0	13.1	59.0	166.4	147.1	0.6	258.9	994.2
04	Metal ore mining	1556.3	245.9	197.4	0.6	48.0		77.5						0.6			0.8		0.1	12.9	11.8	17.6	0.5	117.3	1071.4
05	Other mining	1654.4	542.3	540.5	1.4	0.4		27.1						0.7			0.1		0.1	28.4	6.8	33.3	0.5	184.6	830.6
06	Food manufacturing	9090.1	3555.2	3371.6	66.3	117.3		32.4						1.1	0.0		0.4	2.0	2.3	72.0	22.1	43.5	2.9	322.9	5033.4
07	Manufacture textiles	9507.9	2354.4	2337.1	9.5	7.8		5.8						4.0	0.2		0.4	1.3	7.1	42.7	32.1	35.5	2.9	335.2	6686.3
08	Manufacture of wearing apparel, leather and products of leather and fur	1705.5	249.9	247.2	2.4	0.4		1.9							0.0		0.0	0.1	0.1	16.8	2.3	13.8	0.5	84.1	1336.0
09	Sawmills and manufactucture of furniture	723.2	398.4	397.5	0.8	0.1		2.4									0.0		2.6	8.4	2.0	7.5	1.2	39.0	261.5
10	Manufacture of paper, cultural and educational articles	6001.0	1845.2	1834.0	5.6	5.7		5.9						0.1	0.1		0.4	0.4	0.2	23.4	9.8	22.2	5.3	207.3	3880.7
11	Electricity, steam and hot water production and supply	6961.8	895.9	534.5	16.8	344.6		3.8	6.7	2040.0				0.2	2.6		0.0	1.0	0.5	33.6	27.9	36.7	1.3	795.2	3116.5
12	Petroleum refineries	17617.4	33.7	29.5	3.1	1.1		0.6						15.6				30.9		20.0	359.9	29.6	1.1	136.5	16989.5
13	Coking, manufacture of gas and coal products	3703.2	509.3	446.1	46.5	16.7		42.1						0.2	16.2	254.4	6.2		84.6	12.5	27.5	6.9		30.4	2713.0
14	Chemical industries	40343.6	10287.6	10000.5	170.8	116.3		1279.9						67.0	8.9	80.3	7.1	50.4	52.9	108.0	432.2	127.6	9.0	1353.5	26479.2
15	Manufacture of building materials and other non-metallic mineral products	16105.2	13343.2	12526.7	99.7	716.8		276.7		560.0				2.3	3.1	1.3	9.4	17.3	13.4	82.1	324.7	148.8	2.6	599.6	720.7
16	Primary metal manufacturing	29311.0	5072.2	4657.4	204.1	210.8		7983.2						4.1	140.1		569.3	3.5	0.5	55.3	455.4	90.9	1.0	1331.0	13604.7
17	Manufacture of metal products	863.0	457.1	447.4	7.7	1.9		123.2						0.5	0.1		0.2	0.2	1.3	18.2	11.1	23.4	3.4	113.5	110.9
18	Manufacture of machinery	4849.6	1515.9	1382.4	100.9	32.6		340.4						3.3	1.1		53.7	0.4	7.3	89.3	43.8	46.9	4.1	260.8	2482.7
19	Manufacture of transport equipment	3191.8	682.7	666.9	6.2	9.5		41.4						0.5	0.2		2.1	0.6	0.8	37.5	13.8	31.3	4.9	154.6	2221.5
20	Manufacture of electric machinery and instruments	1055.8	329.9	326.1	2.7	1.1		15.6						0.7	0.8		1.2	0.9	1.8	24.1	10.2	15.9	0.5	65.0	589.3
21	Manufacture of electronic and communication equipment	385.1	137.0	134.3	2.7			1.1						1.0	0.3		0.5		1.3	9.2	7.7	10.2	0.2	38.6	178.0
22	Manufacture of instruments, meters and other measuring equipment	246.0	70.7	69.6	0.6	0.6		3.4						0.0	0.0		0.1		0.0	4.7	1.2	3.9	0.1	17.1	144.7
23	Maintenance and repair of machinery and equipment	0.0	0.0																						
