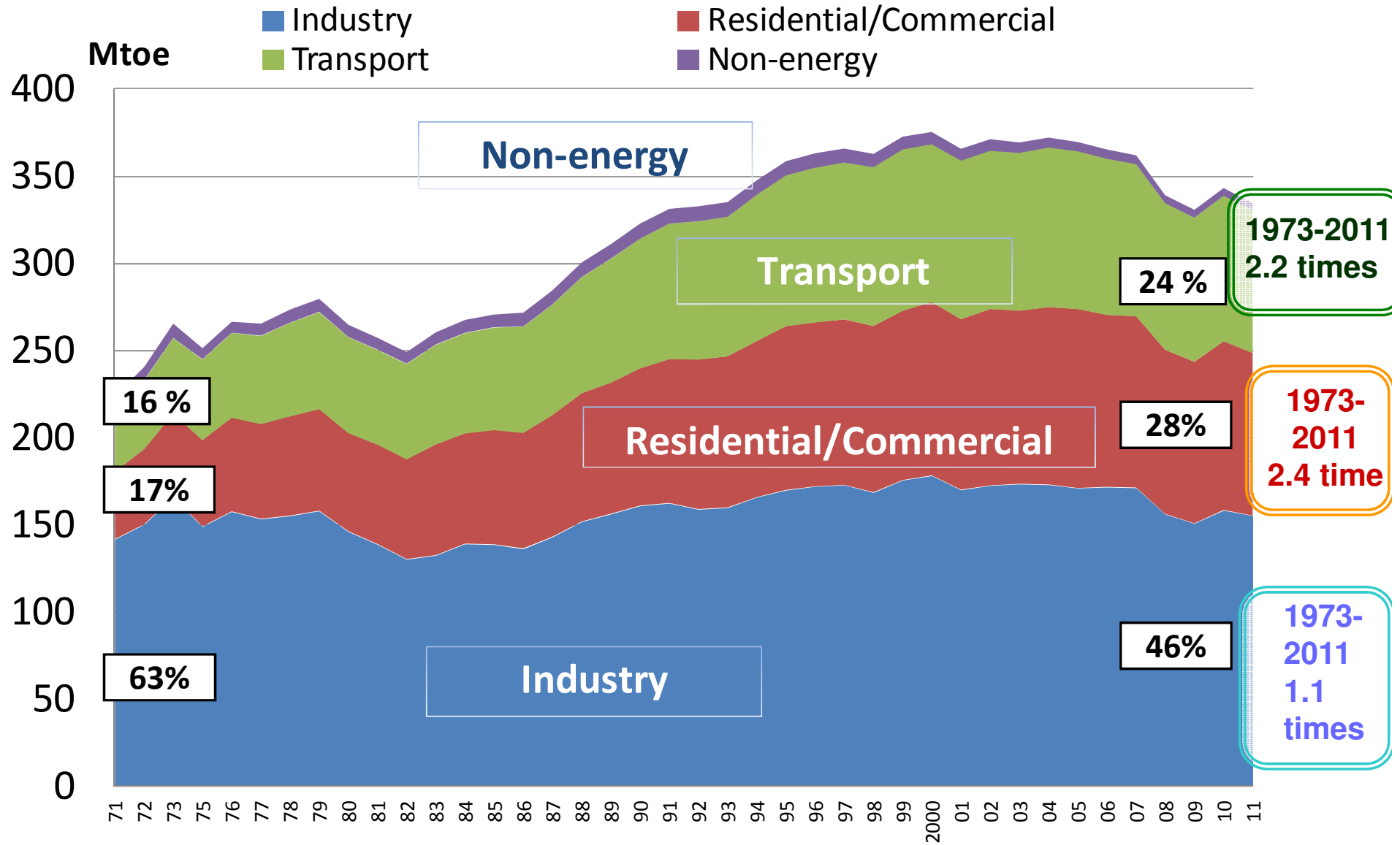

Japan's Energy Efficiency and Conservation Policy Updates

Naoko Doi

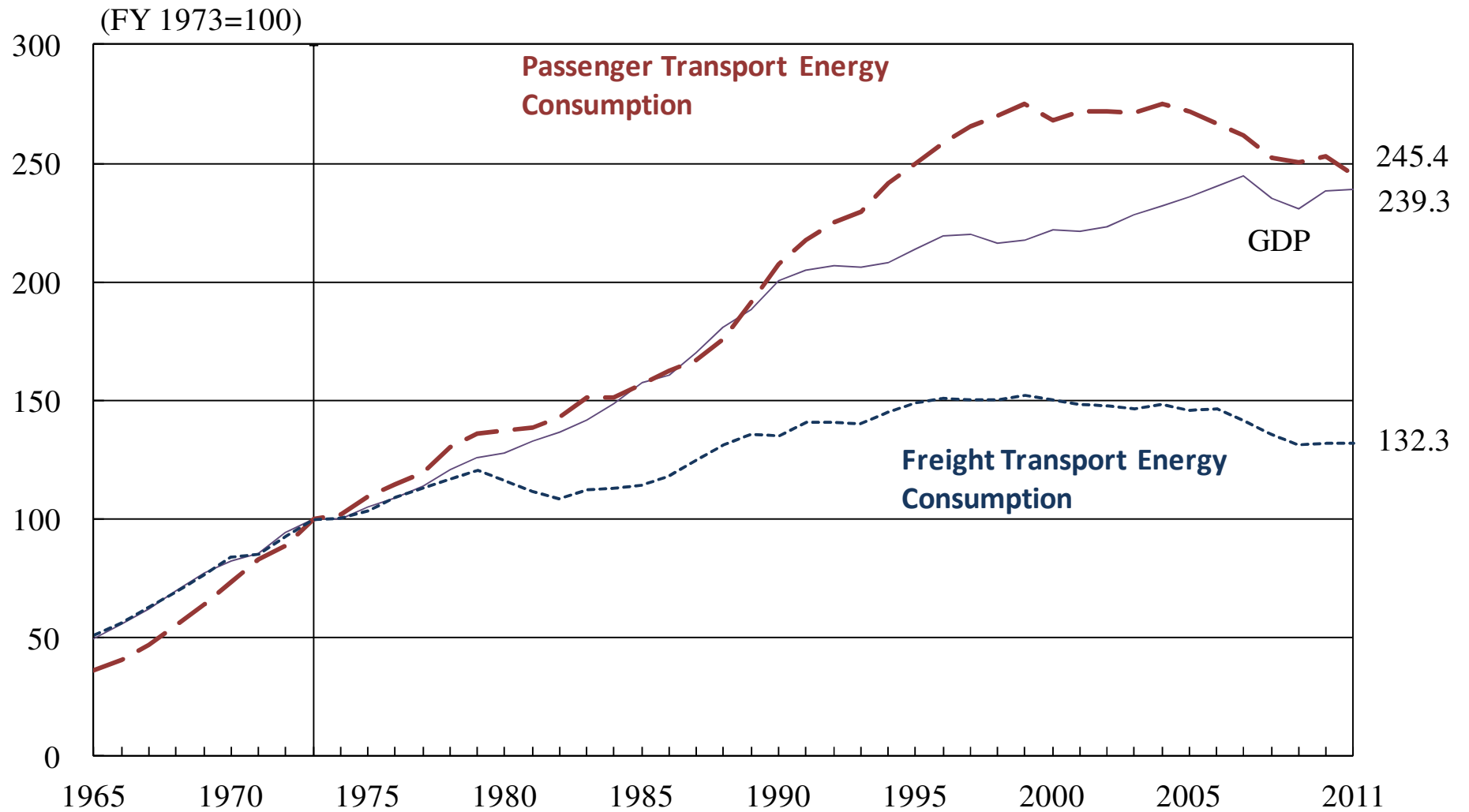
