Energy Saving Efforts
Saitama Works Honda Motor Co., Ltd.

Outline of Saitama Works

● **Location:**

1-10-1 Sinsayama, Sayama City,
Saitama Prefecture
350-1392 Japan
Phone: 04-2953-4111

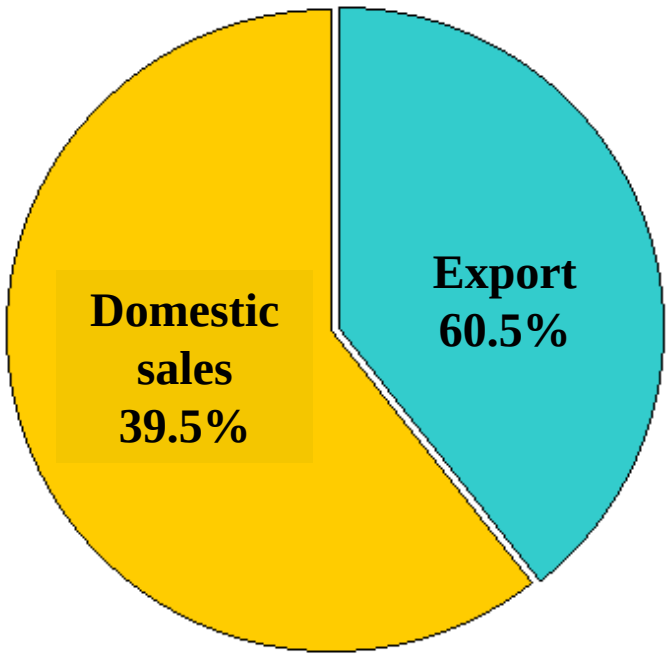
- **Month and year of foundation: May 1964**
- **Intended use: Automobile manufacturing factory**
- **Factory lot area: 385,000 square meters**
- **Total building floor area: 415,000 square meters**
- **Number of employees: About 5,310 (As of March 2003)**

Production records

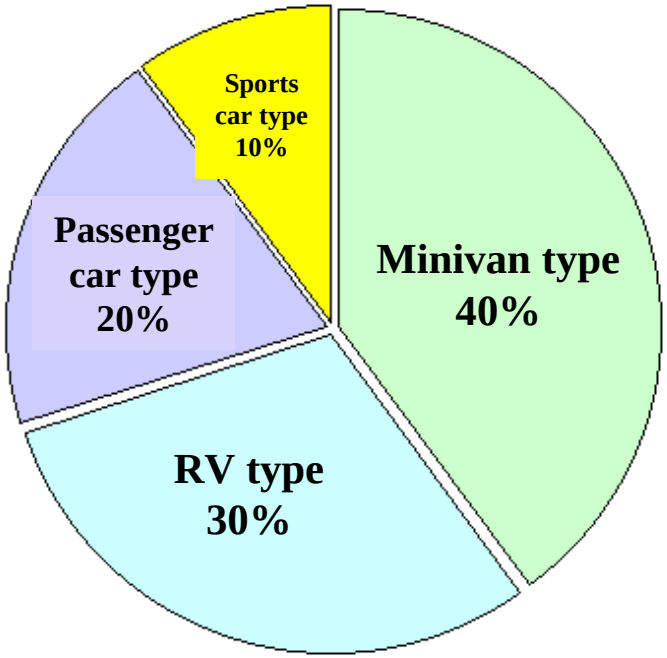
Fiscal year 2002

Number of finished cars produced: 540,594

Ratios of shipment values of finished cars



Ratios of numbers of finished cars by type



Automobile models produced

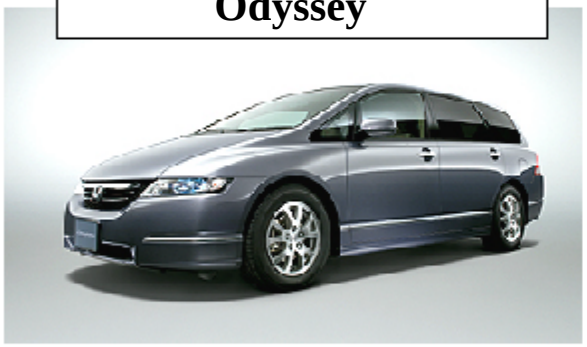
(Automobile models produced in 2003)

Legend

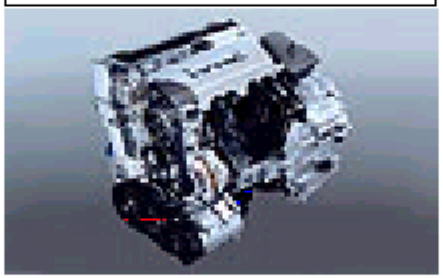
Accord

Accord (Station wagon)

Odyssey



Engine



Step Wagon

CR-V

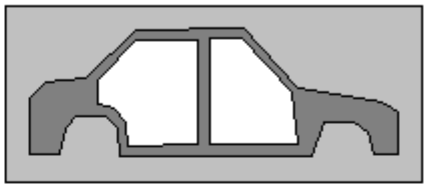
Stream

Inspire

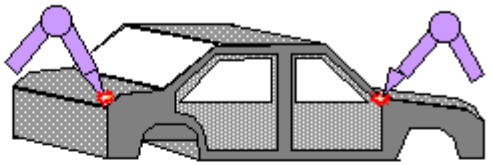
Outline of operation processes, as well as energy categories

Factory designated for Class 1 energy control in terms of both electricity and fuel

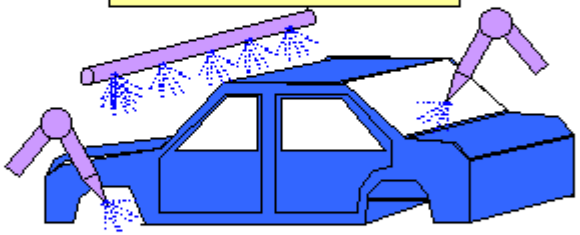
Pressing process



Welding process



Coating process



Finished car assembly process

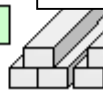
Shipment inspection

Engine manufacturing and assembly processes

Machining

Casting

Raw material



Facilities control

- Electricity
- Air
- Steam
- Air conditioning

Honda's Declaration on Environment

Date of issue: June 1, 1992

"Guidelines for activities"

1. **We make efforts in recycling materials, as well as in saving materials and energy, at each stage of life cycles comprising research, development, production, sale, service, and scrapping of products.**
2. **We make efforts in minimizing and appropriately treating wastes and pollutants generated at each stage of life cycles of products.**
3. **We, each of whom is a member of an enterprise as well as of society, recognize that it is important to strive for the maintenance of human health and the conservation of environment, and will take positive actions.**
4. **We recognize the effects exercised on people in relevant local areas by activities of business establishments, and will make efforts in such a way as to receive a high evaluation from society.**

Environmental Policy of Saitama Works

Basic philosophy

This Works, which, as a member of society, regards global environmental conservation as an important task: will build a business establishment (as an important base of a green company) on which people and society will continue to place their hopes; will aim at being always progressive in its action; and will make efforts to achieve the above.

Basic policy

This works will conduct the following environmental management activities on the basis of the fact that parts of four-wheeled automobiles are processed and manufactured at this works, as well as in keeping with the environmental declaration and action guidelines of our company.

1. **Environmental evaluation will be conducted in business activities. With regard to important items, it will be so arranged that environmental objectives and goals will be set within the limits feasible in terms of technology and economy, thereby carrying out maintenance and improvement. Furthermore, efforts will be made to continuously improve the environmental management system.**
2. **Related environmental laws, regulations, standards, and other requirements will be observed. In addition, voluntary standards will be established to prevent environmental pollution.**
3. **Attempts will continue to be made to achieve goals for alleviating environmental load, and efforts will be made with the aim of conducting business activities based on circulation.**
   - **Reduction of byproducts due to production activities**
   - **Making sure that chemical substances are controlled.**
   - **Prohibition of use of substances destroying ozone layers**
   - **Discovery of alternative raw materials, curbing of quantities of raw materials used, thoroughgoing reuse, and reutilization**
   - **Effective use of energy by utilizing LCI (manufacturing LCA) technique, as well as implementation of energy saving.**
4. **Social activities regarding environment will be actively participated in, thereby aiming at symbiosis with society.**
5. **Environmental education and in-house activities will be carried out, thereby having all employees understand environmental policies and making sure that environment information is universally known.**
6. **Environmental policies will be disclosed to people outside our company at request.**

Kazuo Sagawa
Head
Saitama Works, Honda Motor Co., Ltd
April 1, 2003

Action Slogan for “2002, 2003, and 2004”

We are going to accumulate actions of individuals, thereby building “environment” at our top-ranking production base!

= Environmental conservation activity items =

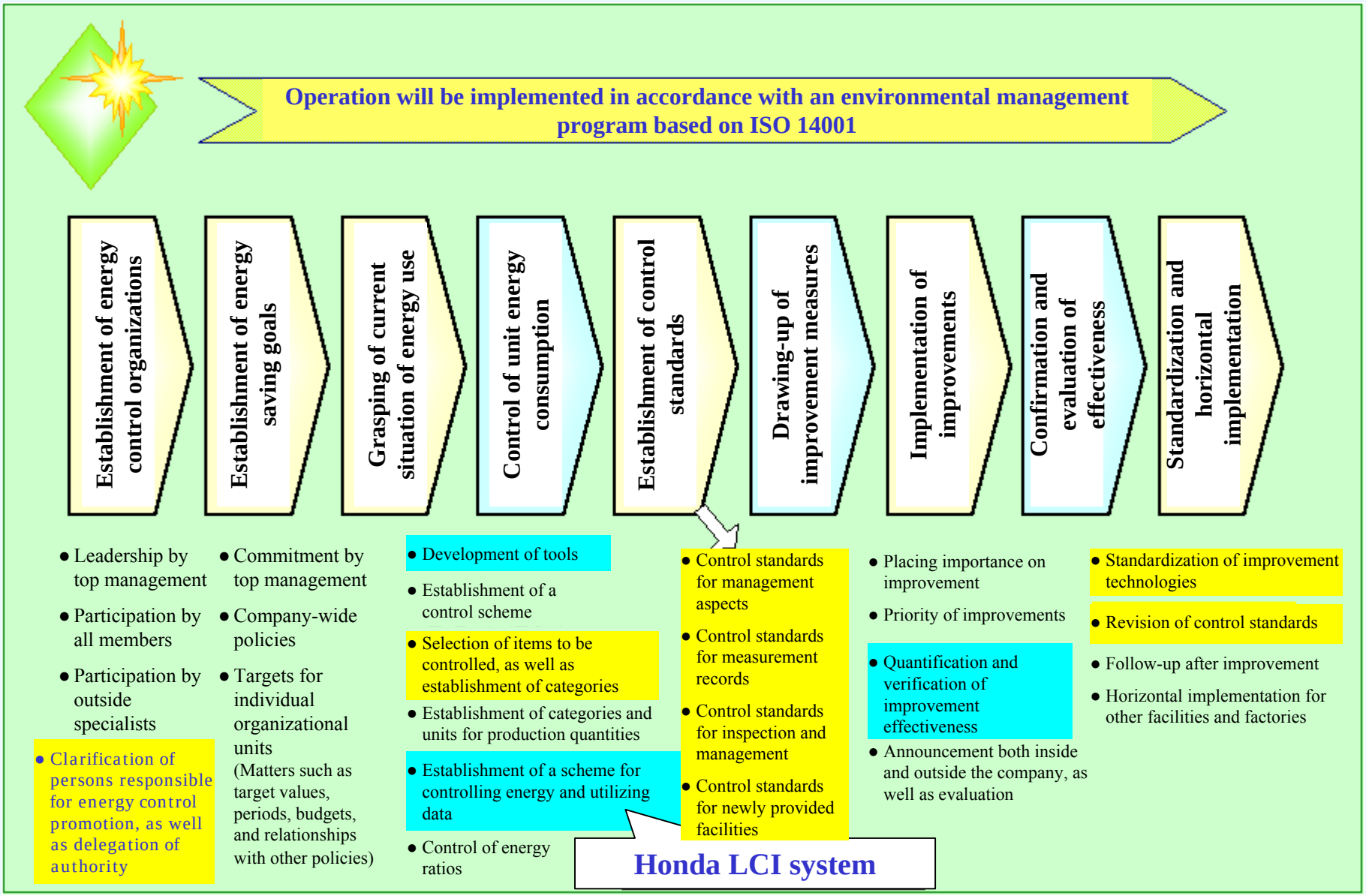
1. **Efforts to control environment**
   (Application of environmental management system)
2. **Efforts to grapple with energy saving**
   (Promotion of countermeasures against global warming due to “carbon dioxide emissions”)
3. **Efforts to address environmental conservation**
   (Promotion of environmental load reduction activities and relevant control)

History of environment and Honda's moves

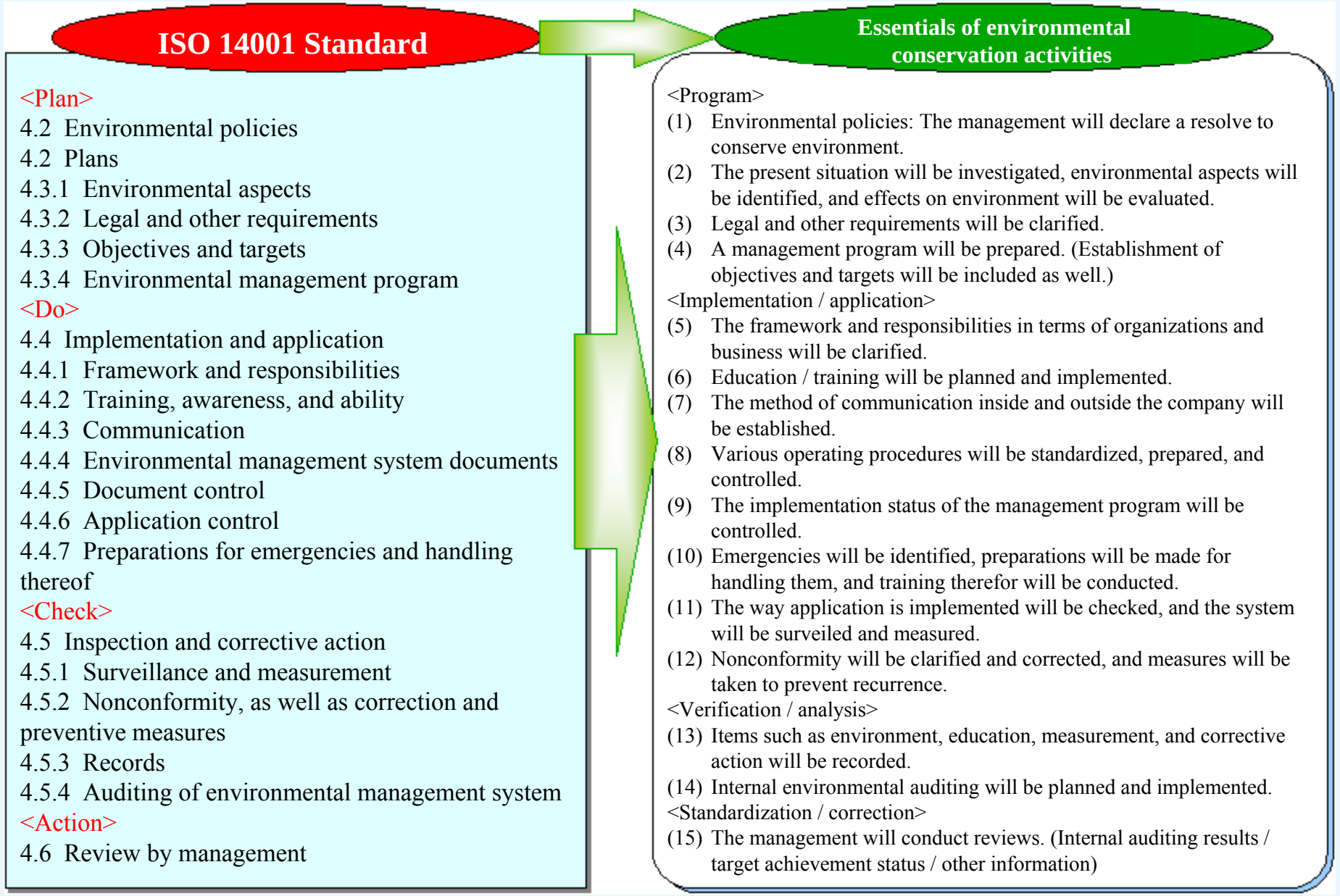
Moves in the world	Honda's moves
1962: ● Rachel Carson published "Silent Spring."	1975: ● Measures were taken to address emission control. CVCC engines were installed.
1972: ● The Club of Rome Club published the "Limits to Growth" on the "World Environment Day."	1976: ● "Home town building" was started.
1987: ● The "Montreal Protocol" was adopted.	1990: ● Organizations exclusively handling environmental issues were established.
1993: ● EU enacted "EMAS" (Eco-Management and Audit Scheme), which started to be implemented in 1995.	1992: ● Honda's declaration on environment was issued.
1996: ● "ISO 14001" took effect.	1995: ● The world Environment Conference was held.
1997: ● "COP3 (Kyoto Conference)" was held. Emissions of greenhouse gases are to be reduced by 5% worldwide by the period 2008 - 2012. ● Japan is to achieve 6%. ● EU is to achieve 8%.	1997: ● Green factory efforts were implemented. A goal was set such that the unit energy consumption should be reduced 30% by 2010 as compared with 1990.
	1998: ● ISO 14001 certification was obtained.
	2000: ● Operation of cogenerator No. 1 was started.
	2002: ● Operation of cogenerator No. 2 was started.

Policies

Method of implementing energy control



Application of environmental management system



Drastic amendment of the Law on Rationalization of Use of Energy

Enforced in April 1999

What is the Energy Saving Law?

◆ The Energy Saving Law is a comprehensive law for promoting effective use of energy and elimination of waste thereof. This law, which has been applied for about 20 years since enacted in 1979, is contributing to the realization of our country's energy use efficiency that is said to be at the highest level in the world.

◆ Energy is indispensable to daily life and business activities. It is important to utilize energy as effectively as possible in our country, which depends on overseas sources a great deal of energy including petroleum.

◆ The Energy Saving Law is one in which are incorporated all measures to thoroughly rationalize the use of energy as a means to curb quantities of energy uses as far as possible, while maintaining rich daily life and vigorous economic activities.

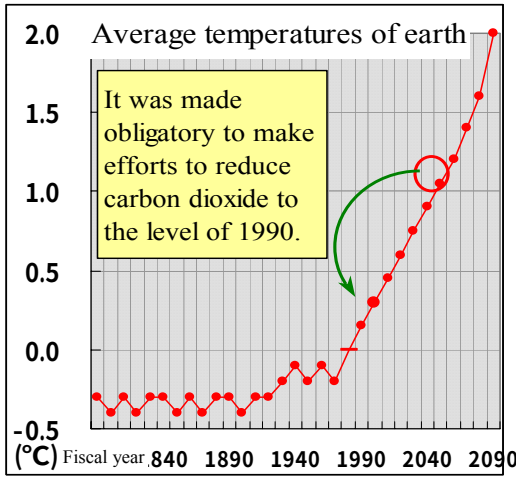
＊ Failure to save energy leads to the following!

