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The clear path to operational excellence



Manufacturing Line Energy Management System Utilizing IT to Eliminate Waste -Energy Saving Activity in Kofu Factory-

Feb. 25, 2010

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Yokogawa Manufacturing Corporation



YOKOGAWA *in ASIA*

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YOKOGAWA ◆



Location of Kofu Factory

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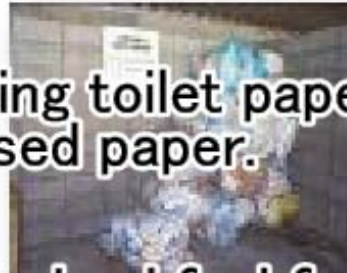




Activity on Reuse and Recycle in Kokubo Industrial Park (Operated by 23 companies)

Step 1

Re-producing toilet paper from the used paper.



KOKUBO
KOKUBO INDUSTRIAL PARK

Step 2

Making refuse-derived fuel from recovered waste plastic and woodchip



Step 3

Turning raw garbage from cafeteria into compost.



Step 4

Utilizing the pulp mold forming packing material



And More...

Plant cherry trees at Kamata riverside.
Discussing about construction of bio-mass power station utilizing forest thinning.



The YOKOGAWA Group's Environmental Management

The Yokogawa Group's two goals of its environmental management are
1) to reduce the environmental burden of the Group's business activities and
2) to reduce the environmental burden of customers' business activities.
The Yokogawa Group is proactively implementing environmental activities in all business areas to integrate the activities for reducing the environmental burden into our daily business operations.





YOKOGAWA's Concept - Vigilantplant



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Vigilantplant brings customers to the excellent plant with new possibilities for a more integrated plant operation.

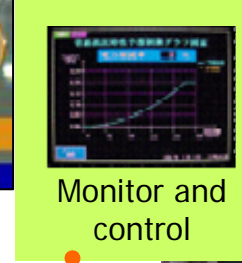




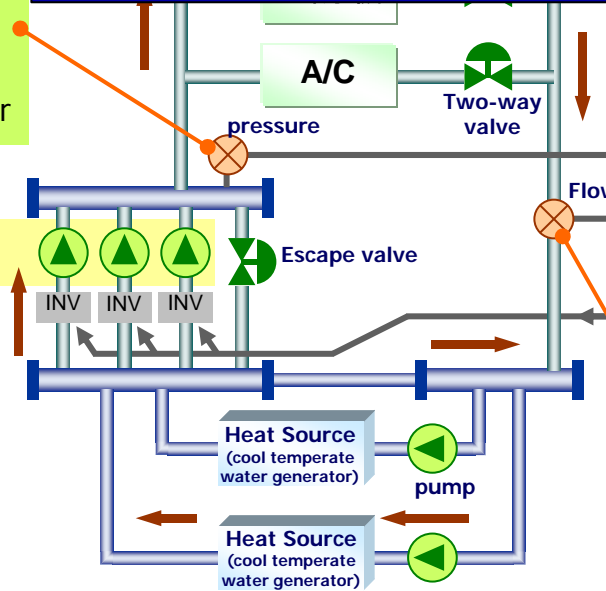
Model Production Facilities



Energy Saving Award



Pump





Environmental Conservation Activity in Kofu Factory

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MIND

- Reduce/Reuse
- Plant trees/Greening



TECHNOLOGY

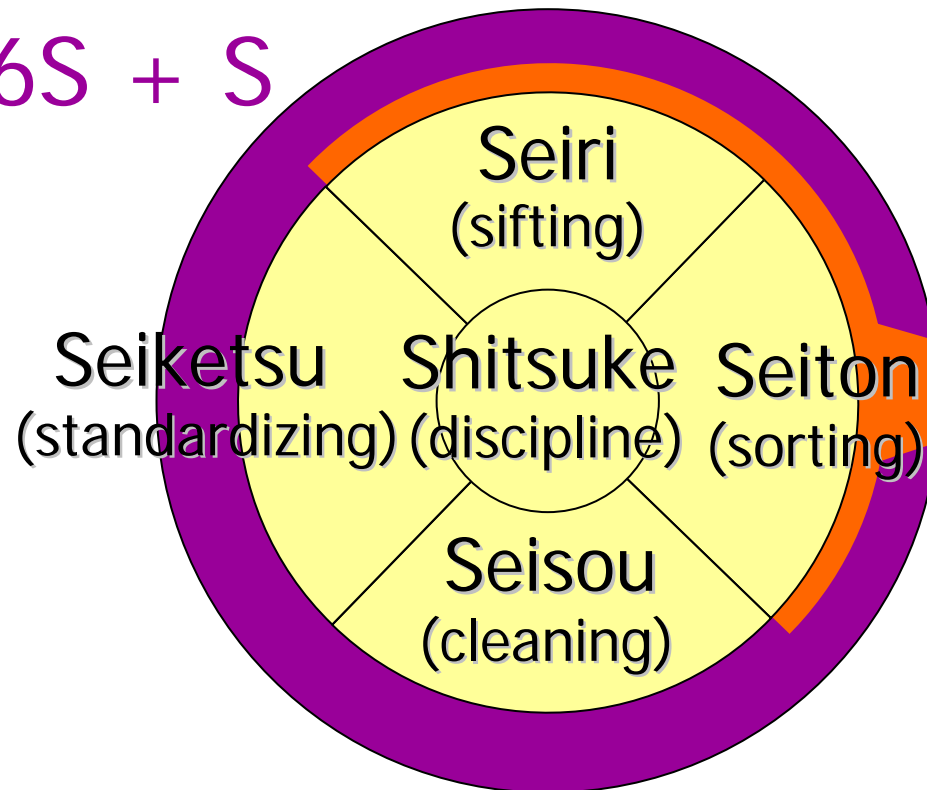
- Eco Friendly Design
- Utilizing our products for environmental conservation
- Recycle Technology
- Energy Saving System

SYSTEM

- ISO14001
- Environmental Accounting
- Law System
- Tax System

Everyday activities are essential for manufacturing improvement, likewise environmental conservation!