24	Industries not elsewhere cassified	1059.4	748.2	740.8	4.5	2.9		28.3							0.4		1.7	1.0	0.7	16.4	5.5	14.2	0.9	77.8	164.4
25	Construction	1002.7	439.8	439.5	0.3	0.1		10.8						0.3		0.0		2.7	0.5	103.6	14.2	118.2	3.5	159.6	149.5
26	Freight transport and communication	3647.0	1224.9	1154.1	23.4	47.5		8.4						0.7				21.9	0.5	792.2	184.6	1024.5	82.4	167.5	139.4
	Railway	1607.9	1050.6	979.7	23.3	47.5		2.4						0.0				0.1	0.0	21.3	0.8	440.4	0.3	90.5	1.5
	Highway	1117.6	74.0	74.0	0.0			3.6											0.1	729.0	6.2	285.1	2.3	16.6	0.7
	Water	415.5	12.4	12.4	0.0			0.1						0.0					0.1	7.3	169.5	217.3	2.1	6.9	
	Air	129.2	5.4	5.4				0.0						0.0						6.5	0.4	38.6	75.5	2.6	0.1
	Pipeline	144.5	11.1	11.1				0.5						0.1				21.2	0.2	2.4	5.9	26.4	0.9	9.6	66.3
	Others	56.2	22.5	22.5				0.0										0.6		10.8	1.8	13.1	0.2	7.3	0.0
	Communications	175.6	49.0	49.0				1.8						0.0					0.1	15.0	0.1	3.6	1.0	34.1	70.8
27	Commerce	1392.5	806.0	777.9	0.5	27.5		14.5						0.3	0.4		0.0	0.3	10.1	192.1	6.2	102.3	8.0	157.3	94.9
28	Resturants	297.1	187.3	180.6	0.1	6.5		11.2						0.2	0.3		0.0	0.2	7.3	11.6	0.4	6.1	0.5	44.6	27.3
29	Passenger transport	710.0	74.3	63.1	3.7	7.5		1.7												183.7	42.8	217.2	167.6	12.4	10.3
	Railway	162.0	55.2	44.0	3.7	7.5		0.7												5.0	0.2	84.8	0.1	9.1	7.0
	Highway	261.0	12.4	12.4	0.0			1.0												172.8	1.5	68.1	0.5	1.7	3.0
	Water	97.5	2.1	2.1	0.0			0.0												1.7	40.6	51.9	0.5	0.7	
	Air	178.7	0.9	0.9				0.0												1.5	0.1	9.2	166.5	0.3	0.2
	Others	10.7	3.8	3.8																2.6	0.4	3.1	0.1	0.7	0.1
30	Public utilities and services to housholds	2769.5	788.7	729.1	0.3	59.3		3.0						0.3	1.7	0.0	1.3	0.0	1.6	309.5	16.7	350.2	74.5	95.4	1126.5
31	Cultural, educational, health and scientific research institutions	1635.6	584.3	540.2	0.2	43.9		1.7						0.3	1.0	0.0	0.8	0.0	1.3	73.9	4.0	83.6	17.8	67.7	799.3
32	Finance and insurance	546.9	125.1	115.7	0.0	9.4		0.6						0.0	0.3	0.0	0.3	0.0	0.2	37.7	2.0	42.7	9.1	25.7	303.1
33	Public administration	1438.3	488.5	451.6	0.2	36.7		1.1						0.5	0.6	0.0	0.5	0.0	2.6	149.6	8.1	169.2	36.0	45.4	536.1
		0.0																							
RH	Rural households	209476.8	7675.0	7153.3		499.6	22.0	67.6			30330.6	17559.7	153301.4				1.9		28.1	12.5		11.7	57.4	430.9	
UH	Urban households	19777.9	5855.1	5360.3		470.1	24.7	64.0						19.9	22.2	3.9	32.6		505.8	51.2		4.5	6.8	574.7	12637.1
Total		411376.0	66156.1	62143.8	854.8	3110.8	46.8	10648.0	6.7	2600.0	30330.6	20286.8	154197.6	165.8	200.9	365.1	691.1	309.9	748.8	2909.3	2262.8	4070.0	512.1	9278.9	105635.8
Industry		161280.9	46050.3	43354.0	820.9	1875.4	0.0	10334.7	6.7	2600.0	0.0	0.0	0.0	143.1	174.3	361.1	653.7	284.8	190.7	812.1	1975.3	938.5	44.9	6915.3	89795.5

