



Greenhouse Gas Inventory Office of Japan

温室効果ガスインベントリオフィス



 **National Institute for Environmental Studies**

 **Center for Global Environmental Research**

Object of GIO

The Greenhouse Gas Inventory Office of Japan (GIO) was established in July 2002 in the Center for Global Environmental Research (CGER), the National Institute for Environmental Studies (NIES) to compile annual greenhouse gas (GHG) inventories, which also involves the necessary tasks such as international response, and conducts research that is needed for inventory preparation and utilizes developed inventories.

Main work of GIO

- [Domestic activities]
 - Preparing annually national GHG inventory
 - Providing support and assistance for the technical review of the national GHG inventory of Japan
 - Providing support and assistance for the inventory related policies and actions such as the Committee for the GHG Emissions Estimation Methods
- [International activities]
 - Convening the Workshop on GHG Inventories in Asia (WGIA)
 - Convening Korea and Japan Mutual Learning on GHG Inventory
 - Contributing to the technical review of national greenhouse gas inventories of other Parties as reviewers for the UNFCCC and the Kyoto Protocol

What is GHG Inventory?

A greenhouse gas inventory is an accounting of the amount of anthropogenic greenhouse gas emissions by sources and removals by sinks such as carbon dioxide (CO₂) in a year.

For GHG inventories, the emissions estimates for each gas are conducted by each sector and source category (see Table 1), based on statistics instead of actual measurement data as shown in Figure 2.

An official national greenhouse gas inventory consists of Common Reporting Format (CRF), which contains mainly numerical information and National Greenhouse Gas Inventory Report (NIR), which is a description of inventory compilation, such as the emissions and the estimation methods.

Under the UNFCCC which is an international environmental treaty to cope with global warming, and the Kyoto Protocol which is an international agreement linked to the UNFCCC and settings quantified emission reduction commitment for reducing GHG emissions, Parties included in Annex I (developed countries and countries with economy in transition) are required to submit annual national GHG inventory to a secretariat of UNFCCC.

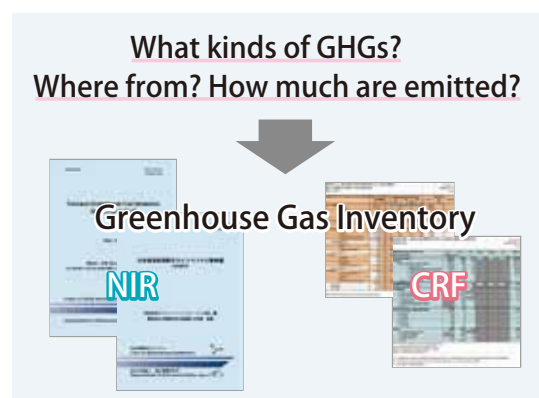


Fig. 1 Image of Greenhouse Gas Inventory

Table 1 GHGs and Emission sector

GHGs Sector	CO ₂	CH ₄	N ₂ O	HFCs PFCs SF ₆
Energy	Fuel Combustion	Fugitive Emission from Fuels / Fuel Combustion	Fuel Combustion	
Industrial Processes	Cement Products / etc.	Chemical Industry	Chemical Industry	Semiconductors / Refrigeration / Solvents
Agriculture		Enteric Fermentation / Rice Cultivation / Manure Management	Agricultural Soil / Manure Management / etc.	
Waste	Waste Incineration	Solid waste Disposal on land / Waste Water Handling / Waste Incineration	Solid waste Disposal on land / Waste Water Handling / Waste Incineration	

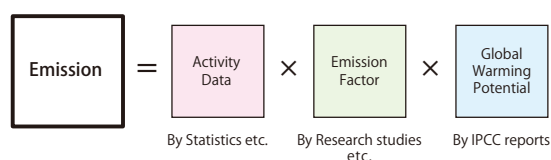


Fig. 2 General estimation method

Institutional arrangement for the GHG Inventory preparation

GIO develops GHG inventories with the assistance of private consultant companies requested by the Ministry of the Environment (see figure 3). GIO compiles GHG inventories with the data collection from relevant ministries, agencies, organization and some other publications.

