

**SEforALL(Sustainable Energy for All)
International workshop in Japan
on Energy Efficient Building**

**Energy Conservation Guidelines
for Buildings of the Energy Conservation Act
- Current State and Issues of the Benchmark -**

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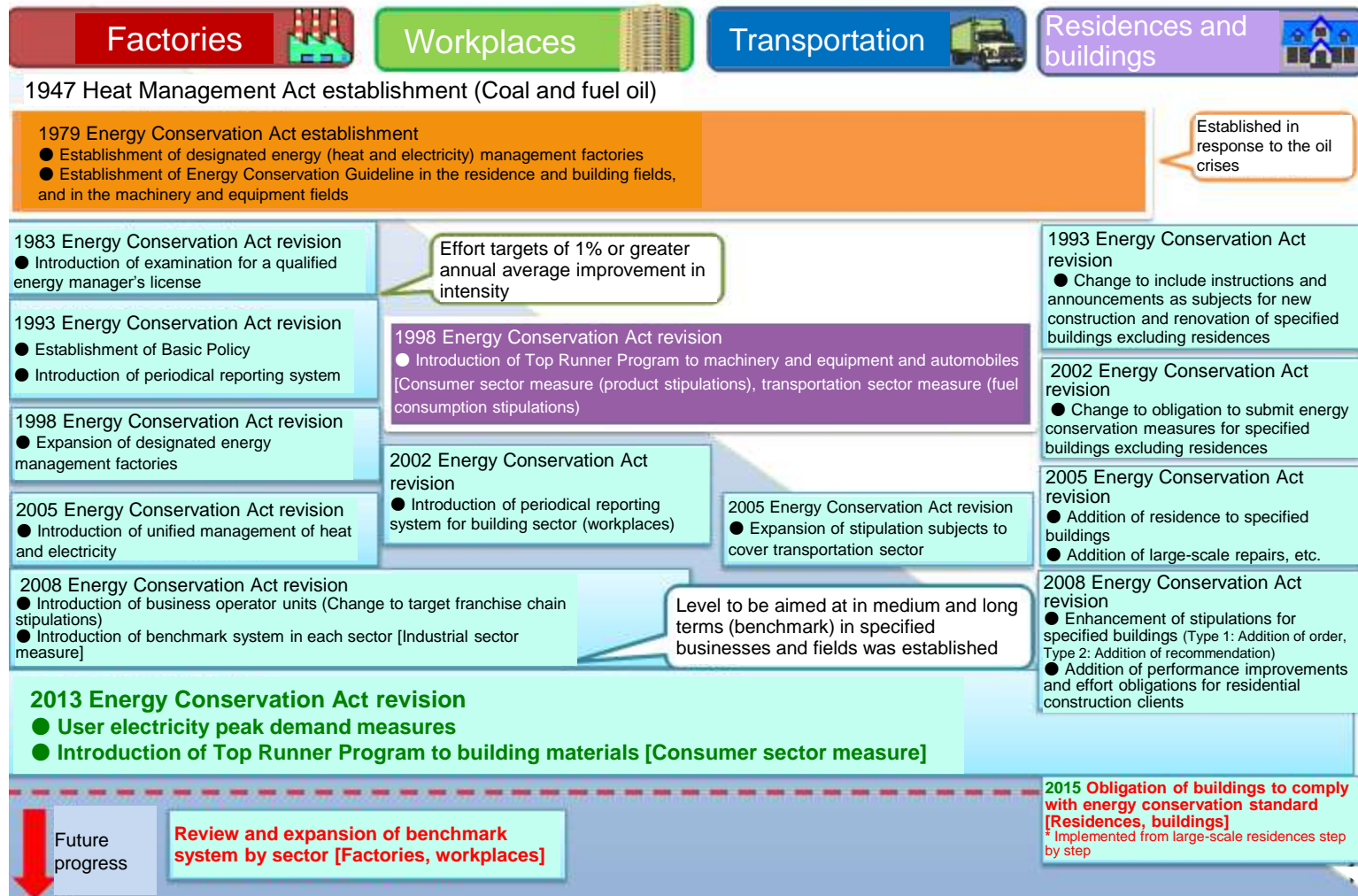
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1. Introduction

1.1 History of Energy Conservation Act in Japan

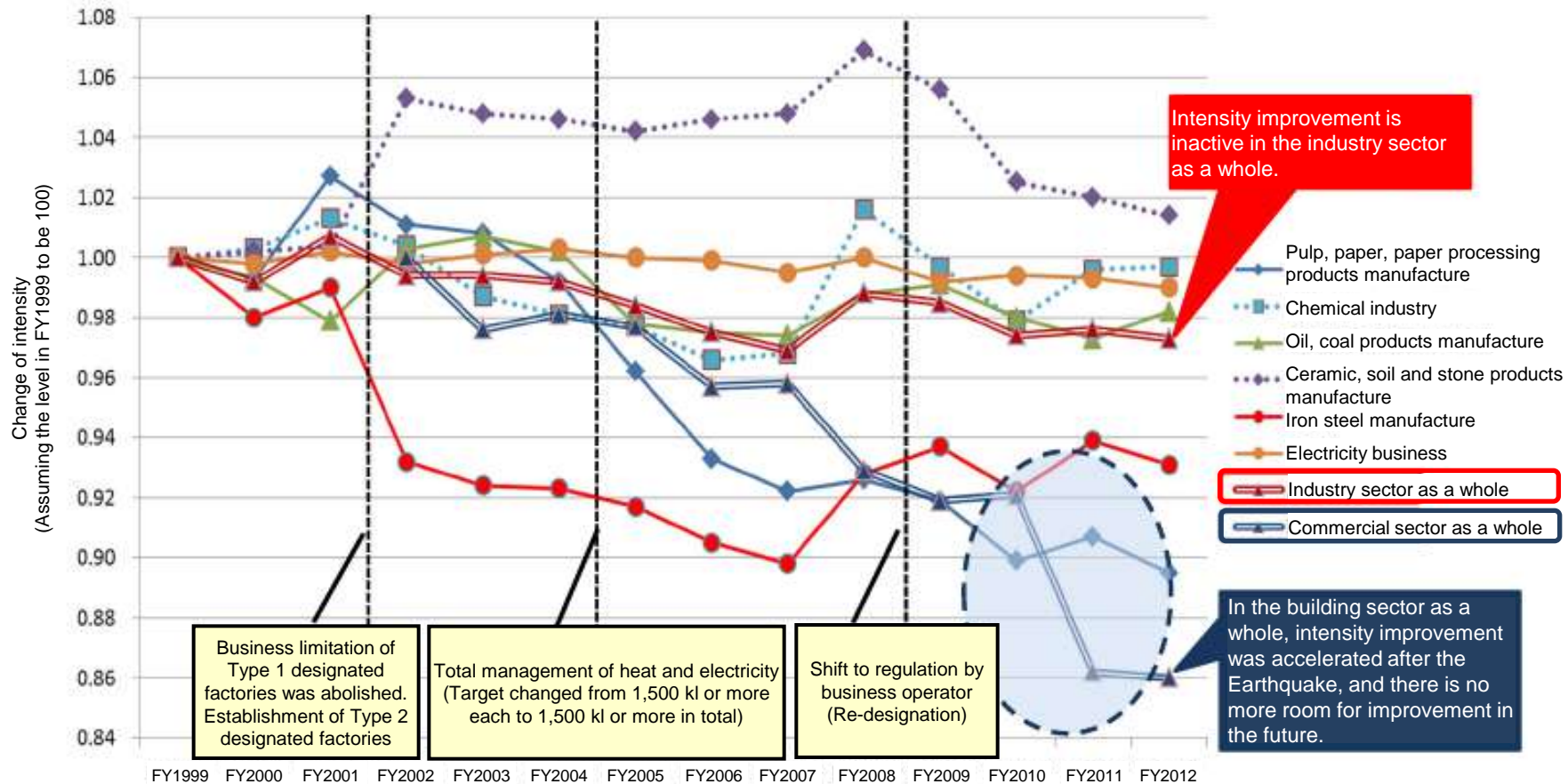
Transition of Energy Conservation Act



1.2 Current State of Energy Conservation Activities

● In the industry sector, part of the industry is inactive.