Institute of Energy Economics, Japan

Final Energy Consumption



(Source) "Energy Statistics" by ANRE

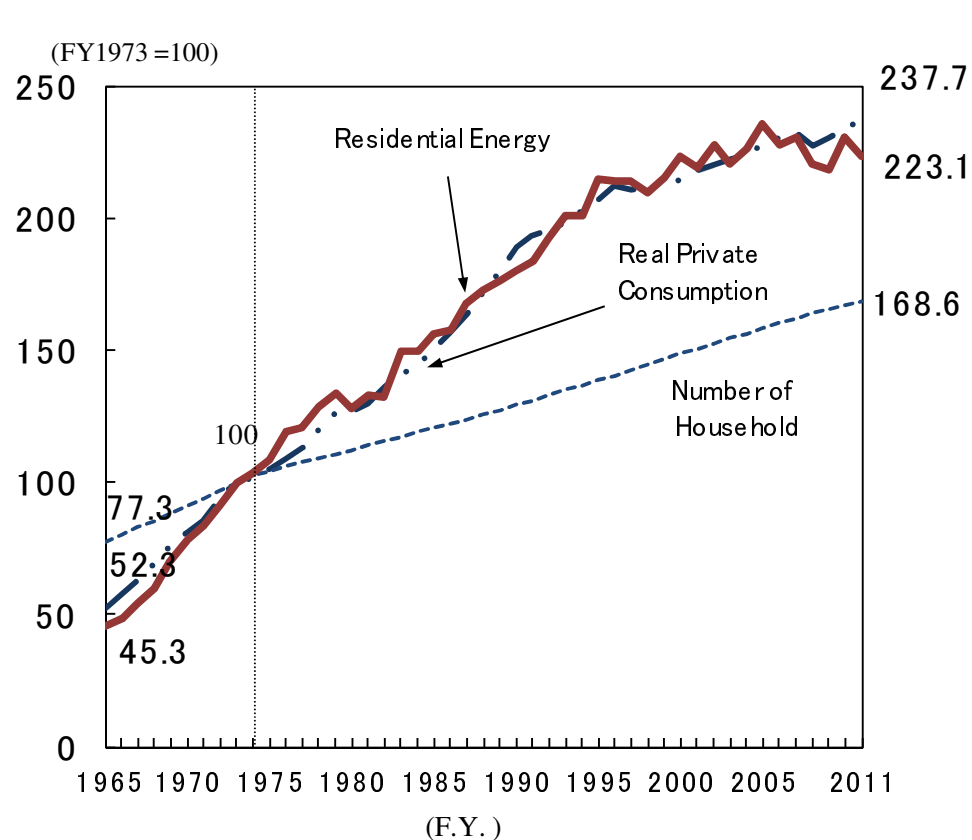