This compiled national inventory is annually submitted to the UNFCCC Secretariat by the Government of Japan. Also, compliance with the reduction commitment under the Kyoto Protocol of an Annex I country will be determined based on this compiled national inventory.

"GHG Emissions in FY 2010" as shown below is the actual summarized output produced based on the GHG inventories compiled by GIO.

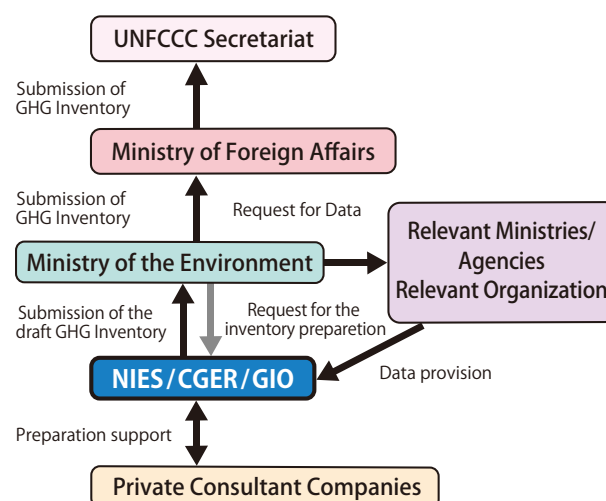


Fig. 3 Japan's institutional arrangement for the national inventory preparation

GHG Emissions in FY 2010

Total GHG emissions in FY 2010(excl. LULUCF) were 1,258 million tonnes (in CO₂ eq.). Compared to the emissions in the base year under the Kyoto Protocol (1,261 million tonnes), they decreased by 0.3%. Whereas CO₂ emission was increased, the other GHGs were decreased in emissions by gases.

The largest source of CO₂ emissions is fuel combustion. Annual fluctuation is affected by climate in summer or winter, economic trend, capacity factor of nuclear power plants and more. The main reasons for the increase in emissions in FY 2010 were the recovery from the economy recession, and extreme hot summer and severe winter.

