



Contribution to Reducing CO₂ from Product Usage

As many tens of times more CO₂ is emitted during product usage than during production, the Mitsubishi Electric Group has designated Reducing CO₂ from Product Usage and Expansion of Contribution to Reducing CO₂ from Product Usage as priority issues, and is working to improve its products.

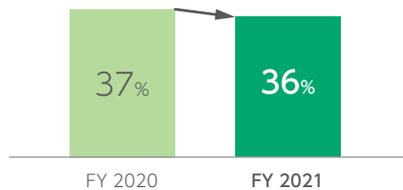
Targets and Achievements for Reducing CO₂ from Product Usage

Power consumed by customers during product use is viewed as corresponding to the amount of CO₂ emissions resulting from generating that power. Increasing product energy efficiency can reduce CO₂ from product use. Under the 9th Environmental Plan (fiscal 2019–2021), the Mitsubishi Electric Group’s goal was to achieve an average reduction rate of 35% compared to fiscal 2001 for CO₂ emissions from product usage.

In fiscal 2021, sales of high energy-efficiency air conditioning systems declined due to limited economic activities overseas and suppressed capital expenditure in Japan and abroad. As a result, the average reduction rate decreased compared to fiscal 2020.

However, improvements were made in the energy efficiency of various other products, including power devices and hot-water supply systems and equipment. As a result of promoting the sales of these products, the average reduction rate for 98 targeted product groups came to 36% compared to fiscal 2001, and we thus achieved our target.

Average Reduction Rates of CO₂ from Product Usage for 98 Product Groups with Fiscal 2001 as Base Year (Mitsubishi Electric Group)



Targets and Achievements for Expansion of Contribution to Reducing CO₂ from Product Usage

The Mitsubishi Electric Group is working to visualize and expand our Contribution to Reducing CO₂ from Product Usage. Contribution to reducing CO₂ is represented by the amount of generated CO₂ deemed saved by switching from older products to new, energy-efficient ones. The calculation is based on the following formula, which multiplies the effect of reducing CO₂ over the life of the product by the number of units sold.

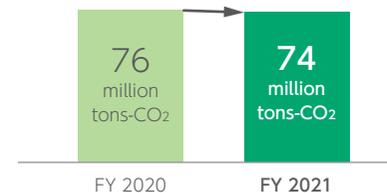
$$\text{Contribution to reducing CO}_2 = \text{Effect of reducing CO}_2 \text{ from product usage per unit} \times \text{Number of units sold during the fiscal year}$$

We use official standards and industry-mandated calculation method when computing our contribution to reducing CO₂. Where no calculation method is specified, we make calculations based on our own product scenarios. Calculations for interim products are based on GHG Protocol Scope 3 Guidance, with proportional division by product weight and percentage of sales.

We made continuous efforts to achieve the target set forth in the 9th Environmental Plan (fiscal 2019-2021) of maintaining the contribution to reducing CO₂ from product usage at 70 million tons.

In fiscal 2021, the decline in new car sales across the world except in China led to a decrease in sales in the industrial mechatronics division. Additionally, limited economic activities overseas and suppressed capital expenditure caused a decrease in sales in the home electronics division. As a result, our contribution to reducing CO₂ was lower than the previous year. On the other hand, improvements were made in the energy efficiency mainly of power devices and hot-water supply systems and equipment, such that by promoting the sales of these products, we contributed to reducing CO₂ from product usage by a total of 74 million tons, and thus achieved our target.

Contribution to Reducing CO₂ from Product Usage (Mitsubishi Electric Group)



Under Environmental Plan 2023, we will continue our company-wide efforts to improve the energy efficiency of our products as we have done under previous environmental plans, and will strive to reduce CO₂ emissions through the utilization of key, in-house devices (e.g., power devices and inverters). We have not specified targets for the period covered by the current plan, but we will strengthen our efforts with the aim of achieving a 1% improvement over the previous models in contribution to reducing CO₂ emissions per product by fiscal 2024.