A4. Energy Supply

ENERGY BALANCE-SUPPLY(WT)

UNIT: 10^4 TONNES

Sectors	Energy carriers																					
	Solids								Bioenergy			Gas				Liquids						
	Coal																					
	Total	Raw coal	Cleaned coal	Other washed coal	Briquettes	Coke	Municipal waste	Industrial waste	Crop residuals	Wood	Biogas (10^4m^3)	Natural gas (10^8m^3)	Coke-oven gas (10^8m^3)	Refinery gas	Other gas (10^8m^3)	Crude oil	LPG	Gasoline	Fuel oil	Diesel oil	Kerosene	Electricity (10^8kwh)	Heat (10TJ)
Energy sectors																							
02 Coal mining																							
feedstocks	-21880.9	-21880.9																					
products	155919.5	136073.1	14884.6	4961.7																			
energy uses	-2555.6	-2246.9	-68.1	-240.5		-40.9							-0.1		0.0		0.0	-37.9	-1.2	-31.6	-1.6	-392.4	-186.5
03 Crude petroleum and natural gas production																							
feedstocks																							
products												179.5				15004.4							
energy uses	-220.0	-219.7		-0.4		-1.2						-41.6		-25.1		-175.0	-13.1	-59.0	-166.4	-147.1	-0.6	-258.9	-994.2
11 Electricity, steam and hot water production and supply																							
feedstocks	-50327.4	-49190.0	-280.0	-857.4								-8.3	-11.1	-61.0	-52.1	-66.1	-0.3	-0.3	-1379.3	-251.4			
products																						10077.3	107200.2
energy uses	-895.9	-534.5	-16.8	-344.6		-3.8	-6.7	-2040.0				-0.2	-2.6		0.0	-1.0	-0.5	-33.6	-27.9	-36.7	-1.3	-795.2	-3116.5
12 Petroleum refineries																							
feedstocks																-14353.4							
products														428.1			540.8	3051.6	2960.8	3972.6	445.8		
energy uses	-33.7	-29.5	-3.1	-1.1		-0.6						-15.6				-30.9		-20.0	-359.9	-29.6	-1.1	-136.5	-16989.5
13 Coking, manufacture of gas and coal products																							
feedstocks	-19205.3	-6480.9	-12678.8	-45.6															-51.6				
products	46.8				46.8	13347.2							223.3		740.4								
energy uses	-509.3	-446.1	-46.5	-16.7		-42.1						-0.2	-16.2	-254.4	-6.2		-84.6	-12.5	-27.5	-6.9		-30.4	-2713.0
Production outside the energy sectors							6.7	2600.0	30330.6	20286.8	154197.6												
Imports	163.5	163.5				0.1										1709.0	232.6	15.9	659.1	612.3	76.1	6.4	
Chinese purchases abroad	0.0																		200.0	33.0	39.6		
Exports	-2861.7	-2187.3	-674.4			-886.1										-1822.7	-7.1	-185.5	-27.8	-130.6	-37.4	-60.3	
Foreign purchases in China (-)	0.0																	-7.5	-40.8	-38.9	-25.0		
Stocks (+decrease, -increase)	86.8	113.3	-60.1	33.6		-331.4										-95.8	8.0	27.6	-34.0	-44.2	-12.7		
Opening stocks	19946.2	18937.2	644.6	364.4		874.8										530.1	18.1	434.8	287.7	419.4	76.1		
Closing stocks(-)	-19859.4	-18823.9	-704.7	-330.8		-1206.2										-625.8	-10.1	-407.2	-321.7	-463.6	-88.7		
Losses												3.9				157.1	1.5					744.5	1485.6
losses in transportion												0.9				134.8	1.3					617.5	1485.6
Statistical errors	-4214.8	-5532.8	336.5	981.5		1481.8						2.1	11.2	2.0	-2.8	-91.5	23.7	-7.6	23.6	82.7	-25.7		78.9
Total supply	61941.7	58667.2	720.3	2507.5	46.8	10559.3	0.0	560.0	30330.6	20286.8	154197.6	107.7	182.0	85.7	684.9	103.1	650.5	2746.4	1679.9	3818.0	507.5	7665.5	81636.1

A5. Energy Demand

ENERGY BALANCE-DEMAND(WT)

