

Saving energy measures

Saving energy activities

We promoted saving energy activities by complete implementation of registered items regarding saving energy, and energy management in detail to achieve the reduction of energy unit requirement and carbon dioxide emission unit requirement at a rate of 1% or more annually on an average, which is the objective in the third saving energy activities.

However, in fiscal 2001, energy unit requirement increased by 6.3 %, and carbon dioxide emission unit requirement also increased by 6.3 %, compared with fiscal 1998, because of production amount decrease, sales price decrease and environmental improvement measures, in spite of reduction of energy consumption.

The outline of saving energy activities

The third saving energy activities
(fiscal 1999 to fiscal 2003)
Target year: fiscal 2003

Goal : energy unit requirement reduction by 5% or more for five years (compared with fiscal 1998)

Goal : carbon dioxide emission unit requirement reduction by 5% or more for five years (compared with fiscal 1998)

Goal : total carbon dioxide emission control under the level of fiscal 1990 (in fiscal 2010)
(These goals were set up in the voluntary action plan.)

Reference : energy unit requirement = equivalent crude oil to energy used / in-house yield
Carbon dioxide emission unit requirement = amount of carbon dioxide emitted / in-house yield

Examples of in-house saving energy measures

(The second saving energy top-runner campaign)

Plants	The name of theme in saving energy top-runner campaign	Saving energy effect		
		Crude oil conversion kℓ / year	Carbon dioxide t / year	Cost effect 10 thousand yen / year
Mukogawa	Saving energy by replacement of dehumidification equipment for blower of cupola	213	849	12,29
Funabashi	Reduction of cokes unit requirement for melting in cupola	580	2,430	35,56
Hirakata	Applying inverter to the fan of dust collector for arc furnace	191	275	8,64
Hirakata	Saving energy by the introduction of the new continuous thermal treatment furnace	660	1,324	20,17
Sakai	Saving energy activities on the layout change of machining line of connecting rods for V3300 engines	40	58	2,27
Shiga	Replacement of No 3 dust collector for high efficiency	153	220	7,84
Others	Other themes are saving energy in compressor, saving energy in lighting equipment, introduction of high efficiency equipments and so on.	603	864	44,23
Total		2,440	6,020	131,00



Lecture meeting on saving energy (Sakai coastal plant)

Energy consumption reduction

The energy consumption of Kubota group was 258 thousand kℓ based on crude oil conversion in fiscal 2001.

We reconsidered our company-wide energy management standards, and tried to improve our energy management levels, to meet amended Energy Conservation Law, as saving energy activities.

We are now developing Kubota saving energy top-runner campaign to discover new saving energy themes, stimulating saving energy activities following last year.

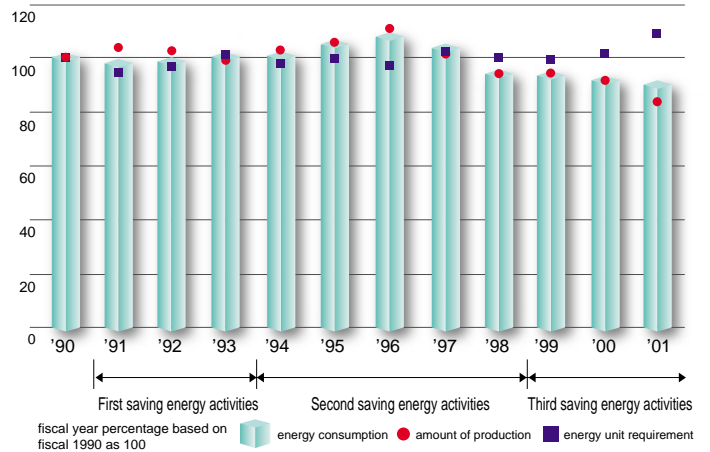
Sixteen ideas were applied for this campaign this year.

We reduced energy consumption by about 1 %, by conducting these ideas successfully.

