

IEA International Workshop

The Role of Government for Promotion of Energy Conservation and Expectations of Other Sectors

19 January 2004

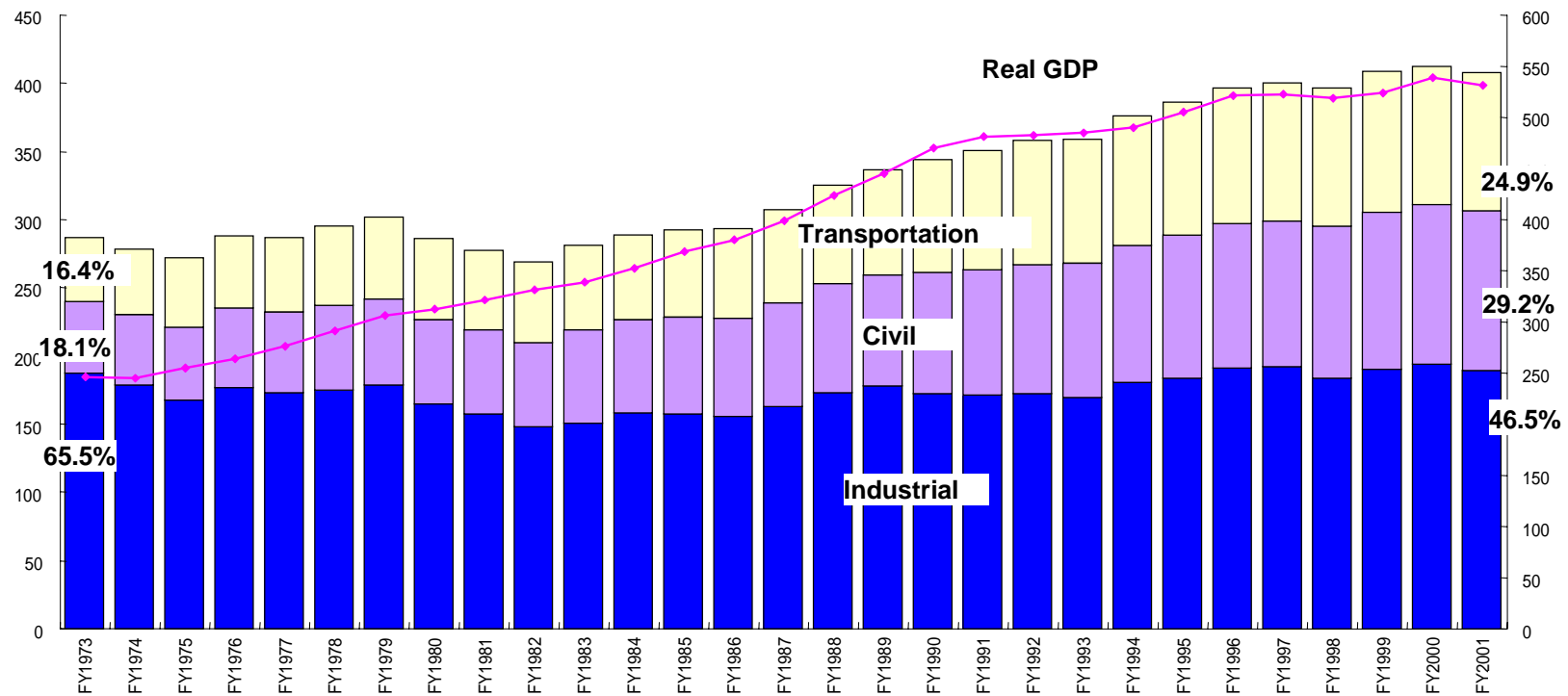
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Changes in Japan's Final Energy Consumption

(million kl crude oil equivalent)