Consumption of energy causes carbon dioxide to increase, and global warming takes place, resulting in abnormal weather giving rise to disasters.

Desertification of the earth

⇩

"Extinction of plants and animals"



[Basic policies]

◆ The basic policies specify basic matters to be implemented by entities such as users of energy, for the purpose of rationalizing the use of energy.

[Obligation to strive hard on the part of energy users]

◆ Voluntary efforts are required of all entities using energy, including consumer nationals as a whole, entrepreneurs, and local governments.

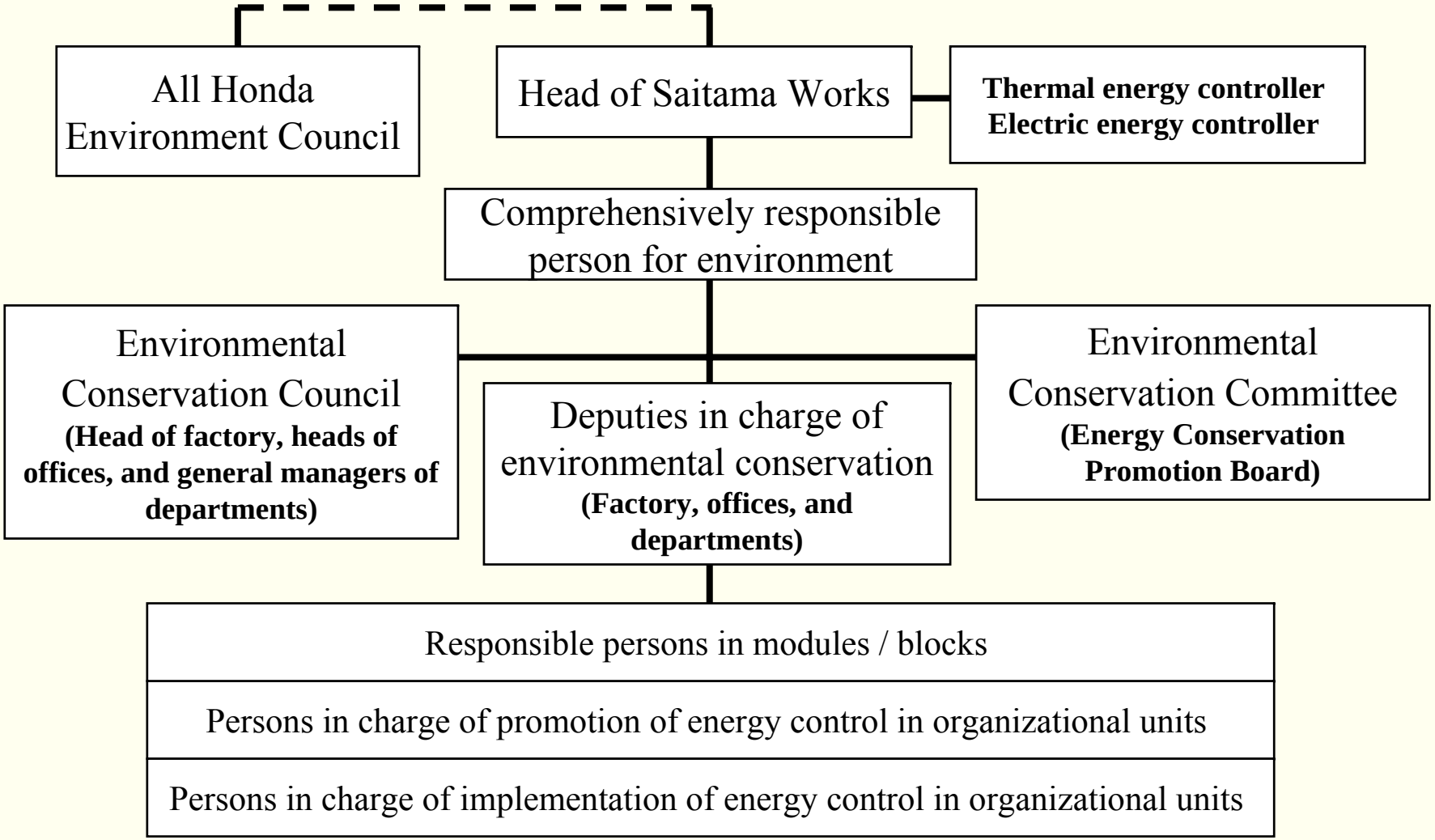
◆ The planned goal to strive for in energy saving is a reduction of 1% of the record of the previous year in terms of unit consumption.

[Measures regarding factories]

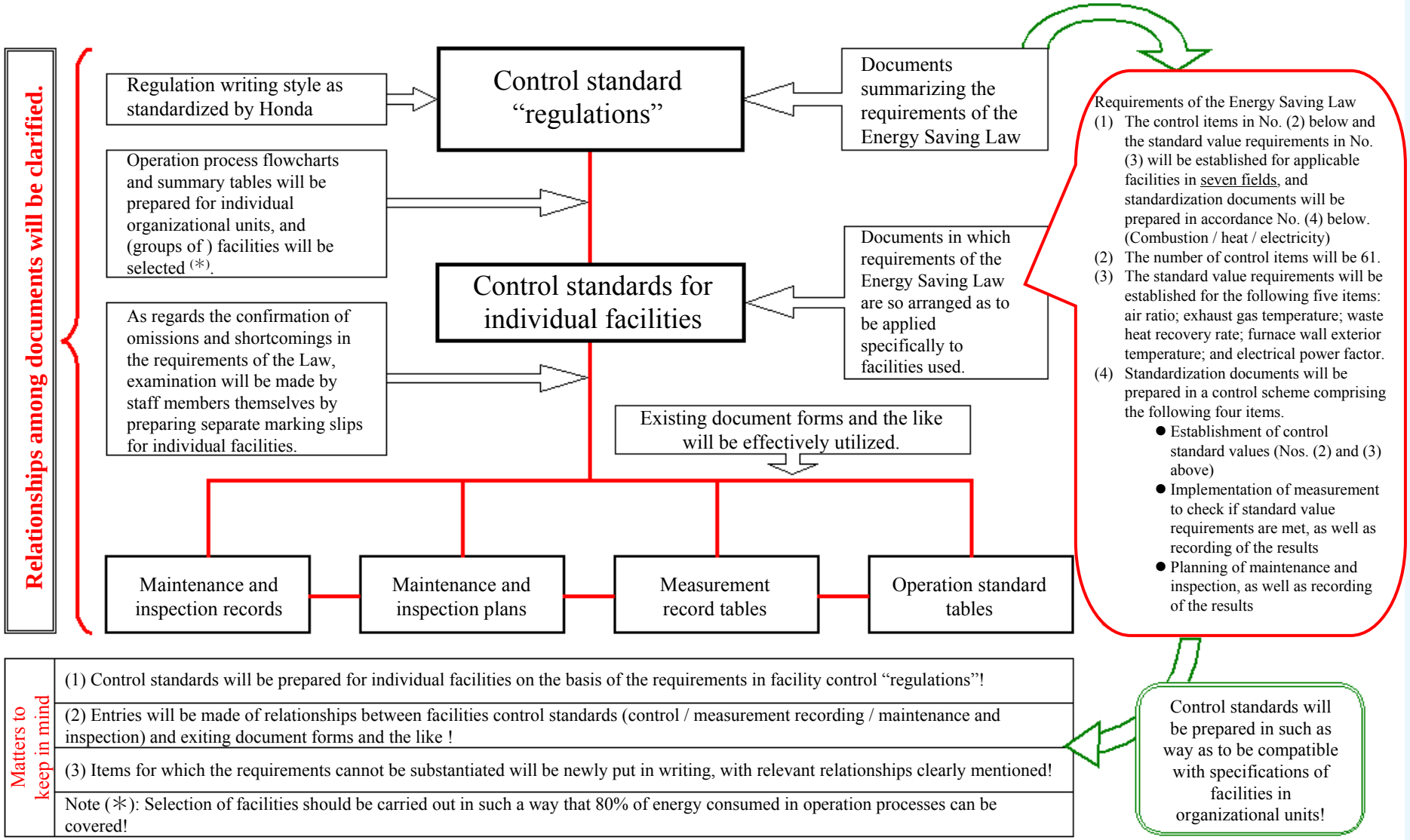
◆ Factories are obliged to formulate "control standards" for the purpose of appropriately and effectively rationalizing the use of energy.

Types of designated factories	Description
Designation of factories for Class 1 energy control	The quantity of energy used is not less than 3,000 kiloliters per year as converted in terms of crude oil, or the quantity of electric power used is not less than 120 thousand kilowatt-hours per year. <Measures> (1) Selection of energy controller (2) Periodic reporting of energy use status (3) In the event that the rationalization of energy use is significantly insufficient, the State will give instructions /make public announcements / issue orders regarding the implementation of "rationalization programs" to be carried out under directions of the State.

Energy control organization framework



Scheme for control standard documents as required by Energy Saving Law



Examples of entry

Control standard

Control standard based on "Energy Saving Law"	Control items			Measurement / recording items		Maintenance and inspection items		Control No.: 001	Page 1 of 1
	Item	Standard values	Frequency	Item	Frequency	Item	Frequency	Related regulations (Documents)	
• Energies to be controlled should be entered. • Names of (groups of) facilities to be controlled Facilities consuming electricity or fuel (Seven items of legally designated facilities) "Boiler No. 1" "Boiler No. 2"	• Requirement item No. should be entered.			• Requirement item No. should be entered.		• Requirement item No. should be entered.		• Operation standard tables • Facility inspection plans • Operation logbook • Legally stipulated inspection records • Maintenance and repair records	
(Heat) (Electricity)	1. Combustion temperature	60-65℃	One per year	• Air flow / Temperature	Once per day	• Daily inspection	Once per day		
	2. Air ratio	1.2-1.3	One per year	• Exhaust gas (0.2%)	Once per day	• Burner inspection	Once per week		
	3. Exhaust gas temperature	200 -250℃	One per year	• Exhaust gas temperature (NOx / SOx)	Once per day	• Periodic inspection (See Note 1.) • Instrumentation inspection	One per year		
	4. Boiler efficiency	Not less than 90%	One per year	• Quantity / Temperature / Pressure • Fuel flow / temperature	Twice per day Twice per day	• Economizer inspection	One per year		
	5. Boiler load adjustment	See Note 1.	One per year						
	6. Quality of supplied water and can water	See Note 2.	One per year	• Water quality analysis	Once per week				
	7. Quality of drained water as recovered	See Note 2.	One per year	• Water quality analysis	Once per month				
				• Fuel analysis	See Note 1.				
• Types (Scope of application) Types should be transcribed from facility specifications operation standard tables (including performance). "Economizer" "Fuel and city gas A13" "One machine at 10 t/h" "One machine at 20 t/h"	Note 1: Technical data			Note 1: Manufacturer's data		Note 1: Legally stipulated inspection		Measures to be taken when new equipment is to be installed	
• Intended use "General process steam" "Water heating equipment for production use"									
• Related items									

Consecutive number for individual organizational unit

Entries should be made of ordinances and regulations related to pertinent organizational units, as well as of names of control document forms. (It is permissible to transcribe entries from pages for different organizational units.)

Entries should be made of items stipulated by statutes, as well as standard values. Furthermore, entries should be made of voluntary control items.

Entries should be made of the following: items of measurement as a means to check if standard value requirements of control items are met, as well as the record of measurement; measurement of voluntary control items, as well as the record of measurement; and maintenance and inspection items.

Entries should be made of items stipulated by statutes.
- Objectives of rationalization standards, as well as plans for achievement thereof
- Guidelines for medium- and long-term plans for facilities

(It is permissible to transcribe entries from pages for different organizational units.)

- In the case of electrical equipment, the stamp of the registered electrical facility controller should be impressed.
- As regards combustion (heat) equipment, the stamp of the registered thermal energy facility controller should be impressed.

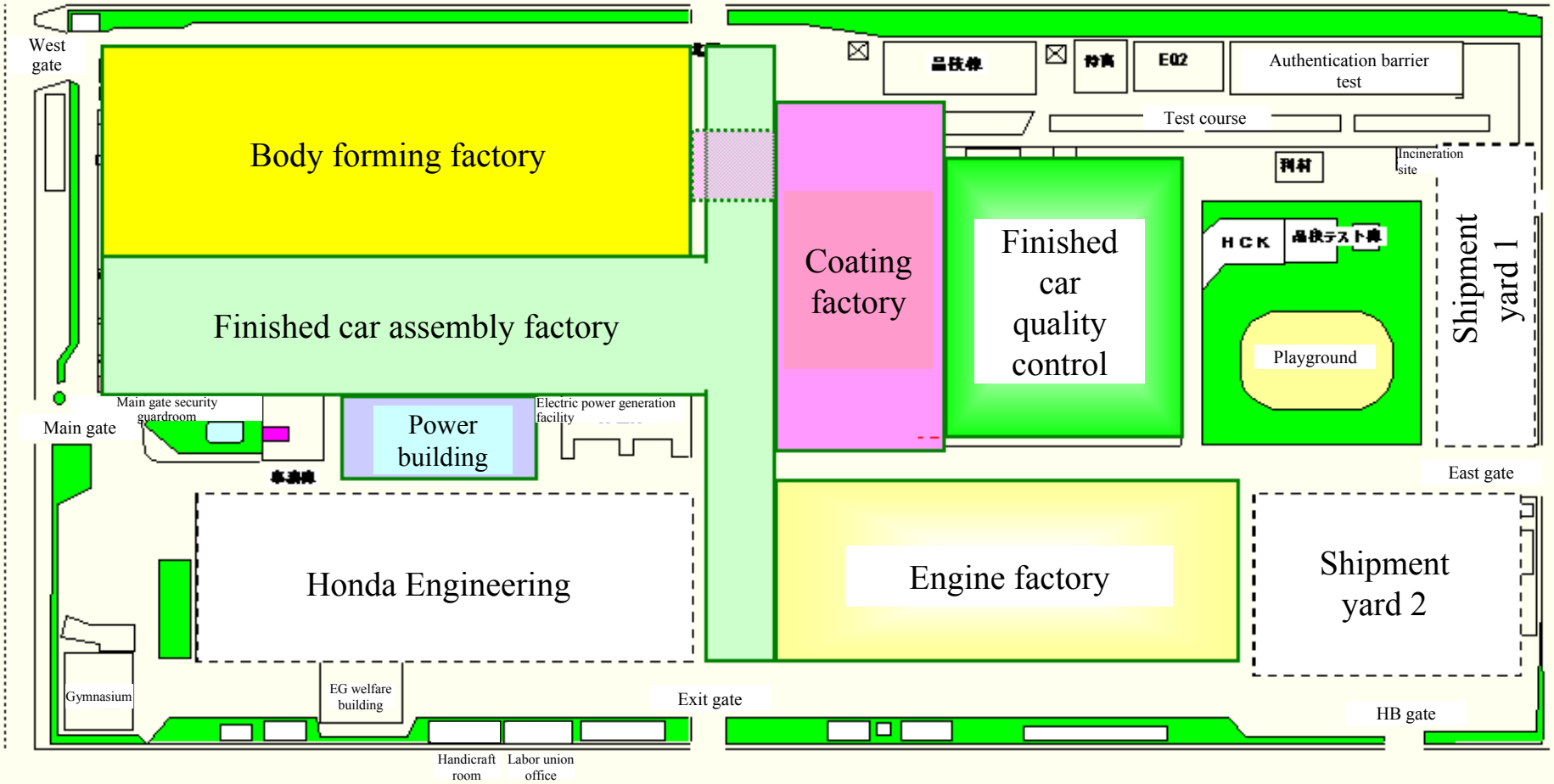
Electrical facility controller: Tamura

Thermal energy facility controller: Nishizawa

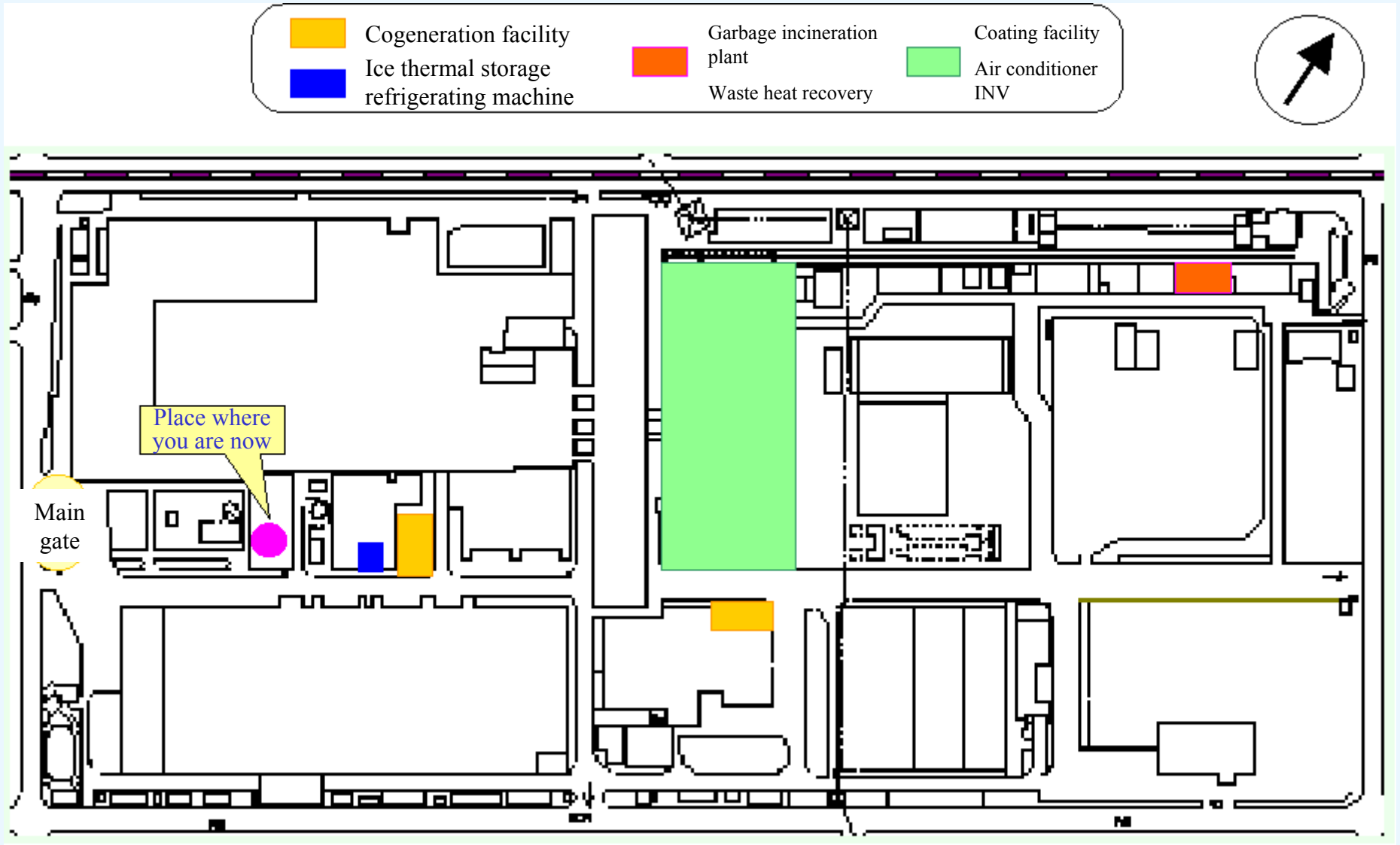
Organizational units responsible for control							Remarks
Facility control BL:	MO	△					In cases where this document comprises more than one page, this block should be provided only on the last page.
Electric power GL:	UN	03/04/04	○ Newly formulated.				
Power TM:	Operation processes	Date	Reasons for revision	Approval stamp	Approved by	Checked by	Prepared by

Additional entries should be made when changes are made.

