

Energy Statistics and Outlook in Asia and the Pacific

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Kenji Kobayashi

Asia Pacific Energy Research Centre (APERC)

of

The Institute of Energy Economics, Japan (IEEJ)

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■ Establishment

- September 10, 1966
- APERC was established on July 1, 1996.

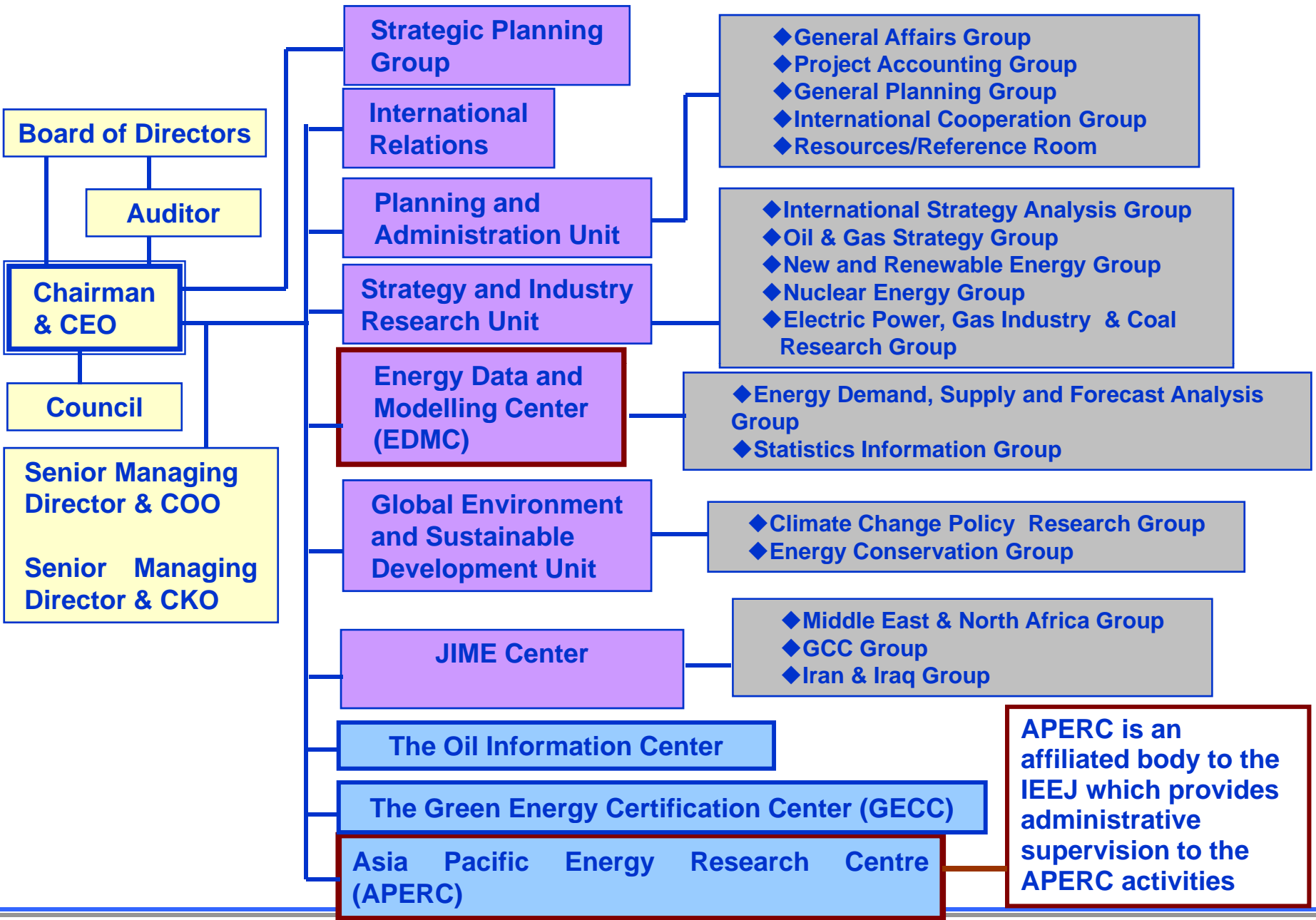
■ Organization

- Headquarters (number of staff 153 incl. EDMC)
- The Energy Data and Modelling Center (EDMC)