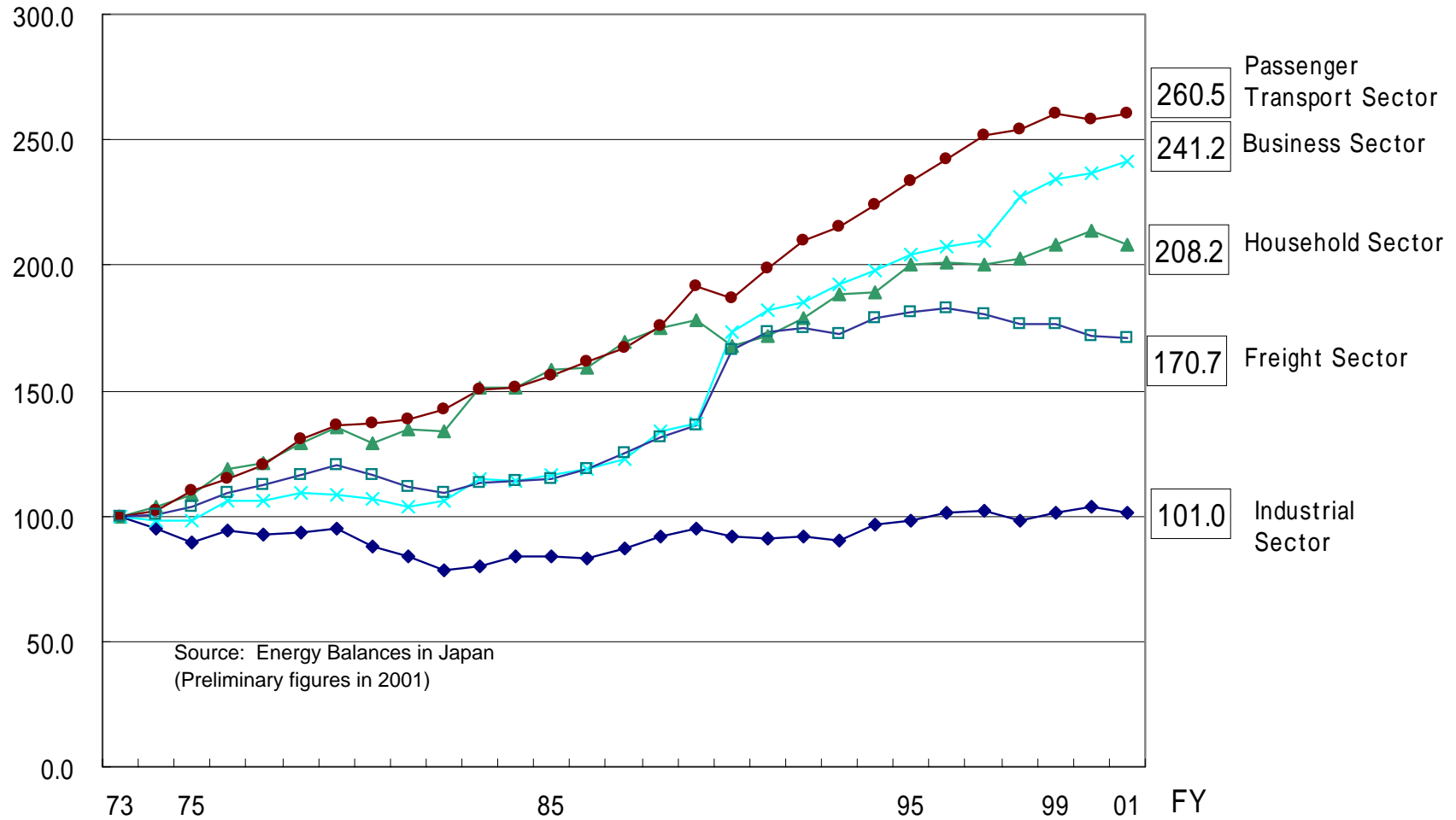
Real GDP (trillion yen, 1995 values)



