

# Global Warming Prevention Activities

In its business activities, including procurement, manufacturing and logistics, Sumitomo Heavy Industries Group has been taking measures to reduce CO<sub>2</sub> emissions by positioning it as the most important issue.

## Promoting Environmental Management

### Promote measures by participation of all personnel

In the Sumitomo Heavy Industries Group, activities to prevent global warming are positioned as a part of environmental management. The results from each business division are managed on a monthly basis by the Environmental Management Division and feedback is provided. The results are also reported to the Executive Board at its quarterly meetings.

Each division in the Group promotes activities to prevent global warming and is engaged in activities to improve a range of processes in order to further enhance the efficient use of energy and to “visualize” activities and initiatives through “the participation of all employees.”

## Reducing CO<sub>2</sub> Emissions

### CO<sub>2</sub> emissions reduction targets achieved in Japan and other countries

Our Group started activities to reduce CO<sub>2</sub> emissions in Japan in fiscal year 2005, taking 2004 as a baseline fiscal year. Fiscal year 2014 was the start of the 4th Medium-Term Environmental Plan, with the target of reducing CO<sub>2</sub> emissions relative to fiscal year 2004 by 32% by fiscal year 2016. This target value is equivalent to a target of 39% reduction relative to fiscal year 1990, which is the baseline year in the Kyoto Protocol.

In fiscal year 2014, we achieved a reduction of 33% (46% by basic unit) from the Company’s baseline of fiscal year 2004. This is a reduction of 40% by comparison with fiscal year 1990, and we have successfully limited CO<sub>2</sub> emissions to an extent significantly exceeding the target.

In other countries, we have set targets for improvement of 1% per year relative to the fiscal year 2013 figure in basic units, which takes production increases into account.

For fiscal year 2014, we achieved the target value for the year with a 7% reduction in emissions compared to fiscal year 2013.

The combined target value for Japan and other countries was 146,000 tons, while the actual figure achieved was 138,000 tons, representing a 6% reduction from the target value.

## Improvement of energy productivity

### Energy productivity targets achieved both in Japan and other countries

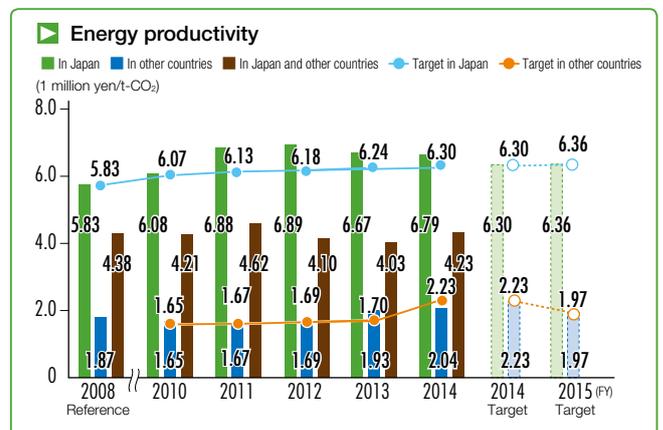
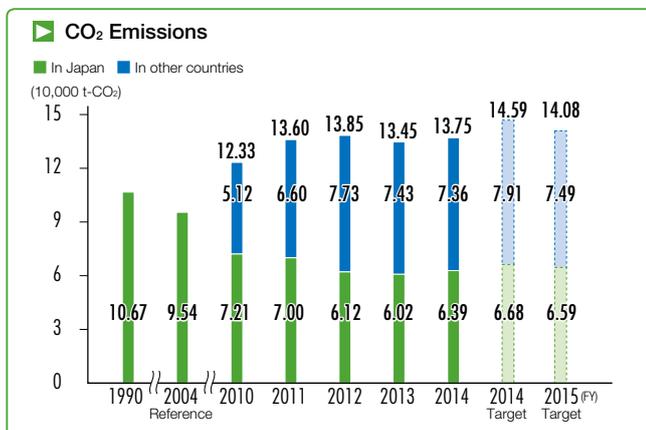
Starting in fiscal year 2009, Sumitomo Heavy Industries Group has been taking the characteristics of Group businesses into account and using the new unified index of energy productivity (net sales/CO<sub>2</sub> emissions: the reciprocal of the basic unit) in Japan. We are pursuing management and operation on a monthly basis at each business unit (BU).

For fiscal year 2014, we declared a 8% increase over fiscal year 2008 as the target for our program. We achieved this target with an 16% increase at our principal production bases in Japan.

The target for our programs in other countries was set at 1% increase year on year. We achieved this target in fiscal year 2014 with an increase of 6%.