6S + S



Visual Management

Safety + Sense



YOKOGAWA



Himalayan cedar

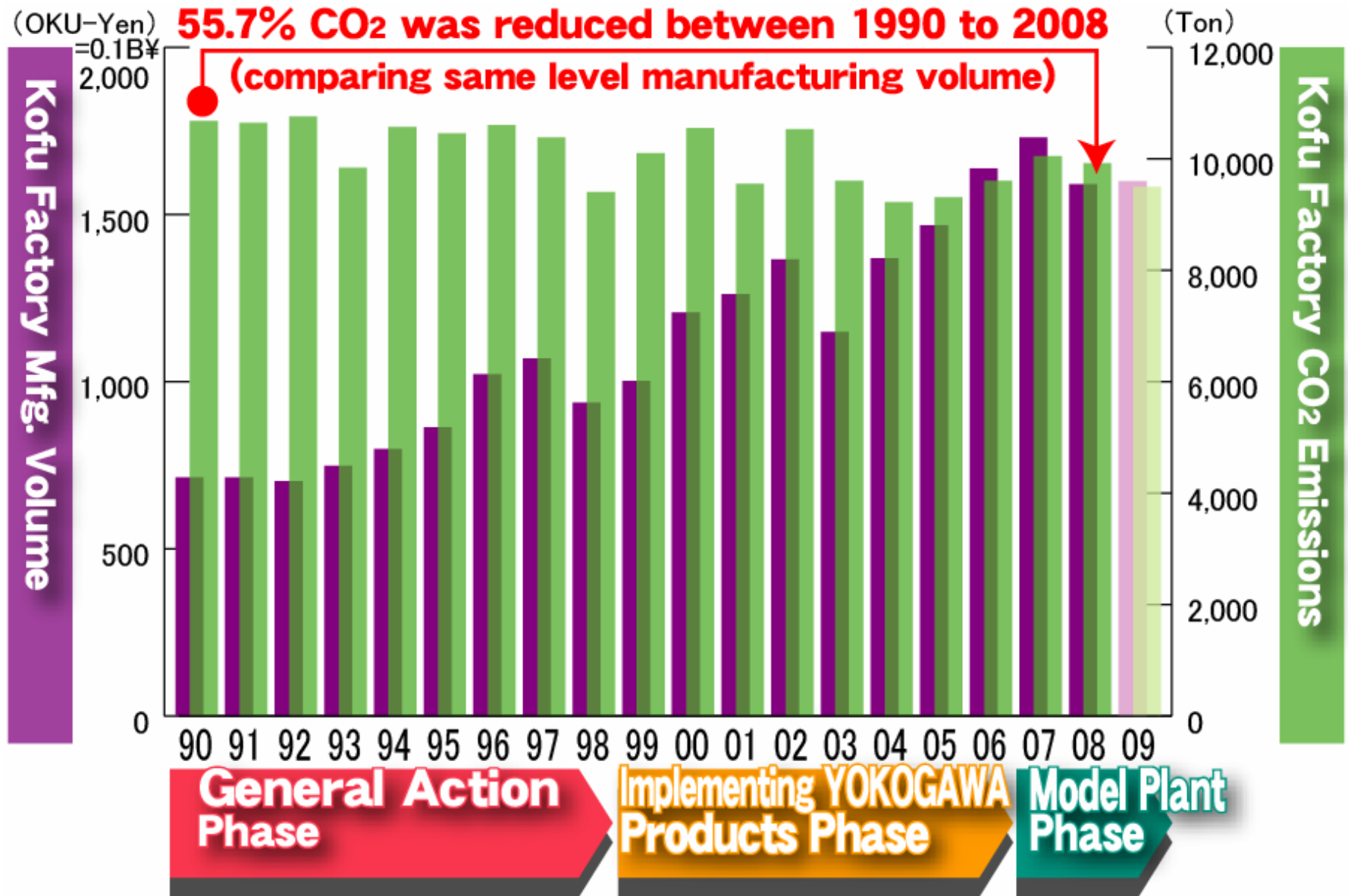
Planted as the symbol of our environmental conservation activity in 1974 when Kofu Factory was established