Source: General Energy Statistics

Changes in Final Energy Consumption by Sector

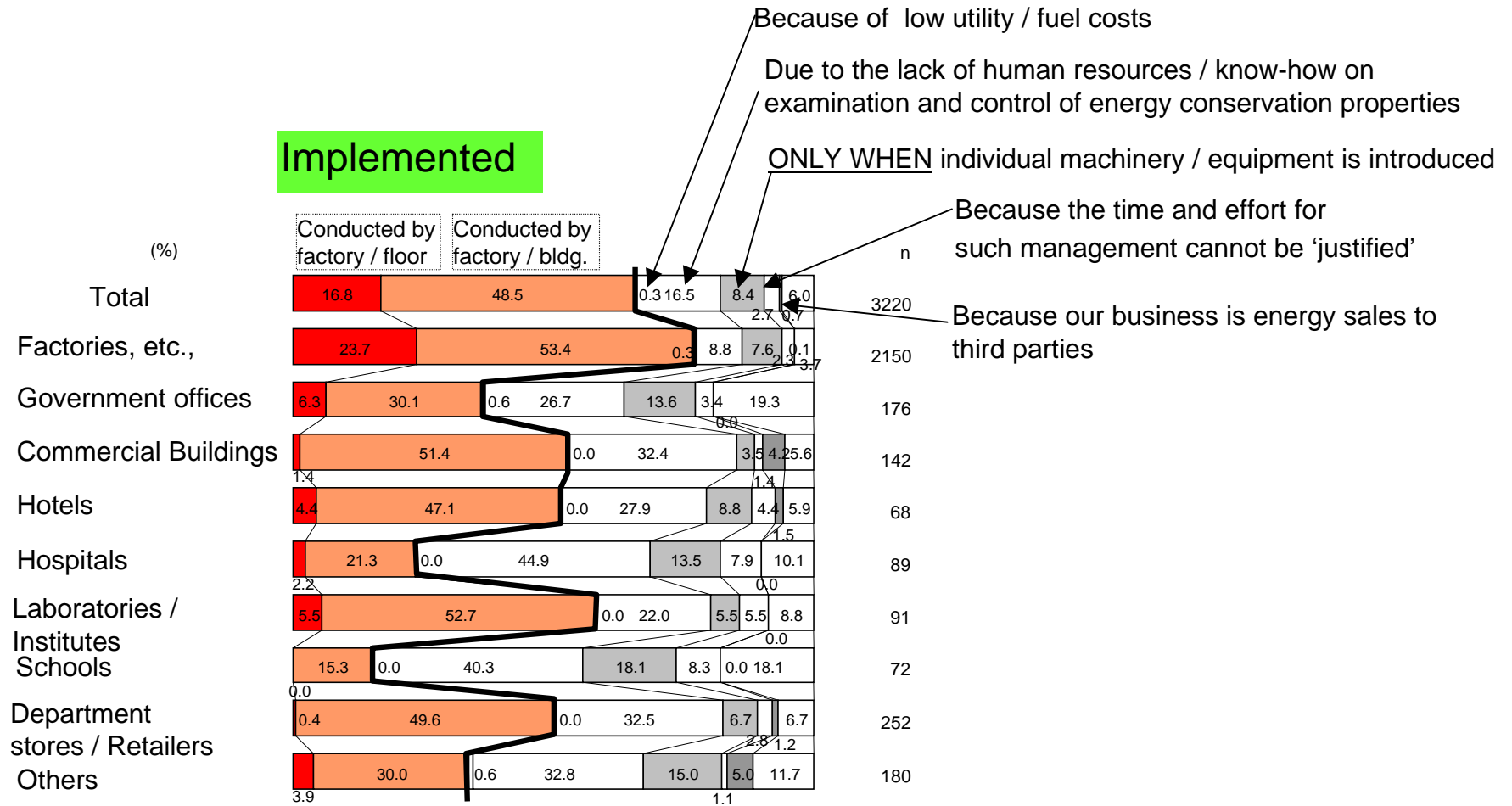
1973FY=100



Status of Unit Energy Management (UEM) in the Commercial Sector

NOT implemented

Implemented

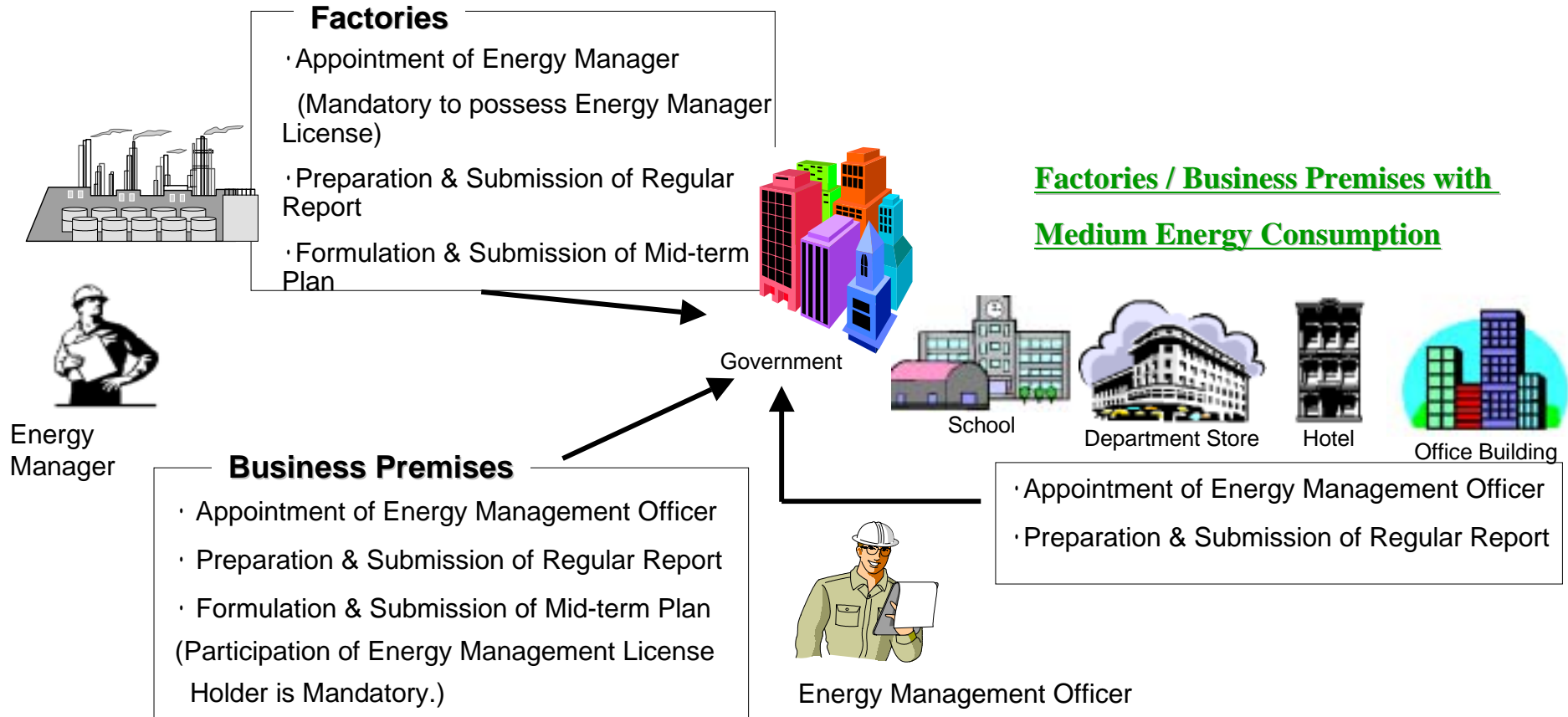


Role of the Government

- **Regulatory measures (Energy Conservation Law)**
 - Requirement to establish energy management systems in businesses
 - Assessment of the situation via regular reports, on-site surveys or inspections and guidance for improvement
 - Energy efficiency improvement of machinery and equipment (“Top Runner” Method)
- **Supporting measures**
 - Financial support for introducing new equipment or facilities
 - Promotion of ESCO (Energy Service Company) Business
 - Support for feasibility studies on energy utilization among multiple factories or buildings
 - Promotion of technology development
- **Distribution of energy conservation information to the public (e.g. idling stop campaign)**