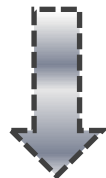
● In the building sector, energy was smoothly reduced, but there are opinions saying that **there is no more room for improvement as a result of activities after the Great Earthquake.**



1.3 Latest Main Energy Conservation Policies Promoted by the Government

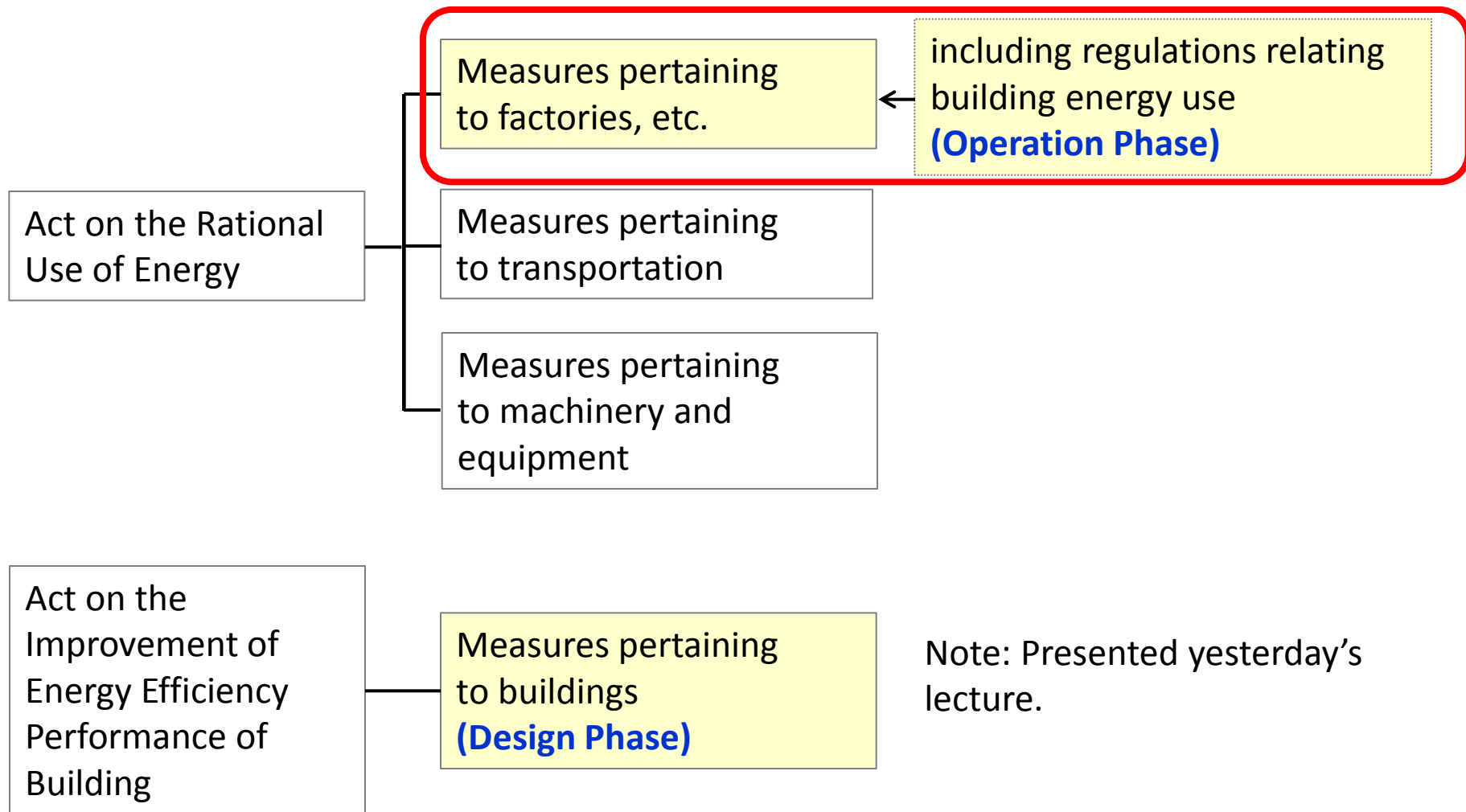
For Enhancement of energy conservation policies by expanding its coverage

- 1) “Assessment of business operators based on classification according to their energy conservation activities”
- 2) “Introduction of benchmark system in building sector” as EC Guideline”**
- 3) “Expansion of definition of energy in the Energy Conservation Act”
- 4) “Act revision based on electricity deregulation”



2. Energy Conservation (EC) Act and EC Guideline

2.1 Structure of the EC Act in Japan



2.2 Measures pertaining to factories, etc. (including buildings)

- Operation Phase -

Annual energy consumption	1,500 kL or more	Less than 1,500 kL
Matters to be observed	Implement the EC measures specified by the EC Guideline in operation phase	
Target	Reduction efforts of energy intensity by 1% in annual average in mid-long term	
Classification	Specified business operator	-
Obligation	Submit periodical report	-
	Submit mid-long term plan	-
	Appoint Energy Management Control Officer and Energy Management Planning Promoter	-
Check by the government	Yes (described later)	-

Energy Management Control Officer :

Person who can execute company-wide energy management (e.g. Executive class)

Energy Management Planning Promoter:

Person who supports Energy Management Control Officer

2.3 Appoint Energy Manager

"Energy Manager" is a key person to promote EC.

Government (METI) and EC Act

Submission of **periodical report**
and **mid-long term EC plan**

Authorization of Energy Manager

Specified business operator

Top Management



Advising on;

- Improvement plan of EE equipment
- Management of EE&C organization

- Making Periodical Report and Mid-long Term plan
- Keeping the energy consuming facilities in sound condition
- Carrying out "Energy Audit"

