

Realization of a Low-Carbon Society

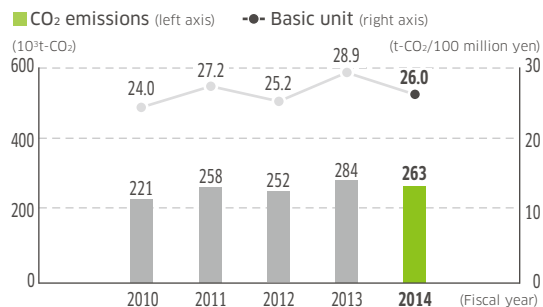
Reduction of Greenhouse Gas Emissions

Our response to climate change is a key issue affecting the continuity of our operations. The reduction of greenhouse gases is particularly important, and we emphasize measures that curb CO₂ emissions generated in our own production work as well as CO₂ emissions released when delivered products are in use.

The KHI Group is committed to contributing to the prevention of global warming worldwide through products and manufacturing that use energy without waste. Under the Eighth Plan, action is directed toward targets set separately for reduction of the CO₂ emissions generated during production and reduction of CO₂ emissions through product-based contributions. The results of fiscal 2014 are presented below.

Through implementing energy-saving measures in working toward our goal of reducing annual CO₂ emissions by at least 5% by fiscal 2016, we cut CO₂ emissions by 3,000 tons in fiscal 2014. CO₂ emissions amounted to 263,000 tons, a result that takes us closer to our goal as we employ further energy-saving measures under the energy visualization system.

CO₂ Emissions and Basic Unit at KHI

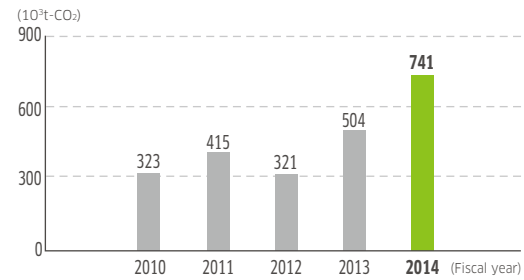


- Notes:
1. The CO₂ emissions value for fiscal 2014 includes a credit adjustment of a 31,500t-CO₂.
 2. Basic unit is a measurement obtained by dividing CO₂ emissions by net sales.
 3. CO₂ emissions in logistics processes are calculated from our position as a specified consignee (a Japanese legal designation applied to consignees that ship 30 million ton-kilometers of freight or more per year), under the revised Energy Saving Law.

CO₂ Reduction Through Product-based Contributions

Through products delivered by KHI to its customers, the Company made an estimated annual contribution to CO₂ emissions reduction of 741,000t-CO₂ in fiscal 2014. CO₂ emissions reduction in Energy & Environmental Engineering, Transportation Systems, and Industrial Equipment is shown in the table above right. The reduction effect is based on a comparison with existing models or improved efficiency through the application of new technology.

CO₂ Emissions Reduction* Through Product-based Contributions

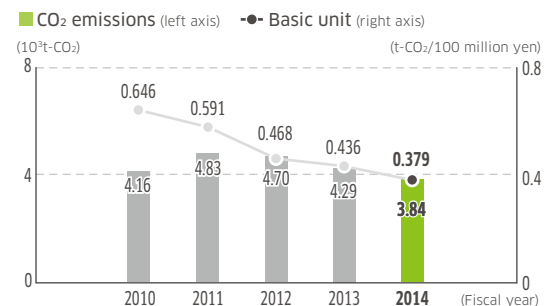


- *Estimate based on delivery results
- Notes:
1. Emission factors for electricity, heat, fuel and other types of energy were established with reference to the manual for the Law Concerning the Promotion of Measures to Cope with Global Warming.
 2. CO₂ emission reduction effect through improved efficiency is based on a comparison with products before replacement or with standard products on the market.
 3. All energy derived from the use of waste energy and energy produced from wastes is counted toward the CO₂ reduction effect.

Environmentally Conscious Logistics

KHI promotes energy-saving activities and data tracking to curb CO₂ emissions from logistics processes. Evaluating the Company's freight traffic on the basis of freight tonkilometers carried (freight weight multiplied by distance), truck transport accounts for about half, with the balance of the freight carried by train or ship, which exerts less impact on the environment. In fiscal 2014, CO₂ emissions reached 3,840 t-CO₂ and CO₂ emissions per unit of sales totaled 0.379. We will continue to look at ways of boosting the load factor for truck transport and using modal shift from truck to other modes, such as train.