UNIT: 10^4 TONNES

	Sectors	Energy carriers																							
		Solids								Bioenergy			Gas				Liquids								
			Coal																						
		Total	Raw coal	Cleaned coal	Other washed coal	Briquettes	Coke	Municipal waste	Industrial waste	Crop residuals	Wood	Biogas (10^4m^3)	Natural gas (10^8m^3)	Coke-oven gas (10^8m^3)	Refinery gas	Other gas (10^8m^3)	Crude oil	LPG	Gasoline	Fuel oil	Diesel oil	Kerosene	Electricity (10^8kwh)	Heat (10TJ)
01	Agriculture	1856.7	1824.4	5.1	27.3		128.6				2727.1	896.2	0.0					0.1	179.7	8.4	1001.4	3.6	582.4	16.6
04	Metal ore mining	245.9	197.4	0.6	48.0		77.5						0.6			0.8		0.1	12.9	11.8	17.6	0.5	117.3	1071.4
05	Other mining	542.3	540.5	1.4	0.4		27.1						0.7			0.1		0.1	28.4	6.8	33.3	0.5	184.6	830.6
06	Food manufacturing	3555.2	3371.6	66.3	117.3		32.4						1.1	0.0		0.4	2.0	2.3	72.0	22.1	43.5	2.9	322.9	5033.4
07	Manufacture textiles	2354.4	2337.1	9.5	7.8		5.8						4.0	0.2		0.4	1.3	7.1	42.7	32.1	35.5	2.9	335.2	6686.3
08	Manufacture of wearing apparel, leather and products of leather and fur	249.9	247.2	2.4	0.4		1.9							0.0		0.0	0.1	0.1	16.8	2.3	13.8	0.5	84.1	1336.0
09	Sawmills and manufactucture of furniture	398.4	397.5	0.8	0.1		2.4									0.0		2.6	8.4	2.0	7.5	1.2	39.0	261.5
10	Manufacture of paper, cultural and educational articles	1845.2	1834.0	5.6	5.7		5.9						0.1	0.1		0.4	0.4	0.2	23.4	9.8	22.2	5.3	207.3	3880.7
14	Chemical industries	10287.6	10000.5	170.8	116.3		1279.9						67.0	8.9	80.3	7.1	50.4	52.9	108.0	432.2	127.6	9.0	1353.5	26479.2
15	Manufacture of building materials and other non-metallic mineral products	13343.2	12526.7	99.7	716.8		276.7		560.0				2.3	3.1	1.3	9.4	17.3	13.4	82.1	324.7	148.8	2.6	599.6	720.7
16	Primary metal manufacturing	5072.2	4657.4	204.1	210.8		7983.2						4.1	140.1		569.3	3.5	0.5	55.3	455.4	90.9	1.0	1331.0	13604.7
17	Manufacture of metal products	457.1	447.4	7.7	1.9		123.2						0.5	0.1		0.2	0.2	1.3	18.2	11.1	23.4	3.4	113.5	110.9
18	Manufacture of machinery	1515.9	1382.4	100.9	32.6		340.4						3.3	1.1		53.7	0.4	7.3	89.3	43.8	46.9	4.1	260.8	2482.7
19	Manufacture of transport equipment	682.7	666.9	6.2	9.5		41.4						0.5	0.2		2.1	0.6	0.8	37.5	13.8	31.3	4.9	154.6	2221.5
20	Manufacture of electric machinery and instruments	329.9	326.1	2.7	1.1		15.6						0.7	0.8		1.2	0.9	1.8	24.1	10.2	15.9	0.5	65.0	589.3
21	Manufacture of electronic and communication equipment	137.0	134.3	2.7			1.1						1.0	0.3		0.5		1.3	9.2	7.7	10.2	0.2	38.6	178.0
22	Manufacture of instruments, meters and other measuring equipment	70.7	69.6	0.6	0.6		3.4						0.0	0.0		0.1		0.0	4.7	1.2	3.9	0.1	17.1	144.7