■ Affiliated Bodies

- Asia Pacific Energy Research Centre (APERC)
- The Oil Information Center
- JIME Center
- The Green Energy Certification Center (GECC)

Organizational Chart of IEEJ/APERC



- **The Energy Data and Modelling Center (EDMC) was established as an affiliate body to the Institute of Energy Economics, Japan, in October 1984 in order to:**
 - ✧ **establish an energy database,**
 - ✧ **develop various energy models, and**
 - ✧ **carry out econometric analysis,**
thereby contributing to the formulation of a comprehensive energy policy for Japan.
- **In July 1999, EDMC joined the Headquarters of the IEEJ.**

- APERC has been working under the guidance of APEC Energy Working Group (EWG).
- APEC Expert Group in Energy Data and Analysis (EGEDA) has been overseeing APERC research activities.
- The primary objective of APERC is to conduct (1)Researches, provide (2)Energy Data Network Service and (3)Training in order to foster understandings among APEC members of regional energy outlook, market developments and policy issues.

■ Research Activities

- The research themes are categorized as follows:

- ✧ Regional energy demand and supply outlook,
- ✧ Energy policy analysis,
- ✧ Sustainable energy development,
- ✧ Regional energy market analysis,
- ✧ Energy infrastructure development,

- APERC plays an important role in the newly introduced APEC Peer Review on Energy Efficiency (PREE)

■ Energy Data Network Service (EDMC, IEEJ/APERC)

- Joint Oil Data Initiative(JODI)
- APEC Energy Database(annual publication)

■ Know-how Transfer Programme (International Relations, IEEJ/APERC)

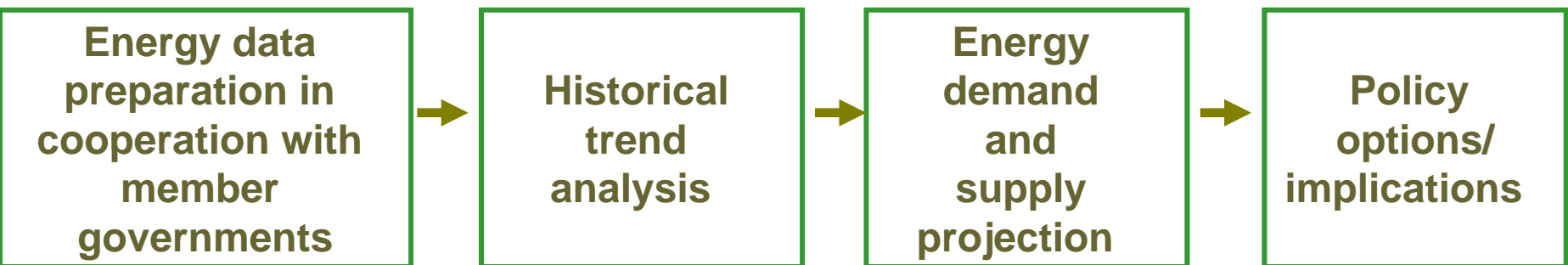
Regional Technical Assistance (RETA 6322) :

■ Background

- Along with economic development and industrialization, Asia and the Pacific region is leading the global energy demand growth.
- A clear understanding of the energy supply and demand across the region, will serve policy-makers to consider options towards energy supply security and sustainable development.