Main entrance of Kofu Factory





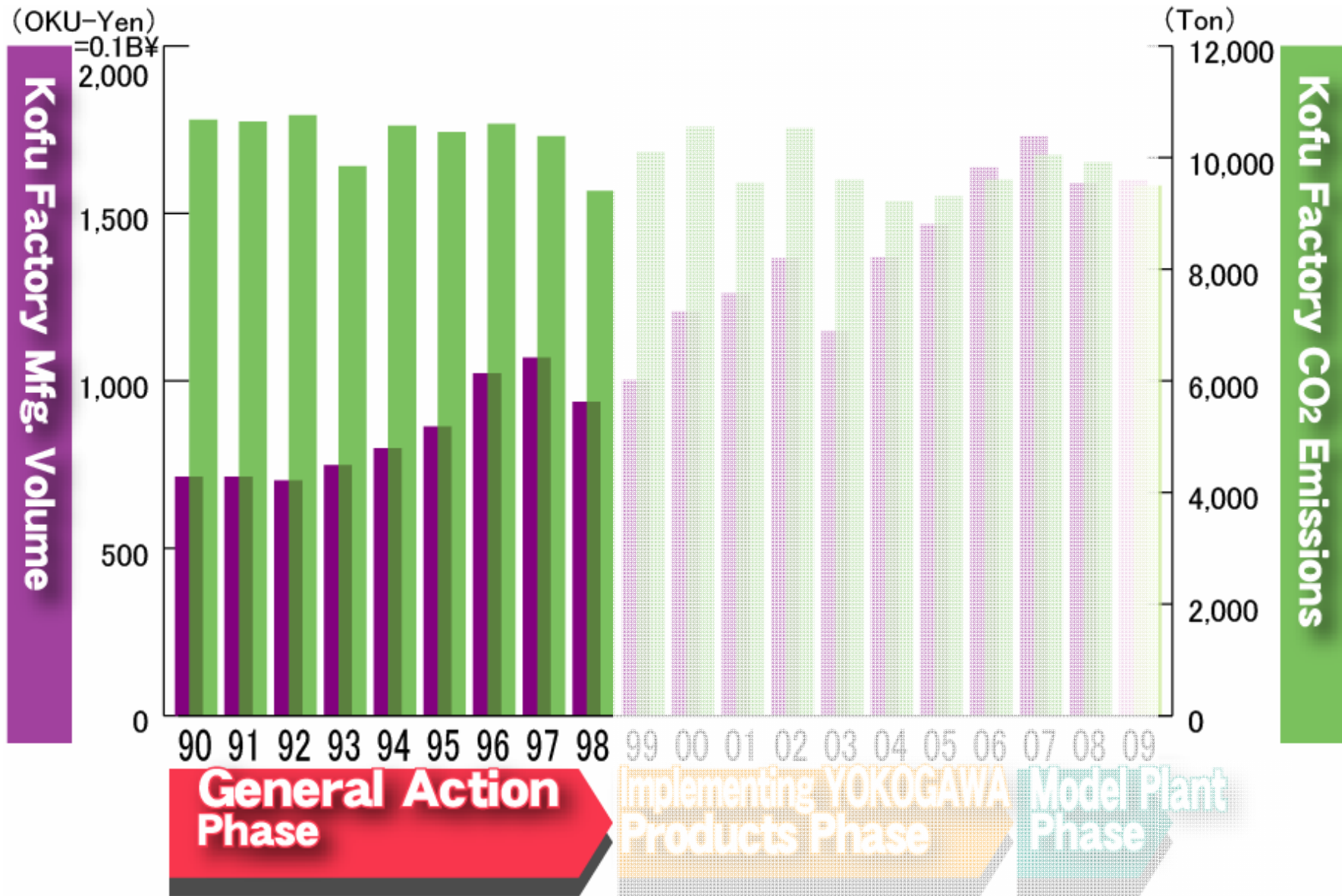
Energy Saving Activity Result for Kofu Factory **vigilantplant**®





General Action Phase

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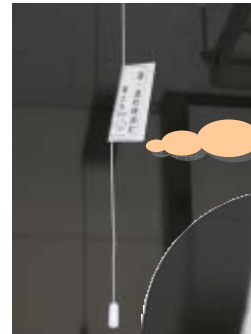