Transport Energy Consumption and GDP



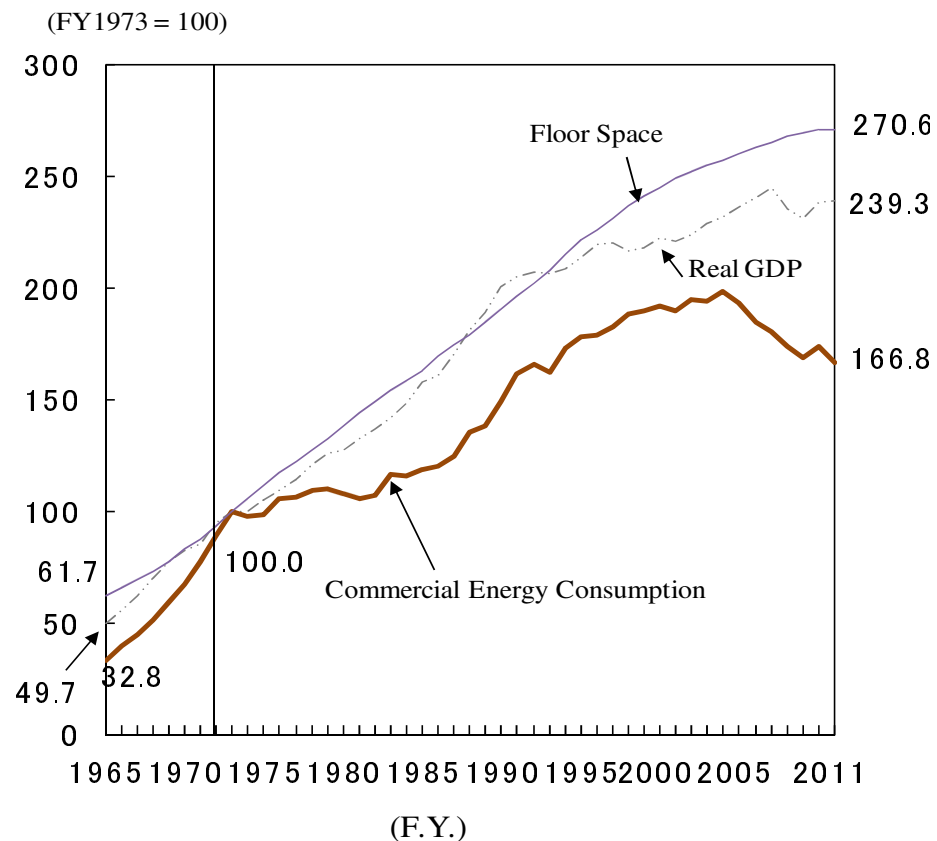
(Source) Institute of Energy Economics, Japan