Energy Manager



- Instruction
- Technical advice

Practical guideline to support Energy management

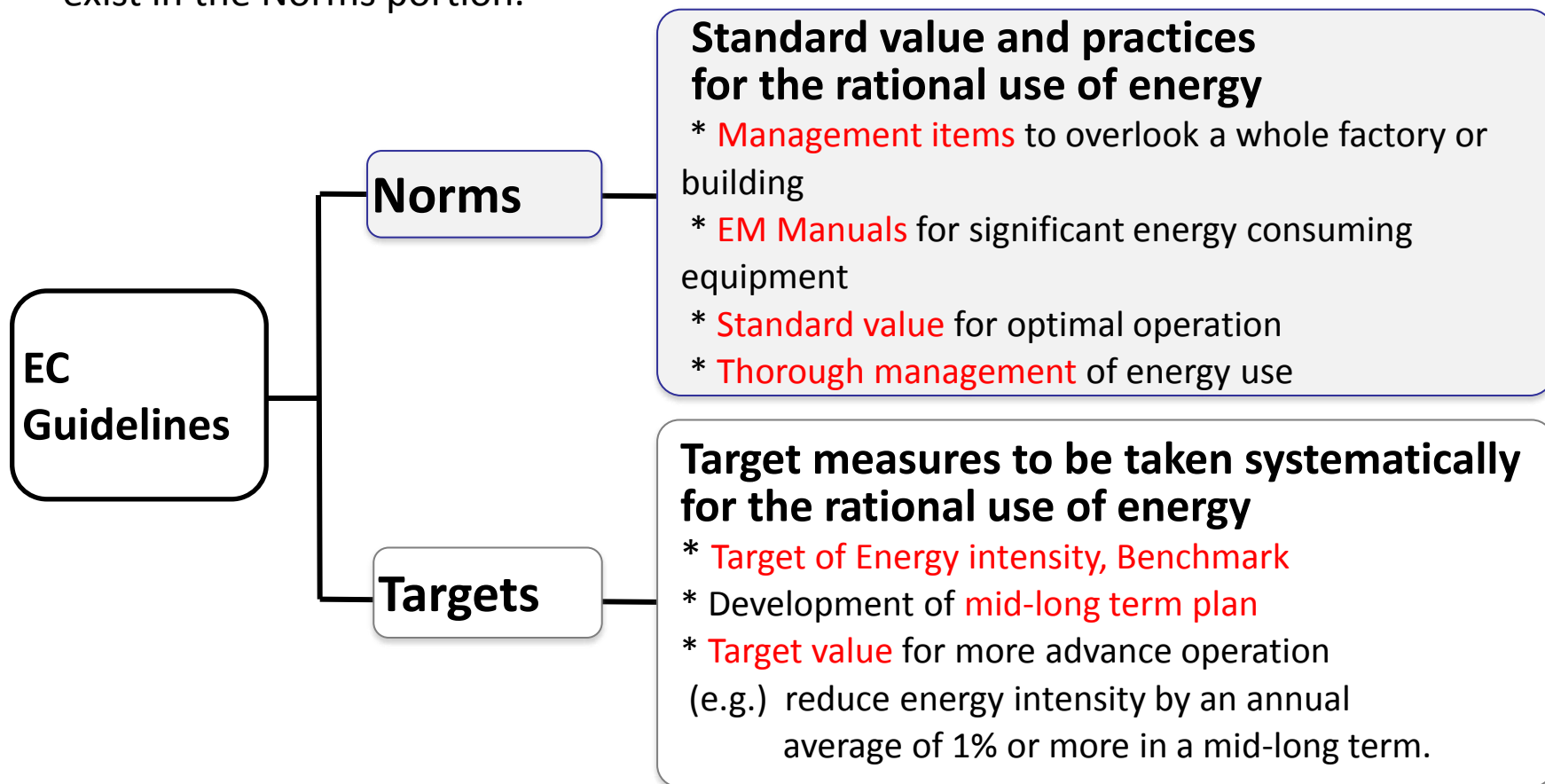
- EC Guidelines
- Energy Management Manual
- Numerical target of major energy intensity equipment

**Engineers
(Middle Management)**



2.4 EC Guideline (Operation phase for building)

- ◆ The EC Guidelines are specified and released as the **notification** by METI based on the EC Act.
- ◆ EC Guidelines consist of the norms (standard) portion and the target portion.
Elements that lead to the creation of the Energy Management Manual (EM manual) exist in the Norms portion.



2.4 EC Guideline (Operation phase for building)

8 Categories concerning the rational use of energy in buildings, etc. which are used exclusively as offices or similar use

- (1) Matters concerning **air conditioning** facilities and **ventilation** facilities.
- (2) Matters concerning **boiler** facilities and **hot water supply** facilities.
- (3) Matters concerning **lighting** facilities, **elevators** and **motive power** facilities.
- (4) Matters concerning **electricity receiving** and **transformation** facilities and BEMS.
- (5) Matters concerning **exclusive power generation** facilities and **cogeneration** facilities.
- (6) Matters concerning **office equipment** and **consumer products**.
- (7) Matters concerning **commercial equipment**.
- (8) Other matters concerning **rational use of energy**.

4 management items

- (1) **Management**
- (2) **Measurement and record**
- (3) **Maintenance and inspection**
- (4) **Measures for new installation**

(1), (2) and (3) require preparation of management manuals.

3. Benchmark System in Japan

3.1 What is the Benchmark System in Japan

- ❑ Benchmark indices can compare the progress and level of energy conservation among business operators in specific business field.
- ❑ Benchmark Indices enable fair assessment of energy conservation efforts of business operators. By clarifying if their energy conservation level is more advanced than those of others or not, you can appreciate business operators with excellent performance in energy conservation and encourages further efforts of business operators with lower performance.
- ❑ The level to be targeted at is the one that business operators with high level performance (approx. top 10 to 20%) can satisfy in each specific business field.

Three elements necessary for the establishment of the benchmark system

3 elements necessary for the establishment of the benchmark system

(1) Business

Business types consuming energy with the same or a very similar method are set.

(2) Benchmark index

Assessment indices are set commonly for target business operators, considering the specialties of the target business.

(3) Level to be aimed at

High level to be achieved by target business operators in medium and long terms (top 10% to 20% of target business types) is set.

Business	Benchmark index	Level to be aimed at
Steel industry by blast furnaces	Energy consumption (kl) / Crude steel volume (t)	0.531 kl/t or less

3.2 Background of introduction of the benchmark system

- It became **difficult to continue decreasing** the energy consumption intensity **by 1% or more in yearly average**.
- Superior business operators who had already achieved considerable energy conservation are **not appropriately assessed because it became difficult for them to achieve 1% decrease**.

Benchmark system started to be studied as a new assessment index.

2008: Benchmark system stated to be studied

Benchmark system **assesses** energy conservation of business operators **by using indices common to the business types**. Under the benchmark system, business operators endeavor to achieve the **target (level to be aimed at)** to realize energy conservation.

2009: Committee for studying benchmark system

2009-2010: Industry sector

Benchmark system was introduced.

< Introduction to the building sector also started >
6 business types were chosen because their **energy consumption and concentration** are great.
(1) Convenience store
(2) Hotel (3) Department store (4) Lease office
(5) Supermarket
(6) Shopping center

2014: Benchmark system for the building sector started to be studied on a full-scale at the committee for studying assessment system for energy conservation of the building sector

August, 2015: At the summary of Energy Efficiency and Conservation Subcommittee, it was decided that "a benchmark system for the building sector should be established".

November, 2015: **Prime Minister Mr. Abe instructed to expand the benchmark target business in the building sector.**

April, 2016: **Benchmark system was introduced to the convenience store business.**

*** Introduced as the first business from the building sector**

3.3 Present Situation of Compliance with the EC Guideline by the Designated Energy Management factories

With regards to preparation and implementation of Energy Management Manuals (preparation of manuals such as operation management, measurement, maintenance, etc. to be made in light of energy conservation), the compliance ratio of type 1 designated energy management factories, etc. is higher than that of type 2 designated energy management factories, etc.

Studying the ratio on each equipment, there are some cases of relatively low compliance ratio even if they belong to the ones of type 1 designated energy management factories, etc. (for example: recovery of exhaust heat, prevention of heat loss, lighting equipment, etc.)