■ Reduction of light power



Sensor to detect people

Inverter light



Define who turn lights off



Thorough lights out at break time

■ Inverter-driven fan pump



Scrubber



Inverter control

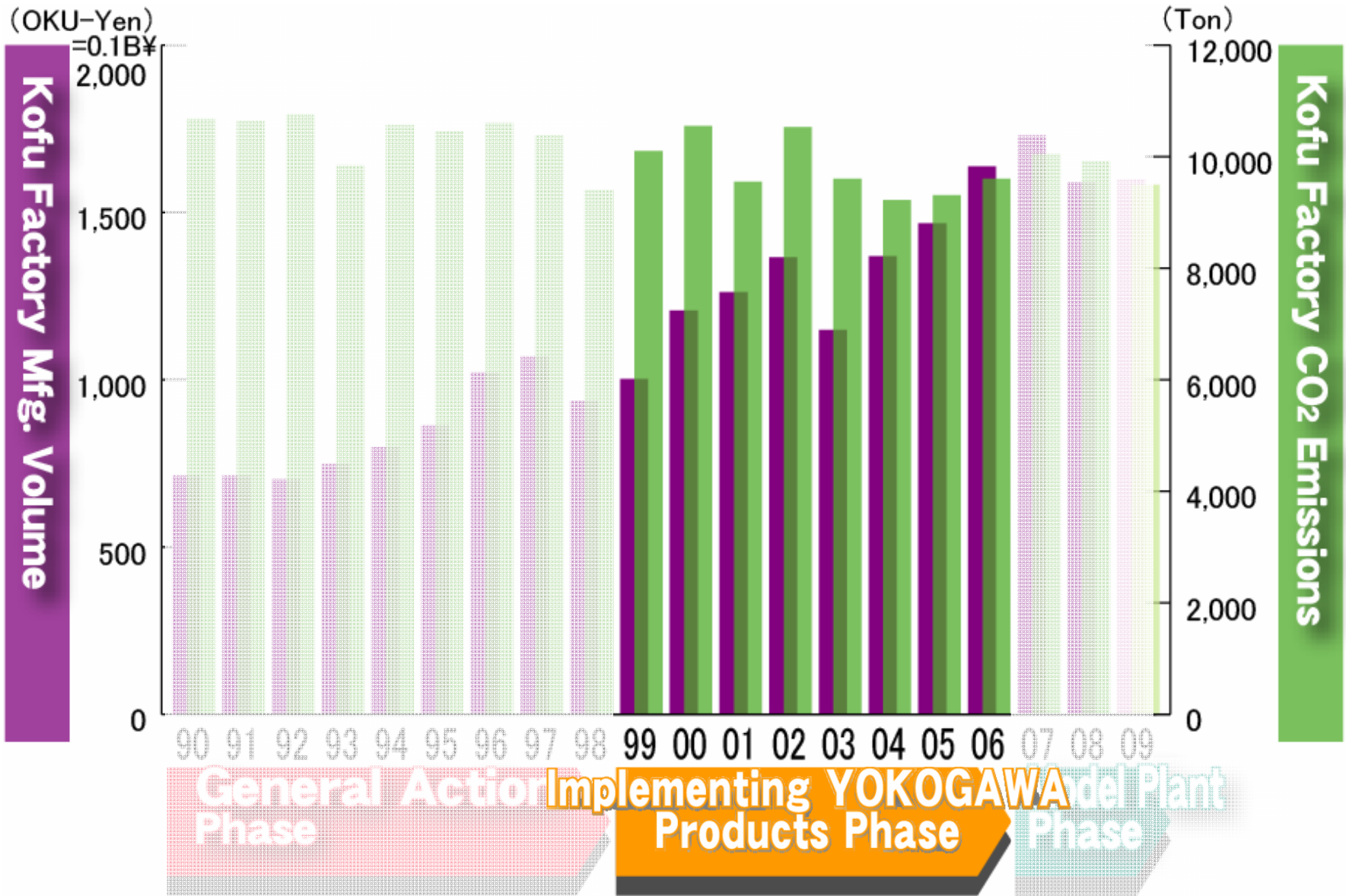


Water pump

Inverter control



Implementing YOKOGAWA Products **vigilantplant**[®]





Energy Saving System in Kofu Factory **vigilantplant**[®]