Residential and Commercial Energy Consumption

Residential Energy Consumption



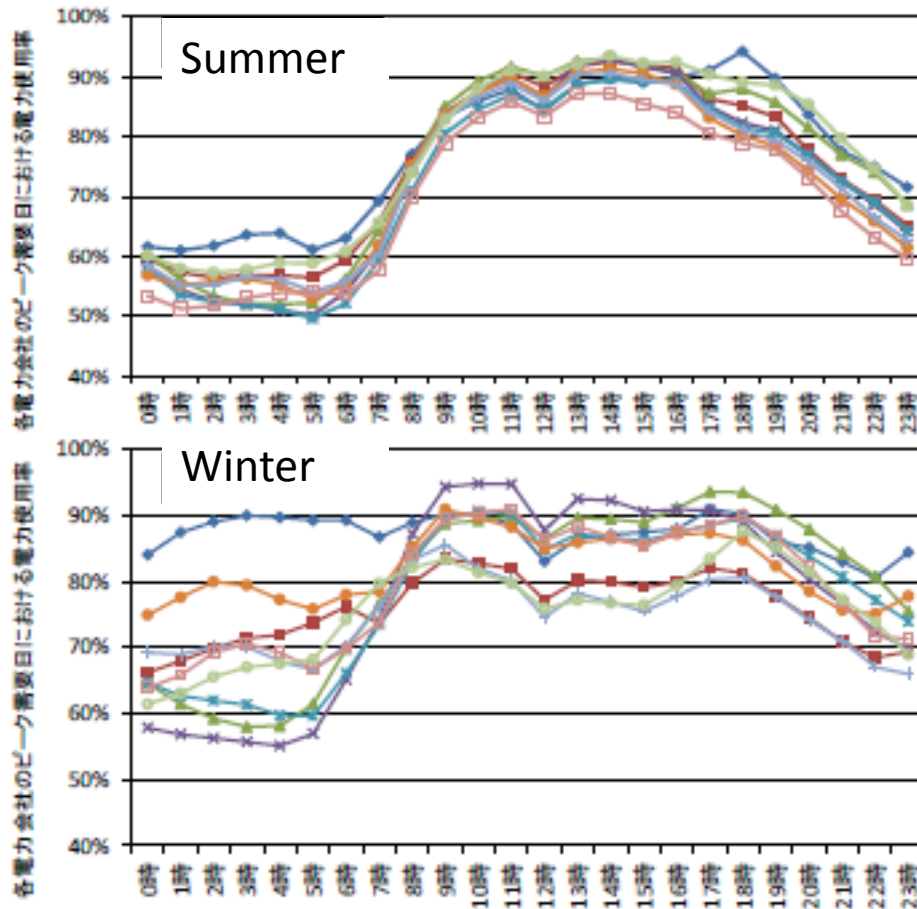
Commercial Energy Consumption



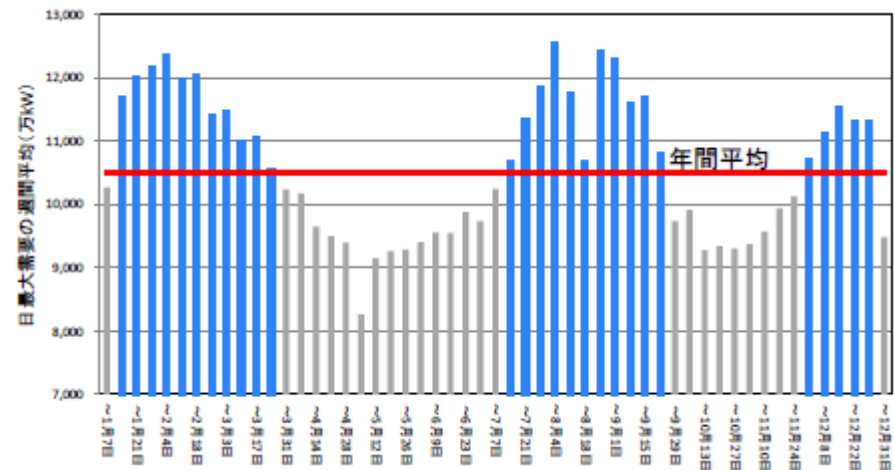
(Source) Institute of Energy Economics, Japan

