

Climate Change Action

In order to ensure that the next generation inherits this irreplaceable planet, Casio has established and is implementing Climate Change Action with medium- and long-term targets to be achieved by fiscal 2051.

Approach to setting medium- and long-term targets

With the establishment of these medium- and long-term targets, Casio intends to reduce its greenhouse gas emissions significantly. Moreover, the company is emphasizing its goal of becoming carbon neutral,^{*1} which means reducing Casio's net greenhouse gas emissions to zero. Accordingly, Casio has adopted the following Environmental Management Policy.

Casio's goal is to become carbon neutral by leveraging its ability to develop compact, lightweight, slim, and energy-efficient products to create new markets and cultural phenomenon.

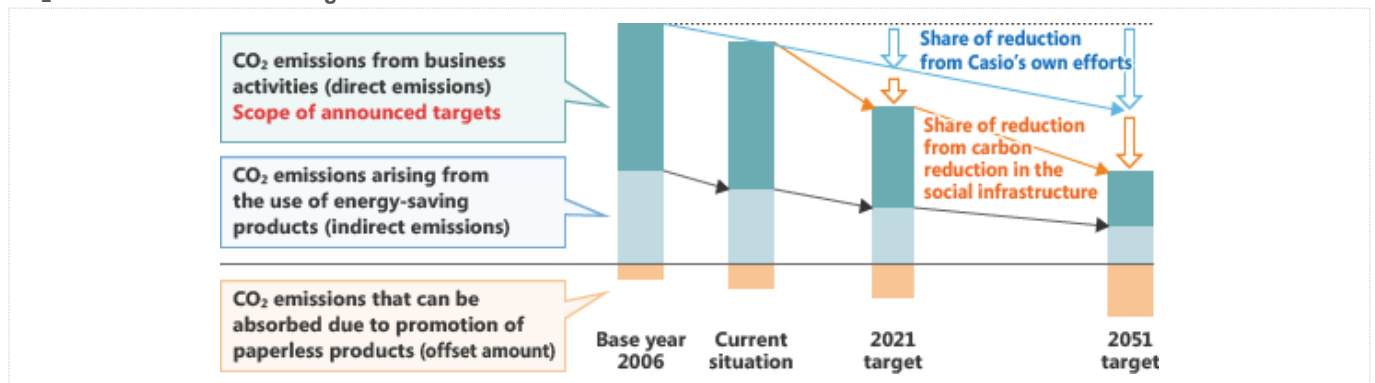
^{*1}. Casio defines "carbon neutral" as offsetting its direct CO₂ emissions with CO₂ emissions reduction and absorption through other methods.

Scope of emissions reduction targets

When Casio established its medium- and long-term emissions reduction targets, it also announced the target scope as greenhouse gas emission from business activities at Casio's production sites and offices in Japan and around the world. Furthermore, Casio is aiming to become a carbon neutral company by offsetting its total volume of greenhouse gas emissions (including the CO₂ emissions resulting from logistics, product usage, employee travel, and consignment production) with the reduction effects of Casio's eco-products such as data projectors, electronic dictionaries and other products that promote paperless lifestyles.

In addition to the CO₂ emissions reduction achieved by the efforts of the Casio group, the target CO₂ emissions reduction also includes reductions due to the availability of cleaner energy such as electricity, and due to carbon reduction in the entire social infrastructure (see diagram).

CO₂ Emissions Reduction Targets



Switching to total-volume emission reduction targets

With the setting of global medium- and long-term targets, total-volume emissions reduction targets for greenhouse gases have been established in Japan and around the world, including reduction targets and emission trading systems. Casio has now finished the move to total-volume emissions reduction targets.

Casio had already set targets for the total volume of greenhouse gas reduction at its offices worldwide. However, with the establishment of its recent medium- and long-term targets, Casio has now set worldwide targets for reductions in the total volume of CO₂ emissions, which is a change from previous targets for reduction per unit of production.

The base year for Casio's medium- and long-term targets is fiscal 2006, decided based on changes in Casio's business structure, as well as the scope and accuracy of data acquisition.

Carbon neutral calculation examples

Casio is looking into trial calculations for its reduction of greenhouse gases based on the use of Casio's eco-products and, in particular, products encouraging the transition to a paperless society.

Casio's current target products for this paperless initiative are data projectors and electronic dictionaries. Casio calculates the amount of CO₂ emitted during the manufacture and use of these products, as well as the amount of CO₂ absorbed by the trees not harvested to make the paper saved by these products. When these two amounts are equal, the products are considered carbon neutral.

When using a data projector

If meetings of ten people each given 10-page information packets are held twice a week, or 100 times a year, and this continues for five years, a total of 50,000 sheets of paper will have been used. Using a data projector for the same meetings would prevent the logging of trees to make the 50,000 sheets of paper, enabling the trees to continue absorbing CO₂. It would also avoid CO₂ emissions from the manufacture of the 50,000 sheets of paper, and the emissions from operating the printer to make the 50,000 copies. However, assuming that each meeting using the data projector is about 3.5 hours, the emissions from the resulting electrical usage also need to be taken into account.

Calculating using the above approach, use of the Casio data projectors sold in fiscal 2012 would result in an annual reduction of about 38,000 tons of CO₂.