Breakdown of Products Included in the Calculation for Contribution to Reducing CO₂ from Product Usage

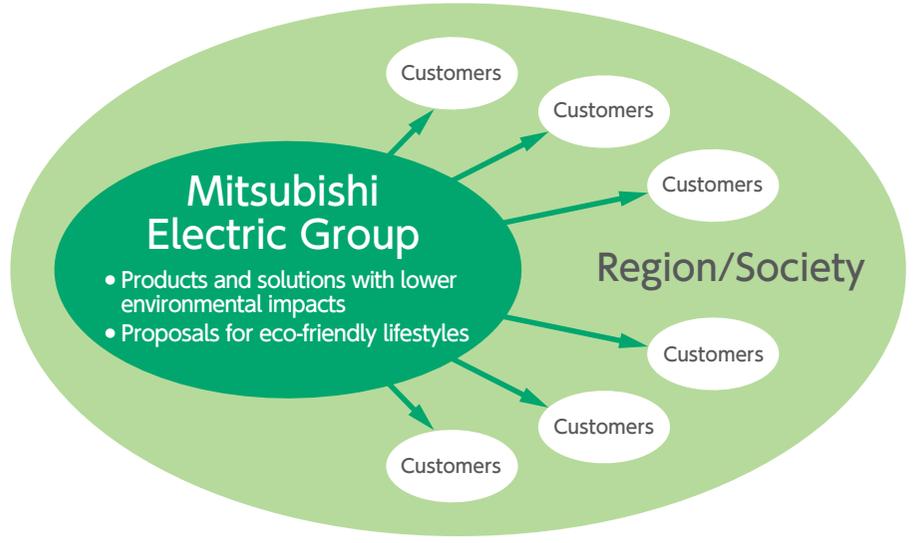
Products (Number of Product Groups)	Examples of Products	Standard/Benchmark Used for Calculation
End Products (82)	Plant monitoring control systems, railcar air-conditioning systems, onboard information systems (TIS, ATC, TIMS), monitor/protection control systems for power generation plants, circuit breakers, elevators, intelligent transport systems (ITS), satellite communications earth station facilities, optic/wireless access systems, air conditioners, televisions, refrigerators, heat exchange ventilation equipment, processing machines, robots, lighting fixtures / lamps, IH cooking heaters, etc.	Contribution from reducing power consumed by the product
	Energy-saving support equipment, elevator modernization, heat exchange ventilation equipment	Reduced power utilization through introduction of energy efficiency enhancing devices, contribution from upgrading to highly efficient components during refurbishment, previously wasted energy used by heat exchange
	Circuit breakers, switchgear	Reduction in leaked SF ₆ gas (CO ₂ equivalent)
	Photovoltaic power generators, turbine generators	Power produced minus energy used for power generation, increase in power generated by improving efficiency
Interim Products (32)	Compressors purchased separately from air conditioners	Contribution from incorporation of products with lower power consumption
	Inverters, motors	Contribution from incorporation of products with lower power loss
	Power devices	
	Electric power steering, alternators, starters	Contribution from incorporation of products with greater fuel efficiency, proportionally divided by weight
	Combined-cycle thermal power generators	Reduction of fossil fuel use by replacement of old thermal power generators. Contribution calculated as reduction in CO ₂ emissions proportionally divided by sales

Note 1: Calculations for products using electricity are based on the national or regional CO₂ emission factors given in CO₂ Emissions From Fuel Combustion Highlights (2013 Edition).
Note 2: Calculations for thermal power generation use thermal power generation factors from the calculation method in the Initiative for Creating a Low-Carbon Society, issued by four electrical and electronics industry associations.
Note 3: Calculations for other forms of energy use and greenhouse gases use factors from the Greenhouse Gas (GHG) Emissions Accounting and Reporting Manual issued by the Japan's Ministry of the Environment and Ministry of Economy, Trade and Industry.

Providing Information and Proposals to Support Customers' Efforts to Reduce their Environmental Impact

The Mitsubishi Electric Group develops and offers products and solutions with lower environmental impacts to help customers reduce as much of their environmental impact as possible in their daily business or life. At the same time, we make an effort to share information on eco-friendly lifestyles.

Reducing Environmental Impact on Society as a Whole from Two Approaches



As an example of these initiatives, we share information with our customers through our websites. This information includes power-saving advice related to how best to use our products, as well as examples of the successful introduction of products and services that contribute to reducing environmental impact.