Natural Capital

CO_2 emissions controlled through Yaskawa products

2.28

million tons of CO_2/year

Green products sales ratio

20.0%

Ratio of renewable energy comprising power consumption at business bases in Japan

3.79%

Environmental Management

We are promoting environmental management in order to pass on the earth's blessings to the next generation.

Environmental Policies of the Yaskawa Group

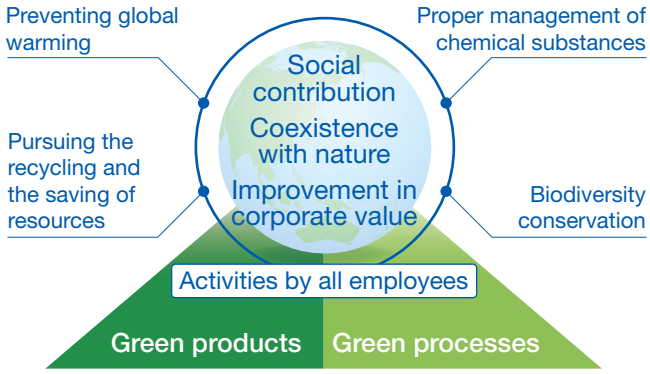
Environmental Philosophy

Based on the Management Principles of the Yaskawa Group, we recognize that the conservation of the global environment is one of the most important issues for all human kind. In every stage of our business operation, we contribute to the realization of a sustainable society through our proactive environmentally conscious actions.

Yaskawa Group's Vision and Long-term Plans for the Environment

Together with its stakeholders, the Yaskawa Group aims to create a society that is sustainable.

It plans to make contributions for the environment by reducing the burdens that result from its manufacturing activities (its green process) at a greater rate than it has to date, and by reducing the burden on the ecosystem with its products (green products) leveraging its technology to enhance the environmental performance.



FY2025 Target

Green products

- -Reduction of environmental loads through products CO_2 emission control by 69 million tons*1
- -Installation of the in-house environmental products and displaying them
- -Improvement in recyclability of product components
- -Application of green procurement to all products

Green processes

- -Reduction of GHG emission by 10%*2 Reduction by 15% by 2030
- -Reduction of waste by 1% every year*3
- -Appropriate management of use and waste of water
- -Through management of harmful substances in production

*1: Cumulative total after FY2016 *2: Compared to FY2015
*3: Per unit of sales

Contributions to the Environment by the Yaskawa Group

The Yaskawa Group contributes in creating a sustainable society through its overall business activities.

In FY2017, the use of Yaskawa products in various parts of the world led to a reduction of 2.28 million tons of CO_2 emissions.

CO_2 emissions produced through its business activities stood at 38 thousand tons.

Contributions for the Environment
2.28 million tons of CO_2
CO_2 emissions controlled through Yaskawa products*1

Burden on the environment
38,000 tons of CO_2
CO_2 emissions produced through business activities*2

*1: Estimate of reductions in CO_2 emissions for which Yaskawa products delivered in FY2017 have contributed when used for a period of a year
*2: Total amount of CO_2 emissions in FY2017 for Yaskawa Electric and its major consolidated companies in Japan and abroad (14 companies in Japan, nine companies abroad)

Green Products Initiatives

To enable dramatic improvements in energy-saving and productivity for its customers and to reduce the burden on the environment on a global scale, Yaskawa has in place a system to certify green products.

Yaskawa makes score evaluations of the contribution level of its products on the environment from three standpoints to prevent global warming, saving resources and recycling, and appropriate management of chemical substances, based on which it certifies items that meet the required standards as Green Products and those that demonstrate the highest level of environmental functionality as Super Green Products.

The sales ratio for super green products and green products in FY2017 was 20 percent. We are aiming to achieve a sales ratio of more than 50% for super green products and green products by FY2018.

* Number of certifications up to FY2017

Yaskawa's concept is to offer green products that provide excellent energy conversion rates to customers worldwide in its bid to realize a sustainable society.
Products which have been certified as a green product contain a logo for identification in brochures and Yaskawa websites.

