

# Korea- Data sources in filling out the IEA energy efficiency indicators template

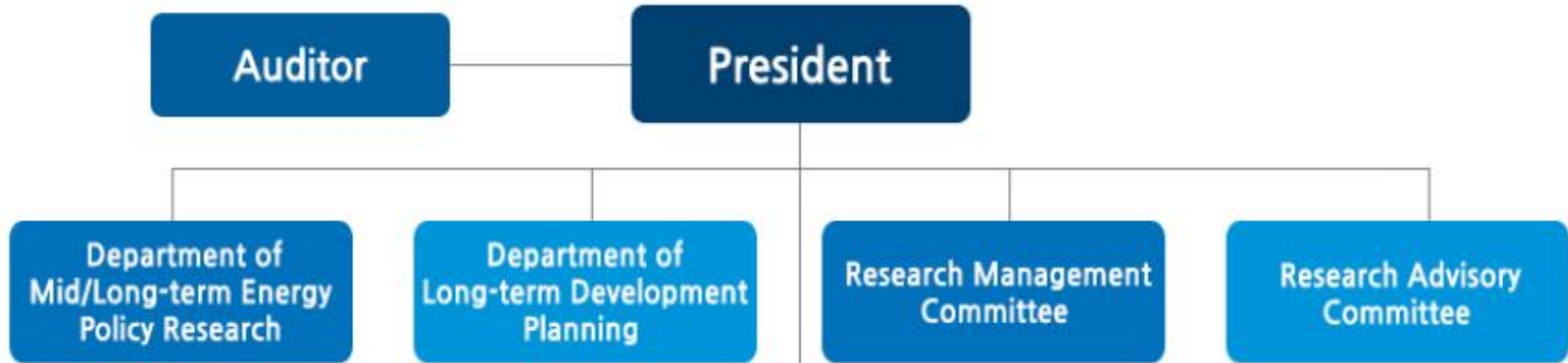
16<sup>th</sup> APEC Workshop on Energy Statistics

Korea Energy Economics Institute

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# Who?

## KEEI(Korea Energy Economics Institute)



1. **Dr. Lim Gichu**(Subject responsible person): Services, Residential, Transport
2. Lee Bohye: Industry
3. Lee Hyeon: Macro economic data, Commodities

Oil Policy Research Division	Electricity Policy Research Division	Climate Research Division	<b>Energy Statistics Research Division</b>	International Energy Cooperation Research Division	Research Planning and Coordination Team	General Affairs Team
Gas Policy Research Division	Nuclear Power Policy Research Division	Energy Demand Management Division	Energy Demand and Supply Division	Overseas Energy Information Analysis Division	Budget Planning Team	Finance and Accounting Team
Resources Development Strategy Research Division	District Heat and Power Research Division	New and Renewable Energy Research Division	Knowledge and Information Technology Division	Regional Energy Cooperation Research Division	External Cooperation and Public Relations Team	

# Basic Principle

As possible...

1. Follow the guidelines of IEA

2. Use the official statistics



3. Estimate reasonably

# Data collection

## 1. Open data

- Website, Publications

## 2. Not open to the public

- We officially ask for the cooperation of the organization.
- But we cannot force them to submit the data.

# Macro Economic Data

## I. Activity & Structure Indicators

Total Population	Statistics Korea
Total Employment	Statistics Korea
Services Employment	Statistics Korea
Total Dwellings	Statistics Korea
Occupied Dwellings	Statistics Korea
New Dwellings	Ministry of Land, Infrastructure and Transport
Household Occupancy	Total Population ÷ Total Dwellings
Total Dwelling Area	KEEI
Annual Heating Degree-Days	KEEI
Annual Cooling Degree-Days	KEEI
U.S. Dollar Exchange Rate	OECD
Purchasing Power Parity	OECD
Consumer Prices Index	Statistics Korea
Private Final Consumption Expenditure	Bank of Korea
Total Services Floor Area	Statistics Korea
New Services Floor Area	×



# Macro Economic Data

- II. Gross Domestic Product : OECD
- III. GDP deflator : OECD
- IV. Value-added in USD: OECD
- V. Value Added(KRW): Automatic calculation
- VI. Value-added in USD MER: Automatic calculation

# Commodities

## Production of commodities based on ISIC Rev.4 Division

### 17: Manufacture of paper and paper products

- Pulp: Korea Paper Association
- Recovered paper: No information
- Paper and paperboard: Korea Paper Association

### 20-21: Manufacture of chemicals and chemical products & basic pharmaceutical products and pharmaceutical preparations

- Ethylene: Korea Petrochemical Industry Association
- Propylene: Korea Petrochemical Industry Association
- BTX: Korea Petrochemical Industry Association
- Ammonia: Korea Fertilizer Industry Association
- Butadiene: Korea Petrochemical Industry Association
- Caustic Soda: Korea Chlor, Alkali Industry Association