エコパイロット
Econo-pilot

Energy-saving control equipment
for cool temperate water pump



InfoEnergy

Control drainage equipment



InfoEnergy

Monitoring air flow
and air pressure



エコパイロット
Econo-pilot

Compressor control
equipment



InfoEnergy

Distributed energy control



Air isolation
valve

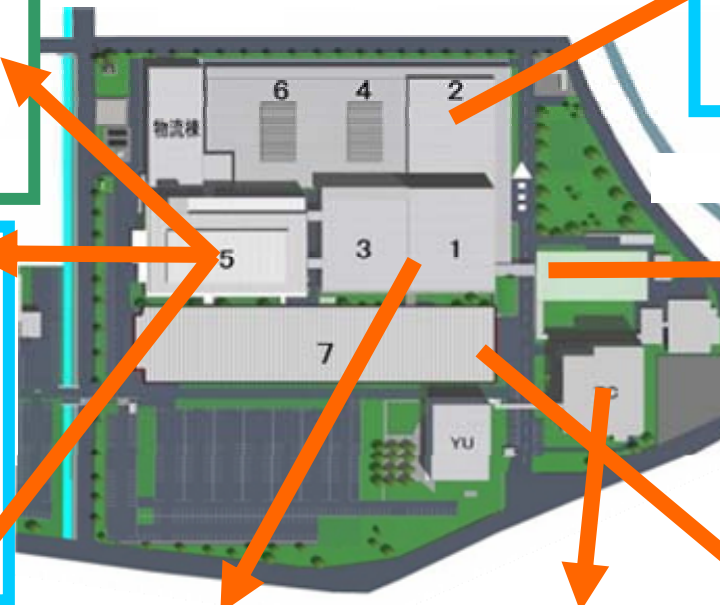


Solar energy
generation



Enerize E3

Show operational status
by specific energy
consumption

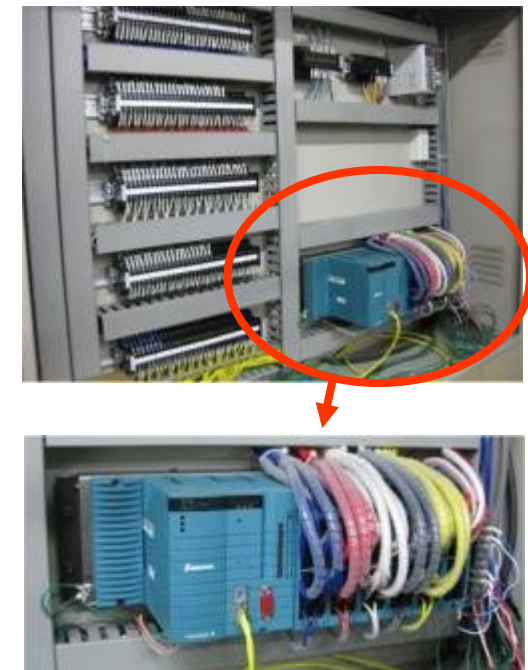
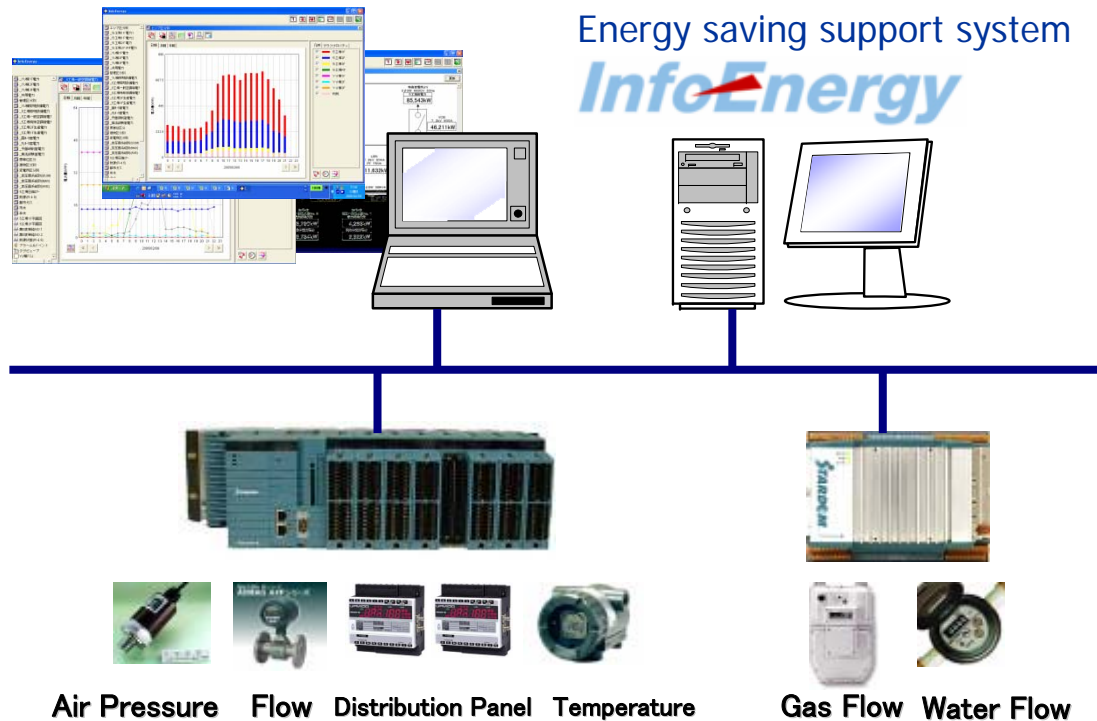




**SEE
CLEARLY**

InfoEnergy is an energy saving support system for plant. This is the distributed EMS (Energy Management System) which can be flexibly phased-in. The on-board automatic controller in the line is EMS loaded. The EMS data is available on web browser. It enables to monitor, manage facilities, and control from the remote.

- Show the waste of energy
- Introduction cost reduction utilizing intranet



Utilized for quantification of result, ISO management, alarm and implement of energy saving