Super Green Products Certified in FY2017

Product	Exterior	Product features and points of the environment friendliness
Robot "MOTOMAN-GP series" and "MOTOMAN-AR series" **MOTOMAN-GP7, GP8, GP25** **MOTOMAN-AR700, AR900, AR1730**		- Fastest load capacity in class - Slimmer and boosted energy conservation - Reduced wiring
Robot controller **YRC1000**		- An energy-saving feature through power regeneration - The smallest size in the world
Robot **MOTOMAN-HC10DT**		- Works in collaboration with people in a safe manner - An energy-saving standby feature - Reduced wiring
Robot **MotoMINI**		- Small enough to be carried around in a suitcase - Slimmer and boosted energy conservation - The smallest industrial robot in the world
Robot controller **YRC1000micro**		- Small enough to be set up on a 19-inch rack - An energy-saving standby feature
"Σ-7 series" AC Servo drive (Compatible with absolute encoders without batteries)		- Saving resources without batteries - Maintenance-free and no batteries are used

Green Process Initiatives

Environmental Management

Our company applies and expands environmental management to the entire Yaskawa Group.

We are aiming for companies that share our environmental policy and manage data on environmental burdens and make efforts to achieve the medium-term environmental objective for the Group versus environmental impact on the Group as a whole to exceed 80 percent in FY2018.

Mid-Term Environmental Objectives (compared with FY2015)

- GHG emissions: 3% reduction by FY2018
- Waste emissions per units of sales: 3% improvement by FY2018

Scene from an audit at a Group company in China

Our head office staff pay direct visits to group companies to assess the status and conduct audits, which includes auditing frameworks for environmental compliance.

We will continue our activities so that 100 percent coverage will be possible by 2025.

Proper Management of Chemical Substances

To deal with chemical substances contained in products, restrictions for which are spreading on a global scale, Yaskawa in FY2017 introduced "chemSHERPA" as a tool in response to a green procurement study and held a supplier briefing for approximately 600 companies.

Yaskawa leverages the scheme to share information on chemical substances according to IEC62474 of the International Electrotechnical Commission, complying with environmental ordinances in a comprehensive manner, and promotes product design and procurement with considerations for the environment.

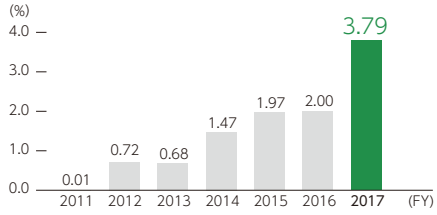
Briefing held for suppliers

Mitigation of Climate Change

The Yaskawa Group promotes the conservation of energy and the use of clean energy in its corporate activities and is aiming to boost the ratio of renewable energy in its use of electric power.

With the exception of development bases, Yaskawa completed its introduction of photovoltaic generation facilities at all of its offices by FY2017, making the ratio of renewable energy approximately 3.8 percent. It will continue to invest in the conservation and creation of energy in a systematic way and further its efforts to achieve its long-term objectives.

Ratio of Renewable Energy Comprising Power Consumption



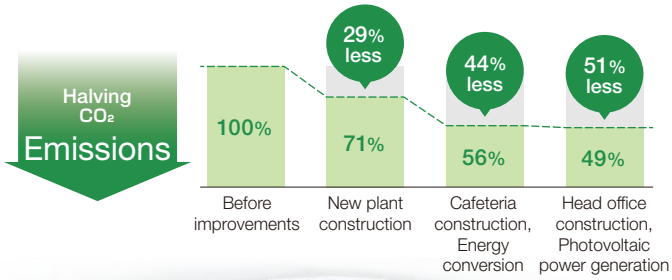
Office Where Solar Power Energy Generation Equipment is Set Up