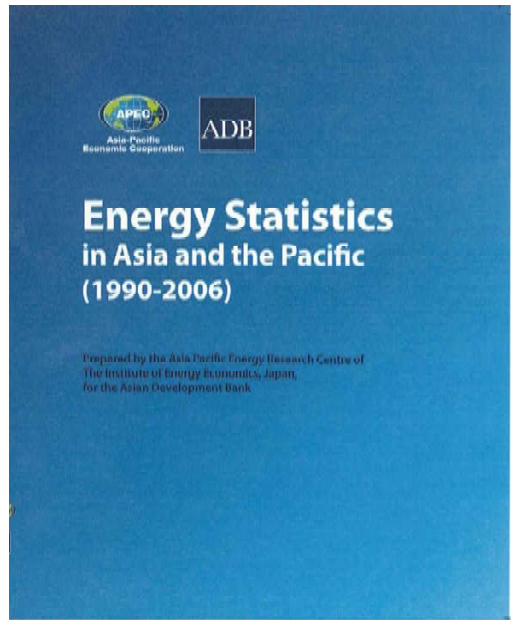
■ Scope of Work

- APERC/IEEJ (1) develops the database framework and methodology, and (2) conducts data compilation with the analysis of historical trends.
- APERC/IEEJ analyzes the historical energy trends in Asia and the Pacific region for projecting the demand and supply by 2030.
- APERC/IEEJ works closely with ADB in establishing a network of agencies/contact persons in the region who will serve as focal points for data collection and validation.



Energy Statistics in Asia and the Pacific

(Published in June 2009)



- **Compilation of the energy statistics for the ADB countries with historical trend analysis (1990-2006)**

Energy Outlook in Asia and the Pacific

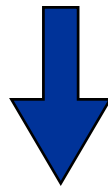
(To be Published in November 2009)

- **Energy outlook in Asia and the Pacific by country (2005-2030)**
- **Regional outlook, including subregional summaries**
- **Relevant policy analysis and development strategies in each subregion and countries**

Energy Statistics: A Useful Tool for Energy Policy-making

- Energy consumption is derived from the economic activities.

- Understanding energy supply/ demand balance is essential for “**Energy Security**” strategy designing as well as monitoring the achievement of “**Energy Conservation (Efficiency Improvement) Policies**”.
- “Energy Data” **AND** related “Activity Data” are essential tool for energy demand & supply analyses.



Accurate, consistent, comprehensive and timely **energy, economic and social** data should be collected via sound statistical system.

- Detailed and accurate energy data is also crucial for estimation of Green House Gas emissions.

Energy Balance Table : Overall Flow of Energy

- Systematic/structural statistics which shows overall flow of energy supply/demand for a country
- Depicts the future image of energy supply and demand, based on the energy balance table

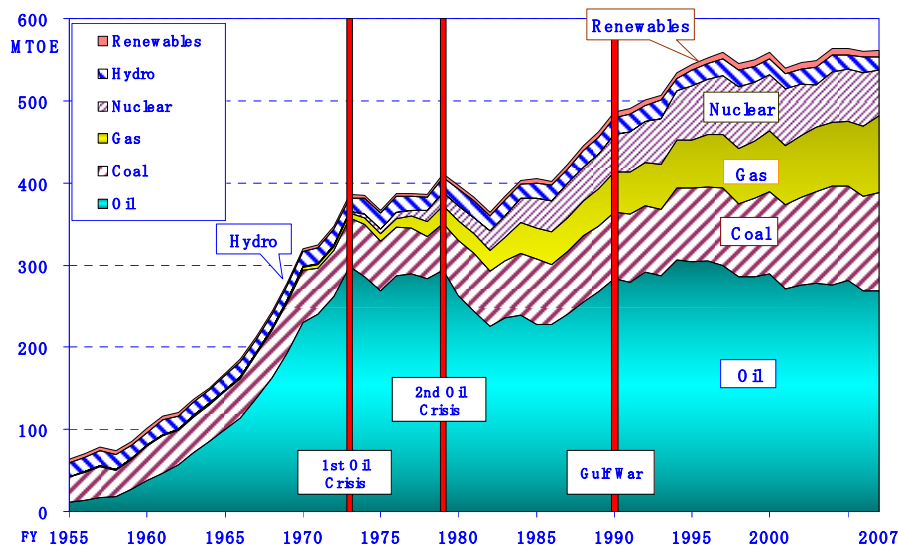
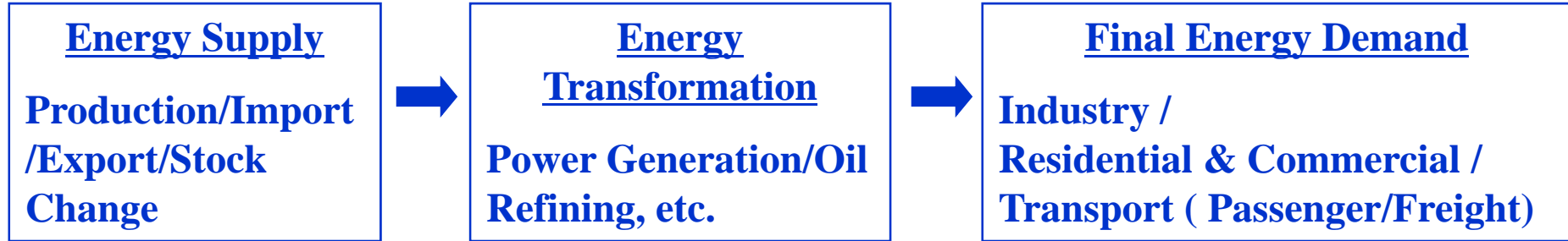
JAPAN FY2007 (Unit : MTOE)