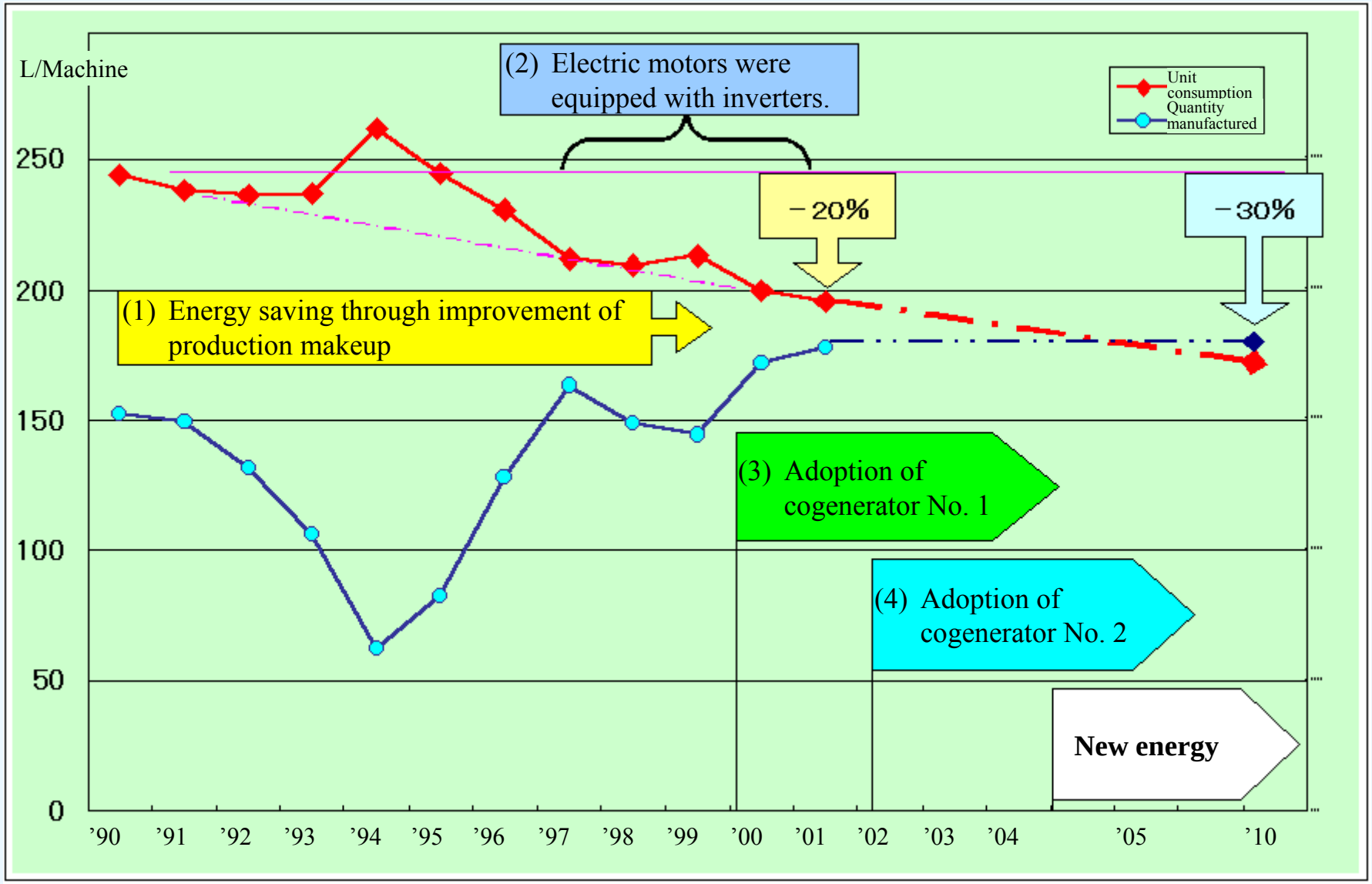
Operating processes subject to application of control standards



Energy saving facilities installation locations

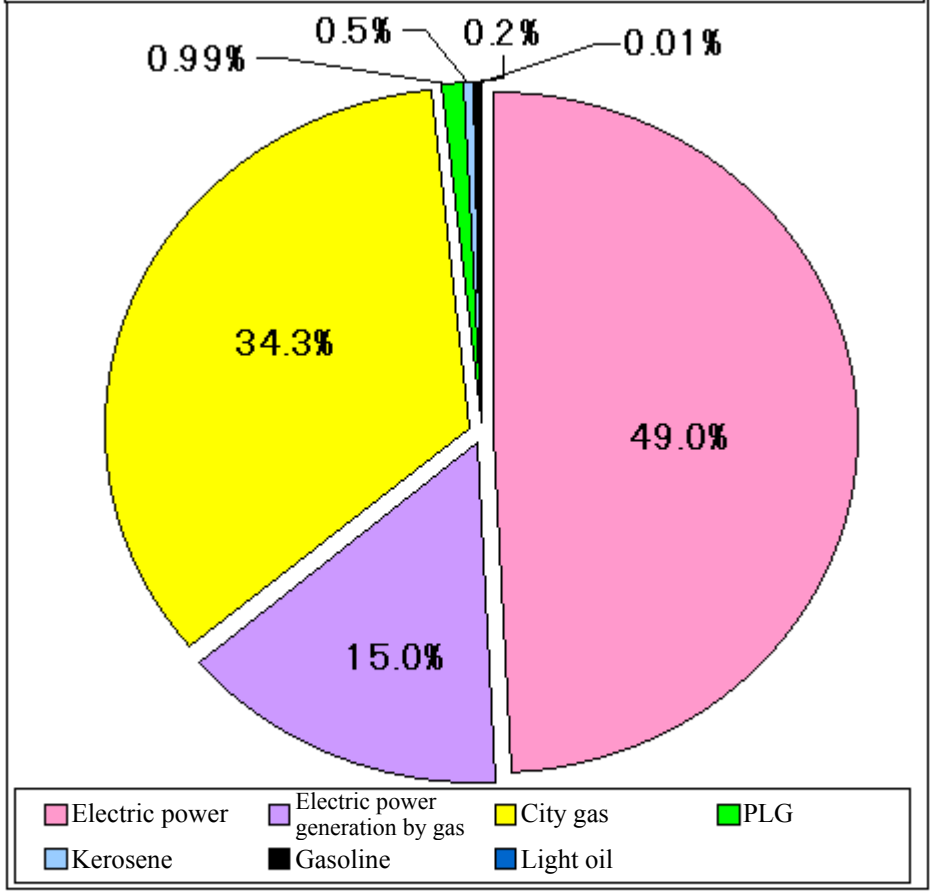


Past records of energy saving, as well as plans up to 2010

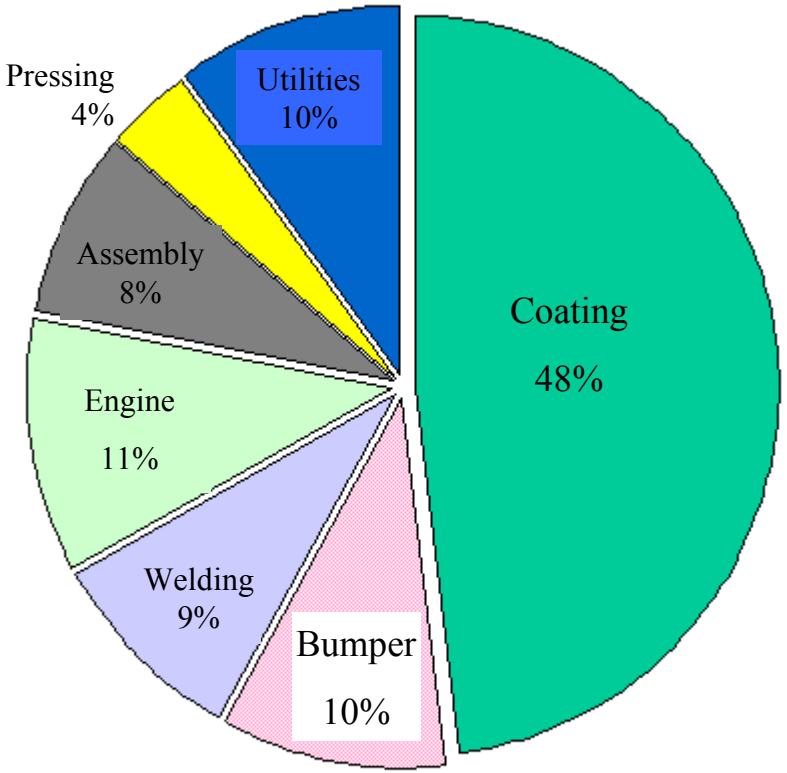


Past records of energy consumption

FY 2002: 73,057 KL as converted in terms of crude oil

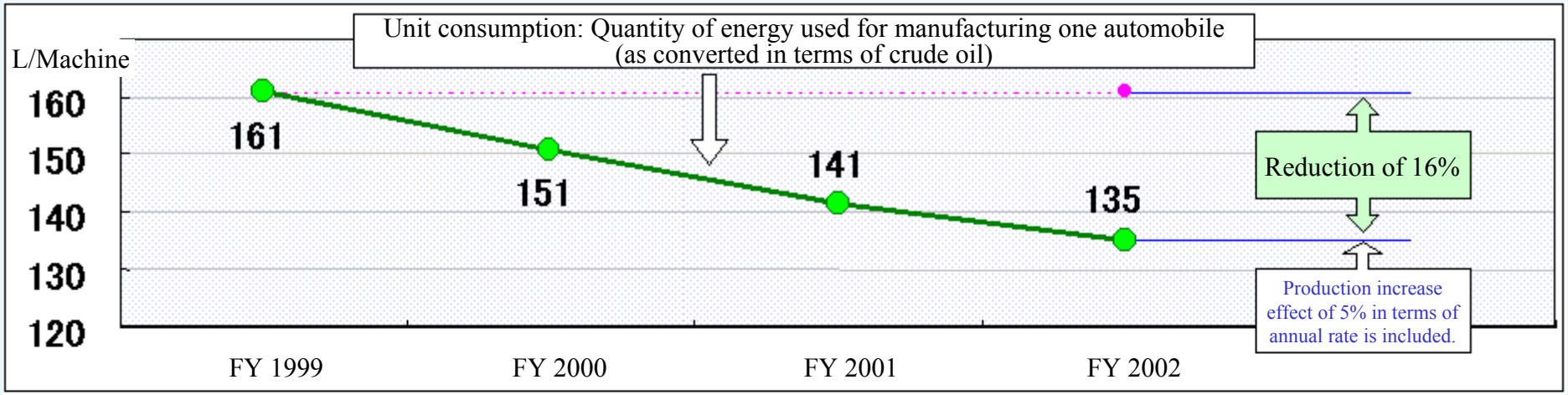


FY 2002: Energy consumption by organizational unit



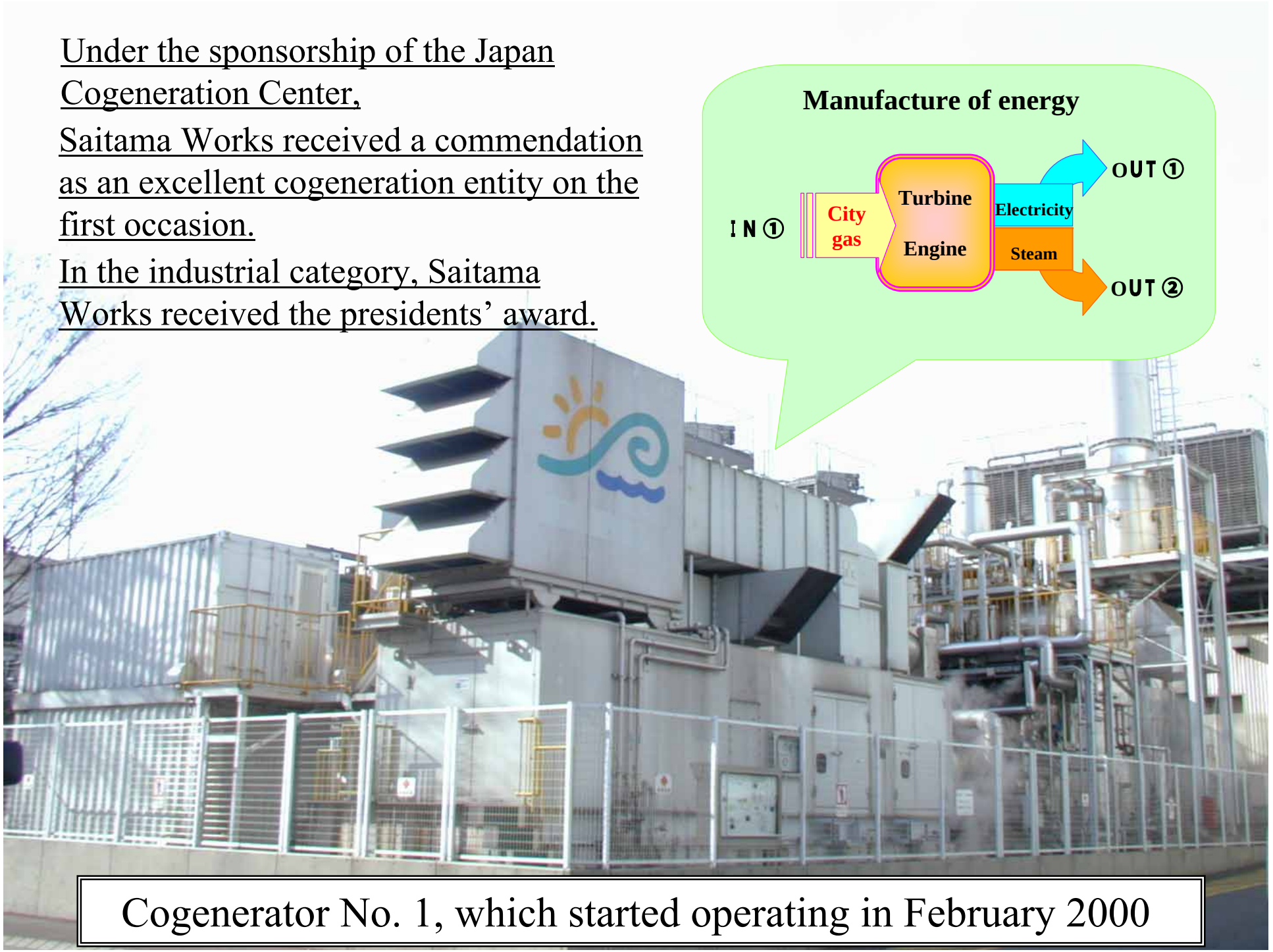
Main points of past records of energy consumption	(1) Electricity accounts for 64% of all energy, and gas accounts for 34% thereof. (2) About half of energy consumed is used in the coating process.

Past records of energy saving at Saitama Works



	Measures	Organizational units	Three years		
			2000	2001	2002
Major energy saving measures	Hardware	Measures taken by organizational units	- Reduction in quantities of air discharged from drying furnaces was increased. - No. 1 finish coating booth was equipped with an INV. - No. 1 intermediate coating booth was equipped with an INV. - Air conditioners were equipped with inverters by way of Phase 1. - We air boosters were abolished.	- Coating booths were equipped with inverters - Horizontal implementation of LCI was conducted. - Boilers were replaced with smaller ones. - Air conditioners were equipped with inverters by way of Phase 2. - Energy saving measures were taken for refrigerating machines. - Air pressure control was implemented.	- The coating process was provided with an INV control system. - Horizontal implementation of LCI was conducted. - Large-sized boilers were abolished. - Air conditioners were equipped with inverters by way of Phase 3. - Energy saving measures were taken for refrigerating machines. - Illuminating appliances were replaced with ones with higher output.
		Measures taken by the Works	- Cogenerator No. 1 was adopted.	- The operation efficiency of the cogenerator increased.	- Cogenerator No. 1 was adopted. - Measures were taken to improve production efficiency.
		Measures taken by factories	- Engine factory makeup improvement was implemented by way of Phase 1. - Body factory makeup improvement was implemented by way of Phase 3 - Body factory makeup improvement was implemented by way of Phase 4 - Electric power monitoring equipment was installed (in the north of the Chemical Conversion Division)	- Engine factory makeup improvement was implemented by way of Phase 2. - Engine factory makeup improvement was implemented by way of Phase 3. - Body factory makeup improvement was implemented by way of Phase 5. - Electric power monitoring equipment was installed (in all workshops).	- Engine factory makeup improvement was implemented by way of Phase 4. - Assembly shop and distribution shop makeup improvement was implemented by way of Phase 1. - Peak electric power control was implemented.
	Software	Measures taken by the Works	- LCI activities were implemented in Sayama Factory. - Energy Board activities were conducted.	- Efforts for having LCI activities take root was promoted. - Energy Board activities were conducted. - Energy Saving patrol was carried out.	- LCI budget control was performed. - Energy Board activities were conducted. - Air leakage detection patrol was carried out.

Under the sponsorship of the Japan Cogeneration Center,
Saitama Works received a commendation as an excellent cogeneration entity on the first occasion.
In the industrial category, Saitama Works received the presidents' award.