Setting of Energy Management Manuals (Standard concerning office buildings, etc. is applied)

Target items of Energy Conservation Guideline of factories, etc. (equipment)	Type 1	Type 2
(1) Air conditioner, ventilator	93%	83%
(2) Boiler, water heater	92%	82%
(3) Lighting, elevator, motive power	92%	81%
(4) Electricity transformer	94%	84%
(5) Power generator, co-generation equipment	94%	85%
(6) Office equipment, consumer equipment	83%	69%
(7) Commercial equipment	74%	63%

Setting of Energy Management Manuals (Standard concerning factories, etc. is applied)

Target items of Energy Conservation Guideline of factories, etc. (equipment)	Type 1	Type 2
(1) Rationalization of combustion of fuel	93%	74%
(2-1) Heater, etc.	87%	63%
(2-2) Air conditioner, water heater	89%	65%
(3) Recovery of waste heat	86%	55%
(4-1) Dedicated power generator	92%	59%
(4-2) Co-generation equipment	92%	50%
(5-1) Prevention of heat loss	86%	56%
(5-2) Prevention of electricity loss	94%	74%
(6-1) Electric power application equipment, electric heater, etc.	90%	64%
(6-2) Lighting equipment, elevator, office equipment, consumer equipment	86%	61%

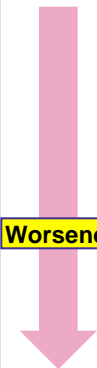
Achievement of yearly average 1% improvement

Number of business operators by the average yearly change ratio of energy consumption intensity in the last 5 years.
Business operators who achieve energy consumption intensity improvement of yearly average 1% are approx. 2/3.



Improved

Energy consumption intensity average yearly change ratio	Number of applicable business operators (Ratio *1)	Of them, number of business operators who continuously decreased intensity for 3 years	Of them, number of business operators who continuously decreased intensity for 4 years	Of them, number of business operators who continuously decreased intensity for 5 years	Ranking of business types on share(%) of number of business operators who continuously decreased intensity for 3. Top 10 business types *2 (Number in () is the number of applicable business operators)
25% or more decrease		16	13	11	Broadcast 60.0% (15 companies) Video, audio, character information production 59.3% (16 companies) Various products retail 54.0% (136 companies) Information service 51.8% (43 companies) Food retail 50.6% (134 companies) Railway 50.0% (7 companies) Religion 50.0% (6 companies) Furniture, fixture manufacture 47.1% (8 companies) Bank 44.4% (40 companies) Food wholesale 44.4% (45 companies)
25% to 20% decrease	40 (0.4%)	27	23	18	
20% to 15% decrease	77 (0.7%)	49	44	38	
15% to 10% decrease	315 (3.0%)	202	178	148	
10% to 5% decrease	1626 (15.3%)	916	819	591	
5% to 1% decrease	4640 (43.7%)	2006	1579	735	
Total	6724 (63.3%)	3215	2656	1541	



Worsened

Energy consumption intensity average yearly change ratio	Number of applicable business operators (Ratio)	Of them, number of business operators who continuously increased intensity for 3 years	Of them, number of business operators who continuously increased intensity for 4 years	Of them, number of business operators who continuously increased intensity for 5 years	Ranking of business types on share(%) of number of business operators who continuously decreased intensity for 3. Top 10 business types * (Number in () is the number of applicable business operators)
1% to 0% decrease	1212 (11.4%)	234	23	—	Mining, stone, gravel excavation 24.2% (8 companies) Electric parts, device, electric circuit manufacture 16.6% (48 companies) Beverage, tobacco, feed manufacturer 16.4% (24 companies) Rubber product manufacture 15.9% (14 companies) Chemical industry 15.8% (97 companies) Ceramic, soil, stone product manufacture 15.5% (51 companies) Non-iron metal manufacture 15.5% (32 companies) Electricity business 15.4% (10 companies) Transportation equipment manufacture 14.6% (78 companies) School education 14.6% (51 companies)
0% to 5% increase	2262 (21.3%)	710	205	70	
5% to 10% increase	291(2.7%)	142	74	46	
10% to 15% increase	68(15.3%)	42	25	11	
15% to 20% increase	29(0.3%)	18	11	4	
20% or more increase	34(0.3%)	20	14	9	
Total	3896(36.7%)	1166	352	140	

N.B 1: (Source) Agency for Natural Resources and Energy "Summary (draft) Reference Data"

2: *Japanese standard detailed industry classification base, limited to businesses in which 10 or more business operators submitted the periodical reports.

3.4 Business types introducing the benchmark system

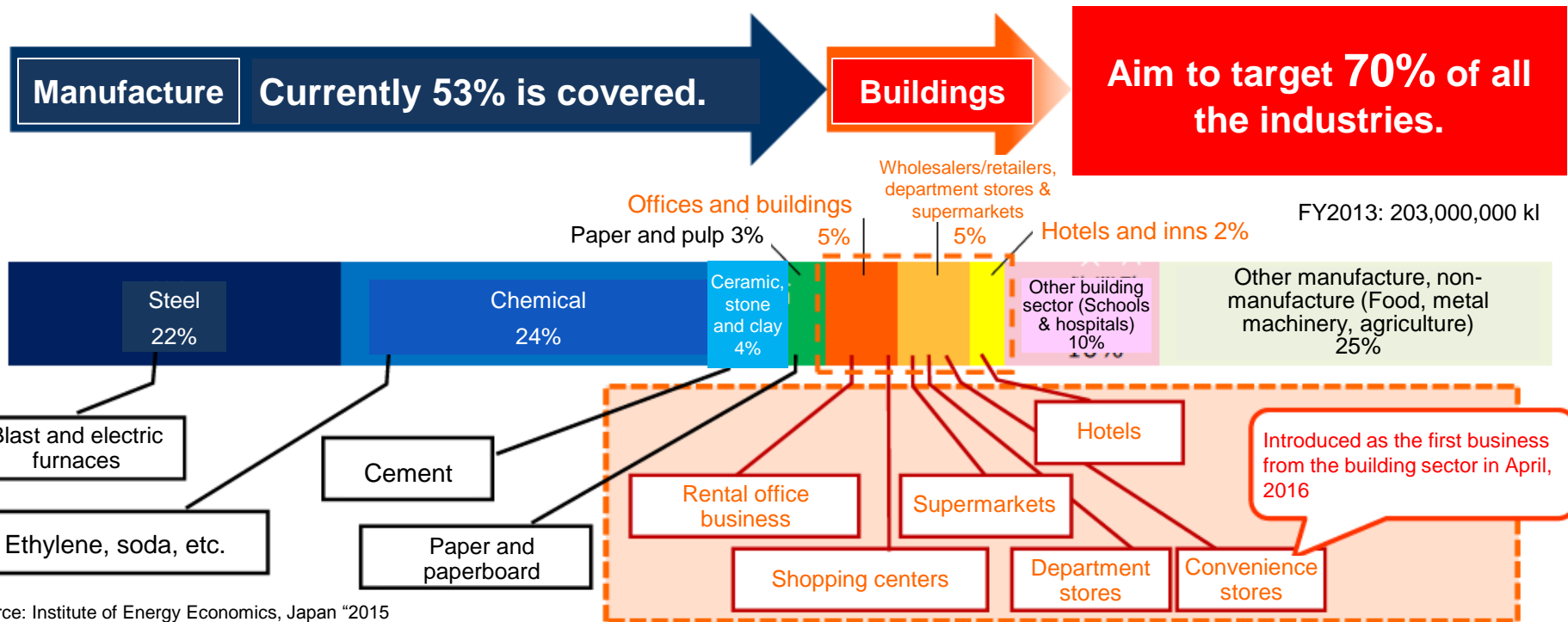
Now, the benchmark system has been introduced to convenience store business type in the building sector.