Going forward, we will continue to promote the following measures.

- ① Concentrate working hours (eliminate waste by mass holidays)
- ② Minimize standby power (reduce the amount of power used by machine tools on standby)
- ③ Minimize working hours (strengthen production technology capabilities)
- ④ Make effective use of equipment and facilities



\* For Japan, the FY2000 figure of 3.78 (t-CO<sub>2</sub>/10,000 kWh) from the Federation of Electric Power Companies of Japan was used as a fixed emissions coefficient. For other countries, the FY2005 figures from the GHG Protocol were used as fixed coefficients.

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## Promoting Green Logistics

### Improved load ratio, modal shift, and promotion of effective use of consolidated shipments

In transportation, we have been making efforts to reduce CO<sub>2</sub> emissions by eliminating waste and by improving efficiency. With FY2006 as the benchmark year, we aimed to achieve a 8% reduction in the basic unit of transportation (t-CO<sub>2</sub>/weight) in FY2014. Improved load ratio, modal shift, promotion of the effective use of consolidated shipments and other such measures in fiscal year 2014 achieved a 12% reduction. Also, in terms of total CO<sub>2</sub> volume, the reduction was 37%.

In fiscal year 2015, we will pursue thoroughgoing management of modal shift and other measures.



Modal shift using a barge

### CO<sub>2</sub> emissions through logistics



## Activities to Reduce Paper Usage

### Reduction of 55% over fiscal year 2005 realized

Reducing paper use is part of activities to save resources and, at the same time, it is linked to activities to prevent global warming such as reducing CO<sub>2</sub> emissions in the papermaking process. The Sumitomo Heavy Industries Group is aiming to continue with the reduction of 45% compared to fiscal year 2005 levels.

The amount was reduced by 55% in fiscal year 2014, achieving the target.

### Paper usage (A4 paper equivalent)



## Environmentally Friendly "First-Class Products"

### 19 products certified as "first-class products"

The Sumitomo Heavy Industries Group has created systematic and voluntary standards across the Group such as carrying out Lifecycle Assessments\*, improving recycling rates at the time of disposal, reducing the volume of packaging, curtailing harmful substances contained in products, and developing products that consume less energy, weigh less, are more compact and last longer. We have launched initiatives for continuous improvements and evaluation based on these standards.

As a result, we added the following 19 products to "environmentally friendly first-class products" by fiscal year 2014.

Plastic injection molding machines (Plastics Machinery Division); warm forging servopresses (Industrial Equipment Division); hot forging servo presses (Industrial Equipment Division); biomass boiler (Energy & Environment Group); compact 25-ton biomass boiler (Energy & Environment Group); dry-type desulphurization equipment (Energy & Environment Group); kiln equipment (Energy & Environment Group); hydraulic excavator (Sumitomo (S.H.I.) Construction Machinery Co., Ltd.); asphalt finisher (Sumitomo (S.H.I.) Construction Machinery Co., Ltd.); hybrid hydraulic excavator (Sumitomo (S.H.I.) Construction Machinery Co., Ltd.); hybrid electric power source for transfer cranes (Sumitomo Heavy Industries Material Handling Systems Co., Ltd.); New pulse-type bag filter "Eco Pulser" (Nihon Spindle Mfg. Co., Ltd.); the Cle-Eco III clean room air-conditioning control system (Nihon Spindle Mfg. Co., Ltd.); electric-powered reach forklifts (Sumitomo NACCO Materials Handling Co., Ltd.); turbines with longer blades (Shin Nippon Machinery Co., Ltd.); dividing-wall distillation columns (Sumitomo Heavy Industries Process Equipment Co., Ltd.); SHX-III/S High Current Ion Implantation System (Sumitomo Heavy Industries Ion Technology Co., Ltd.); S-UHE Ultra High Energy Ion Implantation System (Sumitomo Heavy Industries Ion Technology Co., Ltd.); Sumijetter grit jet pump (Sumitomo Heavy Industries Environment Co., Ltd.)

\* Lifecycle Assessment: A method of objective and quantitative evaluation of environmental impact throughout the lifecycle (all stages from extracting the resources to manufacturing, use, disposal and transportation) of products and services

## Reduction of CO<sub>2</sub> Emissions During Product Use

### Promote technical innovation and sales expansion in energy-saving products

Under the 4th Medium-Term Environmental Plan, our objective is a 15% reduction in CO<sub>2</sub> emissions during product use compared to fiscal year 2008. We will take measures accordingly for technical innovation and sales expansion in energy-saving products. The reduction in CO<sub>2</sub> emissions during product use will amount to the equivalent of 270 thousand tons annually.