23	Maintenance and repair of machinery and equipment	0.0																						
24	Industries not elsewhere cassified	748.2	740.8	4.5	2.9		28.3							0.4		1.7	1.0	0.7	16.4	5.5	14.2	0.9	77.8	164.4
25	Construction	439.8	439.5	0.3	0.1		10.8						0.3		0.0		2.7	0.5	103.6	14.2	118.2	3.5	159.6	149.5
26	Freight transport and communication	1224.9	1154.1	23.4	47.5		8.4						0.7				21.9	0.5	792.2	184.6	1024.5	82.4	167.5	139.4
	Railway	1050.6	979.7	23.3	47.5		2.4						0.0				0.1	0.0	21.3	0.8	440.4	0.3	90.5	1.5
	Highway	74.0	74.0	0.0			3.6											0.1	729.0	6.2	285.1	2.3	16.6	0.7
	Water	12.4	12.4	0.0			0.1											0.1	7.3	169.5	217.3	2.1	6.9	
	Air	5.4	5.4				0.0						0.0						6.5	0.4	38.6	75.5	2.6	0.1
	Pipeline	11.1	11.1				0.5						0.1				21.2	0.2	2.4	5.9	26.4	0.9	9.6	66.3
	Others	22.5	22.5				0.0										0.6		10.8	1.8	13.1	0.2	7.3	0.0
	Communications	49.0	49.0				1.8						0.0					0.1	15.0	0.1	3.6	1.0	34.1	70.8
27	Commerce	806.0	777.9	0.5	27.5		14.5						0.3	0.4		0.0	0.3	10.1	192.1	6.2	102.3	8.0	157.3	94.9
28	Resturants	187.3	180.6	0.1	6.5		11.2						0.2	0.3		0.0	0.2	7.3	11.6	0.4	6.1	0.5	44.6	27.3
29	Passenger transport	74.3	63.1	3.7	7.5		1.7												183.7	42.8	217.2	167.6	12.4	10.3
	Railway	55.2	44.0	3.7	7.5		0.7												5.0	0.2	84.8	0.1	9.1	7.0
	Highway	12.4	12.4	0.0			1.0												172.8	1.5	68.1	0.5	1.7	3.0
	Water	2.1	2.1	0.0			0.0												1.7	40.6	51.9	0.5	0.7	
	Air	0.9	0.9				0.0												1.5	0.1	9.2	166.5	0.3	0.2
	Others	3.8	3.8				0.0												2.6	0.4	3.1	0.1	0.7	0.1
30	Public utilities and services to housholds	788.7	729.1	0.3	59.3		3.0						0.3	1.7	0.0	1.3		1.6	309.5	16.7	350.2	74.5	95.4	1126.5
31	Cultural, educational, health and scientific research institutions	584.3	540.2	0.2	43.9		1.7						0.3	1.0	0.0	0.8		1.3	73.9	4.0	83.6	17.8	67.7	799.3
32	Finance and insurance	125.1	115.7	0.0	9.4		0.6						0.0	0.3	0.0	0.3		0.2	37.7	2.0	42.7	9.1	25.7	303.1
33	Public administration	488.5	451.6	0.2	36.7		1.1						0.5	0.6	0.0	0.5		2.6	149.6	8.1	169.2	36.0	45.4	536.1
RH	Rural households	7675.0	7153.3		499.6	22.0	67.6			30330.6	17559.7	153301.4				1.9		28.1	12.5		11.7	57.4	430.9	
UH	Cultural, educational, health and scientific research institutions	5855.1	5360.3		470.1	24.7	64.0						19.9	22.2	3.9	32.6		505.8	51.2		4.5	6.8	574.7	12637.1
Total demand		61941.7	58667.2	720.3	2507.5	46.8	10559.3	0.0	560.0	30330.6	20286.8	154197.6	108.3	182.0	85.7	684.9	103.1	650.5	2746.4	1679.9	3818.0	507.5	7665.5	81636.1
Industry		41835.9	39877.4	686.4	1272.1	0.0	10246.1	0.0	560.0	0.0	0.0	0.0	85.6	155.4	81.6	647.5	78.0	92.4	649.3	1392.4	686.5	40.3	5301.9	65795.9