Business types introducing benchmark system

Business	Benchmark index	Target level
(1) Steel industry by blast furnaces	Energy consumption per crude steel production volume	0.531 kl/t or less
(2) Ordinary steel manufacturing industry by electric furnaces	Sum of the intensity of the upper process (energy consumption per crude steel volume) and that of the lower process (energy consumption per rolled volume)	0.143 kl/t or less
(3) Special steel manufacturing industry by electric furnaces	Sum of the intensity of the upper process (energy consumption per crude steel volume) and that of the lower process (energy consumption per rolled volume)	0.36 kl/t or less
(4) Electric utility industry	Thermal power generation efficiency index A Thermal power generation efficiency index B	1.00 or more, 44.3% or more
(5) Cement manufacturing industry	Sum of energy consumption per production volume (delivery volume) in individual processes such as the raw material, burning, finish, and delivery processes	3,739 MJ/t or less
(6) Paper manufacturing industry	Energy consumption per paper production volume in the paper manufacturing process	6,626 MJ/t or less
(7) Paperboard manufacturing industry	Energy consumption per paperboard production volume in the paperboard manufacturing process	4,944 MJ/t or less
(8) Petroleum refining industry	Energy consumption per standard energy consumption in the petroleum refining process (sum of values of multiplying a throughput for each apparatus included in the said process by an appropriate coefficient)	0.876 or less
(9) Basic petrochemicals manufacturing industry	Energy consumption per production volume of ethylene, etc. in the ethylene, etc. manufacturing facility	11.9 GJ/t or less
(10) Soda industry	Sum of energy consumption per weight of caustic soda delivered from an electrolytic cell in the electrolytic process and steam consumption calorie per weight of liquid caustic soda in the condensation process	3.22 GJ/t or less
(11) Convenience store industry	Value of dividing the total power consumption at the store conducting the said business by the total sales thereof	845 kWh/¥1,000,000 or less

Enforced
in April,
2016

3.5 Policy on the Benchmark System for Future Expansion of their Coverage



Source: Institute of Energy Economics, Japan "2015 Handbook of Energy & Economic Statistics"

When the building sector business types prepare an appropriate system design, further study is made for introduction.

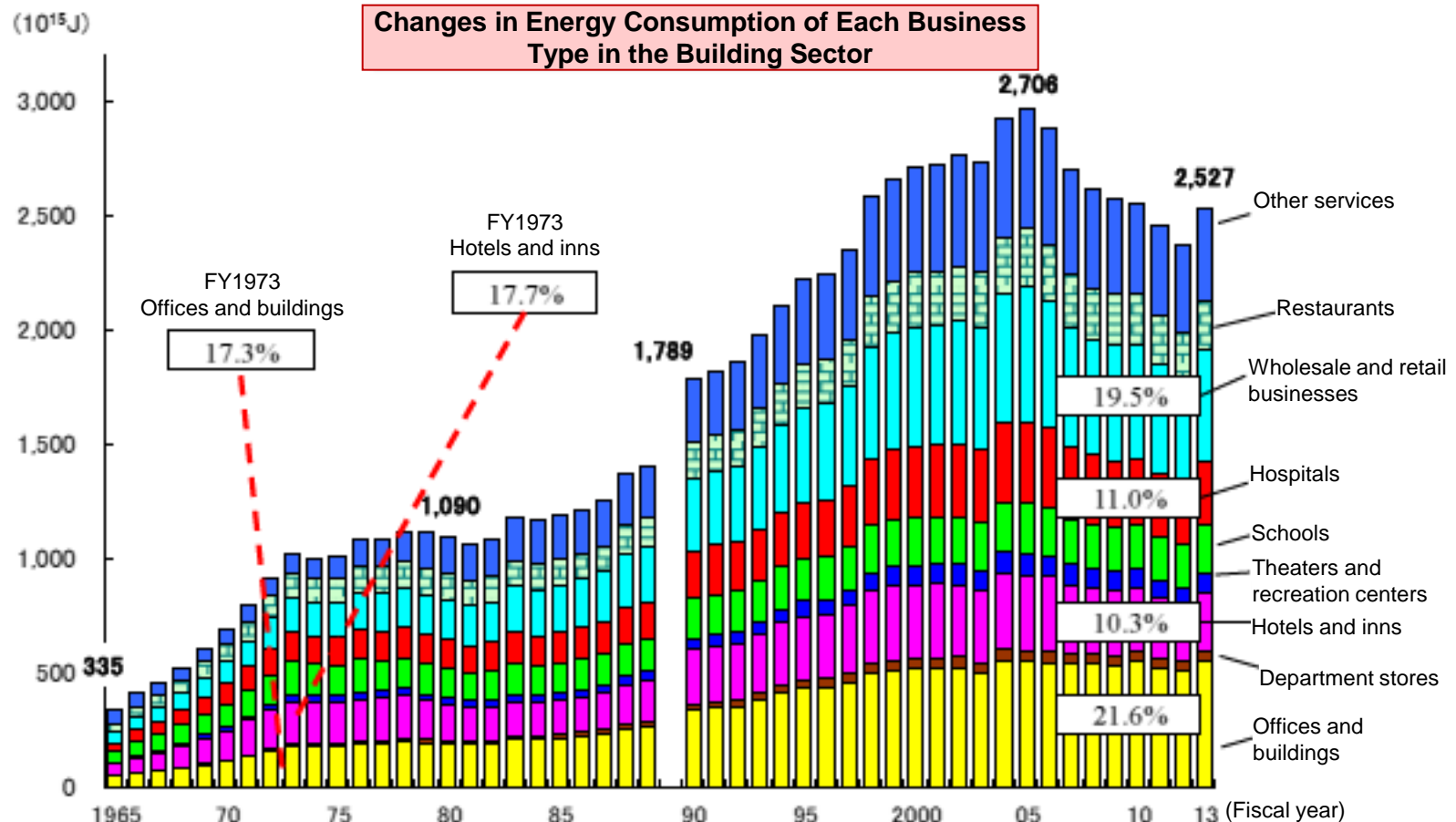
4. Benchmark system for the building sector

4.1 Introduction of Benchmark system for the building sector

- ❑ The benchmark system was introduced to the convenience store business in April, 2015.
- ❑ Following this, the studies are in progress for 5 other business types, which are the hotel, department store, office building, shopping center and super market, for early introduction based on the collected data. The study will start from the business types which have already established an appropriate system design to promote benchmark system.
- ❑ For the public sector which is part of the building sector, the benchmark system will be studied for the government and municipalities to enhance effectiveness of the EE&C promotion in light of their contribution to the traction of EE&C promotion of business operators, development of the industry related to energy conservation, promotion of analysis of EE&C, etc.

Energy consumption by the building sector

- It is found that business types consuming much energy were hotels and office buildings in the past. Recently, however, the shares of office buildings and wholesale/retail buildings are increasing, and 4 business types consisting of offices, wholesale/retail businesses, hospitals, and hotels, account for the share of more than 60%.
- The increase of the energy consumption in the building sector seems to be caused by the increase of number of air conditionings and lighting facilities according to the increase of the floor area as well as increased usage of OA equipment.



Note: In the "Comprehensive Energy Statistics", the numerical value calculation method was changed after FY1990.

