

Fourth PMR Technical Workshop  
Instrument Choice for Mitigation: Modeling and  
Analysis & Data Management and Reporting  
October 21, Sydney

# Installation Level Emissions Data Collection in China

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# Outline

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- Energy and Emissions Statistical Systems
- Reporting Requirements
- Verification of Reported Data
- Challenges with Data Collection

# Energy and Emissions Statistical Systems

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- Various authorities, statistical channels and requirements
- Statistics Bureaus: *Statistics Law, relevant rules, ...*
- Development and Reform Commissions
  - *Statistics Law*
  - *Energy Conservation Law*
  - *the 12<sup>th</sup> Five-Year Work Program on GHG Emissions Control*
  - *the 12th Five-Year Plan for Energy Saving and Emission Reduction*
  - *Implementation Plan of Energy Conservation and Low Carbon Actions in 10,000 Enterprises*

# Energy and Emissions Statistical Systems

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- Local Commissions of Economy and Information Technology
- Industry Authorities/Associations: *Statistics Law*, ...
  - *Ministry of Transport*
  - *State Electricity Regulatory Commission / China Electricity Council*
  - .....

# Reporting Requirements

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- Different channels, different systems, different requirements
- National Bureau of Statistics
  - *One set of forms meeting all the data requirements for enterprises/organizations from all aspects, starting from Feb. 18, 2012*
  - *Uniform and systematic indexes, direct reporting to NBS*
  - *Reported information shared with statistics organizations at all levels*
  - *<http://www.lwzb.cn/pub/gjtjlwzb/>*

# Reporting Requirements

- Development and Reform Commissions / Local Commissions of Economy and Information Technology
  - *Key Energy Consumers Reporting System from 2008*
  - *Enterprises with annual energy consumption of more than 5000 tce*
  - *Enterprises with lower energy consumption (e.g. 2000-5000 tce) in some areas*
  - *Dedicated reporting system, e.g. Beijing Energy Conservation Management System for Energy Consuming Entities,  
<http://project.bjpc.gov.cn/jngl/login.do>*

# Information Reported

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## ➤ National Bureau of Statistics

### ■ *Covered entities*

- non-industrial major consumers (50-5000 tce/yr): energy consumption data
- non-industrial key consumers (>5000 tce/yr): energy consumption data
- public organizations: energy consumption data
- energy processing and transformation enterprises: energy purchase, consumption and stocks
- Industrial enterprises with sales revenues of >20 million: energy purchase, consumptions and stocks

# Information Reported

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## ➤ National Bureau of Statistics

### ■ *For key industrial consumers*

- raw coal (anthracite, coking coal, bituminous coal, lignite, etc.), cleaned coal, other washed coal, coal products
- coke, other coking products
- coke oven gas, blast furnace gas, convertor gas, furnace gas, natural gas (gaseous and liquified), coal mine methane (coalfield)
- crude oil, gasoline, kerosene, diesel, fuel oil, liquefied petroleum gas, refinery gas
- naphtha, lubricant, paraffin waxes, solvent oil, petroleum coke, petroleum asphalt, other petroleum products



# Information Reported

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## ➤ National Bureau of Statistics

- Heat
- electricity
- coal gangue (fuel), domestic waste (fuel), biomass waste (waste), waste heat and pressure, other industrial waste (fuel)
- ✓ other fuels, ...
- ✓ Consumption by production and non-production purposes
- ✓ In both mass and monetary forms
- ✓ Monthly and annual report
- *Simplified requirements for other consumers*

# Information Reported

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## ➤ National Bureau of Statistics

### ■ *Forms to be completed*

- ✓ Monthly information on energy purchase, consumption and stocks
- ✓ Monthly information on production, sales, ordered quantity and stocks of major products
- ✓ Monthly information on energy intensity of major products
- ✓ Monthly information on production and sales value
- ✓ Monthly financial information
- ✓ .....

# Information Reported

- Development and Reform Commissions / Local Commissions of Economy and Information Technology
  - *Industrial enterprises vs. non-industrial ones*
  - *For key industrial consumers (>5000 tce/yr)*
    - same types of energy to be reported as the statistical system requires
  - *forms to be completed*
    - basic information
    - energy consumption structure, with types and purposes
    - energy conservation achieved and benefits analysis
    - Energy conservation-related transformation and upgrade
    - unit product energy consumption

# Information Reported

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- State Electricity Regulatory Commission
  - Electricity generation
  - Capacity of electricity generators
  - Average utilization hours
  - internal electricity consumption
  - coal consumption: raw coal and coal equivalent
  - coal consumption rate of electricity generation
  - coal consumption rate of electricity supply

# Verification of Reported Data

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## ➤ National Bureau of Statistics

### ✓ four types of review

- mandatory logic review
- quasi-mandatory logic review: approval needed
- double-check review: explanation needed
- Reminder-type review

### ✓ not specific to energy data

# Verification of Reported Data

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- Development and Reform Commissions / Local Commissions of Economy and Information Technology
  - ✓ initial review by different organizations
  - ✓ review at the provincial-level
  - ✓ no verification procedures given

# Verification of Energy Conservation

- 17,000 entities (>10,000 tce/yr and appointed >5,000 tce/yr): *>60% energy consumption of China and energy conservation target of 250 million tce during 2011-2015*
- Verification to be done by provincial authorities
- Verification Principles
  - ✓ Independence, unbiased, objectiveness, etc.
  - ✓ Document review, site visit, measurement, analysis and calculation, random interview and discussion, etc
- Baseline energy consumption, project energy consumption, energy management and measurement system, energy leakage

# Verification of Energy Conservation

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- Verification of baseline energy consumption
  - ✓ engineering flow sheet
  - ✓ Output records
  - ✓ Energy consumption balance sheet and energy flow chart
  - ✓ Records on the major energy-consuming equipments
  - ✓ Consumption of energy-consuming work medium
  - ✓ Records on energy input, output and consumption, energy statistical sheets, financial statements, and original evidence



# Verification of Energy Conservation

- Verification of project energy consumption
  - ✓ Status of the project
  - ✓ Similar parameters as under the baseline situation
- Verification of energy management and measurement system
  - ✓ Structure, staff and rules of the energy management organ
  - ✓ Energy measurement device
  - ✓ Monitoring and inspection reports of energy input and output, measurement report of efficiency of major energy-consuming facilities

# Verification of Energy Conservation

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- Verification of energy leakage
  - ✓ Baseline energy consumption of relevant processes
  - ✓ Energy consumption changes after the project
- Quality assurance
  - ✓ Cross-checking
  - ✓ External evaluation
- Output data
- Disagreement on the conclusions

# Challenges with Data Collection

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- Different authorities and not unique requirements
- No data sharing mechanism
- Quality of data
- Data availability for non-major energy consumers
- Lack of some emission-related data
- Company-level rather than installation-level data

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**Thanks**