CO₂ Emissions from Logistics Processes and Basic Unit



- Notes:
1. CO₂ basic unit is a measurement obtained by dividing CO₂ emissions by net sales.
 2. Emissions in logistics processes are calculated from our position as a specified consignee (a Japanese legal designation applied to consignees that ship 30 million tonkilometers of freight or more per year), under the revised Energy Saving Law.
 3. CO₂ emissions from logistics processes in fiscal 2010 do not include emissions by Kawasaki Shipbuilding Corporation and other subsidiaries before they merged into the Company on October 1, 2010.

Installation of Solar Power Generating Facility

Kawasaki Trading Co., Ltd., a KHI Group company, began selling power under Japan's Feed-in Tariff Scheme for Renewable Energy. The photo shows the 1,500kW Iwaoka Photovoltaic Power Generation Station, which has annual power generating capacity of about 1,897MWh.



Iwaoka Photovoltaic Power Generation Station

Use of Energy Visualization System

The amount of energy used in a year at all KHI business sites is equivalent to about 150,000kl of crude oil. During MTBP2013, we aim to reduce annual CO₂ emissions and energy consumption by at least 5% by fiscal 2016 as part of our efforts to realize a low-carbon society. To reach this target, we are currently installing an energy visualization system throughout our factory network and making progress in reducing CO₂ emissions and energy consumption.

The underlying objective in introducing this system into our operations is to have all employees participate in saving energy.

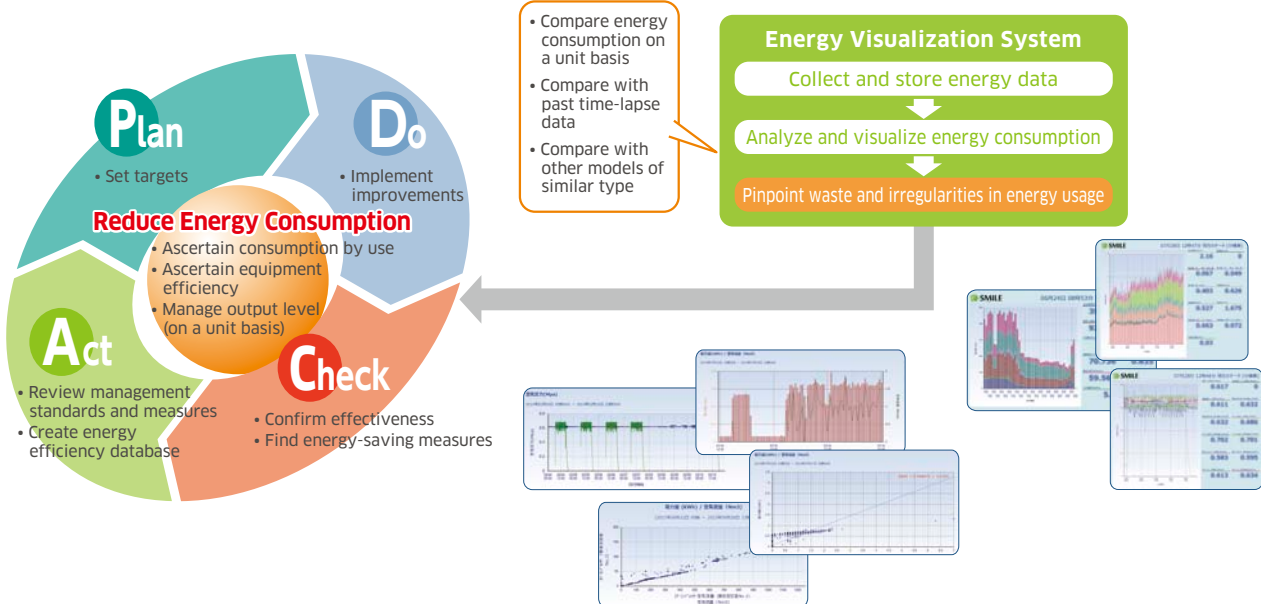
Production equipment accounts for between 70% and 80% of Company-wide energy consumption. Each factory has between several hundred and several thousand pieces of equipment, presenting an extremely varied assortment of features and many different methods of use. A limited number of energy managers cannot possibly deal with all of the energy-efficiency issues associated with such a vast array of equipment. That is why we rely on the people at each facility within a factory—those who typically use the equipment—to track energy consumption. It is these efforts by individuals that underpin greater energy savings overall. And for this reason, it is important to be able to see possible waste at a glance. The energy visualization system meets this need.