Source: Estimated based on the "Handbook of Energy & Economic Statistics in Japan" from the Institute of Energy Economics, Japan, and the "Comprehensive Energy Statistics" from the Agency for Natural Resources and Energy

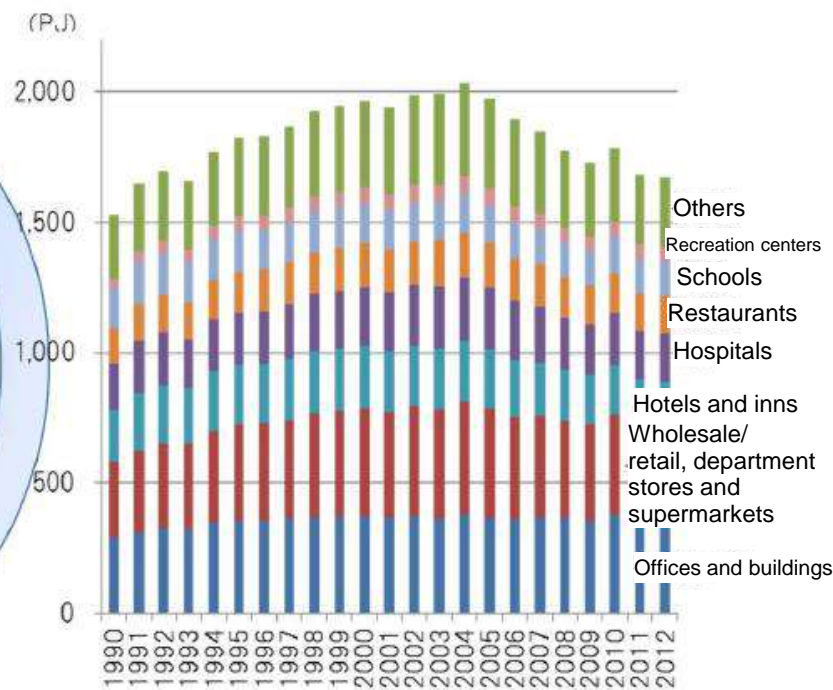
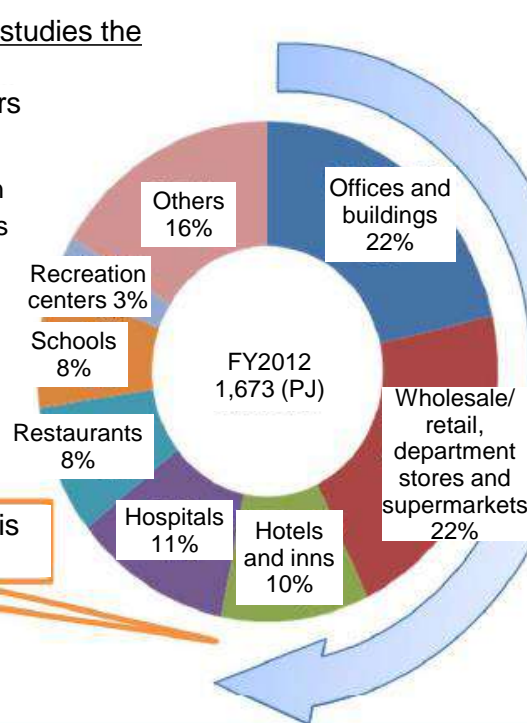
4.2 Study for introducing the benchmark system in the building sector

- ❑ The workshops for study of the benchmark system for the building sector were held in FY2014. The workshops provided with discussion on establishment of assessment indices and levels appropriate for each industry.
- ❑ As the special features of each industry need to be studied for establishment of the assessment indices, the study is continuing through the discussion with each industry individually.

Organizations with which the workshop studies the assessment indices and levels

- Japan Council of Shopping Centers
- Japan Chain Stores Association
- Japan Department Stores Association
- Japan Building Owners and Managers Association
- Japan Franchise Association
- Japan Hotel Association
- The Real Estate Companies Association of Japan

Approx. 50% of the building sector is covered.



4.3 Study of the benchmark system for the building sector

Business type	Index (draft)	Progress of study
Convenience store	<ul style="list-style-type: none"> ● Energy consumption intensity Energy consumption per sales amount ● Level to be aimed at: 845 kWh/million yen 	<p>Already introduced</p> <ul style="list-style-type: none"> ● Public notice issued in April, 2016 ● Values of benchmark indices reported in the periodical report in July, 2017
Hotel	<ul style="list-style-type: none"> ● Multiple regression formula is used as an index (1) Element concerning scale + (2) element concerning equipment + (3) element concerning operation 	<ul style="list-style-type: none"> ● Narrowing down parameters affecting energy consumption by analyzing questionnaire data ● Benchmark explanation seminar for association members ● Approval by the board of directors
Food super market	<ul style="list-style-type: none"> ● Energy consumption intensity or multiple regression formula Indices considering store area, business hours, refrigerator showcase, etc. are being studied 	<ul style="list-style-type: none"> ● Understanding by local field survey ● Questionnaire for data collection ● Opinion exchange with 4 associations ● Data analysis for obtaining consent of the associations
Department store	<ul style="list-style-type: none"> ● Energy consumption intensity or multiple regression formula Indices considering store area, business hours, sales amount, etc. are being studied 	<ul style="list-style-type: none"> ● Benchmark system explanation seminar (Tokyo, Nagoya, Osaka, Okayama, Fukuoka) ● Data analysis for obtaining consent of the associations
Lease office	<ul style="list-style-type: none"> ● Energy conservation potential estimation tool is being studied as an index * Tool developed exclusively for the benchmark system based on ECTT (developed by ECCJ) 	<ul style="list-style-type: none"> ● Benchmark system explanation seminar Explanation of the system and operation of the energy conservation potential estimation tool (Tokyo, Nagoya, Osaka) ● Input load of the tool is a current concern
Shopping center	<ul style="list-style-type: none"> ● Energy consumption intensity is being studied as an index Store area x Energy consumption per business hour, etc. 	<ul style="list-style-type: none"> ● Local field survey of stores is being studied ● Difference in the form of the stores, assessment of various tenants, etc. are current concerns

(1) Benchmark system for the business of the convenience store

■ Target business Types (draft)

Japanese standard industry classification: Convenience store (5891)
Indicating business operators that sell retail various convenience products, mainly food and beverages, by a self-service system, with small store size and operating 24 hours or for long hours.

■ Benchmark index (draft)

* The intensity index used for the Low Carbon Society Plan is adopted.

$$\text{Benchmark index} = \frac{\text{Total electricity (kWh) used by all convenience store workplaces (stores only)}}{\text{Total sales amount (million yen) sold by all convenience store workplaces (stores only)}}$$

* "All convenience store workplaces (stores only)" indicates the number of directly managed stores and the number of franchise stores.

■ Level to be aimed at (draft)

Level to be aimed at: 845 kWh/million yen

(2) Study of the benchmark system for the business type of the hotels

Elements affecting energy consumption in hotels are analyzed according to questionnaire results on energy consumption.

Parameter	Correlation coefficient	Parameter	Correlation coefficient
Total floor area	0.930	Restaurant area (m ²)	0.792
Hotel area	0.928	Yearly number of guests (people)	0.768
Number of guest rooms (rooms)	0.848	Yearly number of guests using banquet halls (people)	0.767
Number of employees (people)	0.845	Yearly number of guests using restaurants (people)	0.746
Number of people accommodated (people)	0.837	Banquet room area (m ²)	0.717

(2) Study of the benchmark system for the business type of the hotels

Possibility of the benchmark index based on multiple regression analysis is being studied.

Benchmark index for hotels

* Smaller values indicate better assessment results.

$$= \frac{\text{Actual energy consumption}}{\left[\text{Estimation of energy consumption of a standard workplace} \right]}$$

Whether a multiple regression formula that can set a reasonable benchmark index can be obtained is to be studied.

