The third saving energy activities

Promotion of saving energy activities

Results of the third saving energy activities in Kubota’s domestic plants

We at Kubota have been deliberately promoting saving energy activities such as the first ones (fiscal 1991 to fiscal 1993), the second ones (fiscal 1994 to fiscal 1998), and the third ones (fiscal 1999 to fiscal 2003) since fiscal 1991. Fiscal 2002 was the last year of the "third saving energy activities."

As a result, we achieved the goals of reduction of energy unit requirement and carbon dioxide emission unit requirement by 5% or more for five years, compared with fiscal 1998, in our six plants among our seventeen targeted plants. However, we could not achieve the goals in other plants, because energy efficiency decreased in spite of effort of saving energy. In these plants, we could not help changing manufacturing system and so on because selling prices became cheap and manufacturing amount decreased.

Transition of emitted amount of carbon dioxide (in Kubota’s domestic plants)

Total emitted amount of carbon dioxide was 581 thousand ton-CO₂ in fiscal 2003. It was reduced by 15.4% compared with fiscal 1999 in Kubota’s domestic plants.

Total amount of energy consumption and emitted amount of carbon dioxide

Total emitted amount of carbon dioxide was 581 thousand ton-CO₂ in fiscal 2003. It was reduced by 15.4% compared with fiscal 1999 in Kubota’s domestic plants.

The third saving energy activities

Goals of activities

- Energy unit requirement = reducing by 5% or more for five years (compared with fiscal 1998)
- Carbon dioxide emission unit requirement = reducing by 5% or more for five years (compared with fiscal 1998)
- Total emitted amount of carbon dioxide = controlling it under the level of fiscal 1990

Period of activities

- Fiscal 1999 to fiscal 2003 (for five years)

Targeted plants

- Kubota’s domestic plants

*1)Energy unit requirement = energy consumption / in-house output
*2)Carbon dioxide emission unit requirement = emitted amount of carbon dioxide / in-house output

Transition of emitted amount of carbon dioxide

In Kubota’s domestic plants, we searched for new themes of saving energy this year, and picked up seventy-nine new themes. In this way, we are tackling saving energy activities continuously.

We promoted a total number of 236 themes including the themes from the previous year in fiscal 2003, reducing a cost of 480 million yen a year.
Main themes of saving energy activities in the awarded plants

<table>
<thead>
<tr>
<th>Plants</th>
<th>Award</th>
<th>Main theme of saving energy activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keiyo plant (Funabashi)</td>
<td>A minister award of Ministry of Economy,</td>
<td>1) Reduction of carbon unit requirement in melting in supplier&lt;br&gt;2) Reduction of kerosene unit requirement in annealing furnace&lt;br&gt;3) Efficient operation of gas turbine cogeneration system&lt;br&gt;4) Saving energy activities in connection with layout change of machining line of connecting node of V3000 engines&lt;br&gt;5) Adoption of high efficiency equipments (fan motors and lighting equipments)&lt;br&gt;6) Introduction of energy consumption controlling system by line</td>
</tr>
<tr>
<td>Sakai plant</td>
<td>A chief award of Kansai Bureau of Economy,</td>
<td>1) Saving energy activities in connection with layout change of machining line of connecting node of V3000 engines&lt;br&gt;2) Adoption of high efficiency equipments (fan motors and lighting equipments)&lt;br&gt;3) Introduction of energy consumption controlling system by line</td>
</tr>
</tbody>
</table>

Moving course of lectures on saving energy

A moving course of lectures on saving energy was held in December 2003 in Kyuhoji business center which got “a chief award of Agency for Natural Resources and Energy (in the field of electricity)” as an excellent plant controlling energy in the previous year. Saving energy activities and examples of improvement were introduced in the course.

Moving course of lectures on saving energy (in Kyuhoji business center)

Global warming prevention activities in Kubota group (activities from fiscal 2004)

We promoted our saving energy activities mainly in our domestic plants as “the third saving energy activities” until fiscal 2003. We are going to develop “global warming prevention activities of Kubota group” based on environmental promotion mid-term plan from fiscal 2004 in order to cope with global warming prevention better.

A goal of the activities is reduction of carbon dioxide emission unit requirement by 1% a year. We are going to tackle mainly saving energy activities to prevent global warming in the whole Kubota group including manufacturing departments, non-manufacturing departments, distribution departments, and affiliated companies.

Outline of global warming prevention activities in Kubota group

<table>
<thead>
<tr>
<th>Goal</th>
<th>Reduction of carbon dioxide emission unit requirement by 1% a year</th>
<th>Period of activities</th>
<th>Fiscal 2004 to fiscal 2012 (for 9 years)</th>
<th>A phased promotion complying with governmental policies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Targeted plants</td>
<td>Manufacturing departments&lt;br&gt;Non-manufacturing departments&lt;br&gt;Distribution departments</td>
<td>Domestic</td>
<td>Overseas</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Manufacturing activities&lt;br&gt;Non-manufacturing activities&lt;br&gt;Distribution activities</td>
<td>Domestic</td>
<td>Overseas</td>
<td></td>
</tr>
</tbody>
</table>
Eco-office activities

We have tackled environmental management activities mainly in plants whose environmental load is relatively large so far. We planned substantial activities, named “Eco-office activities,” in our non-manufacturing workplaces, in fiscal 2003, in order to promote better environmental management activities in our non-manufacturing workplaces. We are going to start the activities in Kubota’s non-manufacturing workplaces from fiscal 2004. However, we already started the activities in our Head office in December 2003.

We reduced used amount of steel simplifying a steel crate, using the strength of a safety frame of a tractor. (reduction of 15 kg per tractor)

An example of crate improvement for tractors exported

Environmental conservation activities at distribution stage

In order to reduce the emission of carbon dioxide and air pollutants in transportation, we are tackling promotion of modal shifts in which we change our transportation means from trucks to railways and ships, the cooperative transportation and distribution, use of returning trucks, the improvement of transportation efficiency and so on. We are also tackling waste reduction by reducing packing material, and carbon dioxide reduction when producing and discarding packing materials.

Results in fiscal 2003

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>44575</th>
<th>10 thousand ton-km</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total transportation amount of products</td>
<td></td>
<td>53652</td>
<td>ton-CO2</td>
</tr>
<tr>
<td>Modal shift rate</td>
<td></td>
<td>44.5</td>
<td>%</td>
</tr>
<tr>
<td>Reduced amount of carbon dioxide by improving distribution</td>
<td>4015</td>
<td>ton</td>
<td></td>
</tr>
<tr>
<td>Monetary effect</td>
<td>97</td>
<td>million yen</td>
<td></td>
</tr>
</tbody>
</table>

*The data only in Kubota’s domestic plants was adopted.

We are using the sunlight in our Hanshin office in Head office to reduce environmental load.

We have installed a photovoltaic system in our Hanshin office in Head office. The system generates electric power of 20 kWh a day, which amounts to a few percentage points of total used amount of electric power. Though the figure may look small, the system makes our employees be aware of environmental load reduction.

We also use an air conditioning system adopting a micro gas turbine in this office.

An example of crate improvement for tractors exported

We reduced used amount of steel simplifying a steel crate, using the strength of a safety frame of a tractor. (reduction of 15 kg per tractor)