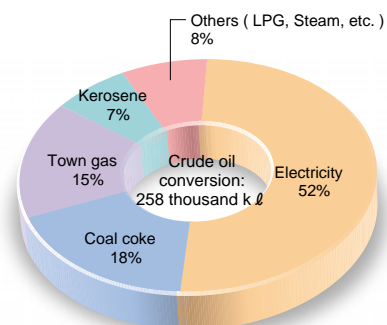
Typical saving energy ideas are as follows: Reduction of cokes unit requirement for melting in cupola, Saving energy by the introduction of the new continuous thermal treatment furnace adopting regeneration burner, Saving energy activities on the layout change of machining line, and Applying inverter to dust collector for high efficiency. We promote our saving energy activities, continuing saving energy top-runner campaign next year.

Transition of energy consumption on an unconsolidated basis

(fiscal year percentage based on fiscal 1990 as 100)



Energy consumption of Kubota group in fiscal 2001, by type of energy



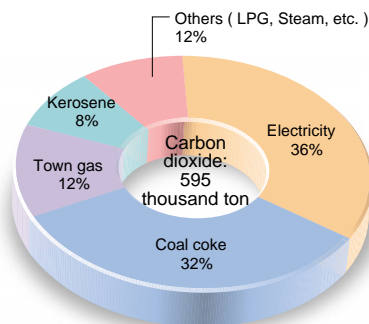
Carbon dioxide emission reduction

In fiscal 2001, carbon dioxide emission amounted to 595 thousand ton-CO₂.

We reduced carbon dioxide emission by 11% compared with fiscal 1990, while our goal was under the level of carbon dioxide emission in fiscal 1990.

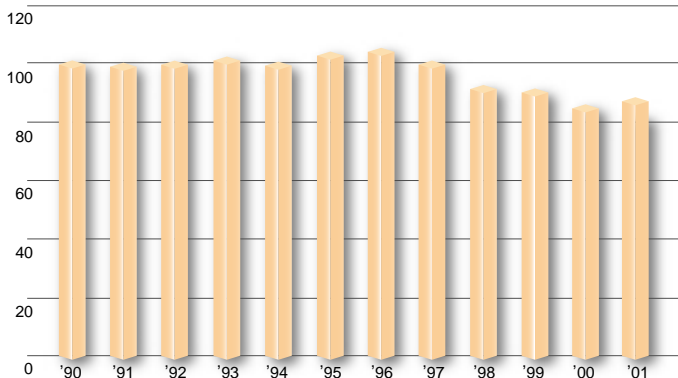
We maintain our objective value from now on by saving energy activities.

Carbon dioxide emission of Kubota group in fiscal 2001



Transition of carbon dioxide emission

(fiscal year percentage based on fiscal 1990 as 100)



* including our affiliates from fiscal 2001

An example of saving energy measures (an example of saving energy top-runner campaign)

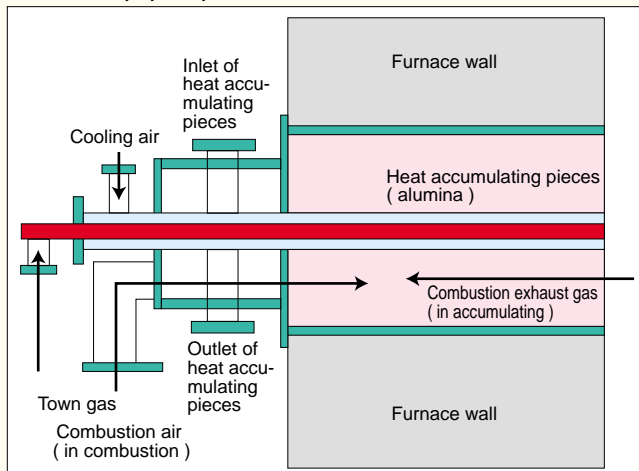
An example at Hirakata plant

When replacing thermal treatment furnace, we adopted new regenerative burners, and could save energy extremely. Main technologies and improvements are as follows:

- ① Maximizing waste heat recovery rate by adopting regenerative burners
- ② Metal design in the furnace to minimize water cooling loss using our own heat resisting steel
- ③ Air tightness improvement by separating furnace body with inserting and extracting equipments
- ④ Air tightness improvement by pushing the gate entirely to the furnace body by air cylinders



Entrance side for pipes



Regenerative burner

Saving energy effect

- ① saving energy amount crude oil conversion: 660 kℓ/year
- ② reduction amount of carbon dioxide 1324 ton-CO₂/year
- ③ cost effect by saving energy 20.17 million yen/year