

Special Feature Realizing a Low-carbon Society

To address the problem of climate change, now so urgent as to be called the climate crisis, Kawasaki is focusing greater efforts than ever on reducing CO₂ emissions through product-based contributions and reducing CO₂ emissions from business activities to realize a low-carbon society. Making product-based contributions refers to providing products that emit little CO₂ during use, such as Kawasaki-brand Green Products.¹ We have achieved a certain emissions reduction effect through such contributions. In terms of CO₂ emissions from business activities, we are advancing Company-wide efforts to save energy, as part of which we are working to improve the efficiency of our onsite power generation facilities.

Reducing CO₂ Emissions through Product-Based Contributions

Approximately 90% of the CO₂ emitted during the life cycles of our products is released during the period of their use after they are sold. Therefore, Kawasaki seeks to realize a low-carbon society by providing products that produce only low CO₂ emissions during their use.

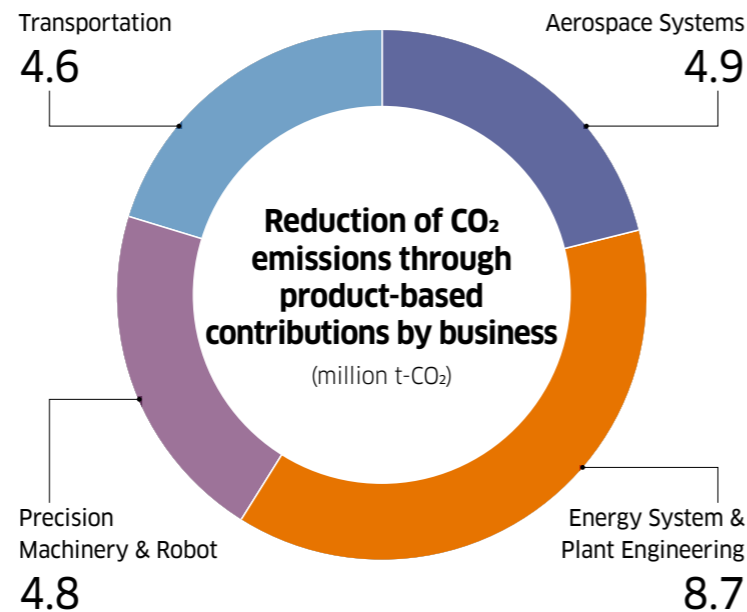
To reduce products' post-sale CO₂ emissions, in addition to increasing product energy efficiency, we are advancing electrification and modal shifts when replacing existing products in our product lineup and expanding our lineup of products that utilize exhaust heat, waste, and renewable energy. Key products that help reduce CO₂ emissions are shown on page 25. In fiscal 2017, we revised our rules for

calculating CO₂ emissions reductions through product-based contributions in order to better quantify the contributions of such products to the mitigation of global warming.

Calculations based on these rules showed that the CO₂ emissions reduction through products we sold in fiscal 2019 was about 23.1 million tons. Large contributions were made mainly by the M7A Series gas turbines for power generation, Kawasaki-brand Green Products boasting excellent reliability, economy, and environmental friendliness, and the M7V Series motors for HSTs,² which boast world-leading output control.

Fiscal 2019 Result (non-consolidated)
Reduction of CO₂ Emissions through
Product-based Contributions

Approximately
23.1
million tons of CO₂



Calculation Rules

- **Products to be assessed:** Kawasaki-brand Green Products, products that use waste, waste heat, and renewable energy, as well as cogeneration systems and rolling stock pertaining to modal shifts, etc., were selected for assessment.
- **Period of assessment:** Until fiscal 2016, we used a one-year period of assessment. However, in line with the revision of the calculation rules, since fiscal 2017, we have adopted a flow-based approach³ in which the period of assessment is the estimated useful life of products sold in the fiscal year, because the estimated useful lives of our products are long. This allows us to better calculate the difference in CO₂ emissions between our products and industry standard class products over the entire period of use.

1. The details of Kawasaki-brand Green Products are disclosed on Kawasaki's website: http://global.kawasaki.com/en/corp/sustainability/green_products/index.html#2019item
We launched the Kawasaki-brand Green Products in-house registration program in 2013 for products that meet standards established by the Company related to energy efficiency and other factors. The number of registered products has continued increasing every year, reaching 61 in 2020.

2. HST: Hydrostatic transmission: A non-stage transmission comprising a hydraulic pump and hydraulic motors.

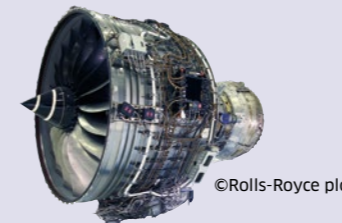
3. Please refer to the "Guideline for Quantifying Greenhouse Gas Emission Reduction Contribution" (Ministry of Economy, Trade and Industry, March 2018).