Cogenerator No. 1, which started operating in February 2000

Merits and demerits of operation

<<Merits>>

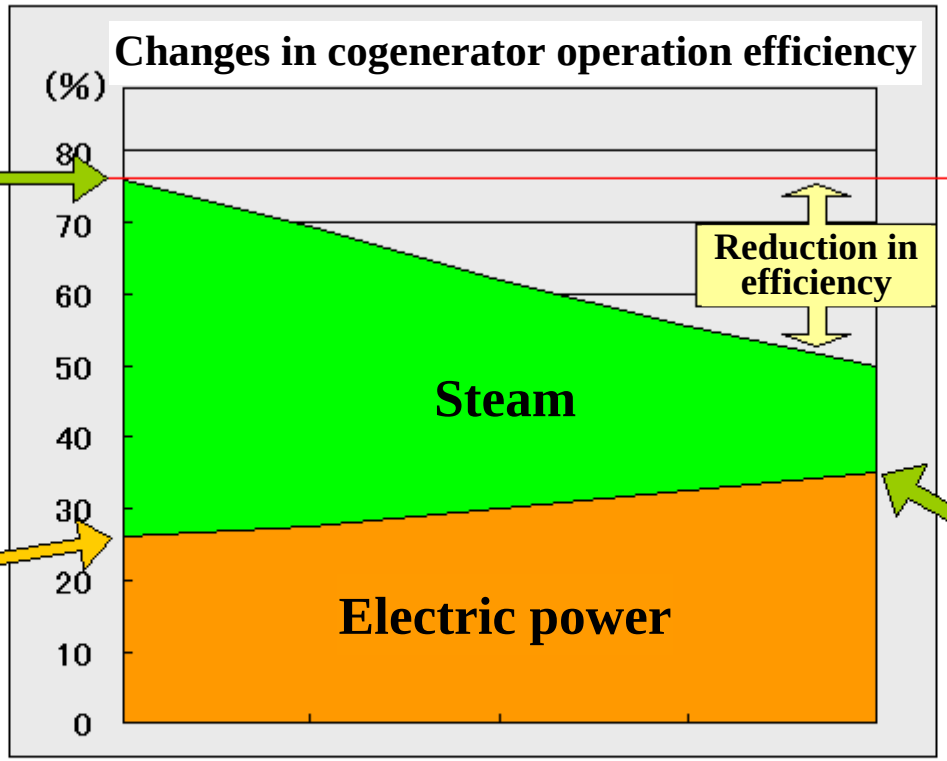
Steam is utilized as a heat source for air conditioning.

Contract electric power cost can be reduced only up to 65% of the maximum generated power.

<<Demerits >>

Quantities of steam used decrease in the spring and fall.

Power generation reduces contract electric power and cuts costs.



In order to practically improve efficiency, it is necessary to skillfully switch between steam use and electric power use.

Records of operation in 2001

Operation efficiency
<[Actual output] / [LHV Standard value]>

- Maximum efficiency = 76.0% (Test)

- Overall efficiency = 69.4%

- Power generation efficiency = 29.9%

Award was received.

[Steam generation efficiency = 39.5%]

[Operating efficiency]

[69.4% / 76%] = 91.3%

Facility functions for which commendation was awarded

(1) Energy saving features

1. Air suction cooling device
2. Turbo-motor power generator
3. Steam suction type refrigerating machine
4. Small-sized through flow boiler

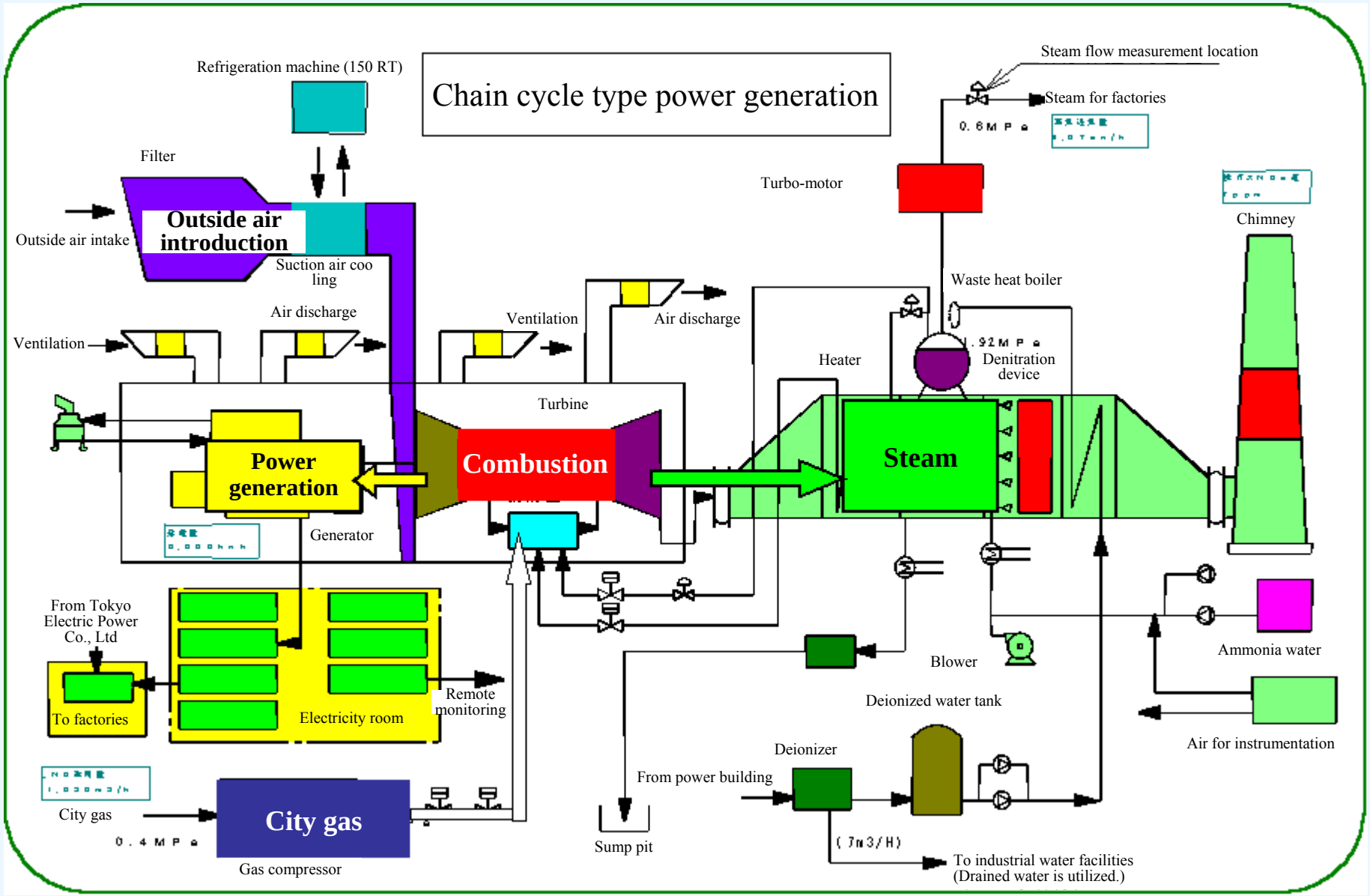
(2) Environmental conservation features

1. Abolition of large- sized through flow boiler
2. Exhaust gas denitration device

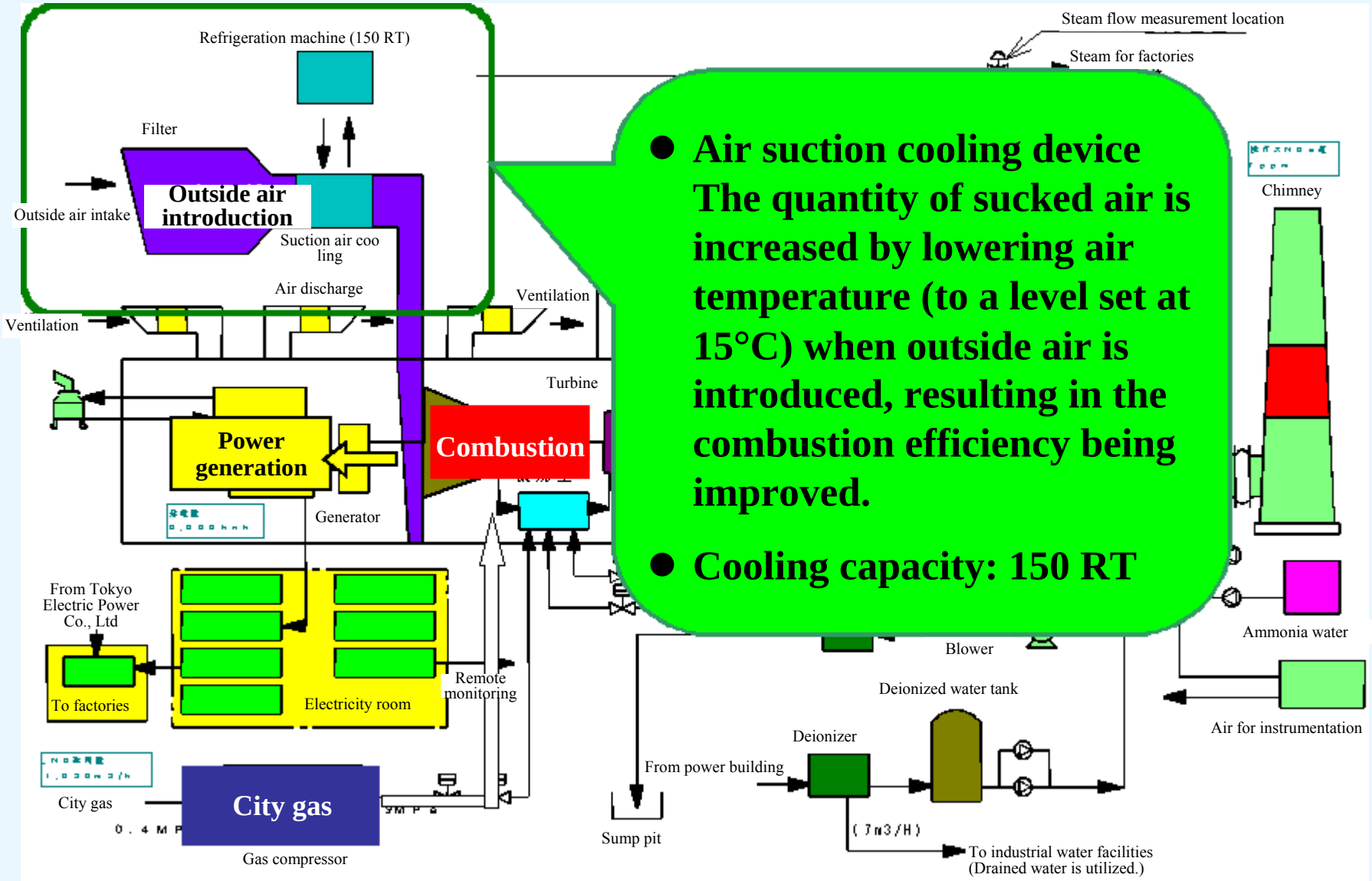
(3) Novelty features

1. Single-cycle breaker
2. Contract electric power control

System schematic

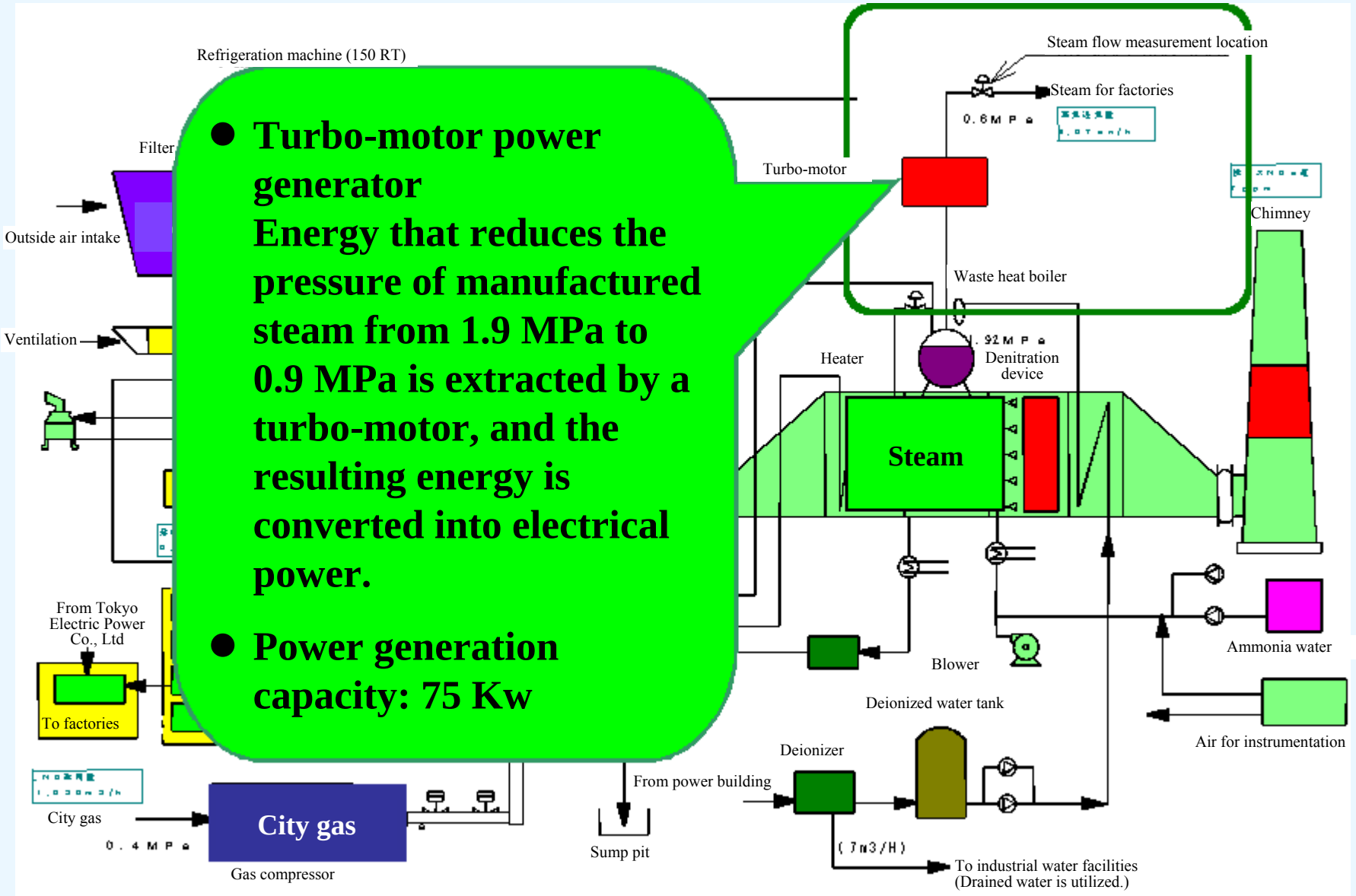


Energy saving features, Part 1



- **Air suction cooling device The quantity of sucked air is increased by lowering air temperature (to a level set at 15°C) when outside air is introduced, resulting in the combustion efficiency being improved.**
- **Cooling capacity: 150 RT**

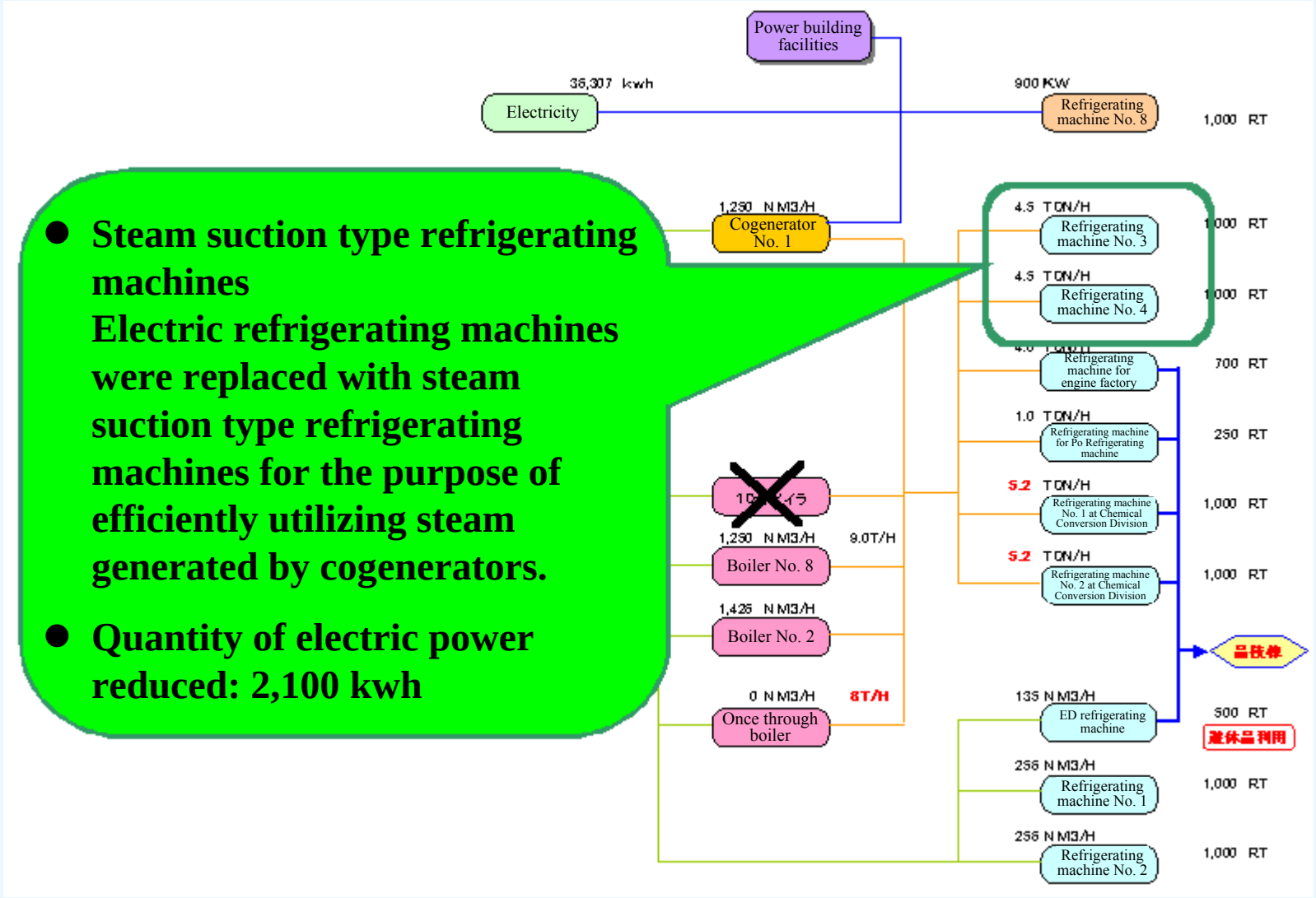
Energy saving features, Part 2



- **Turbo-motor power generator**
  Energy that reduces the pressure of manufactured steam from 1.9 MPa to 0.9 MPa is extracted by a turbo-motor, and the resulting energy is converted into electrical power.
- **Power generation capacity: 75 Kw**