Measures for Factories / Business Premises under the Energy Conservation Law

Factories / Business Premises with Large Energy Consumption



Designated Energy Management Factories under the Energy Conservation Law

Annual Energy Consumption		Category	
<ul style="list-style-type: none"> Fuel (Heat) 	<ul style="list-style-type: none"> Electricity 	Following five industries: <ul style="list-style-type: none"> Manufacturing Mining Electricity supply Gas supply Heat supply 	<ul style="list-style-type: none"> All businesses other than those listed at left e.g. office buildings, department stores, hotels, schools, hospitals, government offices, and amusement parks) Head offices / office bldgs. of the industries listed on the left
		1st Category Specified Factories / Business Premises	1st Category Designated Factories / Business Premises
3,000 k	12 million kWh	2nd Category Specified Factories / Business Premises	
1,500 k L	6 million kWh		

- Appointment of energy management officer
- Preparation & Submission of mid- & long-term plans
- Energy management license holder participation at the time of mid- & long-term plan preparation
- Regular reporting (instead of recording)

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- **Appointment of an energy manager (Mandatory to possess an official energy manager license)**
- **Preparation and submission of mid- & long-term plans**
- **Regular reporting**

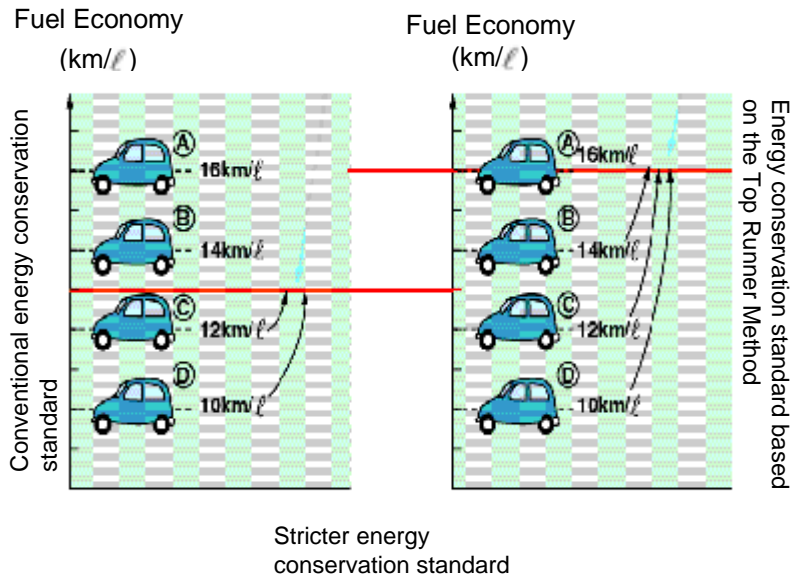
*** Points in red are the legislative changes in the Energy Conservation Law revised in 2002.**

Energy Efficiency Improvement of Machinery & Equipment (Top Runner Method)

Energy-Conservation Target for Specified Equipment

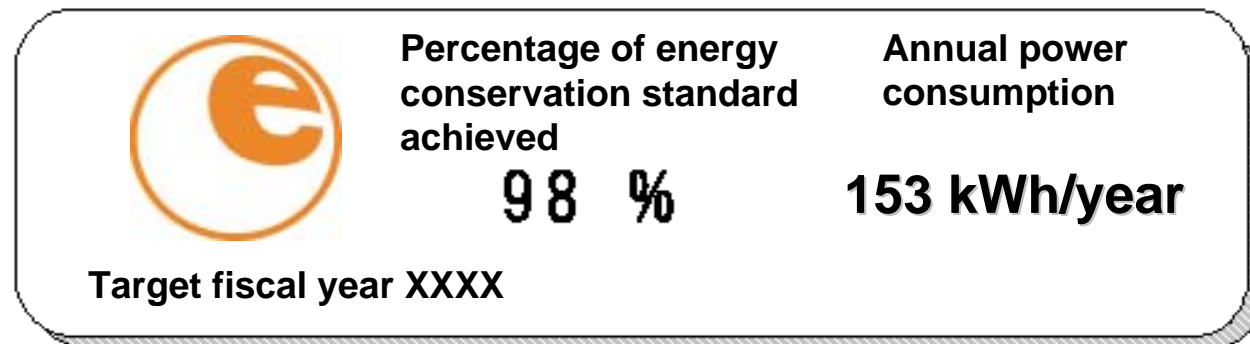
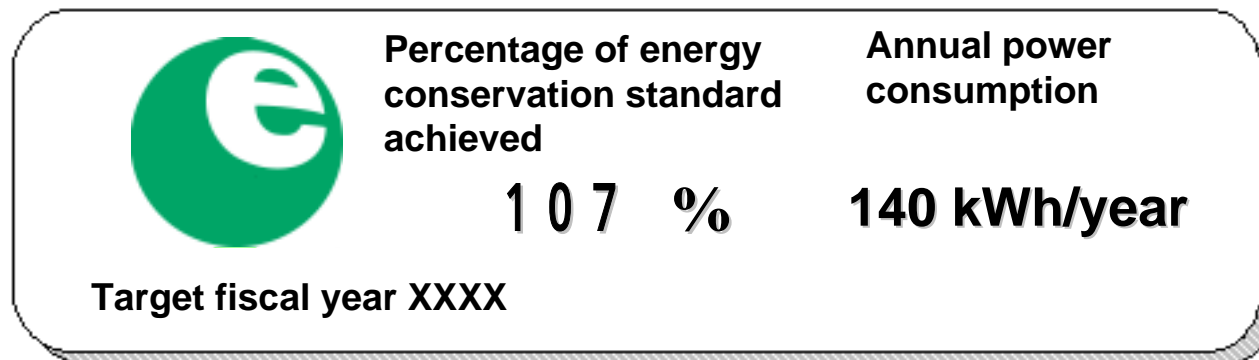