A6. Energy used for Heat

ENERGY BALANCE-HEATING(WT)

UNIT: 10^4 TONNES

		Energy carriers																							
		Solids								Bioenergy			Gas				Liquids								
		Coal																							
	Sectors	Total	Raw coal	Cleaned coal	Other washed coal	Briquettes	Coke	Municipal waste	Industrial waste	Crop residuals	Wood	Biogas (10^4m^3)	Natural gas (10^8m^3)	Coke-oven gas (10^8m^3)	Refinery gas	Other gas (10^4m^3)	Crude oil	LPG	Gasoline	Fuel oil	Diesel oil	Kerosene	Electricity (10^8kwh)	Heat (10TJ)
01	Agriculture	1856.7	1824.4	5.1	27.3		128.6				2727.1	896.2	0.0				0.0	0.1				3.6	582.4	16.6
04	Metal ore mining	245.9	197.4	0.6	48.0		77.5						0.6			0.8		0.1		11.8		0.5	117.3	1071.4
05	Other mining	542.3	540.5	1.4	0.4		27.1						0.7			0.1		0.1		6.6		0.5	184.6	830.6
06	Food manufacturing	3555.2	3371.6	66.3	117.3		32.4						1.1	0.0		0.4	2.0	2.3		22.1		2.9	322.9	5033.4
07	Manufacture textiles	2354.4	2337.1	9.5	7.8		5.8						4.0	0.2		0.4	1.3	7.1		32.1		2.9	335.2	6686.3
08	Manufacture of wearing apparel, leather and products of leather and fur	249.9	247.2	2.4	0.4		1.9							0.0		0.0	0.1	0.1		2.3		0.5	84.1	1336.0
09	Sawmills and manufactucture of furniture	398.4	397.5	0.8	0.1		2.4									0.0		2.6		2.0		1.2	39.0	261.5
10	Manufacture of paper, cultural and educational articles	1845.2	1834.0	5.6	5.7		5.9						0.1	0.1		0.4	0.4	0.2		9.8		5.3	207.3	3880.7
14	Chemical industries	8510.9	8234.7	163.7	112.5		519.5						29.4	8.9	56.9	7.1	22.9	42.9		329.3		7.4	1353.5	26479.2
15	Manufacture of building materials and other non-metallic mineral products	13343.2	12526.7	99.7	716.8		276.7		28.0				2.3	3.1	1.3	9.4	17.3	13.4		324.7		2.6	599.6	720.7
16	Primary metal manufacturing	5072.2	4657.4	204.1	210.8		6054.4						4.1	140.1		569.3	3.5	0.5		455.4		1.0	1331.0	13604.7
17	Manufacture of metal products	457.1	447.4	7.7	1.9		123.2						0.5	0.1		0.2	0.2	1.3		11.1		3.4	113.5	110.9
18	Manufacture of machinery	1515.9	1382.4	100.9	32.6		340.4						3.3	1.1		53.7	0.4	7.3		43.8		4.1	260.8	2482.7
19	Manufacture of transport equipment	682.7	666.9	6.2	9.5		41.4						0.5	0.2		2.1	0.6	0.8		13.8		4.9	154.6	2221.5
20	Manufacture of electric machinery and instruments	329.9	326.1	2.7	1.1		15.6						0.7	0.8		1.2	0.9	1.8		10.2		0.5	65.0	589.3
21	Manufacture of electronic and communication equipment	137.0	134.3	2.7			1.1						1.0	0.3		0.5		1.3		7.7		0.2	38.6	178.0
22	Manufacture of instruments, meters and other measuring equipment	70.7	69.6	0.6	0.6		3.4						0.0	0.0		0.1		0.0		1.2		0.1	17.1	144.7
23	Maintenance and repair of machinery and equipment																							
24	Industries not elsewhere cassified	748.2	740.8	4.5	2.9		28.3							0.4		1.7	1.0	0.7		5.5		0.9	77.8	164.4
25	Construction	439.8	439.5	0.3	0.1		10.8						0.3		0.0		2.7	0.5		14.2		3.5	159.6	149.5
26	Freight transport and communication	174.3	174.3	0.0	0.0		8.4						0.7				21.9	0.5		15.2		6.9	56.6	139.4
	Railway						2.4						0.0				0.1	0.0		0.8		0.3	13.7	1.5
	Highway	74.0	74.0	0.0			3.6						0.0					0.1		6.2		2.3	16.6	0.7
	Water	12.4	12.4	0.0			0.1											0.1				2.1	6.9	
	Air	5.4	5.4				0.0						0.0							0.4			2.6	0.1
	Pipeline	11.1	11.1				0.5						0.1				21.2	0.2		5.9		0.9	9.6	66.3
	Others	22.5	22.5				0.0										0.6			1.8		0.2	7.3	0.0
	Communications	49.0	49.0				1.8						0.0					0.1		0.1		1.0	34.1	70.8
27	Commerce	806.0	777.9	0.5	27.5		14.5						0.3	0.4		0.0	0.3	10.1		6.2		8.0	157.3	94.9
28	Resturants	187.3	180.6	0.1	6.5		11.2						0.2	0.3		0.0	0.2	7.3		0.4		0.5	44.6	27.3
29	Passenger transport	19.1	19.1	0.0			1.7													2.2		1.2	5.0	10.3
	Railway						0.7													0.2		0.1	1.7	7.0
	Highway	12.4	12.4	0.0			1.0													1.5		0.5	1.7	3.0
	Water	2.1	2.1	0.0			0.0															0.5	0.7	
	Air	0.9	0.9				0.0													0.1			0.3	0.2
	Others	3.8	3.8				0.0													0.4		0.1	0.7	0.1
30	Public utilities and services to housholds	788.7	729.1	0.3	59.3		3.0						0.3	1.7	0.0	1.3		1.6		16.7		74.5	95.4	1126.5
31	Cultural, educational, health and scientific research institutions	584.3	540.2	0.2	43.9		1.7						0.3	1.0	0.0	0.8		1.3		4.0		17.8	67.7	799.3
32	Finance and insurance	125.1	115.7	0.0	9.4		0.6						0.0	0.3	0.0	0.3		0.2		2.0		9.1	25.7	303.1
33	Public administration	488.5	451.6	0.2	36.7		1.1						0.5	0.6	0.0	0.5		2.6		8.1		36.0	45.4	536.1
RH	Rural households	7653.0	7153.3		499.6	22.0	67.6			30330.6	17559.7	153301.4				1.9		28.1				57.4	430.9	
UH	Cultural, educational, health and scientific research institutions	5830.4	5360.3		470.1	24.7	64.0						19.9	22.2	3.9	32.6		505.8				6.8	574.7	12637.1
Total demand		59012.4	55877.6	686.2	2448.7	46.8	7870.2	0.0	28.0	30330.6	20286.8	154197.6	70.7	182.0	62.2	684.9	75.6	640.5	0.0	1358.5	0.0	263.9	7547.2	81636.1
Industry		40499.0	38551.1	679.6	1268.4	0.0	7567.7	0.0	28.0	0.0	0.0	0.0	48.3	155.4	58.1	647.5	53.2	82.9	0.0	1303.7	0.0	42.2	5461.6	65945.4