Sector		Energy Source	A	B	C	D	E	F	G
		Coal	Oil	Natural Gas	Hydro · Renewables etc.	Nuclear	Electricity	Total	
Primary Energy Supply	1	Domestic Production	1	1	4	24	56	0	85
	2	Import	120	267	89	0	0	0	476
	3	Total Primary Energy Supply	120	268	93	24	56	0	561
	4	Export, Stock Change etc.	-1	-25	0	0	0	0	-26
	5	Domestic Primary Energy Supply	119	243	93	24	56	0	535
Energy Conversion	6	Electric Utilities	-57	-26	-57	-16	-56	85	-125
	7	Oil Refining, Cokes etc.	-17	-16	0	-6	0	16	-25
	8	Own Use etc.	-5	-7	-1	3	0	-12	-21
Final Energy Consumption	9	Total Final Energy Consumption	40	195	34	4	0	89	363
	10	Industry	39	78	16	3	0	39	176
	11	Residential & Commercial	1	31	17	1	0	49	99
	12	Transport	0	86	0	0	0	2	87

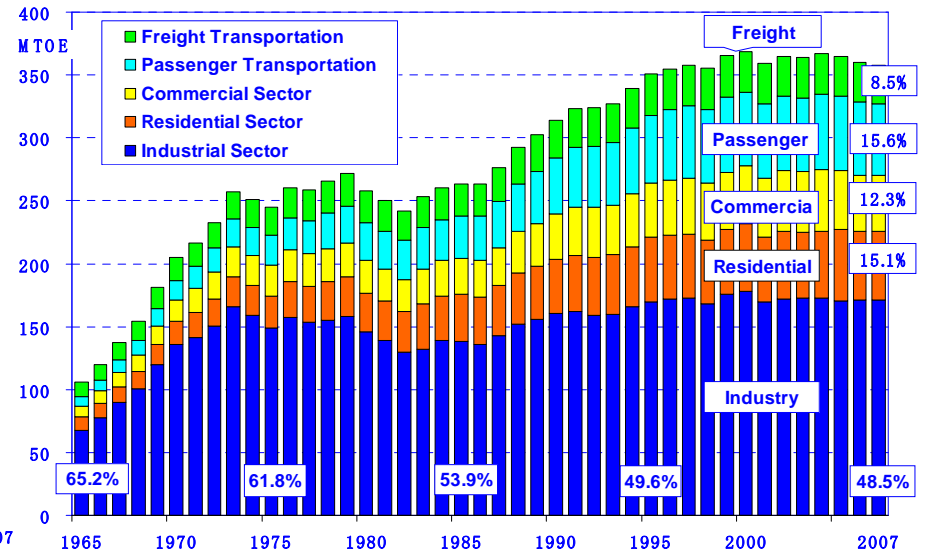
- Based on variety of scattered energy statistics which use different units
- Unification of units (ton, kl, m³, kWh, etc.) by using thermal unit (joules, toe, kcal, etc.)
- Expressed in thermal unit which allows summation and subtraction between different types of energy
- Enables macro level time series analyses of overall thermal efficiency for power generation
- No “double counting” by treating “energy transformation” ⇒ convenient for CO₂ emission estimation