EXAMPLE



	Target Year	Energy Conservation Effects	Compared with
Passenger cars (gasoline fueled)	2010	23%	1995
Passenger cars (diesel fueled)	2005	15%	1995
Trucks (gasoline fueled)	2010	13%	1995
Trucks (diesel powered)	2005	7%	1995
	2004 (Partly 2007)		
Air conditioners (cooling & heating)		63%	1997
Air conditioners (cooling only)	2007	14%	1997
TV units	2003	16%	1997
VCRs	2003	59%	1997
Fluorescent lamps	2005	17%	1997
Photocopiers	2006	30%	1997
Computers	2005	83%	1997
Magnetic disc devices	2005	78%	1997
Electric Refrigerators / freezers	2004	30%	1998
Passenger cars (LP fueled)	2010	11%	2001
Stoves	2006	(Gas)1%/ (Oil)4%	2000
Gas cookers	2006	14%	2000
Gas hot water systems	2006	4%	2000
Oil hot water systems	2006	4%	2000
Electric toilet seats	2006	10%	2000
Vending machines	2005	34%	2000
	2006 (Partly 2007)		
Transformers		30%	1999

Efficiency Improvement of Home Appliances (Energy Saving Labeling Program)



Covers 10 appliances : air conditioners, fluorescent lamps, TVs, refrigerators, freezers, stoves, etc.

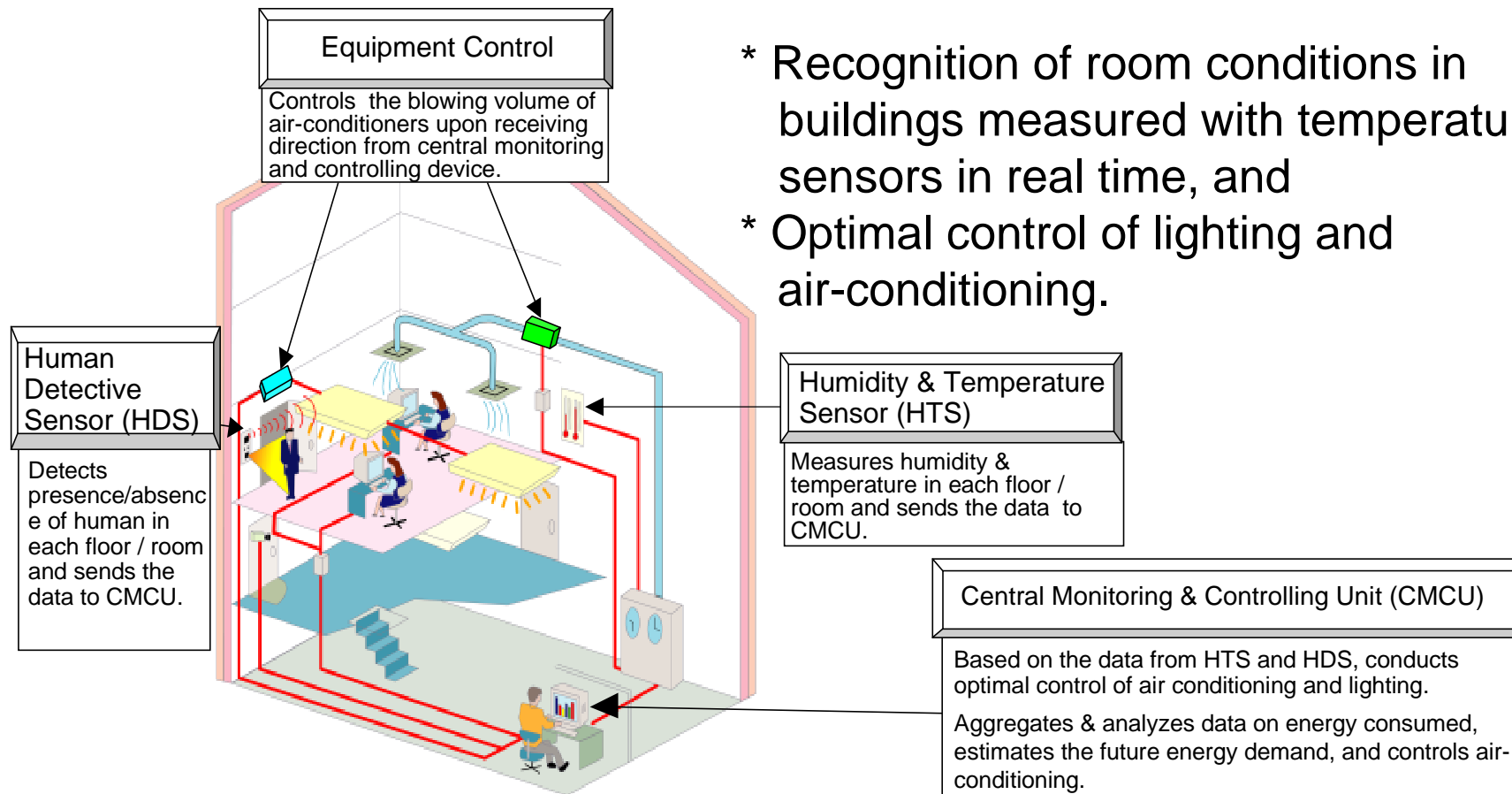
Evaluation of Retailers of Energy-Efficient Appliances