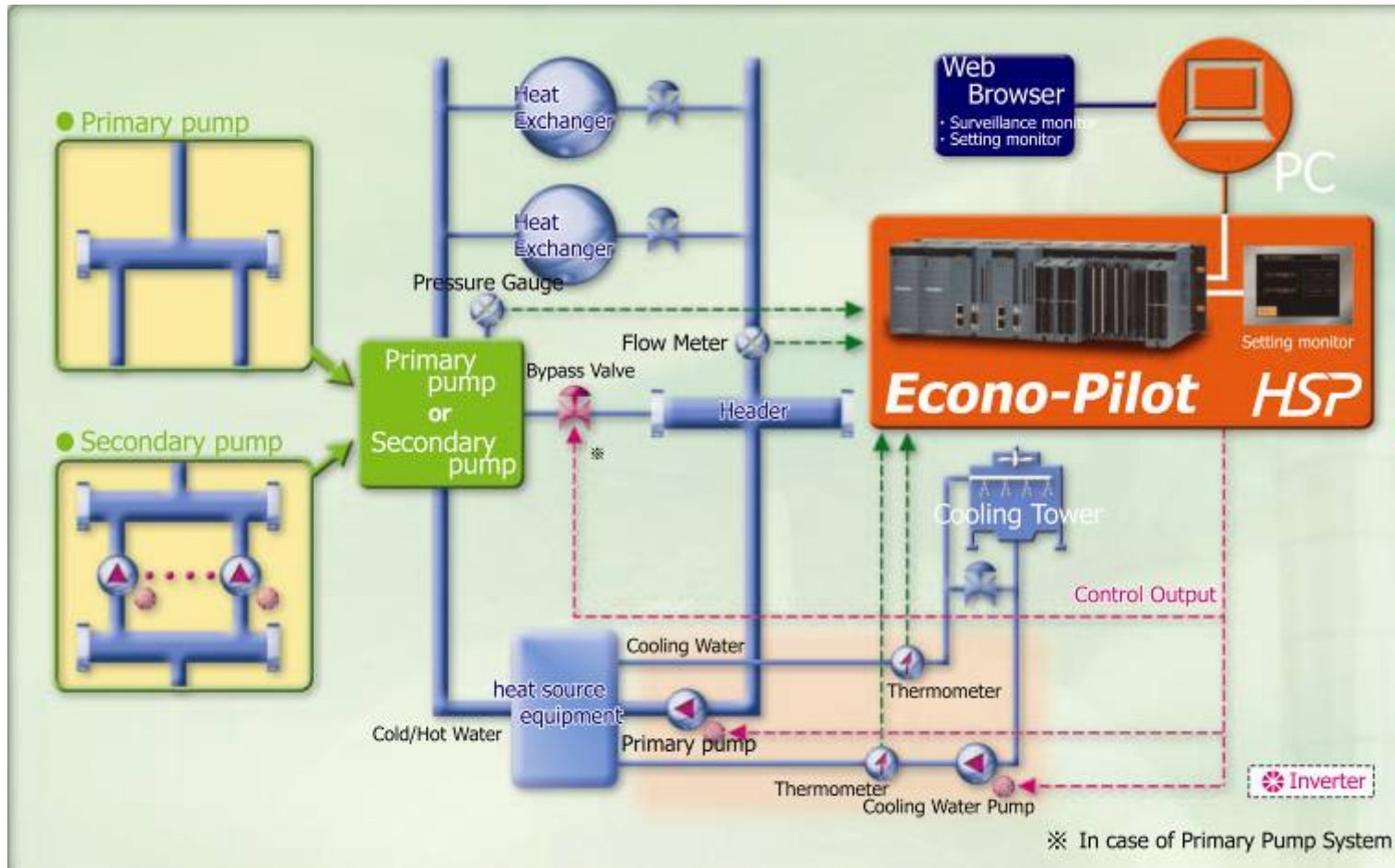
エコパイロット

Water Pump Energy Saving Control System

vigilantplant.®

KNOW
IN ADVANCE

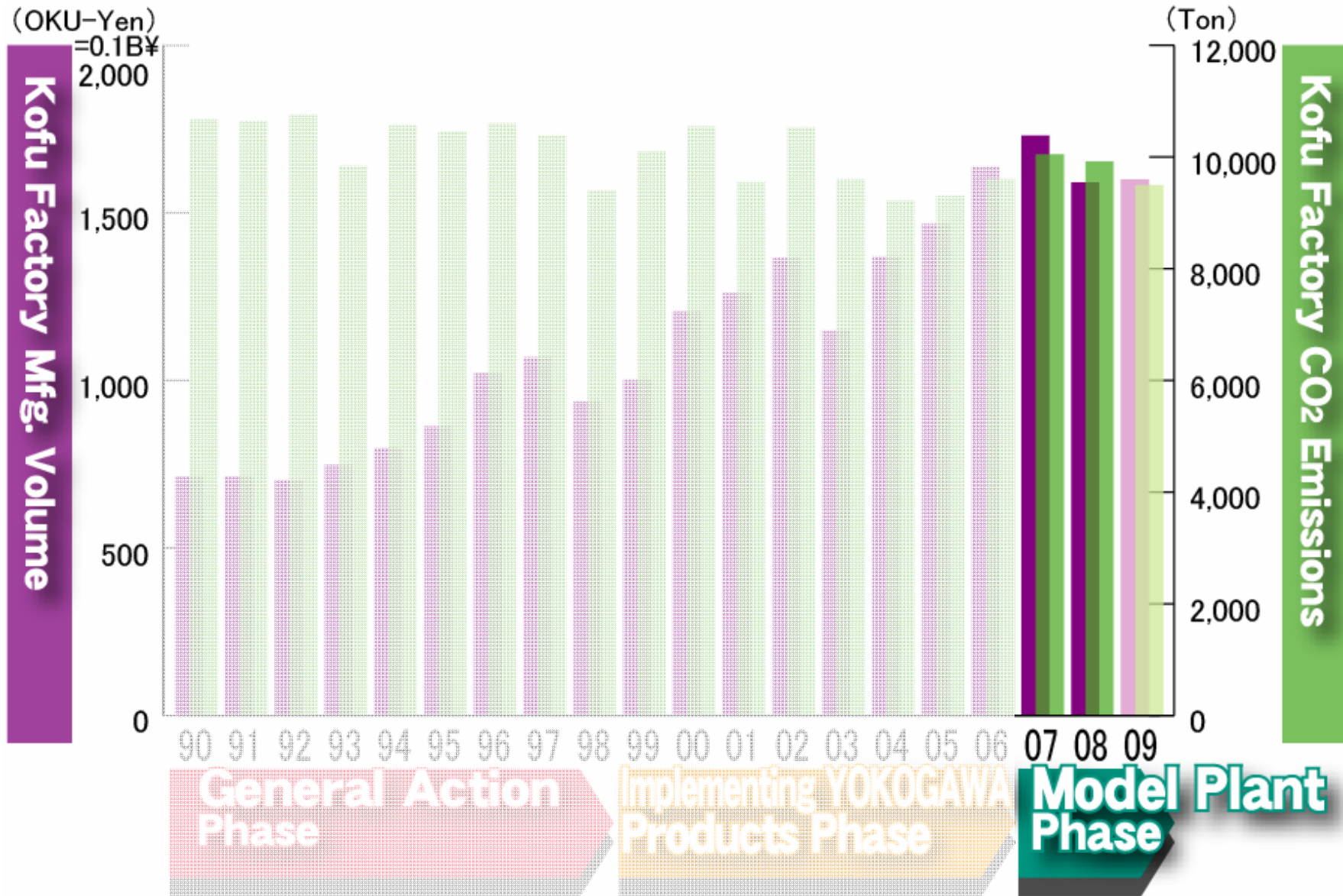
Econo-Pilot is energy saving control system for the A/C secondary pump to outflow the cool temp water. By optimizing the pump revolution for the water flow, maximum 60 to 90 % energy saving will be brought out.