A7. Energy used for Transport

ENERGY BALANCE-TRANSPORT(WT)

UNIT: 10^4 TONNES

Sectors	Energy carriers																							
	Solids								Bioenergy			Gas				Liquids								
	Coal																							
	Total	Raw coal	Cleaned coal	Other washed coal	Briquettes	Coke	Municipal waste	Industrial waste	Crop residuals	Wood	Biogas (10^4m^3)	Natural gas (10^8m^3)	Coke-oven gas (10^8m^3)	Refinery gas	Other gas (10^8m^3)	Crude oil	LPG	Gasoline	Fuel oil	Diesel oil	Kerosene	Electricity (10^8kwh)	Heat (10TJ)
01 Agriculture																		179.7	8.4	1001.4			
04 Metal ore mining																		12.9		17.6			
05 Other mining																		28.4		33.3			
06 Food manufacturing																		72.0		43.5			
07 Manufacture textiles																		42.7		35.5			
08 Manufacture of wearing apparel, leather and products of leather and fur																		16.8		13.8			
09 Sawmills and manufactucture of furniture																		8.4		7.5			
10 Manufacture of paper, cultural and educational articles																		23.4		22.2			
14 Chemical industries																		100.2		118.3			
15 Manufacture of building materials and other non-metallic mineral products																		82.1		148.8			
16 Primary metal manufacturing																		55.3		90.9			
17 Manufacture of metal products																		18.2		23.4			
18 Manufacture of machinery																		89.3		46.9			
19 Manufacture of transport equipment																		37.5		31.3			
20 Manufacture of electric machinery and instruments																		24.1		15.9			
21 Manufacture of electronic and communication equipment																		9.2		10.2			
22 Manufacture of instruments, meters and other measuring equipment																		4.7		3.9			
23 Maintenance and repair of machinery and equipment																							
24 Industries not elsewhere cassified																		16.4		14.2			
25 Construction																		103.6		118.2			
26 Freight transport and communication	1050.6	979.7	23.3	47.5														792.2	169.5	1024.5	75.5	76.8	
Railway	1050.6	979.7	23.3	47.5														21.3		440.4		76.8	
Highway																		729.0		285.1			
Water																		7.3	169.5	217.3			
Air																		6.5		38.6	75.5		
Pipeline																		2.4		26.4			
Others																		10.8		13.1			
Communications																		15.0		3.6			
27 Commerce																		192.1		102.3			
28 Resturants																		11.6		6.1			
29 Passenger transport	55.2	44.0	3.7	7.5														183.7	40.6	217.2	166.5	7.4	
Railway	55.2	44.0	3.7	7.5														5.0		84.8		7.4	
Highway																		172.8		68.1			
Water																		1.7	40.6	51.9			
Air																		1.5		9.2	166.5		
Others																		2.6		3.1			
30 Public utilities and services to housholds																		309.5		350.2			
31 Cultural, educational, health and scientific research institutions																		73.9		83.6			
32 Finance and insurance																		37.7		42.7			
33 Public administration																		149.6		169.2			
RH Rural households																		12.5		11.7			
UH Cultural, educational, health and scientific research institutions																		51.2		4.5			
Total demand	1105.8	1023.8	27.0	55.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2738.6	218.4	3808.7	242.0	84.2	0.0
Industry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	745.1	0.0	795.3	0.0	0.0	0.0