Example of the multiple regression formula

Estimation of energy consumption of a standard hotel

$$= \left[\begin{array}{l} \text{Constant term A} + \left(\frac{\text{Floor area}}{B} \right) + \left(\frac{\text{Restaurant, banquet section Area ratio}}{C} \right) + \left(\frac{\text{Number of accommodated guests}}{D} \right) + \left(\frac{\text{Number of banquet rooms}}{E} \right) \end{array} \right]$$

(3) Study of the benchmark system for the business type of department store

	Candidate explanatory variable	Correlation coefficient with energy consumption*
Size elements	Floor area	0.93
	Sales place area	0.90
	Shared place area	0.82
	Restaurant, coffee shop area	0.46
	Food sales place area	0.41
	Indoor parking space area	0.35
	Hotel, theater, etc. area	0.17
Operational elements	Sales amount	0.85
	Yearly business hours	0.37
	Number of employees	0.29
Others	10 cities/regions	0.47
	Cooling period	0.32
	Cooling degree day (CDD18-18)	0.17
	Heating degree day (HDD14-14)	-0.22
	Construction year or modification year	-0.18

* The greater the absolute value of the correlation coefficient is, the stronger the correlation with the energy consumption is.



* The variables are floor area and sales amount.

(3) Study of the benchmark system for the business type of department store

■ Example of multiple regression analysis

Purpose variable	Valid number	Freedom degree adjusted decision coefficient	Variable	Partial regression coefficient	Standard error	Standard partial regression coefficient	t value	P value	Judgment of meaningful difference*	Contribution degree
Energy consumption (kl)	143	0.9712	Floor area	0.0545	0.0021	0.7414	27	0.0000	**	73%
			Sales amount	0.0243	0.0025	0.2722	10	0.0000	**	27%

(Note) **: $p < 0.01$, *: $p < 0.05$

* Only explanatory variables finally selected as a result of the multiple regression analysis (variable increase-decrease method) are indicated.



■ Formula for forecasting energy consumption (tentative)

$$\text{Energy consumption forecast (kl)} = 0.0545 \times \text{Total floor area (m}^2\text{)} + 0.0243 \times \text{Sales amount (million yen)}$$

■ Benchmark index of each store

Benchmark index for the department store

=

$$\frac{\text{Actual energy consumption (kl)}}{\text{Energy consumption forecast calculated by the multiple regression formula (kl)}}$$



(4) Study of the benchmark system for the business type of office buildings

Assessment tool to calculate the energy conservation potential is being studied so that energy conservation efforts of owners and their managers of buildings are reasonably assessed.

Energy conservation potential estimation tool

Implementation of current energy conservation measures (achievement)

N o	Equipment type	Measure contents	Imple-mentation
1	Air conditioning	Easing of cooling and heating temperature	○
2	Air conditioning	Control of outside air intake	×
3	Air conditioning	Shortening of starting time	Not possible
4	Lighting	Reduction of time for using lighting	○
5	Water heating	Adjustment of pump flow rate and pressure	○
20	...		×

Energy conservation potential expected if all feasible measures are implemented is estimated.

Actual energy consumption



After implementing feasible energy conservation measures (estimation)

N o	Equipment type	Measure contents	Imple-mentation
1	Air conditioning	Easing of cooling and heating temperature	○
2	Air conditioning	Control of outside air intake	○
3	Air conditioning	Shortening of starting time	Not possible
4	Lighting	Reduction of time for using lighting	○
5	Water heating	Adjustment of pump flow rate and pressure	○
20	...		○

Energy conservation potential of the assessment target building

Estimation of energy consumption after implementing energy conservation measures



If this difference becomes smaller, the building is assessed as more advanced in energy conservation.

(5) Benchmark index for the business type of shopping center (draft)

Definition of the business form (draft)



[Enclosed mall]



[Open mall]



[Urban mall]



[Underground mall]

(5) Benchmark index for the business type of shopping center (draft)

***Business operators (SC) are real estate lease business operators excluding tenants**

1) Reporting scope of energy consumption of owners and tenants
3) Handling of indoor parking spaces

Benchmark index (draft)

$$= \frac{\text{Yearly total energy consumption of all stores owned by a business operator (kl)}}{\sum_{n = \text{All stores}} \left(\text{Total floor area of each store owned by a business operator (m}^2\text{)} \times \text{Yearly business hours of each store owned by a business operator (h)} \right)}$$

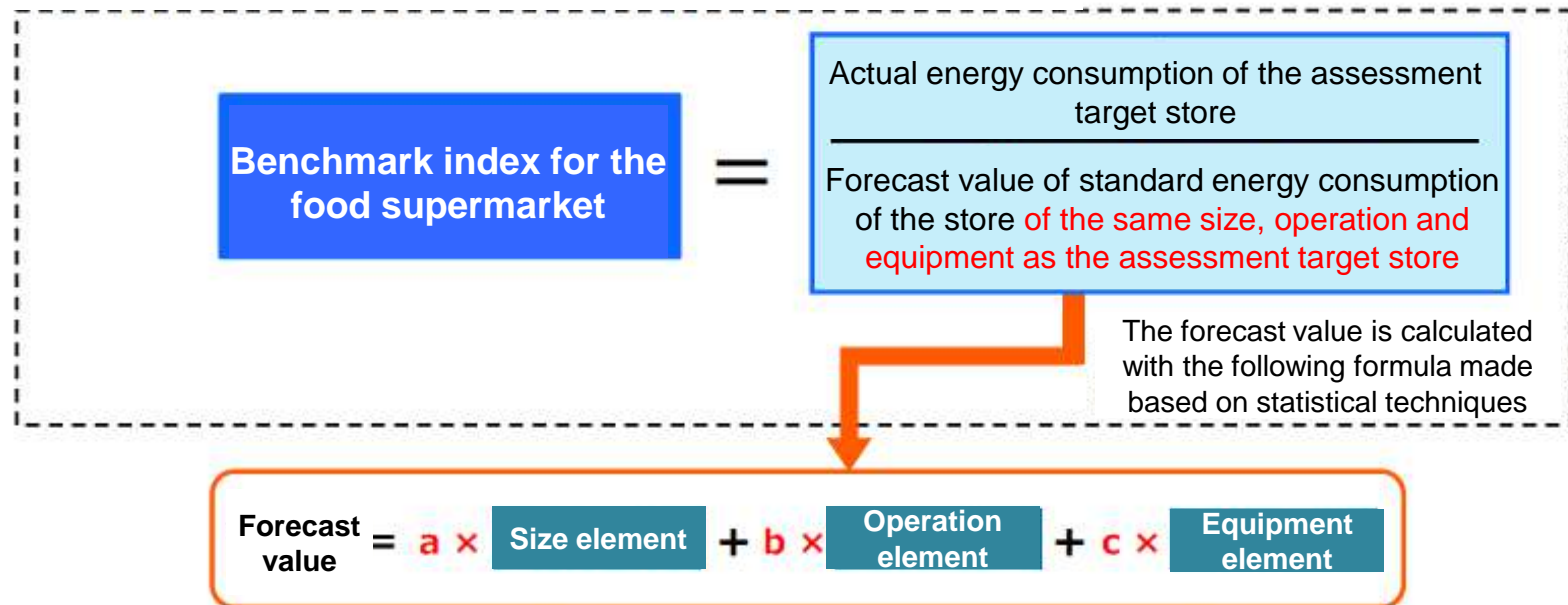
3) Handling of indoor parking spaces

2) Definition of business hours

(6) Benchmark index for the supermarket (draft)

- As size, operation and equipment vary among stores, a method which can consider all of these elements is adopted.
- A method that can assess the degree of energy conservation by comparing actual energy consumption and forecast value calculated by a formula established based on statistical techniques is studied as a draft of the benchmark index.