# Commodities

## Production of commodities based on ISIC Rev.4 Division

23: Manufacture of other non-metallic mineral products

- Cement: Korea Cement Association

24: Manufacture of basic metals

- Crude Steel: Korea Iron & Steel Association
- Bauxite: Not applicable
- Alumina refining: Not applicable
- Aluminium: Not applicable



# Industry

## Energy Use based on ISIC Rev.4 Division

- All industry data come from the IEA energy balance.
- But we can't fill out some details.
  - More detail than the IEA energy balance

IEA energy balance	IEA Energy Efficiency Indicator
Paper, pulp and print	17: Manufacture of paper and paper products
	Of which pulp
	18: Printing and reproduction of recorded media
Chemical and petrochemical	20-21: Manufacture of chemical and chemical products & basic pharmaceutical products and pharmaceutical preparations
	22: Manufacture of rubber and plastic products
Non-metallic minerals	23: Manufacture of other non-metallic mineral products
	Of which cement
	Of which clinker
Iron and Steel	24: Manufacture of basic metals
	Class 2410+2430: Manufacture + Casting of iron and steel
	Of which BOF(Basic Oxygen Furnace)
	Of which EAF(Electric Arc Furnace)
Non-ferrous metals	Class 2420+2432: Manufacture + Casting of precious and non-ferrous metals
	Of which aluminium
Commercial and public services	35-36: Electricity , gas , steam, air conditioning, and water supply

# Energy Consumption Survey

Compiled by Korea Energy Economics Institute

- Conduct the survey every three years
- Survey for annual energy consumption in Korea
- The survey was started since 1981.
- Survey items

Industry	Energy consumptions by forms of management, use, facilities, process, sector,...
Transportation	Energy consumption by size, province, Characteristics of personal transportation, Usage by car
Commercial and Public services	Energy consumption by industry, end-use
Household	Energy consumption by province, Monthly energy consumption, Energy consumption by construction years, size of floor space, number of household members, type of housing, Energy consumption per household
Buildings	Number of business surveyed, Energy consumption by building type, use, size of floor space, year built, area, Monthly energy consumption per building, Renewable energy production, Energy efficiency facility, Energy conservation activity



# Energy Consumption Survey

Compiled by Korea Energy Economics Institute

## □ Survey sector

<b>Commercial and Public services</b>	Sewerage, waste management, materials recovery and remediation activities	<b>Industry</b>	Agriculture, forestry and fishery
	Wholesale and retail trade		Mining
	Accommodation and food service activities		Manufacturing
	Information and communications		Construction
	Financial and Insurance activities		
	Real estate activities and renting/leasing	<b>Transportation</b>	Transport business
	Professional, scientific and technical activities		Private automobile
	Business facilities management and business support services		
	Public administration, compulsory social security and education	<b>Household</b>	
	Human health and social work activities		
	Arts, sports and recreation services	<b>Building</b>	
	Membership organizations, repair and other personal services		
	Water supply		

# Services

- ❑ Total energy use is come from the IEA energy balance.
- ❑ The consumption by use is estimated on the Energy consumption survey.
- ❑ But it does not have enough data, because KEEI conducts the survey every three years.
- ❑ So we estimate the absent data.
  - Use the activity data of services sector
  - Use the interpolation method

# Residential

- ❑ Total energy use is come from the IEA energy balance.
- ❑ The each consumption by use is based upon the “Energy consumption survey” and the “Household Energy Standing Survey”
- ❑ KEEI conducts the “Household Energy Standing Survey ” energy year since 2011.
- ❑ But the results of the surveys are not same with the IEA energy balance. So we adjust the data.
  - Use the activity data of services sector.
  - Use the variability.

# Transport

- ❑ Use the data of Ministry of Land, Infrastructure and Transport for activity & structure indicators.
- ❑ The total energy consumption is from IEA energy balance.
- ❑ We use many source for filling out the transport sheet.
  - Ministry of Land, Infrastructure and Transport
  - Energy consumption survey.
  - Household energy standing survey
  - Korea National Oil Corporation

# Service, Residential and Transport

- ❑ Their total energy consumptions are come from IEA energy balance.
  - But there is no information of each item.
- ❑ So we reference many data sources, and use the various estimation method for filling out the each item.
- ❑ I can't explain the each method on my presentation, but we made reports of the method for each sector.

# Problem and Assignment

## □ Data collection system

- There is no data collection system for EEI now in Korea. So we just depend on the unstable cooperation.
- Korea need to construct the data collection system for the EEI institutionally.
- The system should include the compulsion and supporting plan.

## □ Manualize

- There is no manual for making the EEI now. So the estimation method is not inconsistent.
- We have to make the manual which explain the estimation methodology in detail.
- And the guideline for users should be made also.



# Q & A

If you have questions about my presentation,  
give me the questions please.

And if you have more questions or want to know some  
detailed information, please contact me by email.

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Thank you for your attention!