Model Plant Phase

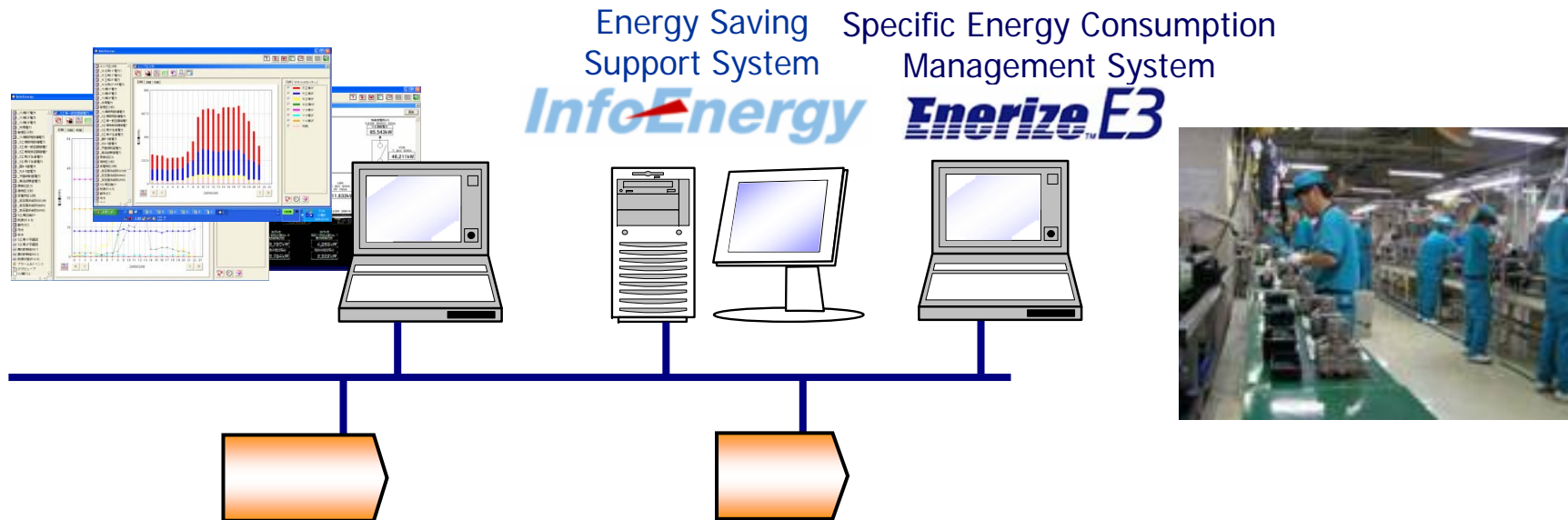
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**SEE
CLEARLY**

Enerize E3 visualize the energy and manufacturing information, analyze the energy KPI, and optimize the energy operation to improve the manufacturing efficiency.



- Tabulating energy and manufacturing data in real time
- Figuring out the energy usage of each line, process and equipment
- Computing specific energy consumption