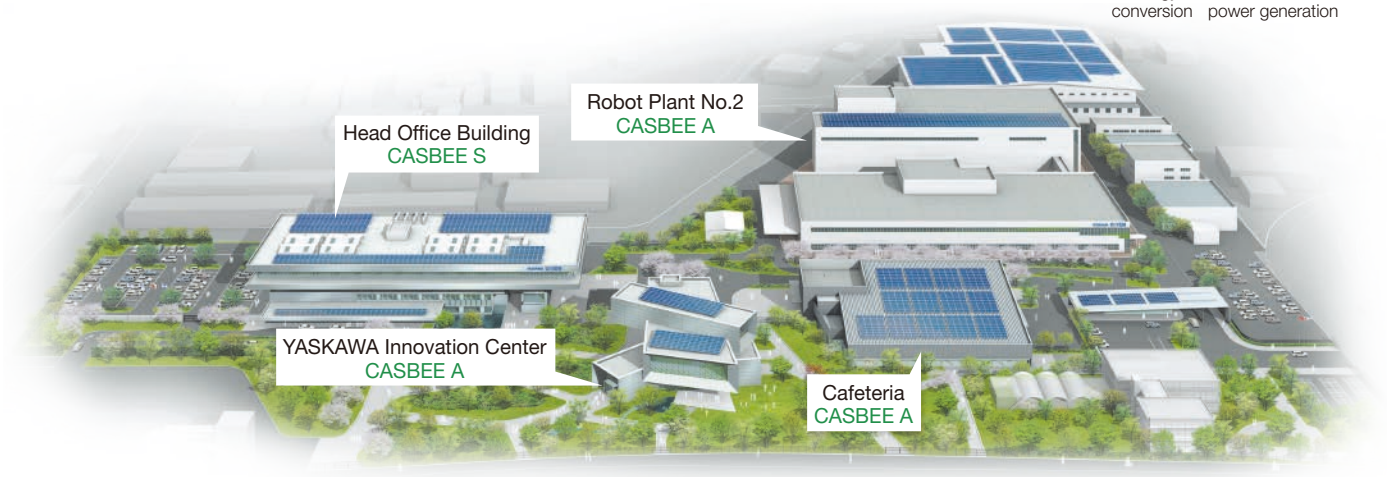
Welfare facility at Yukuhashi plant with photovoltaic generation facility

Eco-Conscious Initiatives at the Robot Village

Five eco-conscious perspectives have been incorporated in the Robot Village to realize halving of CO_2 emissions and 35% reduction of peak power consumption.

The five eco-conscious perspectives and their representative examples are introduced here.





*: CASBEE refers to the Comprehensive Assessment System for Built Environment Efficiency, which is a method of evaluating the environmental performance of a building and ranking it in five stages. (S: excellent, A: very good, B+: good, B-: slightly poor, C: poor)

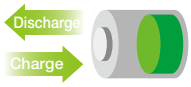
Create Creating Energy

Solar panels

Creating electric power by photovoltaic power generation
Panel capacity: 574 kW, equivalent to 367 households

Making comfortable, energy-saving workplaces free of waste, excess, and irregularity
Head Office Building: CASBEE* "S"
Plant No. 2, Welfare Building, and YASKAWA Innovation Center: CASBEE* "A"

Store Storing Energy



Peak shifting 100 kWh of power by storage battery

Reuse rainwater for toilets to save water
Tank capacity 345 kℓ,
Equivalent to 12 days of consumption at the head office building

Recover Recovering Energy

Utilization of waste heat for hot water supplying

Recovering the power that was thrown away
Recovery of regenerative power

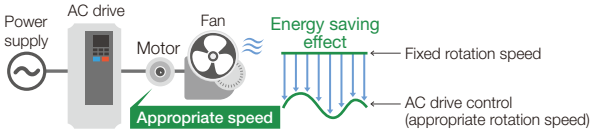
Recovering waste heat energy
Cogeneration 35 kW

Reduce Reducing Energy Consumption

Energy saving by AC drive

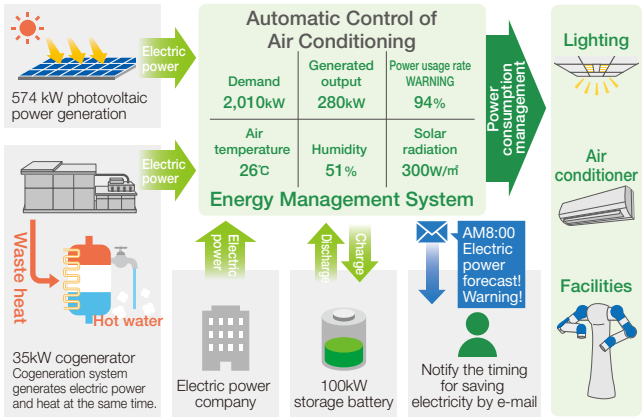
Reducing facility power consumption by using AC drive
Incorporation of AC drives in fans and pumps

Reduce energy consumption through building schemes



Smart use Using Energy Smartly

Functions of the Energy Management System



The Roles of the System

[1] To give energy saving timing notices

[2] To give natural ventilation timing notices

[3] Peak shaving 480 kW of power by automatic control of air conditioning and storage battery

[4] Finding energy waste and feeding back to energy saving tuning

Display screen of energy use in major operational bases in Japan

Power Consumption of the Robot Village