In fiscal 2013, we installed an energy visualization system at the Kakokawa Works, ahead of other factories. The system allowed us to compare and analyze the amount of energy used by similar types of machines and equipment, in operation and in standby mode, which led to the identification of discrepancies in settings and conditions and facilitated adjustments to achieve optimal performance. In addition, we were able to discover air leaks and other problems through continuous data confirmation on the amount of compressed air used. Over a one-year period, such energy-saving measures had an energy consumption reduction effect of about 10%.

In fiscal 2014, an energy visualization system was installed in test areas (see next page) at key factories in Japan. In addition to energy measurements, the system was used to track the flow volume of water, for example, and at factories emphasizing water conservation, the system led to a huge reduction in usage because leaks were found and fixed and a more appropriate level of water consumption was achieved. We will be promoting similar approaches at other factories.

In fiscal 2015, we will begin the process of extending measurement areas throughout our factories.

PDCA Cycle for Energy-Saving Improvement Activities

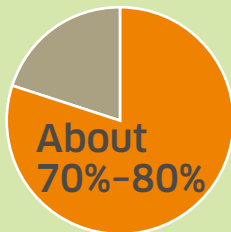


Rolling out energy visualization system

Toward realization of a low-carbon society, we aim to reduce CO₂ emissions and energy consumption through energy-saving approaches. To achieve this end, we are rolling out the energy visualization system to factories throughout the KHI Group and have launched energy-saving activities that have the participation of all employees.

Why are energy visualization systems necessary?

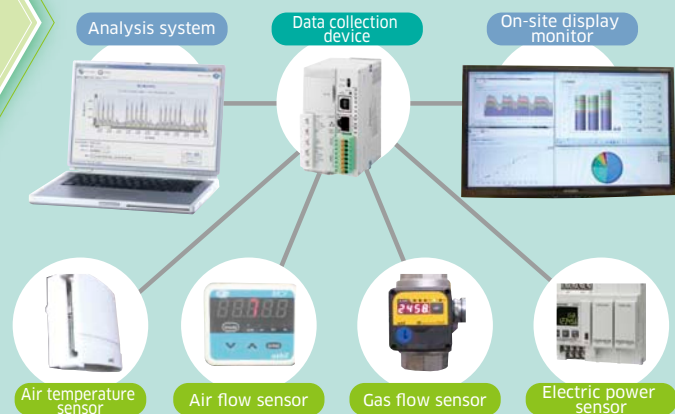
We had already made considerable progress through energy-saving improvements at factories, supported by the efforts of energy-management departments to monitor utility equipment, such as power receiving-and-distribution and transformer facilities, pneumatic compressors, air conditioning equipment and lighting. In fact, due to such progress, we reached a point where it became difficult to achieve further reduction in energy consumption. Production facilities consume somewhere between 70%-80% of total corporate energy applications, and over and above the fact that each location has several hundred to several thousand electric power-drawing units, there is an extremely wide variety of equipment and the features and methods of use are very different. To promote energy savings, it was important to know where energy was being wasted.



Production facilities consume about 70%-80% of total corporate energy applications

K-SMILE the KHI Group's energy visualization system

The energy visualization system "sees" utilization conditions for the different types of energy used at factories and pinpoints in real time such information as where, when, and how much energy is being consumed. The system reveals energy waste and irregularities and contributes to the reduction of energy consumption.



K-SMILE is a registered trademark of Kawasaki Technology Co., Ltd.

Development of K-SMILE Energy Visualization System

K-SMILE is being developed as an energy visualization system for the KHI Group. Development began with configuration of a system that could tally demand for electricity at each factory in response to the tight supply-and-demand situation that arose in the wake of the Great East Japan Earthquake in March 2011. Today, it is being extended as a corporate system providing at-a-glance measurement data from major factories in Japan and utilizing it as a factory system for detailed analysis of energy savings achieved at each location.

K-SMILE is one strategy that will help us reach our goal to reduce CO₂ emissions and energy consumption by more than 5% annually. In conjunction with measures to promote energy-saving improvements at factories, we will create a visualization system with greater sophistication.