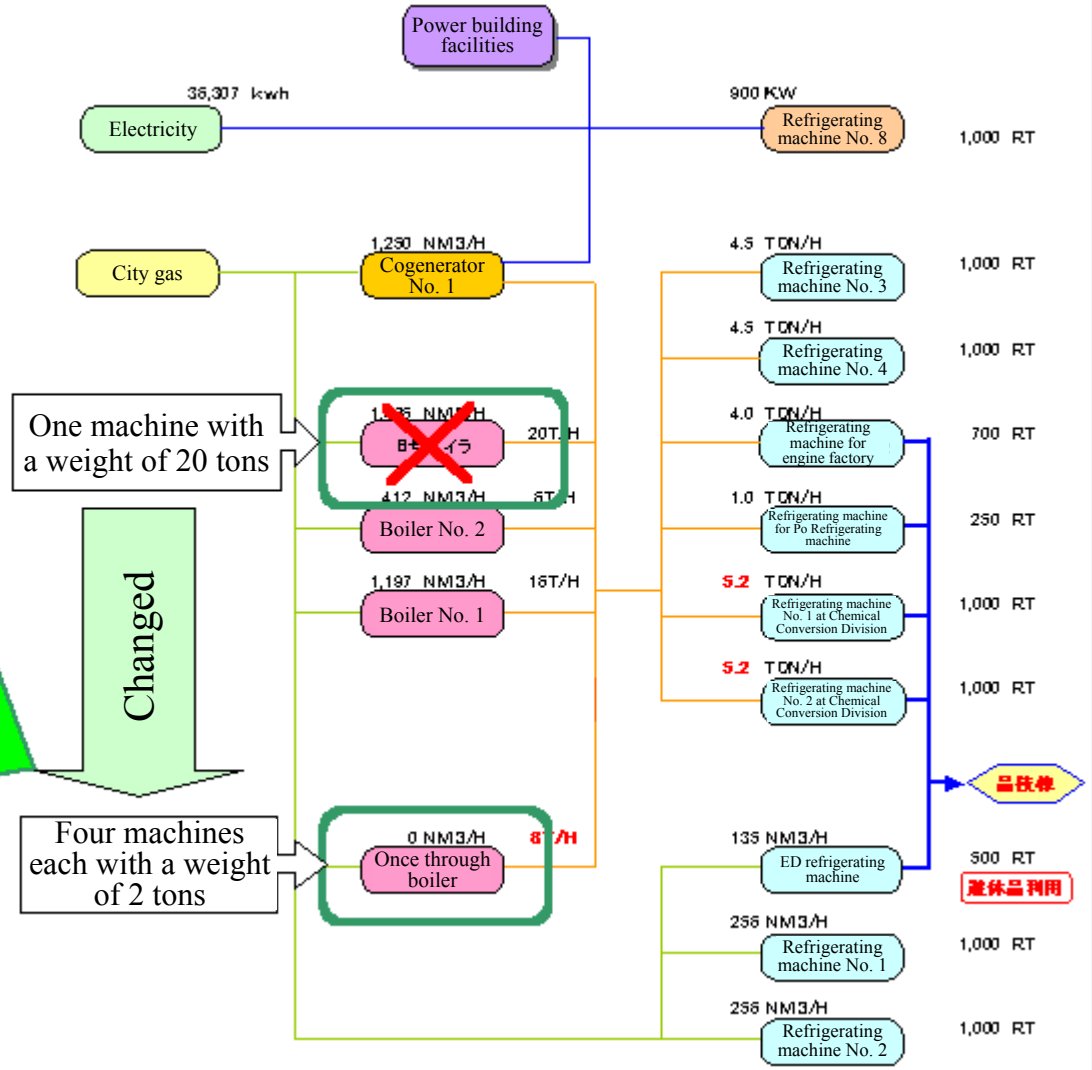
Energy saving features, Part 3

- **Steam suction type refrigerating machines**
  Electric refrigerating machines were replaced with steam suction type refrigerating machines for the purpose of efficiently utilizing steam generated by cogenerators.
- **Quantity of electric power reduced: 2,100 kwh**



Energy saving features, Part 4
Environmental conservation features, Part 1

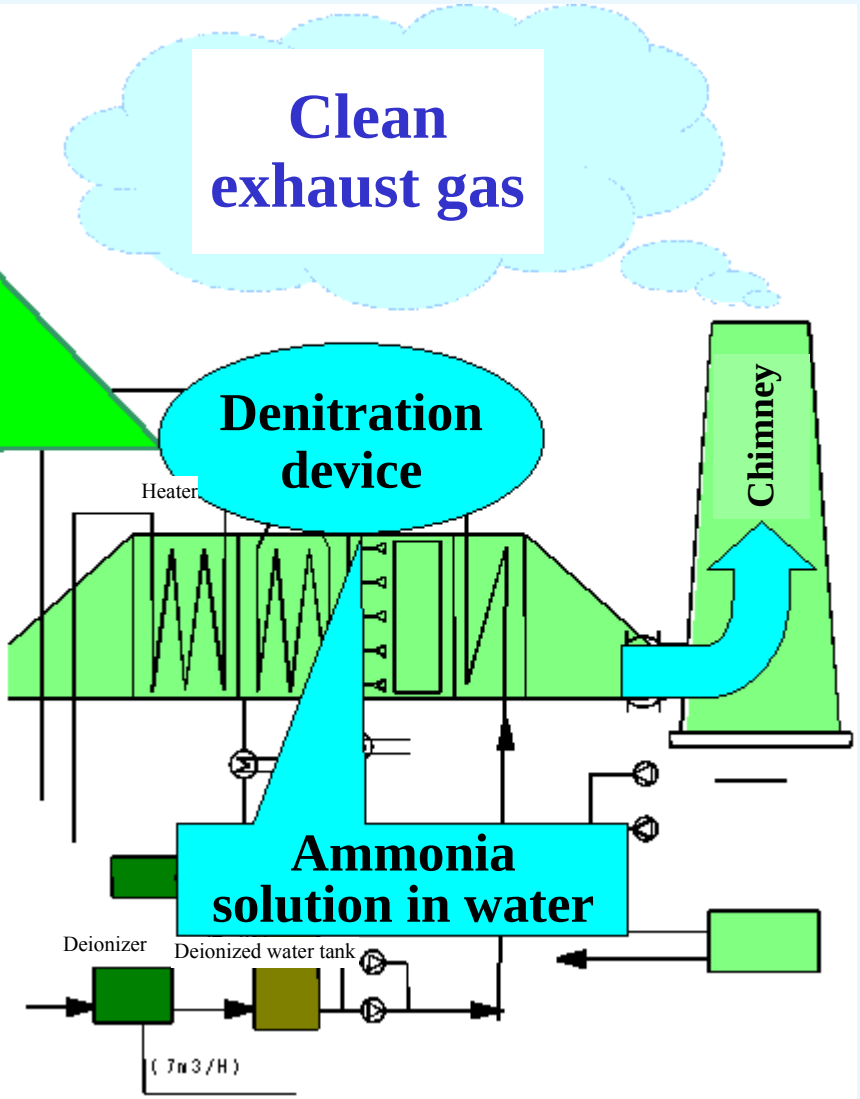
- **Replacement of boilers**
  City-gas-heated large-sized boilers were abolished and replaced with small-sized through flow boilers.
- **Boiler capacity:**
  76 tons → 54 tons
- **Quantity of reduction in combustion exhaust gas:**
  14,880 Nm³



Energy saving features, Part 2

- **Denitration device**
  A denitration device was installed for the purpose of meeting the requirement stipulated by the State regarding the NOx value of combustion gas, which requirement is such that the limit of "70 ppm is lowered to one-tenth."

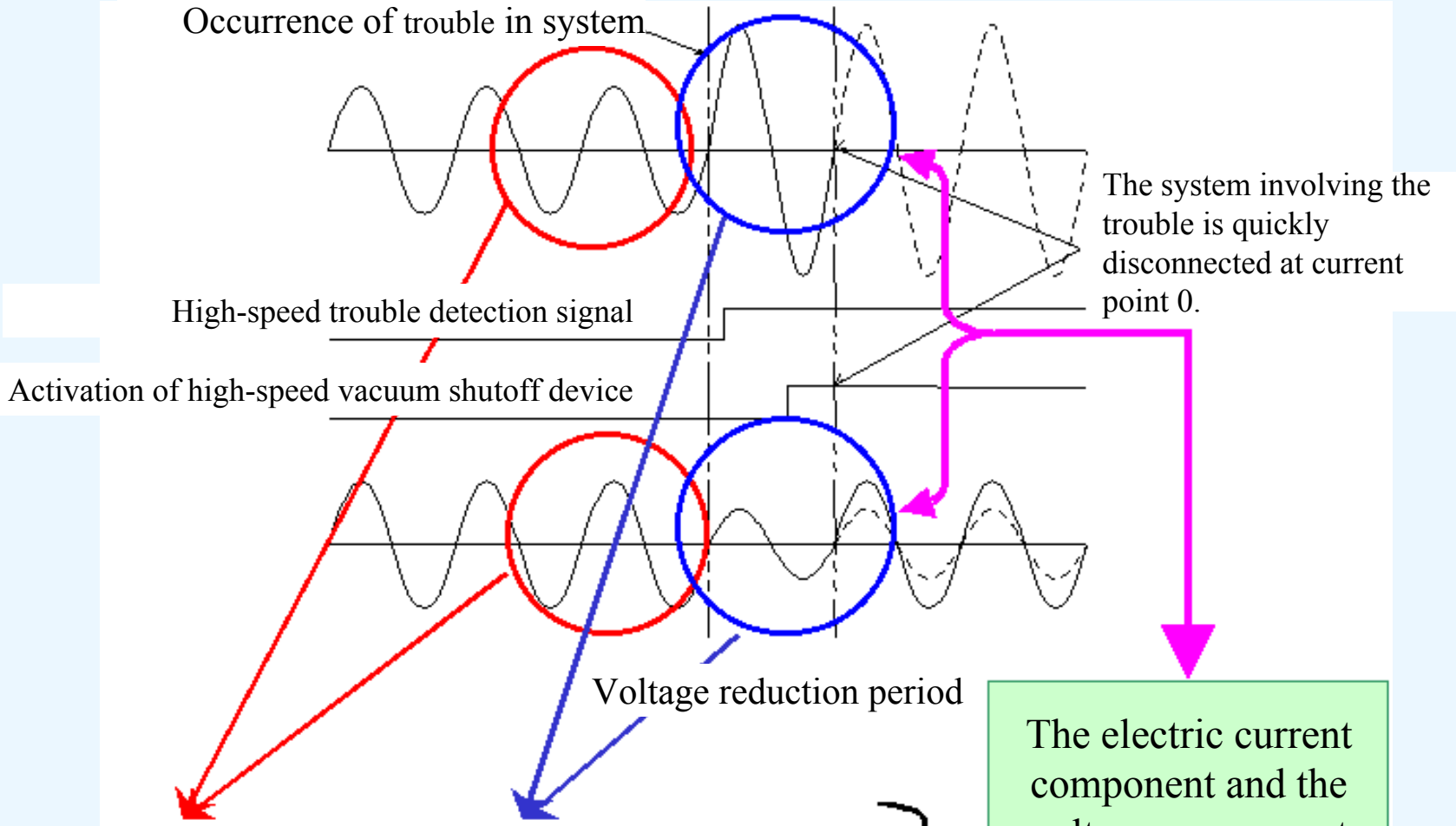
  NOx value: 7 ppm



Novelty features, Part 1

Single-cycle breaker

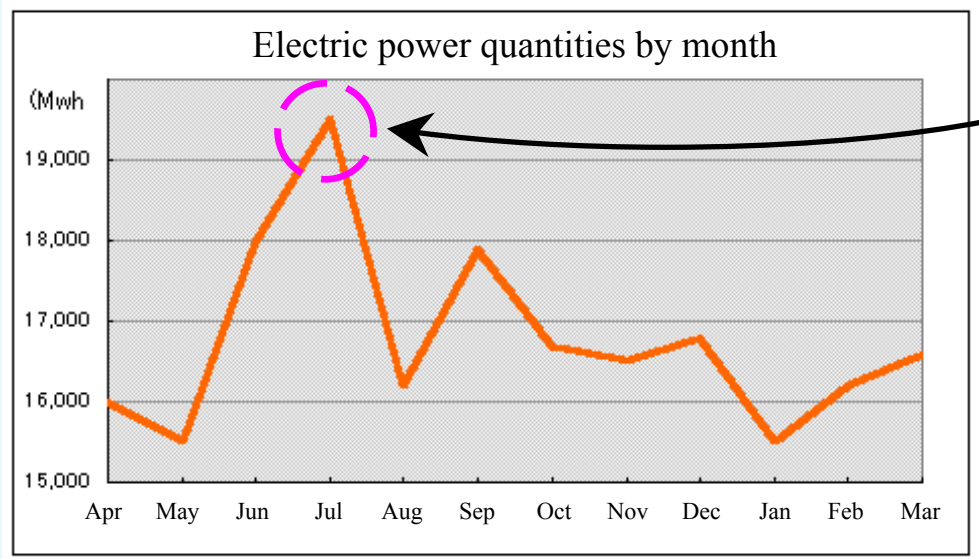
Detection method

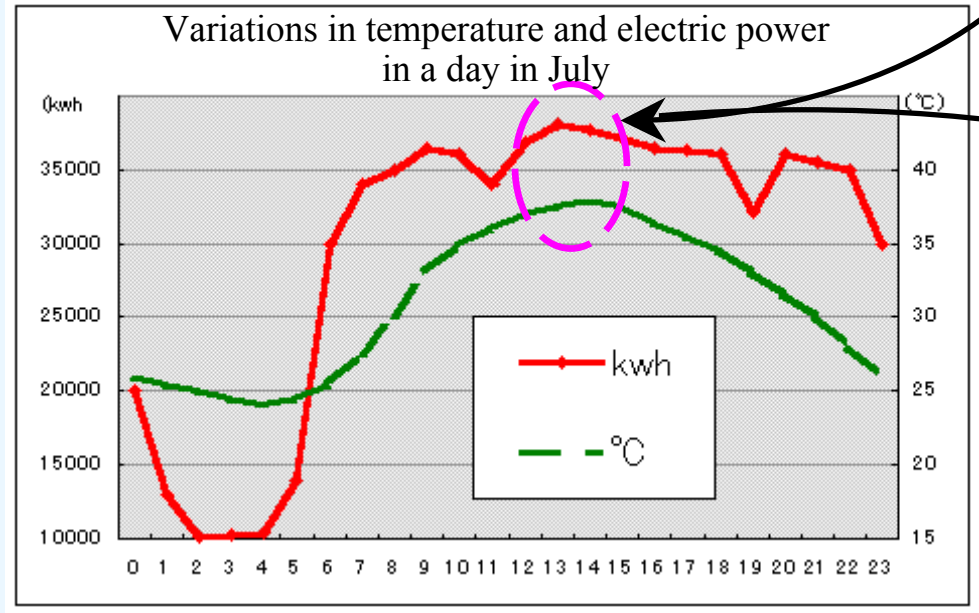


The electric current and voltage in the first and second cycles are memorized.

The electric current component and the voltage component are compared with each other, thereby judging abnormality.

Reduction of contract electric power by utilizing cogenerators





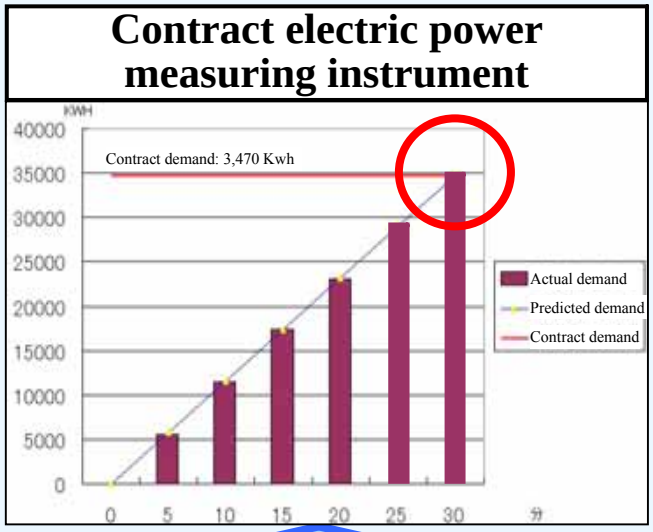
Electric power consumption is highest in July.

Maximum power consumption in a day occurs for only two hours, between 13:00 and 15:00.

The annual contract electric power will be decided on the basis of the maximum electric power.

If the maximum electric power is reduced, then peak power for public use, as well as contract power, can be reduced.

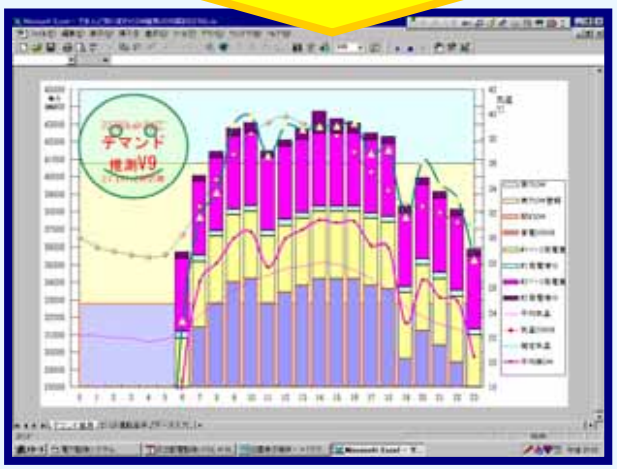
Novelty features, Part 2



Data is taken into PC.

The predicted increase in electric power is calculated on the basis of electric power used.

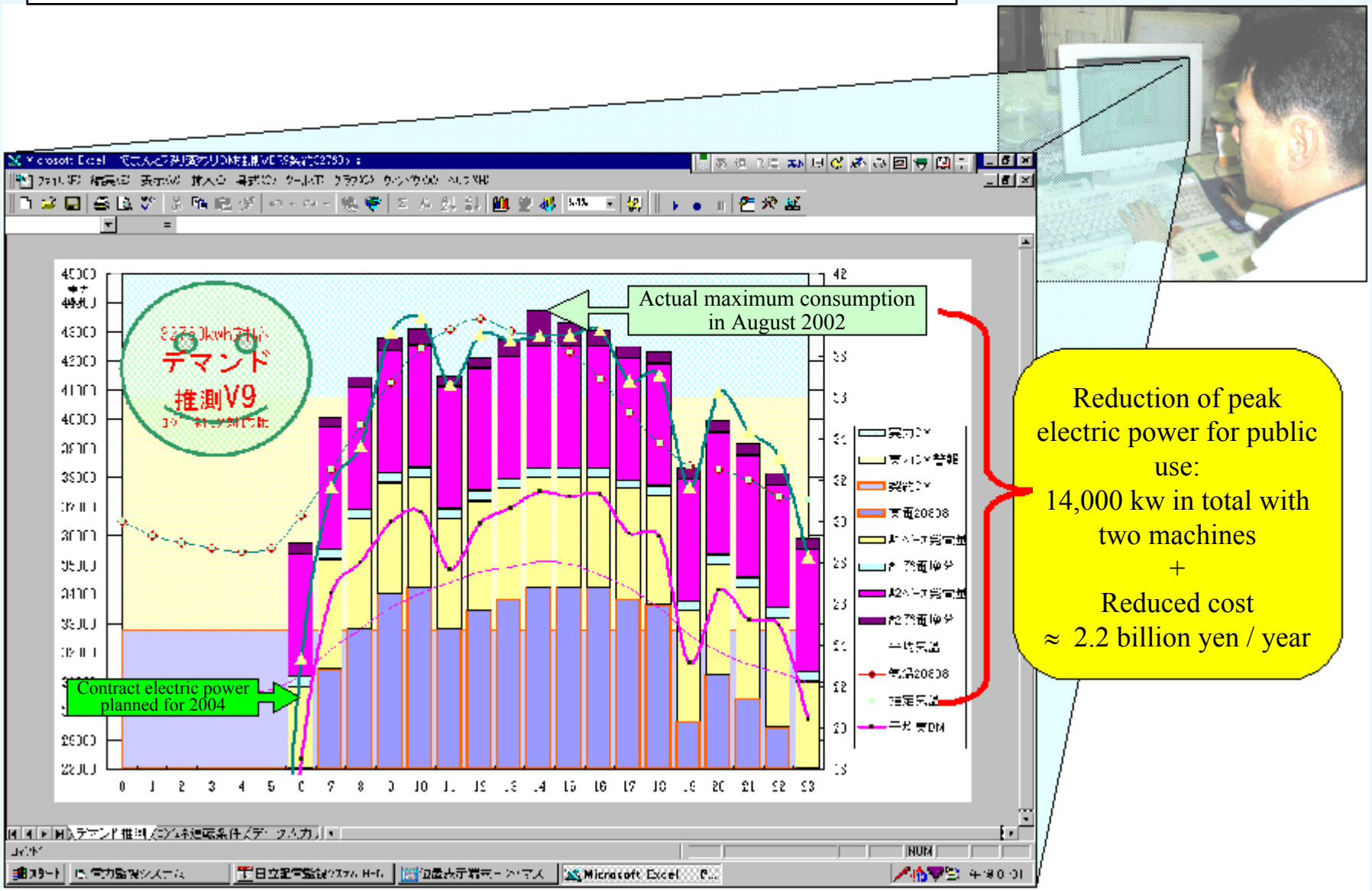
Control that is feasible even if contract electric power is reduced



The cogenerator is instructed to increase generation!