- **An evaluation system was established that targets major consumer electronics retailers' marketing activities for energy- efficient appliances.**
- **High-scored retailers are decided and announced annually along with their rankings. Consumers can recognize them by a specific graphic symbol.**

Promotion of Commercial Building Energy Management System (BEMS)

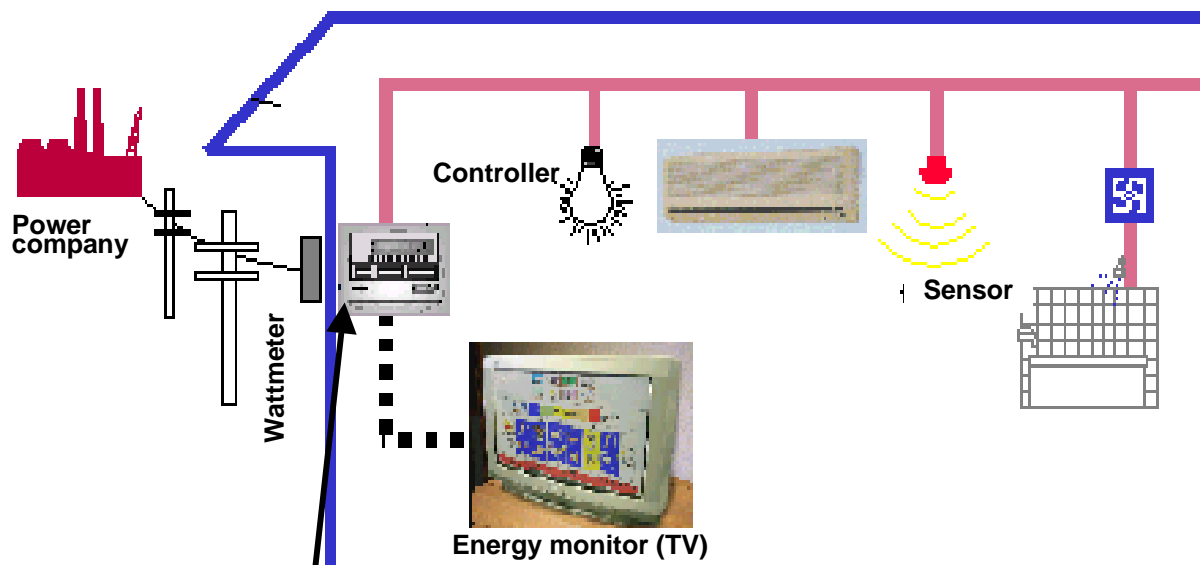
BEMS Image

- Promote popularization of BEMS through active utilization of IT, which enables:



- * Recognition of room conditions in buildings measured with temperature sensors in real time, and
- * Optimal control of lighting and air-conditioning.

Field Test of Home Energy Management System (HEMS)



Optional Services:

- Information services, internet connection services
- Security services
- Equipment maintenance services etc.

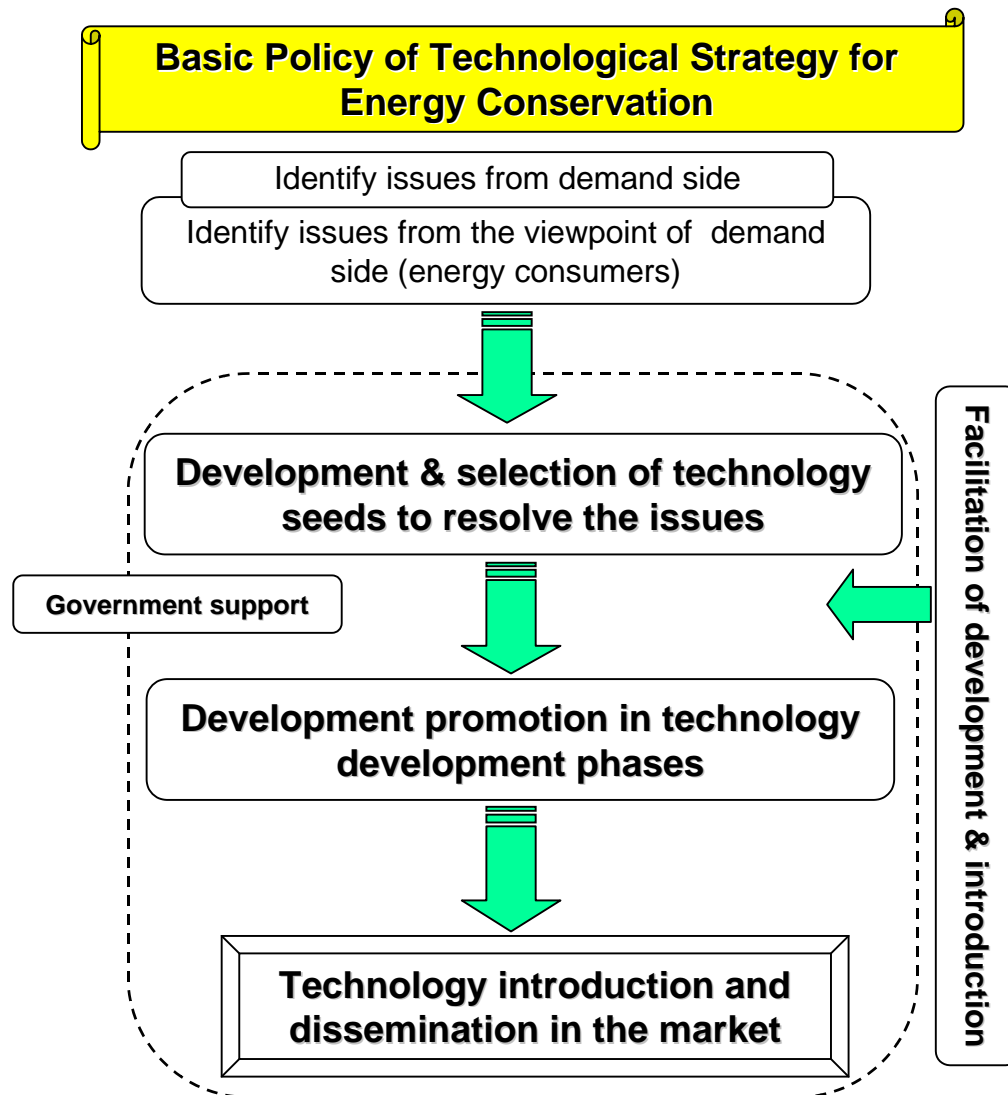
- This program promotes popularization of IT-based systems facilitating energy demand management at home (energy conservation practice) encompassing automatic optimal operation of home appliances (e.g. air-conditioners, refrigerators, etc.), and real time indication of energy usage status and charges.

