



Energy Statistics in China

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Background: 11th five-year plan enlisted reducing GDP energy intensity 20% as a restrictive indicator among the social-economic development indicators. The State Council intended to establish a energy conservation and emission reduction indicator system, monitoring system and examination system.

the indicator system, monitoring system and examination systems will take into effect in energy conservation, environment protection and the balanced development of economics and social affair.



- **to reflect energy conservation progress in national level and local level precisely and dynamically**
- **indicator system, monitoring system and examination system (3 Systems) are put forward by National Bureau of Statistics (NBS), NDRC, and Office of National Energy Leading Group**
- **Based on this, NBS put forward the Implementation Scheme of GDP energy intensity Statistical Indicator System, Monitoring System and Examination System.**
- **Passed by Energy Conservation and Emission Reduction Leading Group**
- **In implementation process**



- **General Idea**

- **Based on the practical requirement of energy statistics indicator system, monitoring system and examination system**
- **Improving energy statistics mechanism**
- **Statistics and investigation in energy production, transportation, storage, consumption and utilization**
- **Based on energy statistics capability and implement and improve step by step**



- **First, to improve energy consumption statistics indicator system**
 - **Energy Statistics Indicator System.**
 - » **Local energy consumption: inter-region energy**
 - » **circulating enterprise: Wholesale, retail and storage statistics indicator, energy utilization efficiency etc.**
 - **Energy Statistics investigation System**
 - » **Enterprises below the “Statistical Scale”, agriculture, service, residential etc.**
 - **Category of Energy Product and the Coverage of Energy Type**
 - » **Adapt to the requirement of international comparison and energy balance**
 - » **Renewable, waste heat and waste energy, scrape, urban solid waste etc.**



- **Second, to improve energy statistics mechanism**
 - **Indicators should be settled down in the mechanism, is the key point of establishing and implementation of the 3 systems**
 - **Since 2007, according to the Scheme, NBS started to improve national energy statistics mechanism step by step**
 - **General design:**
 - » **Based on energy consumption calculation of different levels**
 - » **From energy supply side and energy consumption side to improve energy investigation system**
 - » **Based on general investigation, together with industrial characteristics, to build up s statistics investigation system composed of full investigation, sample investigation, in-depth investigation etc.**



- **1. Energy Production Statistics**
 - **Industrial enterprises above “statistical scale”:** energy production, increase medium and small category of energy product
 - **Industrial enterprises below “statistical scale”:** establish coal, electricity production statistics
- **Statistics for the production of energy product**
 - **Current monthly statistics:** above “statistical scale” enterprises, main conventional energy types (raw coal, washed coal, crude oil, natural gas, electricity generation, crude oil refinery, petroleum, kerosene, diesel, fuel oil, LPG, coke, coal gas etc)
 - **Increased quarterly report of coal production and electricity generation of enterprises below the “statistical scale” (since 2007.7)**



- **Energy circulating statistics**
 - **Energy inter-provincial flow is the key point.**
 - **1. Coal: expand the coverage from key coal mines to all coal production and circulation enterprises**
 - » **content: coal vending by region**
 - » **range: all coal production and circulating enterprises**
 - » **frequency: quarterly report, since 2007's annual report**
 - » **method: through China Coal Transportation and Vending Association**



- **Crude oil: inter-provincial flow is calculated from customs statistics and energy statistical report of industrial enterprises**
- **Crude oil production data come from monthly production statistics of industrial enterprises, crude oil purchased data comes from quarterly energy consumption report of industrial enterprises, import and export data comes from customs data**



- **oil product: inter-provincial data come from “energy commodity purchase, selling and storage of wholesale and retail enterprise ” mechanism.**
 - **1. Among oil product wholesale business enterprises ratified by Ministry of Commerce. Oil product purchase, selling and storage mechanism.**
 - » **Content: oil product purchase, out of province; selling, out of province; retail enterprises; storage**
 - » **Range: all oil product wholesale business enterprises ratified by Ministry of Commerce**
 - **2. Among oil product retail enterprises ratified by government, establish oil product sales, storage statistical investigation mechanism**
 - » **Content: oil product sales, storage**
 - » **Range: Among oil product retail enterprises ratified by government,**
 - **Frequency and method are the same: quarterly since 2007 annual report, Bureau of Statistics organize the investigation**



- **4. Natural gas: inter-provincial flow data is provided by 3 state owned petroleum and natural gas companies.**
- **5. Electricity: inter-provincial electricity transmission data is provided by China Electricity Enterprise Union**
- **6. Other energy types: inter-provincial flow data of washed coal, coke, LPG, refinery gas, LNG etc. are gathered through the same as crude oil. i.e. custom's import and export material and industrial enterprise consumption data**