Increase in quantity of electric power generated

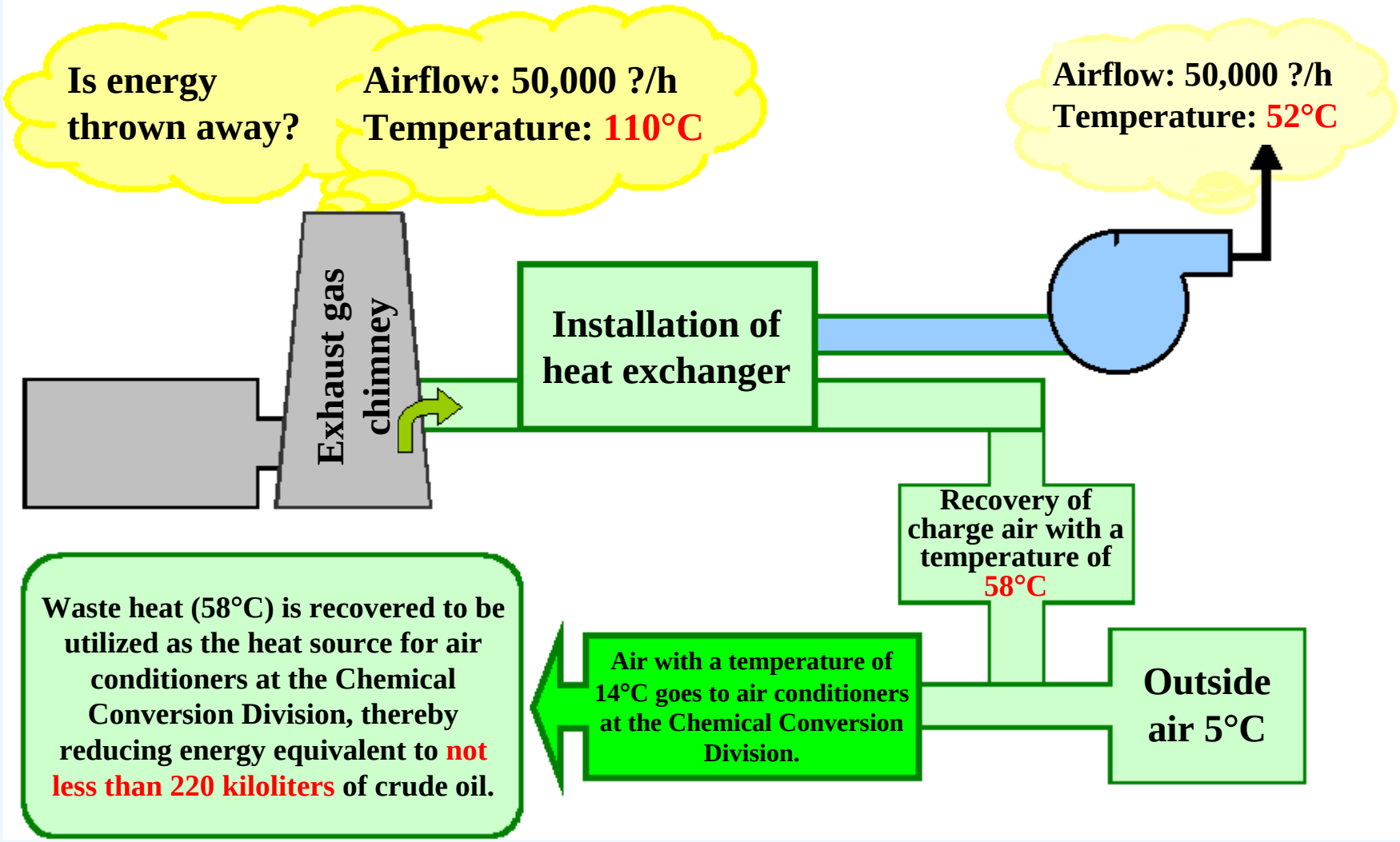
Contract Electric power control



Reduction of peak electric power for public use:
14,000 kw in total with two machines
+
Reduced cost
≈ 2.2 billion yen / year

Novelty features, Part 3

Waste heat from cogenerator No. 2 is recovered to effectively utilize energy.



LCA and LCI

Electric power analysis is systematized.

What is LCA (Life Cycle Assessment)?

This is a technique whereby the resource energy used by a product throughout its life cycle (raw materials → design / manufacture / use / recycling → final disposal), as well as the environmental load discharged, is calculated periodically to evaluate potential effects on environment (that is, to determine the present situation).

<Note>
LCA is a mere evaluation technique (for determining the present situation).

From determination of present situation to analysis

What is LCI (Life Cycle Inventory)?

<Purpose of implementation>

Data in all manufacturing stages and data on all events (in / out) are collected and analyzed.
For the purpose of concentrating on reduction of environmental load, loss will be brought to light, and problems will be extracted, then countermeasures will be implemented to bring about improvement.

<Implementation method>

(1) Quantitative control will be conducted for individual areas on the basis of daily data.

(2) Decisions will be made as to which items are to be targeted in areas where countermeasures are to be taken (it is permissible to start with any item).
(Sections / subsections / teams / operation processes / machines / time / cycles)

(3) Problems brought to light from measured data will be extracted.

(4) Relevant organizational units will utilize data to work out countermeasures.

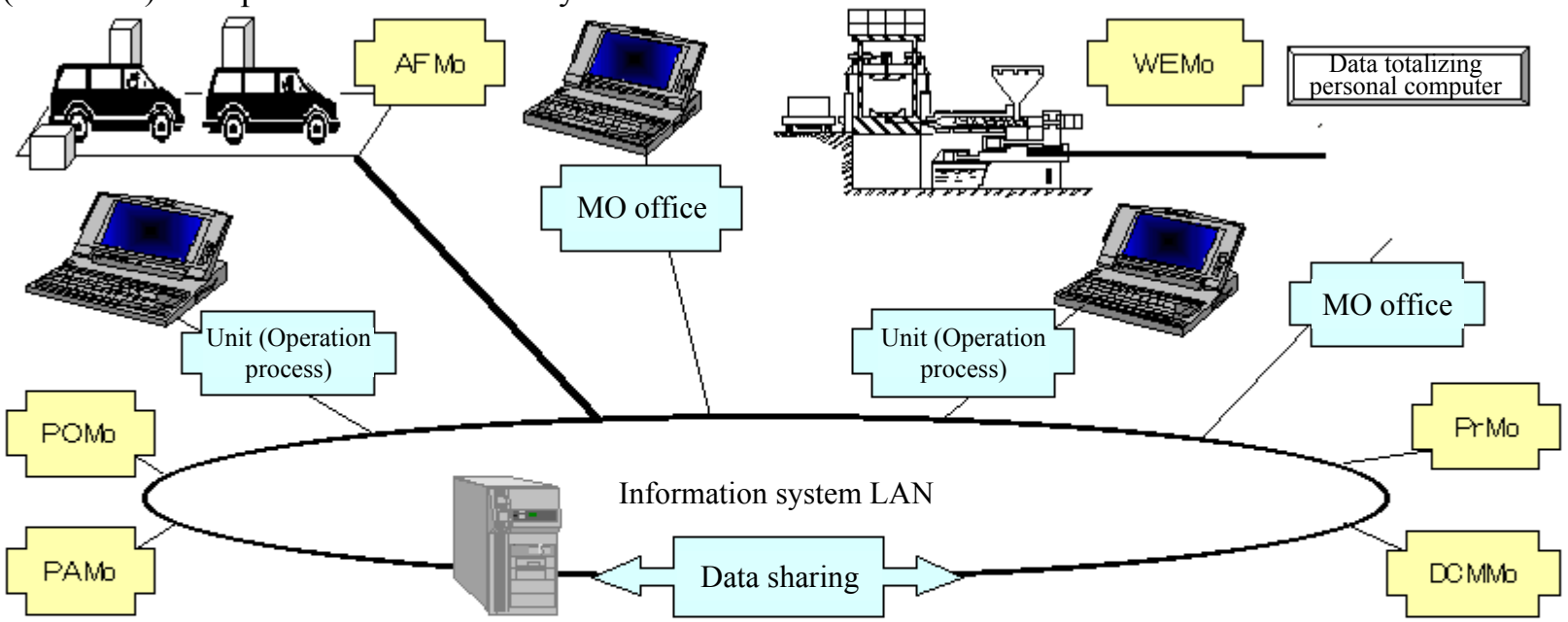
Establishment of Honda LCA System

Saitama Works has established the relevant system, which is being horizontally spread to other works.

Adoption of electric power measurement system

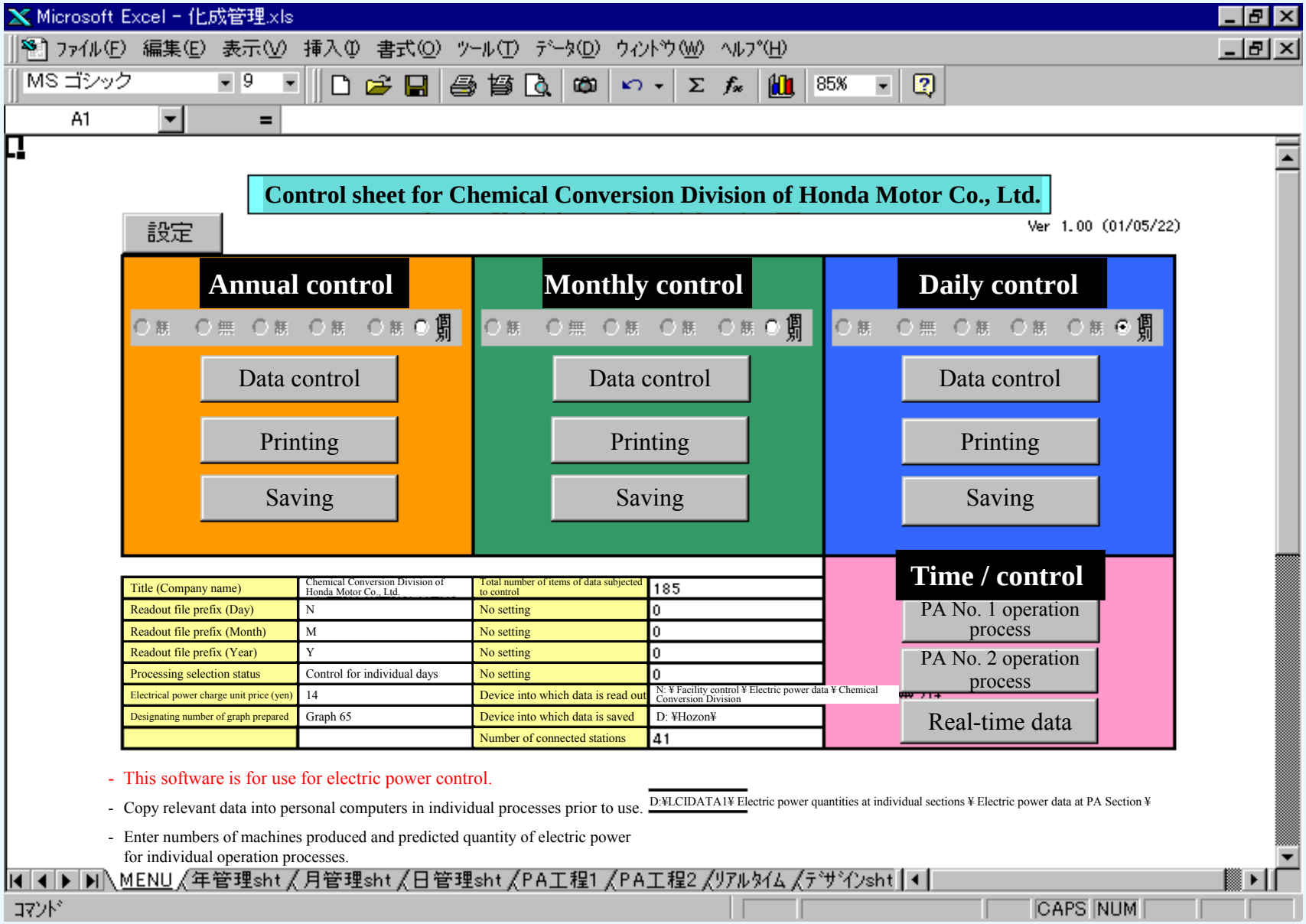
1999
|
2001

◎ An electric power monitoring system will be adopted to share data by LAN, thereby permitting all sections (Mo / UN) to implement control / analysis.

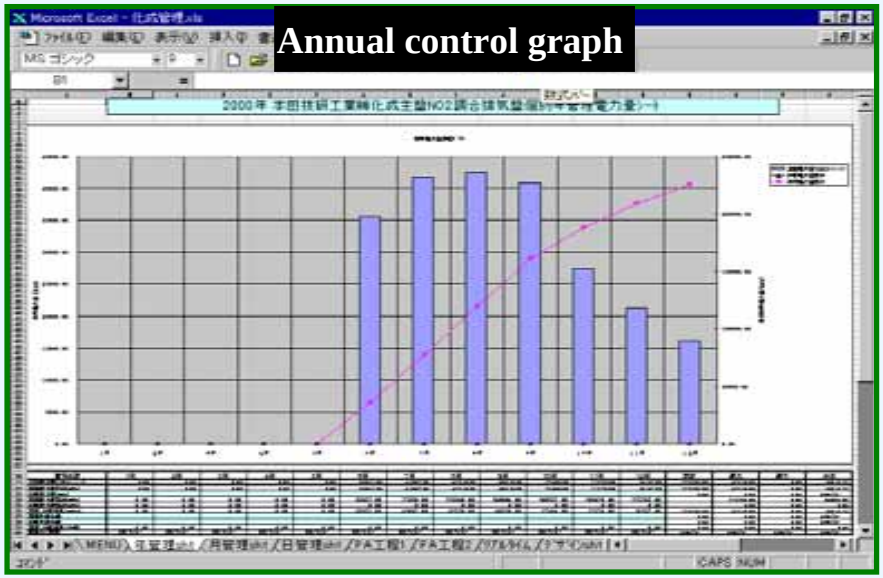


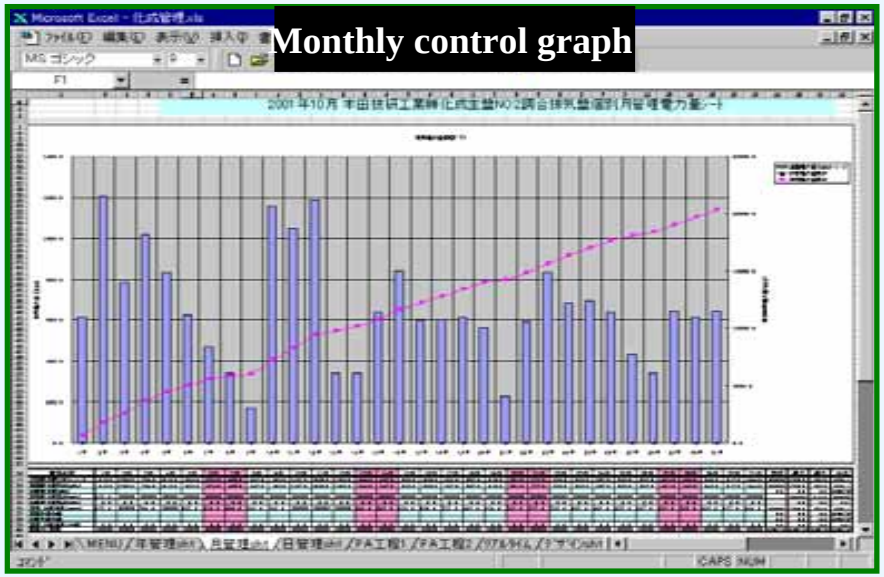
Item	Type of data	Application area	Purpose	Remarks
1) Shared data on electric power	(1) Electric power integration data by the minute	Each individual organizational unit / operation process	Control of budgets and actual expenditures for electric power charges	Each module and unit will control energy consumption on an individual basis, and will continuously promote energy saving activities by utilizing the LCI technique.
	(2) Monthly integration data by the day	Each individual organizational unit / operation process	Electric power charges (Budget control)	
	(3) Monthly data by the day	Each individual organizational unit / operation process	Efficiency control	
	(4) 24-hour data by the hour	Each individual organizational unit / operation process	Standard electric power / loss analysis	
2) LCI analysis technique	This is a procedure whereby the above data are analyzed to bring loss to light.	Each individual organizational unit / operation process	Elicitation of electric power loss	
		Each individual process	Confirmation of energy saving effectiveness	