Promotion of ESCO Business

- **Subsidiary aids**
 - Support project for industries to increase the efficient use of energy
 - Project for promoting the introduction of high-efficiency housing / building energy systems
 - Project for promoting the local introduction of energy conservation
- **Low interest loans**
 - Project for industries to promote the efficient use of energy

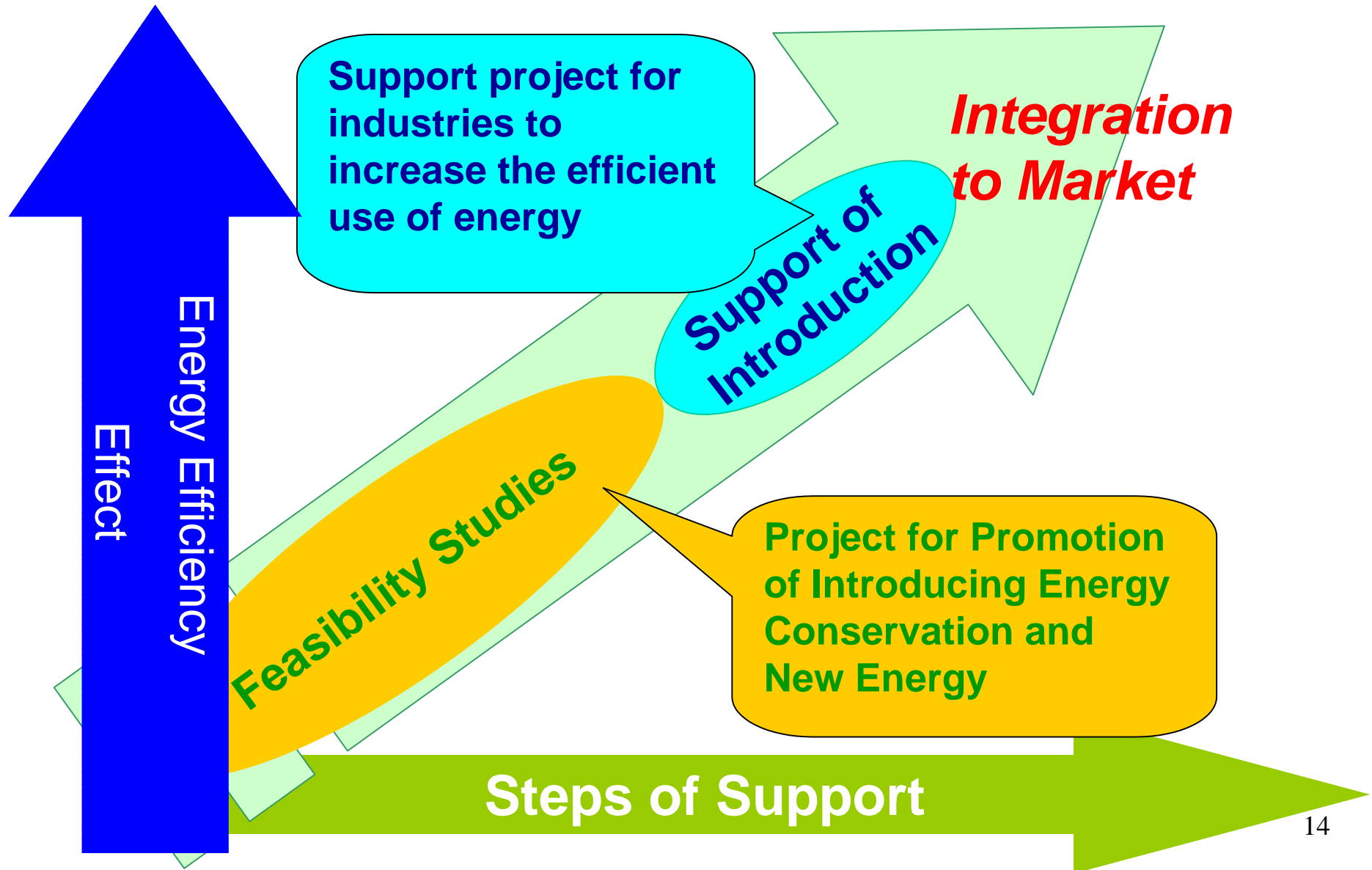
etc.