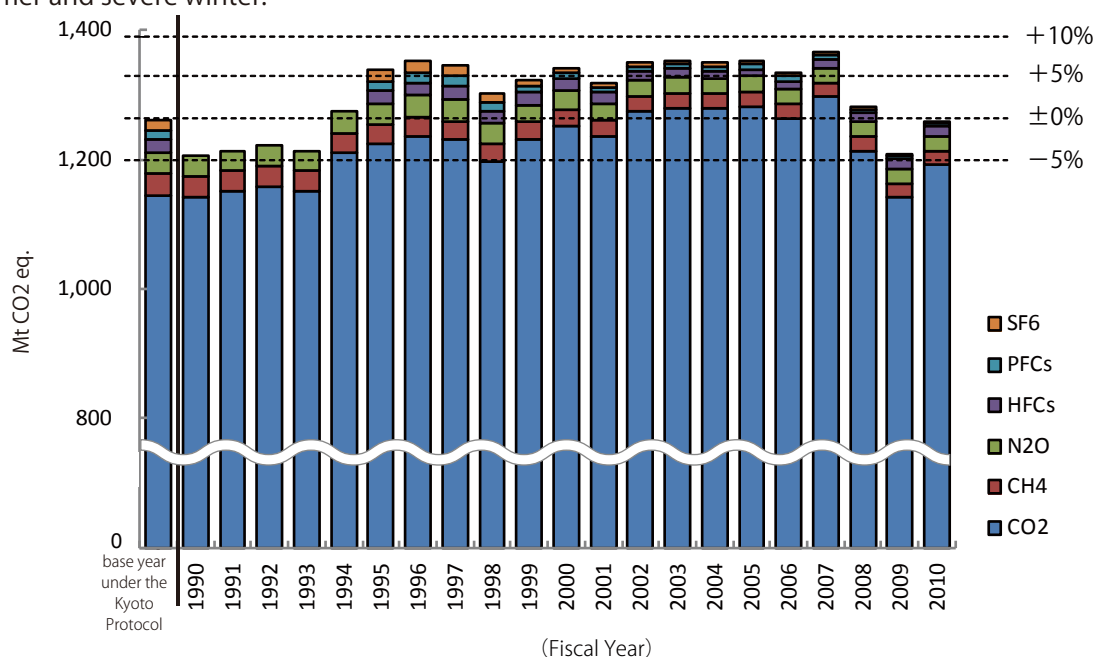


Fig. 4 Trend of Total GHG emissions

The figure of base year under the Kyoto Protocol is the figure indicated in "Report on Japan's Assigned Amount", which is emissions of CO₂, CH₄ and N₂O in 1990 and emissions of HFCs, PFCs and SF₆ in 1995. HFCs, PFCs and SF₆ emissions between 1990 and 1994 are not included. Under the Kyoto Protocol, Japan is required to reduce 6 %, including emission trading and removals by forest carbon sink, from the base year emissions.

International Cooperation and Supporting Activities of GIO (WGIA)

Since 2003, the Ministry of the Environment of Japan and GIO have organized the Workshop on Greenhouse Gas Inventories in Asia (WGIA) to improve GHG inventories in Asia.



Left : WGIA Report (Published as a CGER-REPORT)
 Right : WGIA9(13-15 July 2011, at Phnom Penh, Cambodia

Activity History of GIO

July,	2002	- Establishment of Greenhouse Gas Inventory Office of Japan/ CGER/ NIES
August,	2002	- Submitted National Greenhouse Gas Inventories (Submitted every year since 2002)
November,	2003	- Convened First Workshop on GHG Inventories in Asia Region (WGIA1) , Phuket, Thailand
February,	2005	- Convened Second Workshop on GHG Inventories in Asia Region (WGIA2) , Shanghai, China
February,	2006	- Convened the 3rd Workshop on GHG Inventories in Asia Region (WGIA3) , Manila, Philippines
August,	2006	- Submitted the Initial Report under Article 7.4 of the Kyoto Protocol to the UNFCCC Secretariat
January-		Contributed to the In-country Review of the Initial Report under the Kyoto Protocol and 2006 Inventory
February,	2007	- Submission of Japan Organized by the UNFCCC Secretariat
February,	2007	- Convened the 4th Workshop on GHG Inventories in Asia (WGIA4) , Jakarta, Indonesia
September,	2007	- Convened the 5th Workshop on GHG Inventories in Asia (WGIA5) , Kuala Lumpur, Malaysia
July,	2008	- Convened the 6th Workshop on GHG Inventories in Asia (WGIA6) , Tsukuba, Japan (NIES)
July,	2008	- Convened the "Open Symposium on the Estimation of the Greenhouse Gas (GHG) Emissions - How to Estimate the Emissions in the Commitment Period" Tokyo, Japan
October,	2008	- Convened the Korea and Japan Joint Workshop on GHGs Management Seoul, Republic of Korea
July,	2009	- Convened the 7th Workshop on GHG Inventories in Asia (WGIA7), Seoul, Korea
April,	2010	- Submitted National Greenhouse Gas Inventories (FY 1990 to FY 2008) to UNFCCC Secretariat
July,	2010	- Convened the 8th Workshop on GHG Inventories in Asia (WGIA8), Vientiane, Lao P.D.R.
November,	2010	- Convened the Korea and Japan GHG Inventory Meeting , Seoul, Korea
July,	2011	- Convened the 9th Workshop on GHG Inventories in Asia(WGIA9), Phnom Penh, Cambodia
April,	2012	- Submitted National Greenhouse Gas Inventories (FY 1990 to FY 2010) to the UNFCCC Secretariat

Contact us • Web Site

Greenhouse Gas Inventory Office of JAPAN
 Center for Global Environmental Research
 National Institute for Environmental Studies
 16-2 Onogawa Tsukuba-shi, Ibaraki, 305-8506 JAPAN

FAX: + 81- (0)29 - 850 -2219

E-mail: www-gio@nies.go.jp

Website: <http://www-gio.nies.go.jp/>

