

Mitigating Climate Change

Komatsu is reducing CO₂ emissions generated by its business activities while delivering products that help customers promote their environmental activities.

Mitigating Climate Change through Products and Services

Introducing a New Type of Hybrid Hydraulic Excavator to World Markets

The new HB205-1 hybrid hydraulic excavator features 25% higher fuel efficiency than the PC200-8, which is equipped with a conventional engine. This has earned it certification as a low-carbon emission construction machine by the Ministry of Land, Infrastructure, Transport and Tourism. The new hybrid model's clean engine meets the U.S. Environmental Protection Agency's (EPA) Tier3 emission standards. In addition, it was designated by the Ministry of Land, Infrastructure, Transport and Tourism as an ultra low-noise construction machine, generating 6dB less noise than low-noise machines. All in all, the HB205-1 boasts dramatically improved environmental performance with regard to emissions, fuel efficiency and noise.



HB205-1 hybrid hydraulic excavator

Full Model Change for the WA1200 Super-large Wheel Loader

The WA1200-6, the world's largest mechanical wheel loader, is equipped with an advanced Komatsu engine. Its multi-faceted exhaust emission control system has reduced emission levels of nitrogen oxides (NO_x), hydrocarbons (HC), carbon monoxide (CO), and other harmful substances. In addition, fuel efficiency has been improved by 15% (comparing to conventional equipment), by incorporating control features such as controlling discharge rate of the pump or the flow to the hydraulic circuit dependent on the load onto the equipment.



WA1200-6 wheel loader

Thermoelectric Modules

Thermoelectric modules are devices that take advantage of the Seebeck effect – two dissimilar metals are connected, causing a temperature difference at the connection point and current flow between the two metals. Marketing of these devices has started through KELK Ltd.

Komatsu had undergone a total of approximately 6,000 hours of verification testing with the heat-treating furnace at



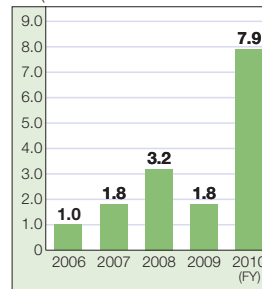
Verification test of the heat-treating furnace at the Awazu Plant

the Awazu Plant until January 2011, and is now using the recovered energy for indoor lighting of the plant. If waste heat recovery from plants is widely adopted (50% adoption) in Japan, it will bring about a reduction in CO₂ emissions of 1 million tons (Electric conversion: 2.9 × 10⁹kWh) annually.

Wire Saws for Solar Cells

Mainstream solar cells are made from thinly sliced silicon wafers. These wafers are manufactured by a machine known as a multi-wire saw, which achieves high precision cutting using a wire moving at high speed. The expansion of solar energy generation has led to an increase in Komatsu NTC's sales of wire saws. The advanced technology contributes to the production and quality of solar cells, and at the same time to the reduction of CO₂ emissions worldwide.

Wire saw sales rate trend (as the rate is 1.0 in FY2006)

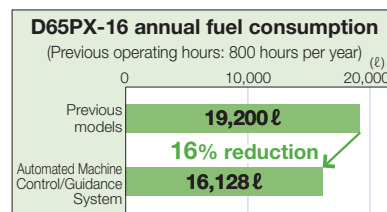


Wire saw for cutting solar cell wafers

Automated Machine Control/Guidance System

An Automated Machine Control/Guidance System refers to a construction system designed to improve the productivity of the overall construction process and ensure quality. This is achieved by applying Information and Communication Technology (ICT) to a series of processes, consisting of surveying, design, construction, supervision, and inspection and maintenance. Equipping construction machines with the Automated Machine Control/Guidance System makes it possible to compare the position information of the machine with three-dimensional design data to support operation of the machine by the operator or to automatically control the machine. Incorporating these features greatly reduces the need for guides and surveying work during construction. It also reduces subsequent corrections, thereby shortening construction periods, improving the operation rates of the construction equipment, and reducing CO₂ emissions. Calculations based on internal test results have shown that the use of one D65PX-16 medium-sized bulldozer will reduce CO₂ emissions by 7.9 tons per year, or in terms of fuel, will help save 15 drums of fuel. After having already made inroads in Japan, the U.S.A. and Europe, Komatsu is currently promoting the system on a global scale.

Example of fuel consumption reduction effect by Automated Machine Control/Guidance System



Training on the Automated Machine Control/Guidance System (China)

*Effect of the Automated Machine Control/Guidance System on Reducing CO₂ Emissions (effect not guaranteed)