A8.Energy used for Feedstock

ENERGY BALANCE-FEEDSTOCK(WT)

UNIT: 10^4 TONNES

Sectors	Energy carriers																						
	Solids								Bioenergy			Gas				Liquids							
		Coal																					
	Total	Raw coal	Cleaned coal	Other washed coal	Briquettes	Coke	Municipal waste	Industrial waste	Crop residuals	Wood	Biogas (10^4m^3)	Natural gas (10^8m^3)	Coke-oven gas (10^8m^3)	Refinery gas	Other gas (10^8m^3)	Crude oil	LPG	Gasoline	Fuel oil	Diesel oil	Kerosene	Electricity (10^8kwh)	Heat (10TJ)
01 Agriculture																							
04 Metal ore mining																							
05 Other mining																							
06 Food manufacturing																							
07 Manufacture textiles																							
08 Manufacture of wearing apparel, leather and products of leather and fur																							
09 Sawmills and manufactucture of furniture																							
10 Manufacture of paper, cultural and educational articles																							
14 Chemical industries	1776.7	1765.8	7.1	3.8		760.3						37.6		23.5		27.5	10.0	7.8	103.0	9.3	1.6		
15 Manufacture of building materials and other non-metallic mineral products								532.0															
16 Primary metal manufacturing						1928.8																	
17 Manufacture of metal products																							
18 Manufacture of machinery																							
19 Manufacture of transport equipment																							
20 Manufacture of electric machinery and instruments																							
21 Manufacture of electronic and communication equipment																							
22 Manufacture of instruments, meters and other measuring equipment																							
23 Maintenance and repair of machinery and equipment																							
24 Industries not elsewhere cassified																							
25 Construction																							
26 Freight transport and communication																							
Railway																							
Highway																							
Water																							
Air																							
Pipeline																							
Others																							
Communications																							
27 Commerce																							
28 Resturants																							
29 Passenger transport																							
Railway																							
Highway																							
Water																							
Air																							
Others																							
30 Public utilities and services to housholds																							
31 Cultural, educational, health and scientific research institutions																							
32 Finance and insurance																							
33 Public administration																							
RH Rural households																							
UH Cultural, educational, health and scientific research institutions																							
Total demand	1776.7	1765.8	7.1	3.8	0.0	2689.1	0.0	532.0	0.0	0.0	0.0	37.6	0.0	23.5	0.0	27.5	10.0	7.8	103.0	9.3	1.6	0.0	0.0
Industry	1776.7	1765.8	7.1	3.8	0.0	2689.1	0.0	532.0	0.0	0.0	0.0	37.6	0.0	23.5	0.0	27.5	10.0	7.8	103.0	9.3	1.6	0.0	0.0

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