Energy Flow: A Case of Japan

● National Energy Demand & Supply Flow and Balances



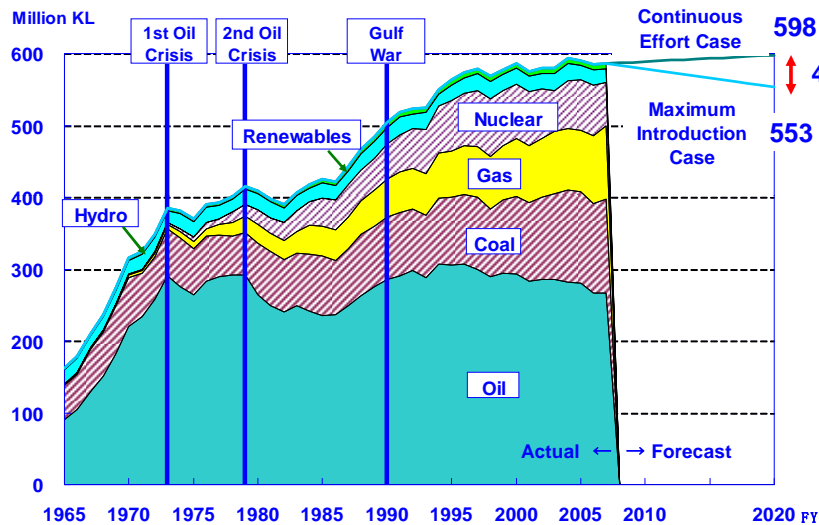
Primary Energy Supply by Energy (Japan)



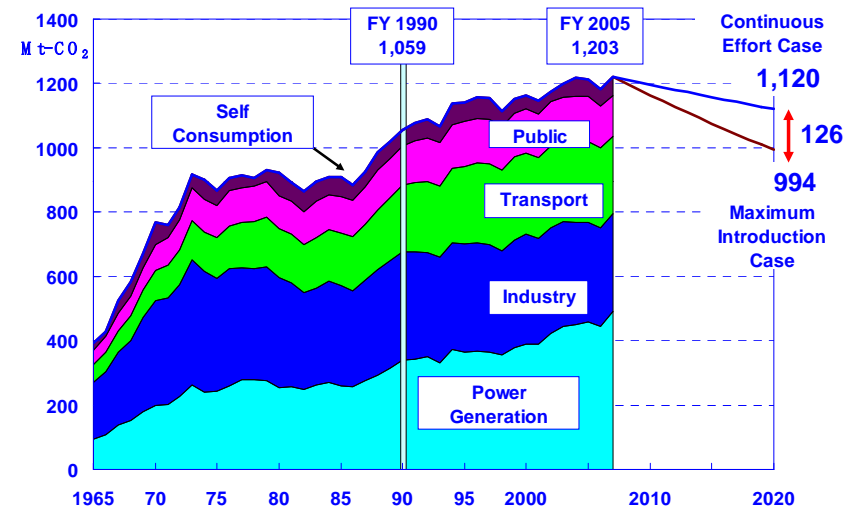
Final Energy Consumption by Sector (Japan)

Energy Conservation and GHG Emissions

By introducing more efficient technologies in addition to the energy saving efforts across the sector, Japan is expected to reduce energy consumption by 45 million kL and thus CO₂ emissions by 126 million tons in 2020 in comparison with the Continuous Effort Case



Primary Energy Supply in 2020



CO₂ Emissions in 2020

- **Continuous Effort Case** :The efforts to improve the efficiency of equipments up to date will be continued with existing technologies.
- **Maximum Introduction Case**: In addition to the above Continuous Effort Case, this case assumes utmost dissemination of equipments, of which energy efficiency performance will significantly improve with cutting-edge technologies that are already at deployment stage, while not imposing obligatory measures to energy consumers.

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