When using an electronic dictionary

Most Casio electronic dictionaries today contain as many as 100 dictionaries in one unit. Without one of these electronic dictionaries, it would be almost impossible for the average person to assemble the same number of dictionaries in paper form. Accordingly, it can be assumed that the typical Japanese consumer would actually only use the following paper dictionaries: a Japanese dictionary, an English-Japanese dictionary, and a Japanese-English dictionary. Any other paper dictionaries would probably be used at a library. Therefore, the CO₂ reduction benefit of an electronic dictionary would be the CO₂ emissions from paper manufacturing, and the CO₂ no longer being absorbed by the trees logged to make the paper dictionaries. On the other hand, assuming that the electronic dictionary is used for an hour a day, 100 days a year, for five years, the corresponding amount of emissions from electrical use also has to be taken into account.

Calculating using the above approach, use of the Casio electronic dictionaries sold in fiscal 2012 would result in an annual reduction of about 7,900 tons of CO₂.

Medium- and long-term targets

Casio group's medium- and long-term targets for greenhouse gas emissions reduction

- **Medium-term target** : To reduce the total volume of global greenhouse gas emissions from business activities by **30%** compared to fiscal 2006, by fiscal 2021
- **Long-term target** : To reduce the total volume of global greenhouse gas emissions from business activities by **80%** compared to fiscal 2006, by fiscal 2051.

* Business activities: This indicates activities of production sites and offices in Japan and overseas, and does not include CO₂ emissions from logistics, product usage, or employee travel.

Managing risks and opportunities

As a result of the Great East Japan Earthquake in March 2011 and the ensuing Fukushima nuclear accident, nuclear power plants across Japan were shut down in May 2012. This has led to a rise in electricity rates in Japan, and the risk of power shortages starting this summer. Moreover, due to the drop in the nuclear power generation rate, the greenhouse gas emission factor for electricity is very likely to increase, which could lead to a jump in the amount of actual CO₂ emissions. As a result, there is a greater risk of emissions trading costs under the Tokyo Metropolitan Ordinance on Environmental Preservation. Also in 2011, there was major flooding in Thailand, which may be partially attributable to global warming and upstream deforestation. Consequently, global risks have become apparent including threats to the value chain for production and parts.

In order to avoid these risks, Casio plans to expand the introduction of renewable energy, and secure alternatives in the value chain.

In addition, Casio sees the greenhouse gas emissions reduction effect of using data projectors and electronic dictionaries as a great opportunity to help combat climate change and become carbon neutral. The company will focus on expanding this business area.

In order to minimize the various risks mentioned above, and expand opportunities, Casio must contribute to the sustainability of the planet and its human societies. Casio recognizes that this is an extremely important issue for further strengthening its business foundation, and will make even more strenuous efforts in the fight against climate change.

Measures for achieving medium- and long-term targets

Casio has set medium and long-term targets for achievement by 2020 and 2050. Among the three areas that the Casio Environmental Declaration 2020 focuses on, Casio will put the highest priority on realizing a low-carbon society.

Realizing a low-carbon society

The Casio Group will provide products and services that make an even greater contribution to the reduction and absorption of CO₂ emissions. In addition to expanding products and services that use energy sources that are friendly to people and the planet, including solar, wind, and hydro power, Casio will incorporate these renewable energy sources into its own business operations.

Casio Europe has been operating geothermal cooling and heating in its office building since January 2009. In fiscal 2013, Casio will also begin investigating initiatives for the use of renewable energy including solar.

Regarding other indirect CO₂ emissions (GHG Protocol Scope 3 emissions), Casio will work to expand the scope of disclosure of other indirect CO₂ emissions generated during distribution and product usage, which it already discloses, based on the calculation guidelines being considered currently by the electrical and electronics industry associations.

Measures for 2020

Casio is studying the potential of the following initiatives to achieve the medium-term target for 2020. It will also strive to assess as quickly as possible their potential to help meet the 2050 target.

1. **Response to social environment changes after the Great East Japan Earthquake**
 - Responding to energy issues
 - Introducing renewable energy sources
2. **Environmental contribution through product usage**
 - Reducing the amount of electricity used by products
 - Minimizing and optimizing the amount of product packaging
 - Increasing the percentage of products that run on solar cells
3. **Utilizing carbon offsets**
 - CO₂ absorption effect based on the expansion of paperless products (reducing demand for logging, etc.)
 - Purchasing carbon offsets for products
 - Promoting tree planting and greening
 - Emissions trading, Clean Development Mechanism (CDM), and Joint Implementation (JI)
4. **Reduction of CO₂ emissions in various business activity processes**
 - Materials procurement, product manufacturing, transport and distribution, product usage, recycling, and disposal
 - Expansion of the scope of CO₂ emission data gathering on logistics, transport efficiency improvement, and modal shift
 - Making production facilities more energy efficient, and improving production processes
5. **Increasing the percentage of non fossil-fuels used at sites**
 - Installation of LED lighting
 - Installation of solar panels
 - Installation of highly efficient air conditioning equipment

Fiscal 2012 Performance

During fiscal 2012, Casio Micronics was transferred, Kofu Casio was closed down, and energy-saving activities were carried out by the entire Casio Group. As a result, CO₂ emissions fell by 18.2% compared to fiscal 2011, which represented a 66.5% reduction compared to fiscal 2006.

For more information, see “Reducing CO₂ emissions”, “Fiscal 2012 Casio Environmental Action Plan Performance”.