Electricity Demand and Supply

Electricity consumption ratio in peak day



6 Electric Utilities' Average Peak Electricity Demand



(Source) Institute of Energy Economics, Japan

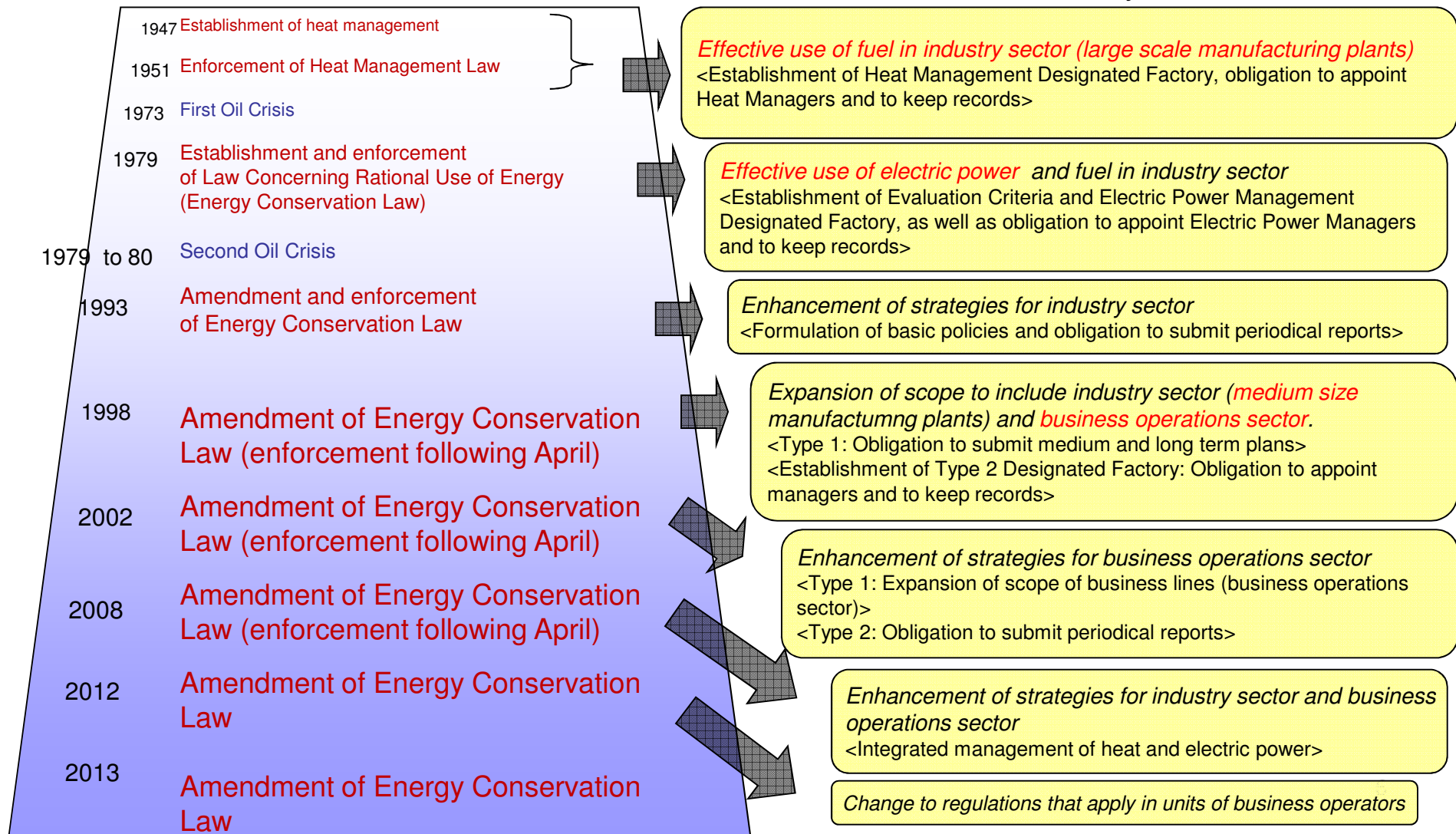
Sectoral Policies and Measures for Energy Conservation