Promotion of Technology Development

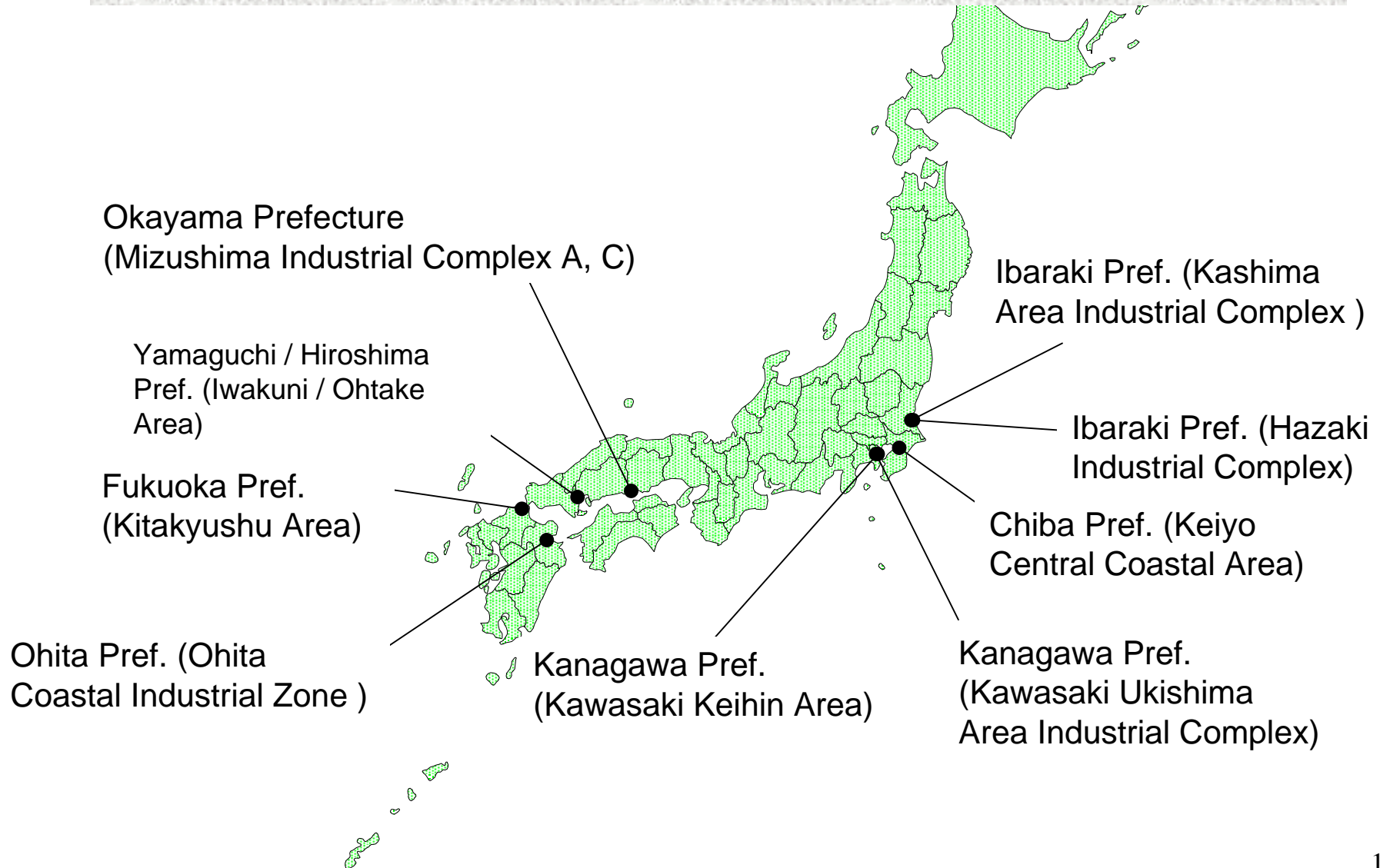


- In June 2002, ‘The Energy Conservation Technological Strategy’ was outlined in order to indicate the direction toward a breakthrough in the demand-side issues.
- Based on the Strategy, the government started a revised research program in 2003.

Promotion of Effective Use of Surplus Energy (e.g. heat) among Multiple Factories or Buildings



Possible Areas for Feasibility Studies Concerning Energy Utilization Among Multiple Factories or Buildings (Examples)



Expectations of Other Sectors and a Path toward Cooperation

- **Industrial Sector**
 - Further improvement through voluntary action plans
 - Increase of investment in energy conserving facilities including utilization of ESCO
 - Toward cooperation among multiple players
- **Business Sector (Premises)**
 - Awareness of the importance of energy management such as BEMS
 - Increase of investment in energy conserving facilities including utilization of ESCO
 - Collaboration between owners and office tenants
- **Local Governments**
 - Development of own strategies based on regional circumstances
 - Exchange of views with industrial & business sectors
 - Energy saving in own buildings
 - Public information
- **Banking Sector**
 - Ensure the sufficient flow of funds