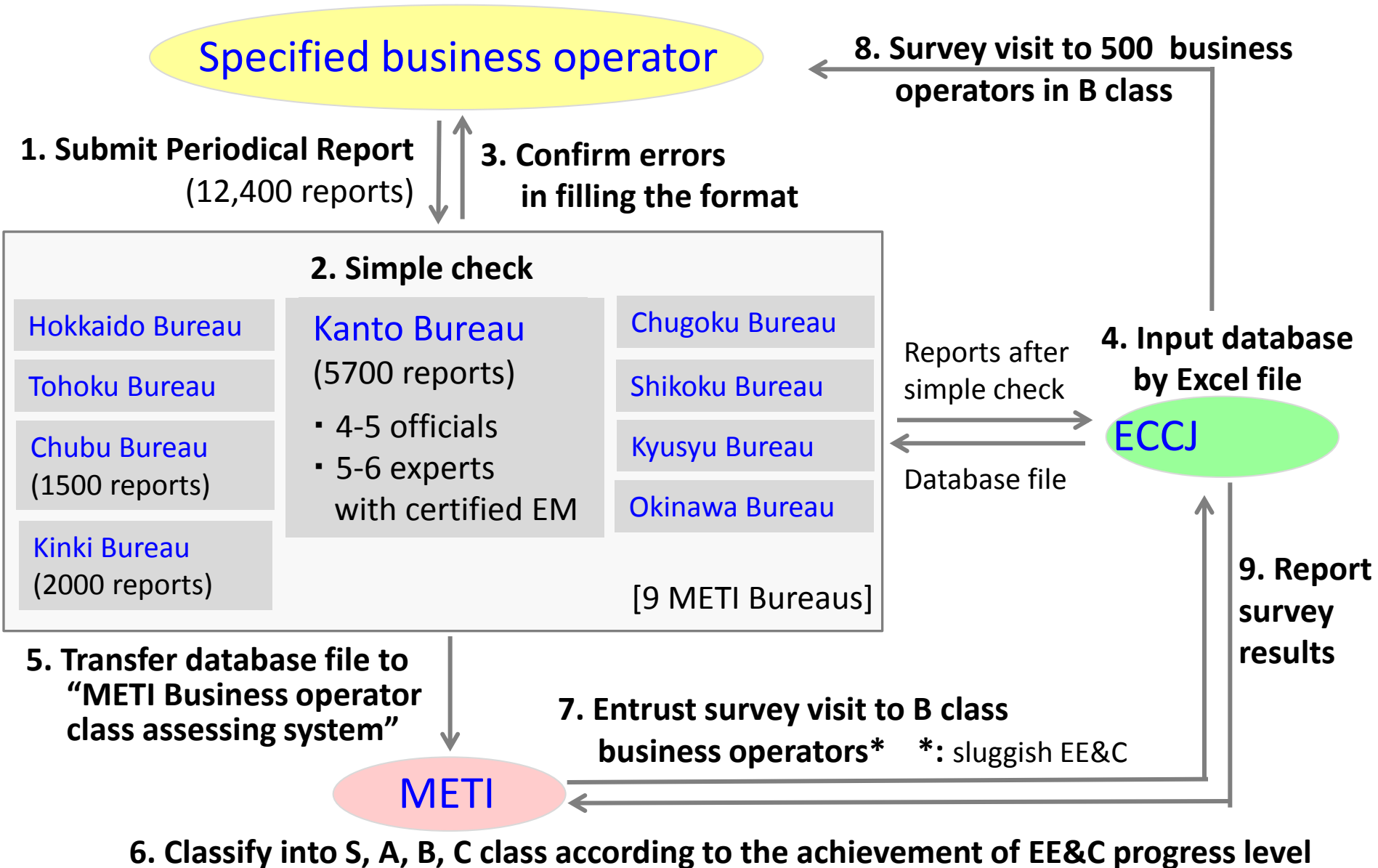
<Schematic diagram of the benchmark index for the food supermarket>



* a, b, c above are coefficients expressing the scale of the impact each element gives to the forecast value.

5. The new assessment of Designated Business Operators

5.1 The Flow of Follow-up to Specified Business Operators



5.2 Assessment of designated business operators

- ❑ Business operator classification assessment system started from FY2016.
- ❑ All business operators are classified into 4 classes of S, A, B and C according to their energy conservation state.
- ❑ Business operators who achieve a benchmark are classified into S even if they do not achieve 1% intensity reduction.
- ❑ Business operators who report multiple benchmarks are regarded as class S if they achieve the benchmark in one of their business types.

Class S

Business operators with superior energy conservation
7,774 companies (62.6%)*¹

[Standards]

(1) The effort obligation targets*² are achieved.

or

(2) **The benchmark targets***³ are achieved.

Business operators who achieve a benchmark are classified into S even if they do not achieve 1% intensity reduction.

[Response]

As superior business operators, the business operator's name and the number of successive years that the targets were achieved are displayed on the Ministry of Economy, Trade and Industry website.

Class A

General business operators
3,417 companies (27.5%)*¹

[Standards]

Business operators that do not correspond to the Class S or Class B

[Response]

No particular response

Class B

Business operators that are delaying energy conservation
1,221 companies (9.8%)*¹

[Standards]

(1) The effort obligation targets*² are not achieved, and the intensities of the most recent two years in succession have increased compared to the previous fiscal year,

or

(2) The five-year annual intensity shows an increase of more than 5%.

[Response]

Caution documents are sent, and local investigations, etc. are implemented with high priority.

Class C

Business operators requiring cautions

[Standards]

Among the Class B business operators, these are operators whose compliance with Energy Conservation Guideline is particularly insufficient.

[Response]

Guidance based on Article 6 of the Energy Conservation Act is implemented.

*¹ FY2015 periodical reporting (Actual results from FY2014) Calculated from the total number of 12,412 business operator companies.

*² Effort obligation targets: There should be a reduction of 1% or more per year in the five-year annual intensities.

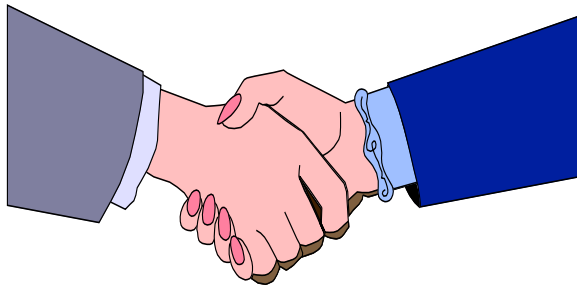
*³ Benchmark targets: Standards that should be aimed for by business operators in the medium to long term in the target business types and fields of the benchmark system.

6. Suggestions Obtained from Experiences in Japan

- ❑ The Japanese energy management system has been established, revised and improved in a period of as long as half a century.
- ❑ Although the social, economic and political situations and the characteristics of energy supply and demand situation are different among countries, learning the experiences of the transition on the EE&C policies in Japan as reference will allow other countries to shorten the time for establishing an energy conservation promotion systems and measures.
- ❑ The Japanese systems and measures that we believe should be useful for many countries to promote and disseminate energy efficiency & conservation, are as follows:
 - 1) Energy conservation measures at the time of economic growth
 - 2) The system design that may create synergetic effect
 - 3) The energy conservation assessment systems that can be used for comparison between individual companies
 - 4) The system for enhancing seamless promotion activities and self-enlightenment for EE&C
 - 5) The systems for enhancing motivation such as award system, etc.
 - 6) The financial systems that support implementation of energy conservation measures (subsidy, etc.)

Thank you for your attention.

SMART CLOVER



ECCJ is promoting “Four Leaf Clover”, which is considered to bring happiness, as “SMART CLOVER”, the symbol of the persons who implement EE&C .



The Energy Conservation Center, Japan

URL: <http://www.eccj.or.jp>