| Sector | Specific Measures |
|-------------------|--|
| Industry | <ul style="list-style-type: none"> • Voluntary Action Plan on the Environment • Introduction of energy efficient equipment (e.g. High-performance industrial furnace, High-performance boiler, and Next-generation coke oven) • Energy Management System in factory |
| Transportation | <ul style="list-style-type: none"> • The “Top Runner Program” is a key driver to improve fuel efficiency of vehicles • Promotion of clean energy automobiles • Energy conservation measures for freight transport owners |
| Buildings | <ul style="list-style-type: none"> • Improvements in energy efficiency of buildings, incl. promotion of High-Efficiency Air Conditioning Systems • Expanding ESCO Market • Improved efficiency of appliances in line with the “Top Runner Program” |
| Household | <ul style="list-style-type: none"> • Energy-Saving Labeling System promotes energy efficient appliances • Improved efficiency of appliances in line with the “Top Runner Program” • Energy Efficient Product Retailer Assessment System |
| Energy Conversion | <ul style="list-style-type: none"> • Improve energy intensity of power generation • Develop clean and efficient technologies (e.g. IGCC) |

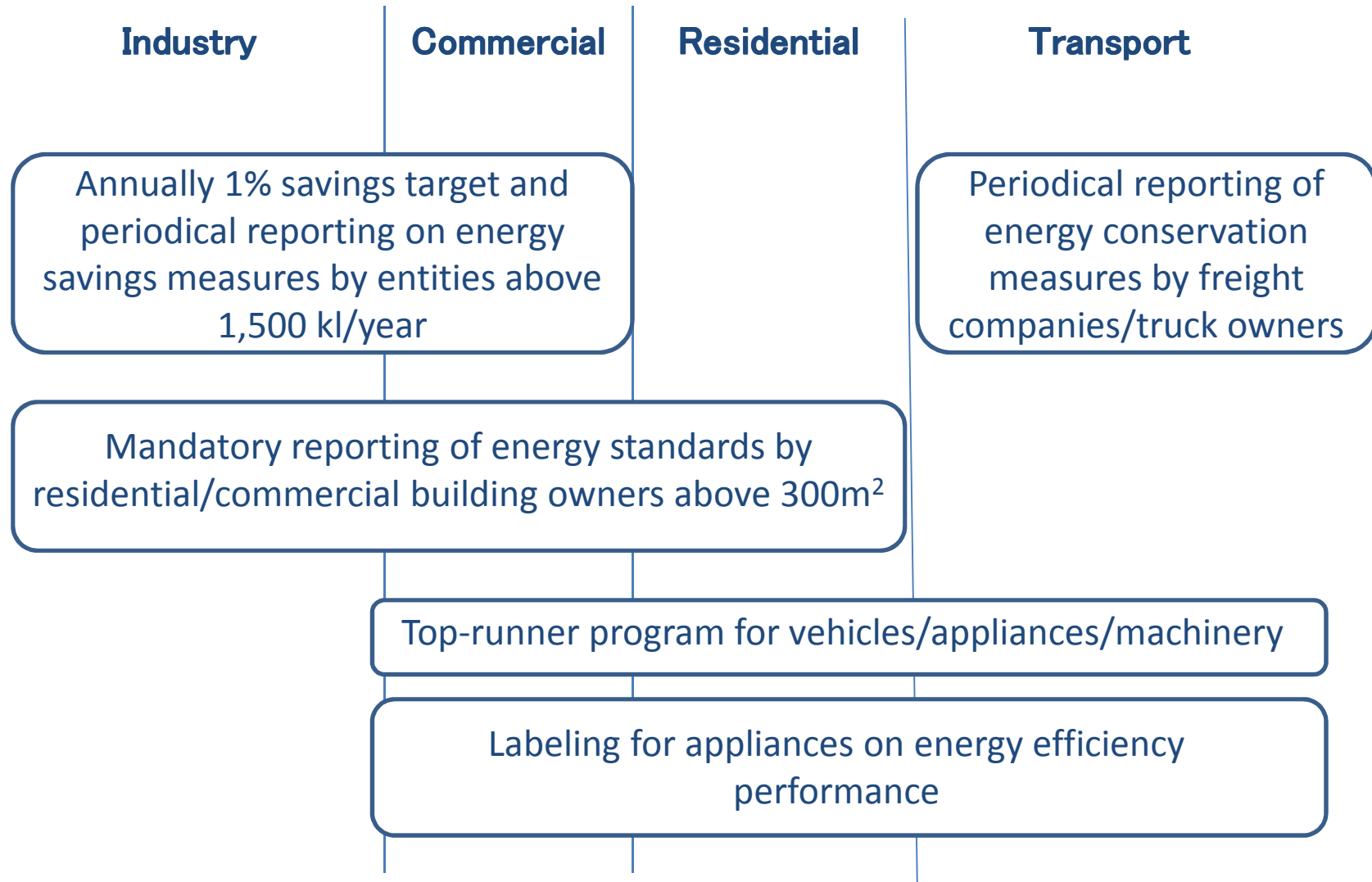
Evolution of Energy Conservation Law

- Japan has been improving the energy conservation strategies for energy security and environment.

<Summary>



Overview for EE&C Policies and Measures by Energy Conservation Law



Overview of the Energy Conservation Law

Factories/Business Establishments_

Announcement of business organizations' obligation to make efforts and evaluation criteria

○ Type 1 designated energy management factories (Energy consumption 3,000kl/year)

- Obligation to appoint energy managers
- Obligation to submit mid-term and long-term plans
- Obligation to periodically report the state of energy use

○ Type 2 designated energy management factories

(Energy consumption 1,500kl/year)

- Obligation to appoint energy management officers
- Obligation to periodically report the state of energy use



Transportation

Announcement of business organizations' obligation to make efforts and evaluation criteria

○ Specific transport business organizations

(Freight, passengers)

(Number of cars owned: 200 trucks or more, 300 trains or more)

- Obligation to submit mid-term and long-term plans
- Obligation to periodically report the state of energy use

○ Specific cargo owners

(Transport volume a year, 30 million ton kilo or more)

- Obligation to submit plans
- Obligation to periodically report the state of energy used for consigned transport

Residential/Commercial

Announcement of construction owners' obligation to make effort and evaluation criteria

○ Specific buildings

(Total floor area, 2,000m² or more)