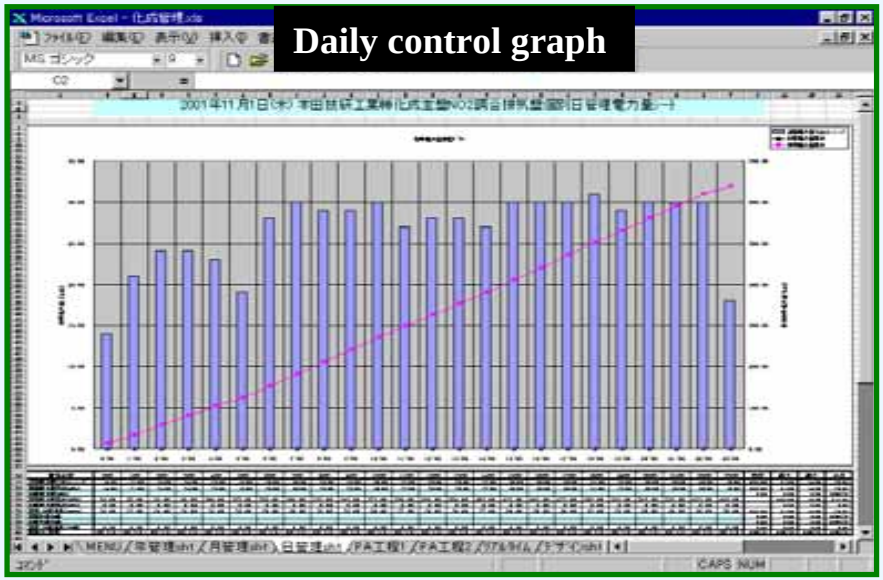
Electric power consumption indication control for individual operation processes, Part 1

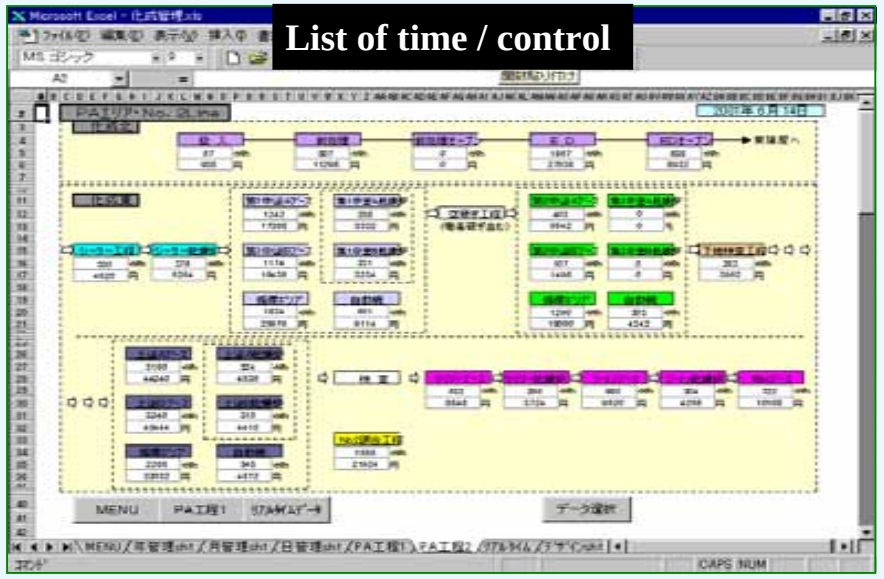


Electric power consumption indication control for individual operation processes, Part 2



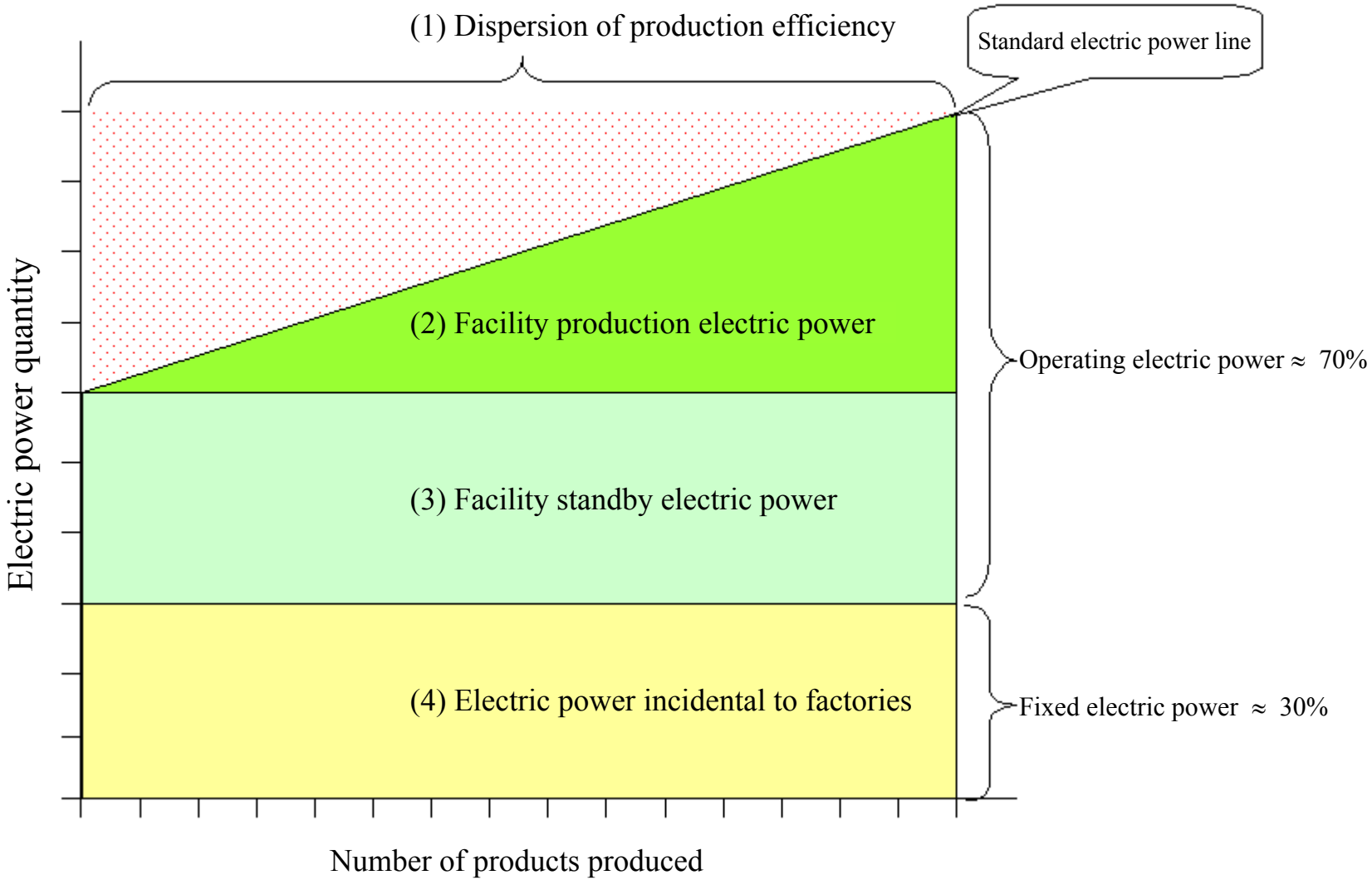






Method of grappling with energy saving

Electric power consumption is stratified and analyzed (subjected to LCI).

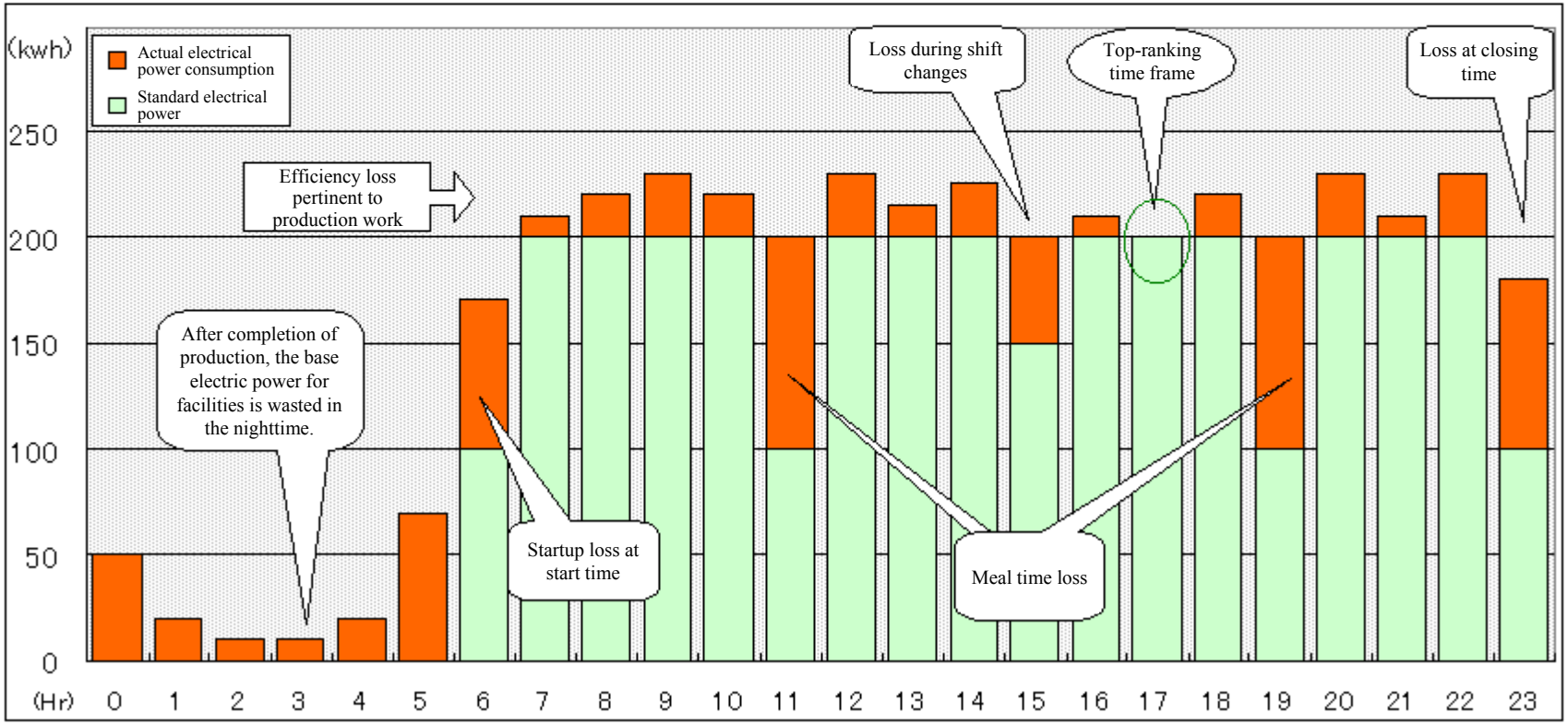


Analysis of electric power consumption per day

(Operation process analysis → Methods of extracting / addressing tasks regarding losses brought to light

Operation process	Stratification of losses	Analysis promotion framework / methods	Description of loss (problem)	Difference analysis	Situation as it should be	Predicted effectiveness	Standardization / required resources
Line No. 1 air conditioning	(1) Operating rate (2) Load factor		(1) Electric consumption reduction is small during production downtime occasioned by breaks / noon recesses	Blower / exhaust fans in various areas are in operation.	Airflow is reduced.	50 (kwh/D)	

Standard electric power (theoretical production electric power) = [Minimum electrical power consumption per machine] × [Production time (minute)]



Instance of energy saving, Part 1 (Reduction of lighting equipment)

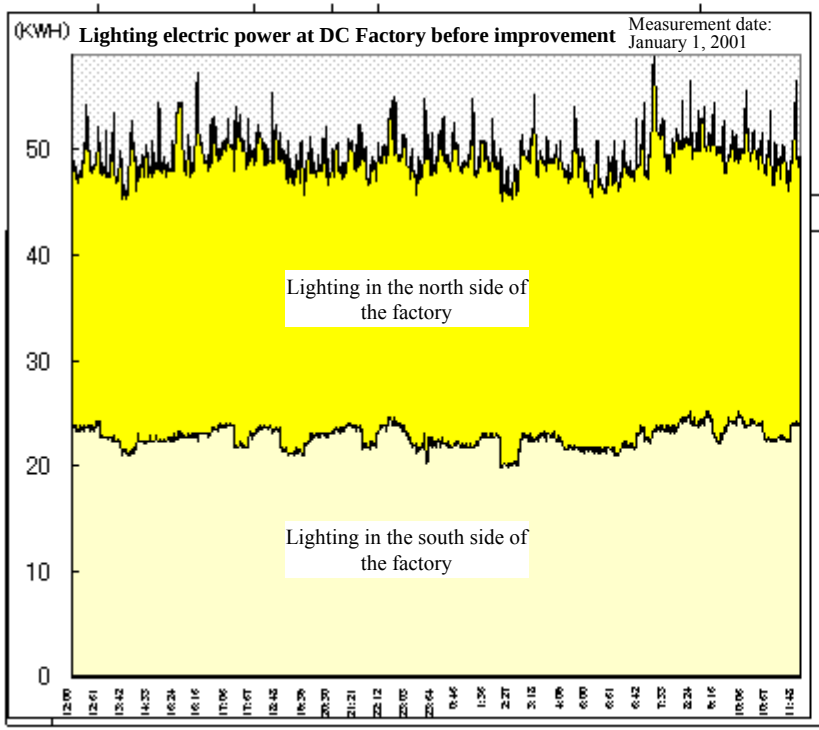
(DCM)Mo

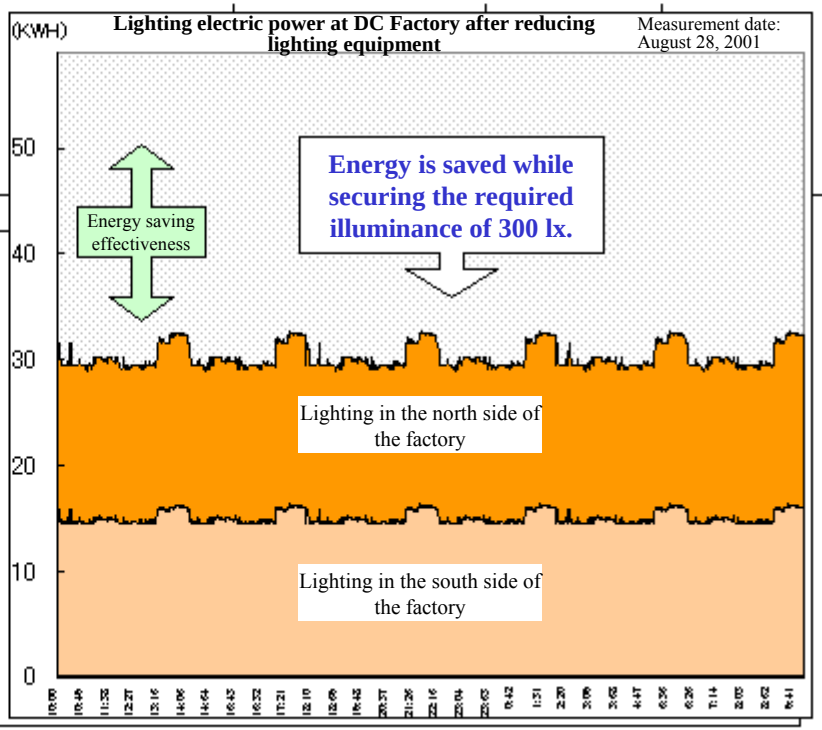
(Operation process analysis → Methods of extracting / addressing tasks regarding losses brought to light

Approved by	Checked by	Prepared by
DCM 八木	施設 竹花	高橋

Preparation date: August 28, 2001

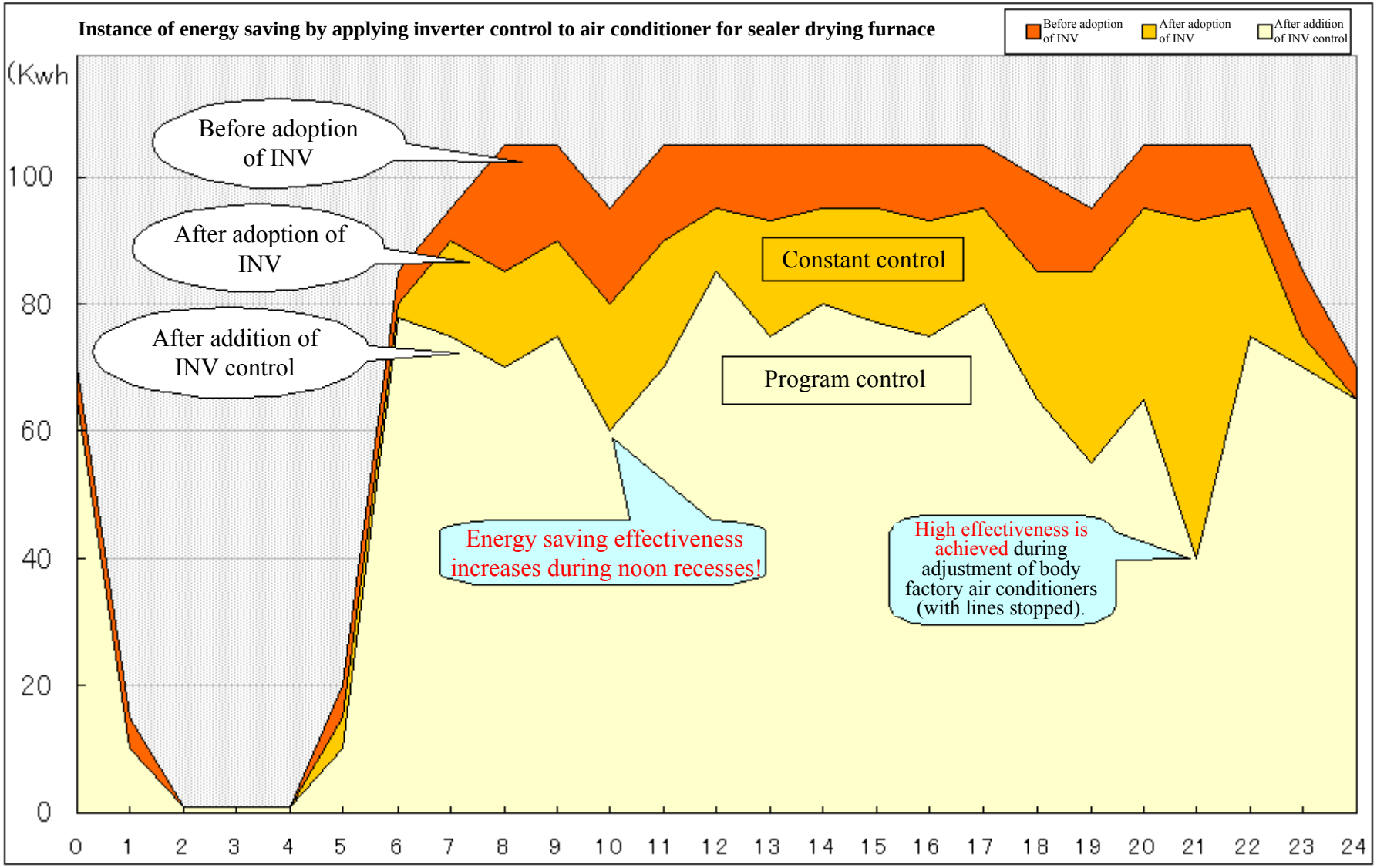
Operation process	Stratification of losses	Analysis promotion framework / methods		Description of loss (problem)	Difference analysis	Situation as it should be	Predicted effectiveness	Standardization / required resources
Lighting equipment at DC factory	Energy saving techniques	Staff mem-bers		Electric power for lighting in factories is 50 kwh, which is consumed for 24 hours a day.	Seven mixed lighting devices are installed in the factory. The illuminance on the passageways is not less than 400 lx.	The number of lighting device on the passageway was reduced from 32 to 16.	One device = 700 w Number of devices removed = 16 = 11.2 kw = 269 kwh/day	= 5,380 kwh/month = 64,560 kwh/year = – 570 thousand yen