1. Showing how much the specific energy consumption used for manufacturing one product



Clarify the waste

2. Charging based on the energy usage of each line and process



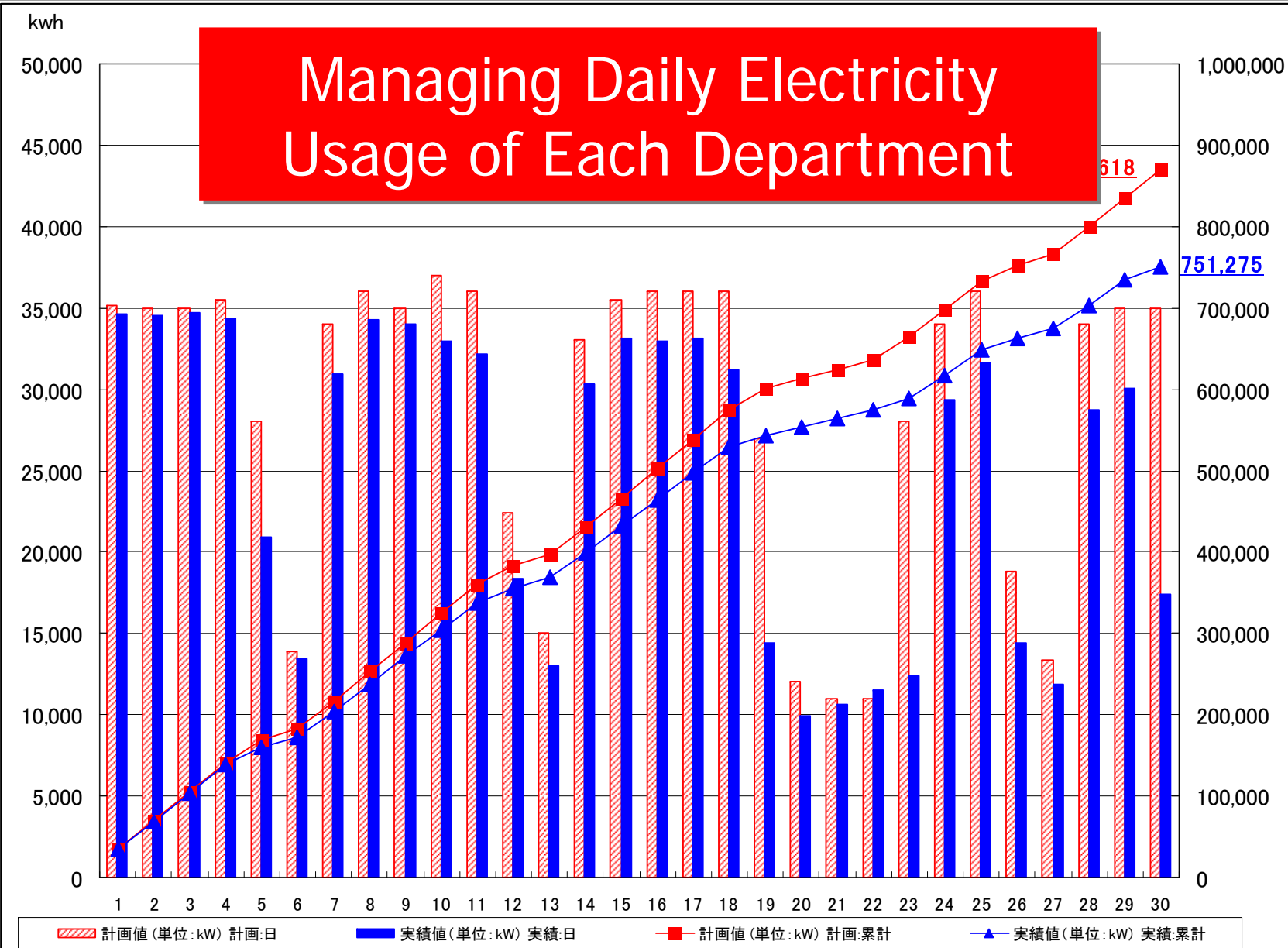
Reflect it on manufacturing cost

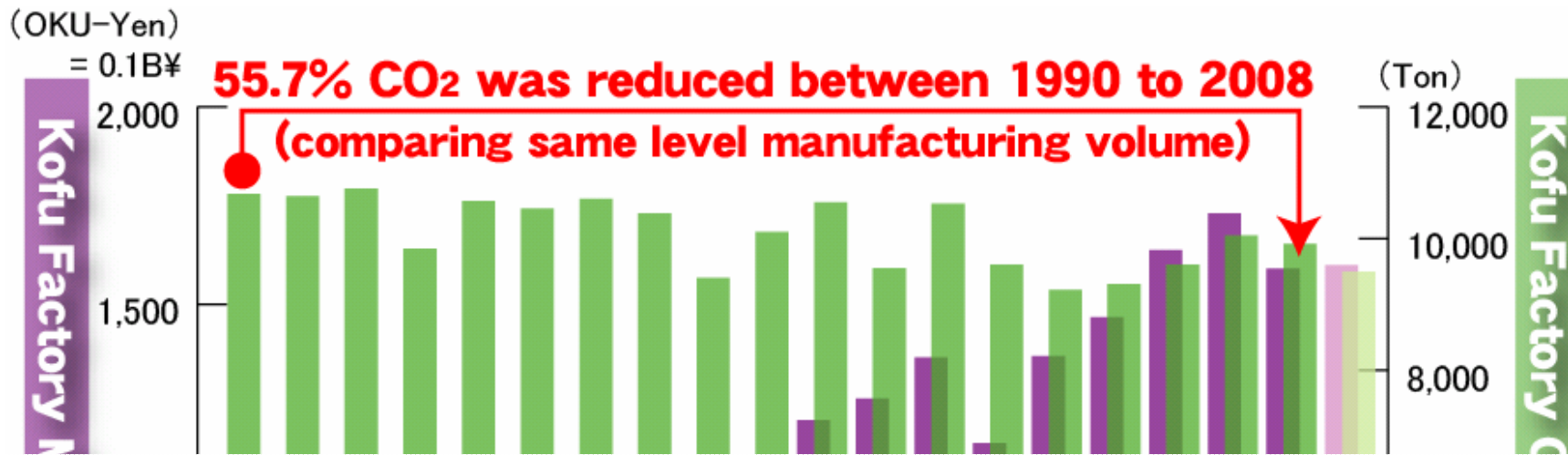


Mind-set of all employees changed

By seeing improvement , reducing manufacturing cost,
and increasing the profit!







Energy Saving Result : 4M US\$ (1998-2008)

Kofu Factory tour visitors : 8,063 visitors
 (Apr.2006 – Jan.2010)

< Visitor countries >

ASIA : China, Korea, Taiwan, Thailand, Malaysia, Philippines, Singapore, India, etc.

Europe : Germany, Netherlands, France, Belgium, Finland, Russia

America : U.S.A., Canada, Mexico, Brazil (Total 25 Countries)

*We are looking forward to seeing you
in Kofu Factory.*