• 3. Energy Consumption statistics

- To show energy consumption structure in city level and county level
- Complementary of energy production data, which could not be acquired from production side
- Recent key point: improve energy consumption data calculation method, and establish regional energy consumption calculation system and assessment system.
- **1. industrial enterprises above “statistical scale”**: statistical investigation system for energy purchase, consumption, storage, conversion. Add category of renewable energy, low heating value fuel, industrial waste etc in investigation list, add waste heat and waste energy recycle indicator



- **2. industrial enterprises below “statistical scale” and private industrial enterprises** : about 10% of total industrial energy consumption; outdated technologies and equipments; energy consumption is high; important for elimination of outdated equipments and promote energy conservation
- **Content:** consumption of coal, coke, natural gas, petroleum, diesel, fuel oil, electricity
- **Range:** industrial enterprises above “statistical scale and private industrial enterprises
- **Frequency:** quarterly, since 2007’s annual report
- **method:** sample investigation by Bureau of Statistics



- **3. energy consumption statistics of agricultural , forestry, farming and fishing industries :**
 - » **Content:** consumption of coal, petroleum, diesel, fuel oil, electricity
 - » **Range:** registered enterprise in agricultural , forestry, farming and fishing industries
 - » **Frequency:** annual, since 2007's annual report
 - » **Method:** key sample investigation by Bureau of Statistics
- **4. energy consumption statistics of building industry:** about 1.5% of total energy consumption. Data acquiring plan: conduct full investigation in general investigation year, and deduct based on materials in non-general investigation year.



- **5. energy consumption statistics of tertiary industry:**
 - » **wide involvement and large quantities;**
 - » **investigation method should be selected based on different energy consumption characteristics of different industries and different enterprise types**
 - » **- -catering service: fully investigation or key unit investigation based on its scale**
 - » **--transportation service: based on different transportation method**
 - » **Other: electricity consumption is about 90% of total consumption, from China Electricity Enterprise Union**



- » **1) catering service:** large number, wide spread, versatile energy type. Above / below “limitation amount”
- » --above “limitation amount”(over 40 people, the turnover is above 2 million RMB): full investigation on coal, coal gas, natural gas, LPG, electricity
- » --below “limitation amount”: deduct based on samples
- » **Content:** consumption of coal, coal gas, natural gas, LPG, electricity
- » **Range:** above / below “limitation amount”
- » **Frequency:** quarterly, since 2007’s annual report
- » **Method:** Bureau of Statistics organize full investigation and sample investigation



– **2) transportation industry:** based on different transportation method

» **(1) railroad, airway, pipeline**

» **Content:** consumption of coal, coal gas, petroleum, kerosene, diesel, fuel oil, natural gas, LPG, electricity

» **Range:** transportation enterprises through railroad, airway, pipeline

» **Frequency:** quarterly, since 2007's annual report

» **Method:** Ministry of Railroad, Local railroad associations, General Bureau of Civil Air, 3 petroleum companies



- **(2) Road , waterway and port**
- **Key enterprises conducting commercial road transportation and waterway transportation**
- **Will expand to all professional transportation enterprises later**
- **Private business on road transportation and waterway transportation: deduction based on sample investigation, and registered numbers in administration department**
- **Content: petroleum, diesel, fuel oil etc.**
- **Frequency: annual, since 2007's annual report**
- **Method: Bureau of Statistics organize full investigation and sample investigation**



– **6. residential energy consumption**

• **1) Urban residents**

- **Content: consumption of coal, petroleum, diesel, town gas, natural gas, LPG, electricity**
- **Range: same as current urban residential investigation**
- **Frequency: quarterly, since 2007**
- **Method: Bureau of Statistics organize sample investigation**



– 2) rural residents

- » **Content: consumption of coal, petroleum, diesel, natural gas, LPG, electricity etc.**
- » **Range: same as current rural residential investigation**
- » **Frequency: quarterly, since 2007**
- » **Method: Bureau of Statistics organize sample investigation**

–7. building energy consumption:

- » **Large buildings such as restaurant, hotel, commercial buildings, governmental buildings, school, hospital.**
- » **Ministry of Construction together with Bureau of Statistics will establish energy consumption statistics system**



–8. energy utilization efficiency statistical system

- » **Energy consumption per physical product, or energy consumption per activity value**
- » **Currently: industrial enterprises above 10 thousand tce: 25 products, 108 energy intensity indicators**
- » **Future: expand from 10 thousand to all industrial enterprises above “statistical scale”, and increase products**



– 9. New Energy and Renewable Energy

- » Nuclear, biomass, hydro, wind power, solar power, geothermal etc.
- » Lack of statistical measurement standard due to less commercial use, except nuclear power and hydro power
- » Statistical standard should be developed, statistical indicator and investigation method should be developed



In general, according to the requirement of the “Implementation Scheme”, a statistical indicator system and investigation system, including energy production, import/export, circulating, consumption, storage and utilization and comprehensive utilization, has been established.

This will provide a sound basis for the statistics, monitoring and examination, and a sound basis for issuing energy consumption public report periodically.



Thank You !