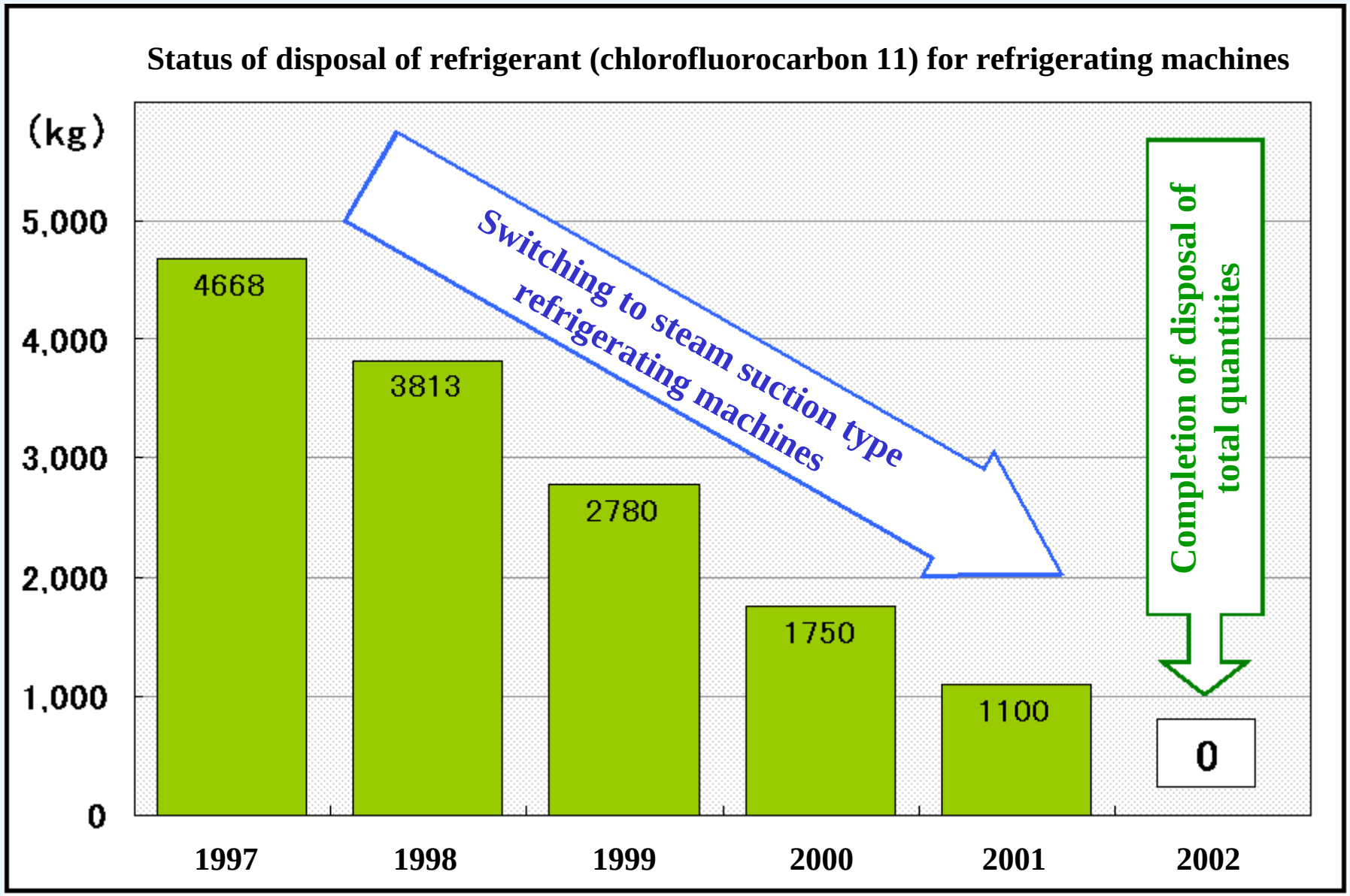
Instance of energy saving, Part 2

1) Improvement of the system in such a way as to provide high-efficiency inverter control



Promotion of use of non-chlorofluorocarbon

(Reduction of substances destroying ozone layers)



Adoption of “ammonia refrigerant” in ice thermal storage refrigerating machine

Background

- The production of specific chlorofluorocarbons was discontinued in December 1995.
- Specific chlorofluorocarbons have a significant effect on the global environment.
- Of all the relevant facilities at Saitama Works, only one facility still uses a specific chlorofluorocarbon.
- A refrigerant other than a chlorofluorocarbon is required for new facilities.

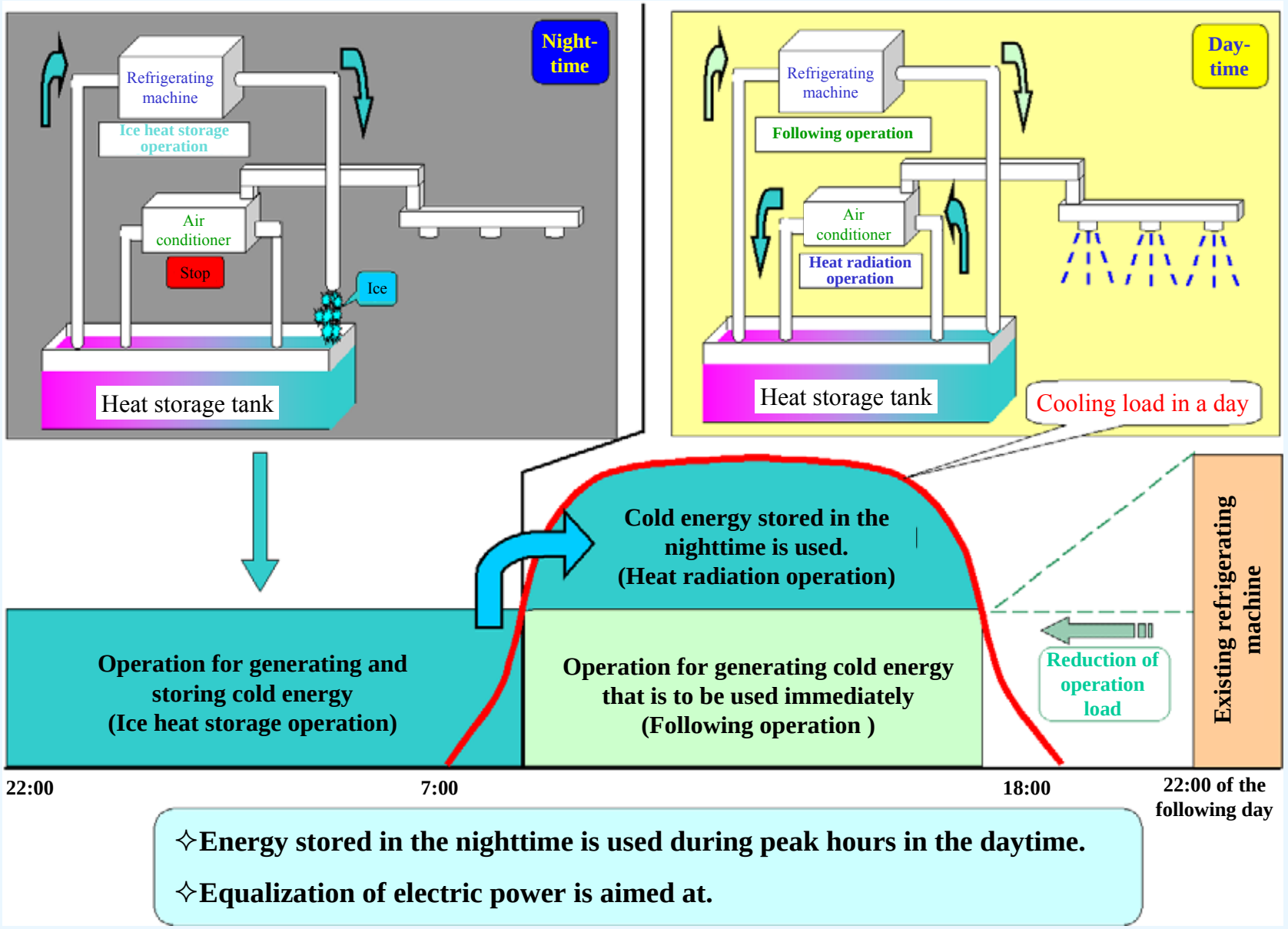
Purpose

- A selection will be made of a refrigerant which replaces any of the specific chlorofluorocarbons and which does not impose a heavy load on the global environment.
- Quantities of electric power used will be equalized, thereby alleviating burdens on public energy.

Effects

1. By abolishing chlorofluorocarbon, the load on the global environment was reduced, and “carbon dioxide was decreased by 28 tons per year.”
2. 1,400 kw of electric power was equalized, and “the electric power cost was reduced by 30 million yen per year.”

Concept of heat storage system

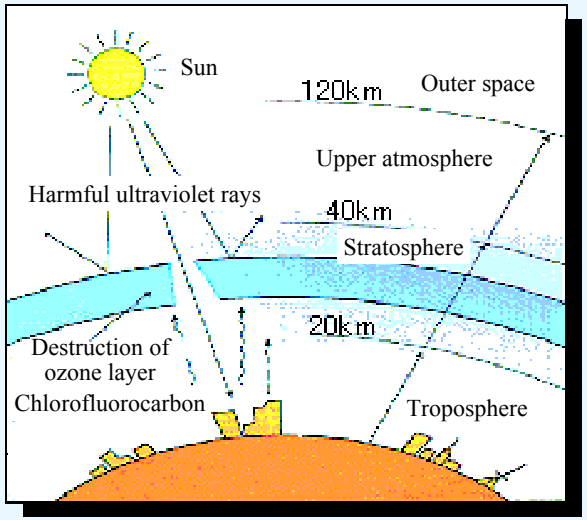


✧Energy stored in the nighttime is used during peak hours in the daytime.

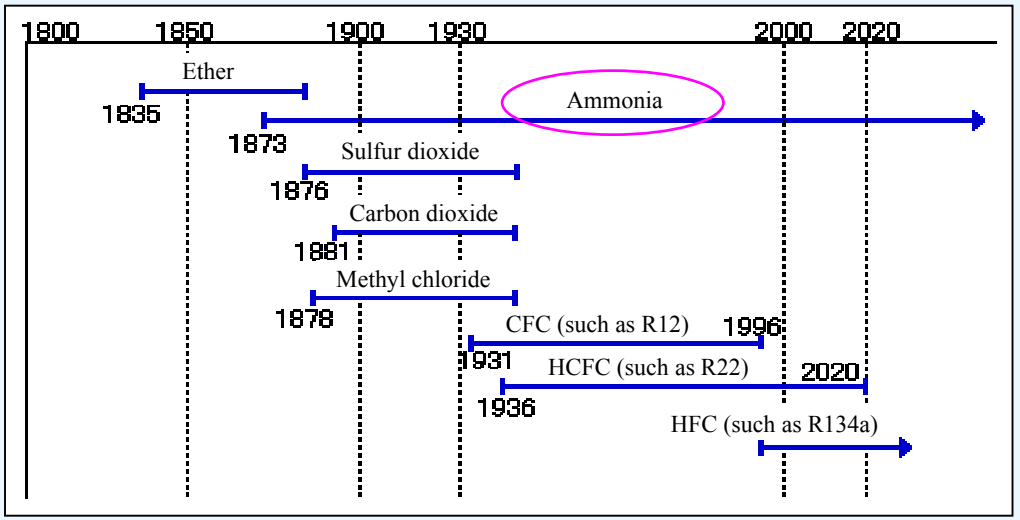
✧Equalization of electric power is aimed at.

Chlorofluorocarbon control and ammonia refrigerating machines

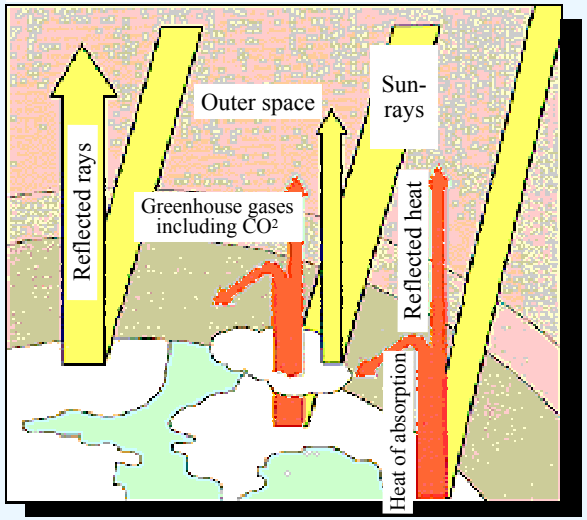
●Substances destroying ozone layers



●Changes of refrigerants



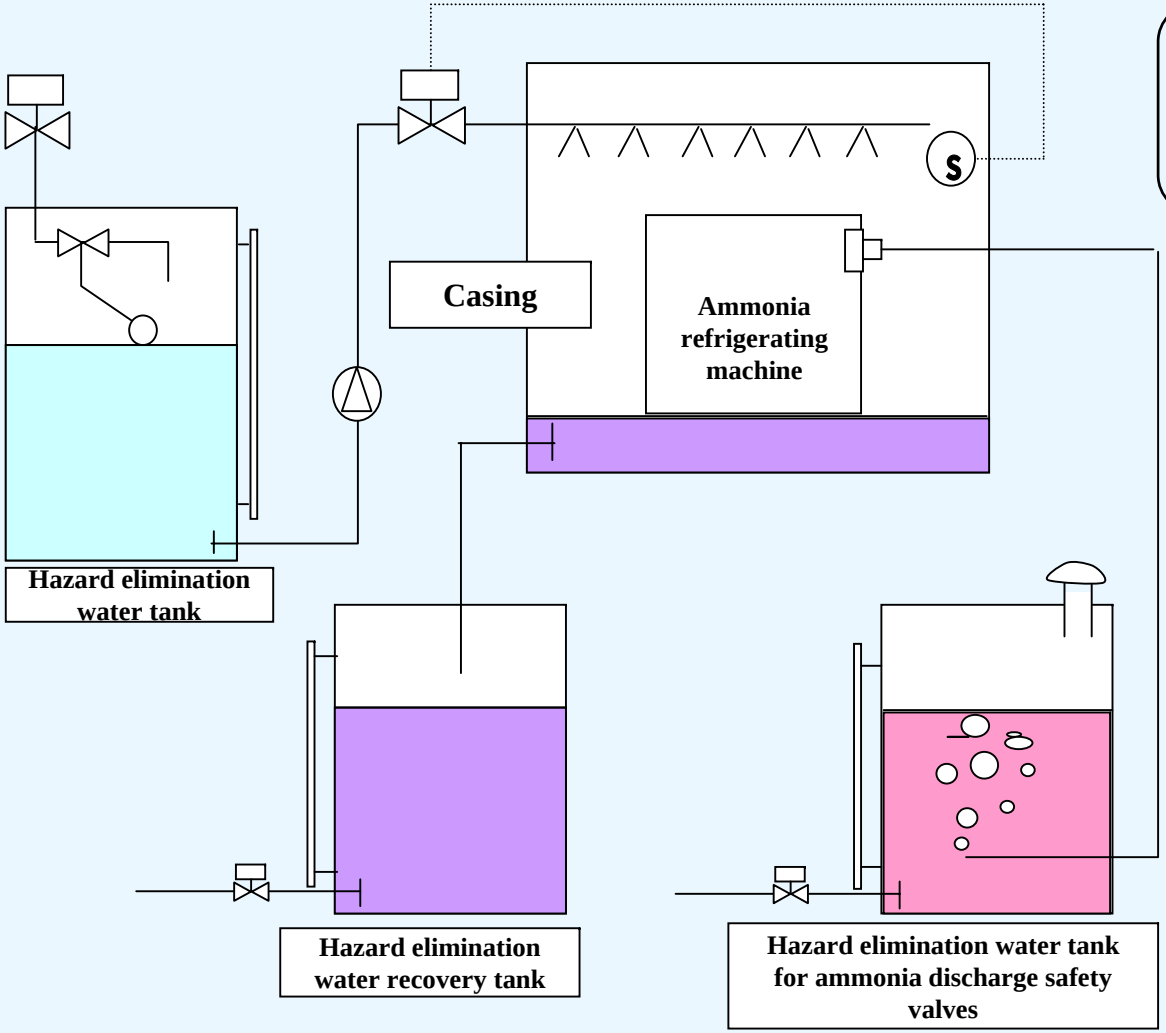
●Global warming issue



●Characteristics of refrigerants

Refrigerant	Ammonia	HCFC−123	HFC−134a
Ozone depletion potential (ODP)	0	0.02	0
Global warming potential (GWP)	0	93	1,300
Toxicity	Toxic (highly poisonous)	Toxic (highly poisonous)	Toxic (weakly poisonous)
Flammability	Flammable (Flame-retardant)	Not flammable (noncombustible)	Not flammable (noncombustible)
Related laws and regulations	High-Pressure Gas Law Fire Defense Law	————	High-Pressure gas
Others	Hazard elimination facilities are required.	Emission control is imposed, which is to be newly abolished in its entirety in 2010.	Emission control is imposed.

Ammonia refrigerating machine hazard elimination facilities



Unlike in the case of conventional refrigerating machines, it is necessary to take countermeasures against ammonia leakage.

- **Casing for refrigerating machine room**
- **Hazard elimination water tank for dilution**
- **Tank for recovering hazard elimination water in the event of leakage**
- **Hazard elimination water tank for safety valves**

Implementation of creation of a forest in the home province

Area beside the safety gate as it was when trees were planted (1976)

Trees were planted in 1976 under the slogan "Let's create a forest in the home province with trees of the same province."

- **Planted area: 57,000 square meters**
- **Number of trees planted: 57,834**

Predicted CO^2 absorption effect ≈ 460 tons/year (One tree: 8 kg/year)

Sound insulation effect: 5 dB

Area beside the safety gate as it is today (2004)

Trees have grown to form a forest rich in green.

Saitama, a Land of Rich Colors

Saitama, a Land of Rich Colors — Fiscal year 2003

Business Establishment Implementing Environmental Conservation

Saitama works, Honda Motor Co., Ltd.

Declaration on Enhancement of Ecology

Saitama, a Land of Rich Colors

Business Establishment Excellently Implementing Environmental Conservation

This is to certify that your business establishment is a “Business Establishment Excellently Implementing Environmental Conservation in Saitama, a Land of Rich Colors” in that your business establishment has produced superb results in such a way as to be a model for other business establishments that made a declaration on enhancement of the ecology of Saitama, a land of rich colors, by way of addressing global environmental conservation activities.

February 27, 2004

Kiyoshi Ueda
Governor, Saitama Prefecture