1 Roll out energy visualization system to all operating facilities

2 Create database with standardized cases on energy savings and share access to information

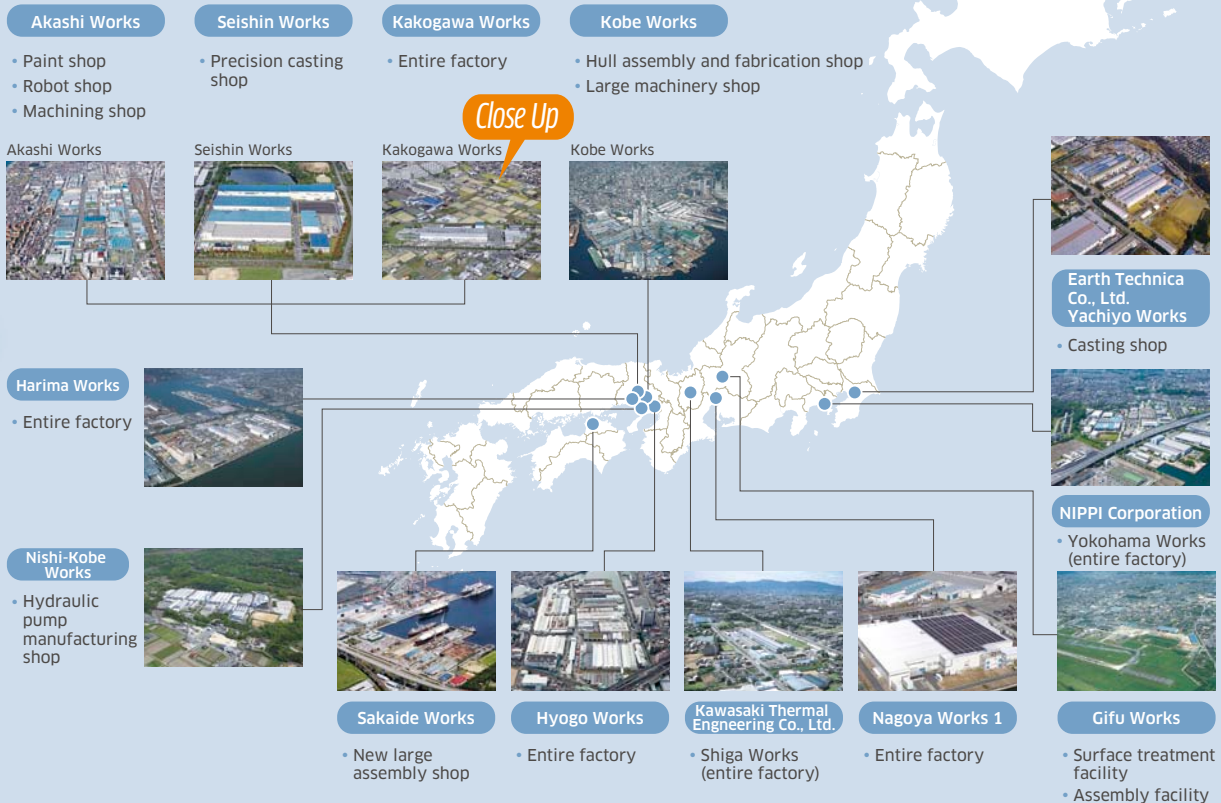
3 Promote energy-saving activities with participation from all employees

Energy-saving activities using K-SMILE

Promote environmental contribution

In conjunction with energy visualization system development, we put corporate activity know-how into an energy-savings database. We will encourage the use of the system and database in energy-saving activities involving all employees, especially those in manufacturing, energy, and administrative divisions.

System Introduced at Major Factories in the KHI Group



Close Up System Verification at Kakogawa Works Leads to Full Corporate Roll-out

In fiscal 2011, we installed the energy visualization system at the Kakogawa Works to evaluate its potential in enhancing energy savings.

Through regular data checks on the amount of compressed air used, we discovered waste—air leaks—and through a comparison of energy consumed by similar equipment and facilities and subsequent analysis, we found additional waste, which we were able to address with appropriate responses. As a result, total energy consumption over one year dropped by about 10%, validating system potential for energy savings. Given this proof of improvement, a decision was made to install the system at all of KHI's principal facilities to expand the range of measurement data.

Measurement sensor placement (● dots) at Kakogawa Works