- Obligation of construction owners who build or reform specific buildings to report energy conservation measures to administrative bodies

- Obligation to report the state of periodic maintenance



Measures for Machinery and Equipment

Obligation of business organizations who make or import equipment consuming energy

Top runner criteria

- Energy conservation criteria for passenger cars, air conditioners, TV, etc. From among the products currently available in the market, the product the energy conservation efficiency of which is the best in the same product category is selected, and other products in the same product category are asked to make their performance the same as or better than the product thus selected.

Provision of Information

Obligation to make efforts to provide general consumers with information

- Announcement of energy conservation products introduced by electricity and gas companies, and announcement of activities, including implementation and achievement, to provide information
- Provision of understandable energy conservation information (yearly energy consumption, fuel efficiency, etc) by retail stores of home electric appliances, etc.

Partial Amendment of the Energy Conservation Law (May 2013)

Energy Conservation Measures in Consumer Sector

Top Runner Program for Building Materials etc.

- ✓ Certain items that do not consume energy themselves but contribute to higher efficiency of energy consumption in housing, buildings, or other equipment will be added to the Top Runner program.

(Products currently subject to the program):
28 products including passenger vehicles, air conditioners, TVs, Luminaires and refrigerators

(Newly added products (planned)):
windows, heat insulating materials, etc.

Peak Demand Reduction

Measures on demand side

- ✓ Consumers' efforts to reduce the use of electricity from utility grids during the peak demand hours will be able to evaluate.
 - *For example, using storage batteries, energy management systems in buildings and households, private power generation etc.
- ✓ Specifically, the procedures to calculate the target of efforts under the Energy Conservation Law will be reviewed.

Equipment Added to Top Runner Program

1. The following equipment has been added to the program.

- Heat pump water heaters (electric)
 - Added to program in March 2013.
 - Target efficiency is 27% in 2017Fy.



- Commercial refrigerators/freezers
 - Added to program in March 2013.
 - Target efficiency is 22.7% in 2016Fy.



Other items

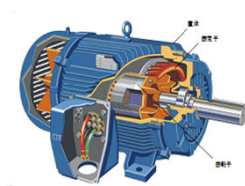
- Complex machines (Mar. 2013)
- Printers (Mar. 2013)
- Industrial motors (three-phase induction motors) (Nov. 2013)
- LED lamps (Nov. 2013)



Complex machines



Printers



Industrial motors



LED lamps

2. Equipment for which standards are currently under deliberation.

- Showcases