Particularly Notable Products That Contribute to Reducing CO₂ Emissions During Use

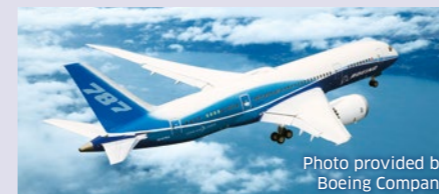
Aerospace Systems



BK117 D-2 helicopter



Trent series jet engines (components)



Boeing 787 (components)

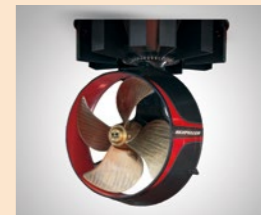
Energy System & Plant Engineering



Industrial-use gas turbines (M7A Series, etc.)

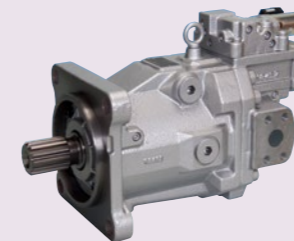


CK Mill crushing machine plant



E-series Rexpeller

Precision Machinery & Robot



HST Motor M7V Series



High-pressure hydrogen regulators for fuel cell vehicles



Spot Welding Robot (BX200L)

Transportation



SOPass ship operation and performance analysis support system



efACE Standard Railcar



Ninja 400/Ninja 250

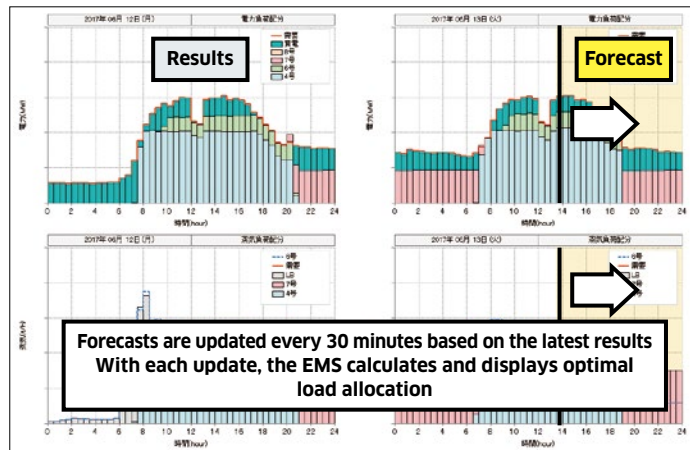
Reduction of CO₂ Emissions from Business Activities

To reduce CO₂ emissions from business activities, Kawasaki is implementing energy-saving initiatives based on energy-saving promotion structures for the Company as a whole and at each works.

One of the key strategies of the 10th Environmental Management Activities Plan is the proactive use of onsite power generation facilities that employ Kawasaki-brand Green Product gas turbines and gas engines as part of energy-saving efforts. Energy use accounts for much of the CO₂ emitted by our business activities. Therefore, optimizing the use of electricity and steam from onsite power generation can help to greatly reduce our CO₂ emissions. We are currently advancing efficiency improvements to existing onsite power generation facilities at the Akashi Works and

other sites while examining opportunities for facility replacements or new installations.

The Akashi Works uses combined-cycle generation (24,700 kW), cogeneration (8,100 kW) and mono-generation (1,800 kW) with gas turbines to supply electricity and steam within the works, using an energy management system (EMS) to optimize operations and thereby reduce CO₂ emissions. Based on the EMS's demand predictions, we have created optimized operational plans for each facility, reducing primary energy consumption by 4% (equivalent to approximately 3,000 t-CO₂ annually). The EMS updates its demand forecasts every 30 minutes, enabling optimized control of the start and stopping of facility operations.



Real-time forecast display (showing load allocation for each facility)

TCFD

In September 2019, Kawasaki officially endorsed the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD).*

In addition to advancing concrete initiatives aimed at the realization of a low-carbon society, such as efforts to reduce CO₂ emissions from business activities and reduce CO₂ emissions through product-based contributions, we will enhance disclosure to stakeholders, including that of risks and opportunities related to climate change, as specified in the TCFD recommendations.

* TCFD

The TCFD was established by the Financial Stability Board, an international body in which the central banks and financial regulatory agencies of many major countries take part. For institutional investors and financial institutions that practice ESG investment and finance, it is important that companies recognize risks and opportunities related to climate change and incorporate them into their management strategy. In light of the significance of such considerations, the TCFD has developed recommendations for the voluntary corporate disclosure of risks and opportunities related to climate change.

