

## **Japan Launches World's First Greenhouse Gas Observing Satellite**

**TOKYO, Japan**, January 23, 2009 (ENS) - The first satellite dedicated to monitoring greenhouse gas emissions as part of global efforts to combat climate change was launched into space today from Japan.

The IBUKI, which means "breath," will circle the globe every 100 minutes at an altitude of some 670 kilometers (416 miles) and will monitor the levels of the greenhouse gases carbon dioxide and methane at 56,000 locations.

The satellite will acquire data covering the entire planet every three days and this data will be shared with other space and scientific organizations.

Mitsubishi Heavy Industries, Ltd. and the Japan Aerospace Exploration Agency, JAXA, launched the Greenhouse Gases Observing Satellite (GOSAT) at 12:54 pm Japan Standard Time from the Tanegashima Space Center.

The launch vehicle flew smoothly, and, at about 16 minutes after liftoff, the separation of the IBUKI was confirmed, JAXA officials said.



**Japan's Greenhouse Gases Observing Satellite  
IBUKI (Photo courtesy [JAXA](#))**

"The satellite is expected to play an important role in monitoring global environmental changes and look out for any small warning signs that could affect our future," said JAXA in a statement.

JAXA said the satellite project will observe the concentration distribution of greenhouse gases thought to be a primary cause of global warming, and help reduce carbon dioxide emissions covered by the Kyoto Protocol.

Signed in Kyoto, Japan in 1997, the international treaty that limits the emission of six greenhouse gases took effect in February 2005. The target for Japan is six percent below 1990 levels.

The protocol's first commitment period expires at the end of 2012 and it is expected to be replaced by a treaty to be finalized in December.

While the Kyoto Protocol requires that 35 industrialized countries meet precise emissions limits, in reality, says IBUKI project manager Takashi Hamazaki, there are no standardized means to measure greenhouse gas emissions, and the amount of emissions reported is based on self-declaration.

The amount is calculated based on assumptions about the volume of the countries' oil consumption, car-driving distances and industrial gas emissions, among other factors.

"Therefore if GOSAT observation makes it possible to estimate greenhouse-gas absorption and emission per continent or large country, we'll be able to use the data as a means of verification," he said.

GOSAT has three major mission objectives. The first is to monitor the density of greenhouse gases precisely and frequently worldwide.

The second is to study the absorption and emission levels of greenhouse gases per continent or large country over a certain period of time.

And the third objective is to develop and establish advanced technologies that are essential for precise greenhouse gas observations.

Hamazaki said, "Over the last few years, global warming has become a serious concern around the world. Discussions on how to reduce the rate of global warming are taking place both domestically and internationally, and include such strategies as reducing the level of carbon dioxide emissions by half over the next 50 years."

"To accomplish this goal," Hamazaki said, "we must improve the accuracy of observations and long-term climate-change predictions. Up to now, global warming predictions have been performed by research organizations around the world through supercomputer simulations based on ground observation data."

In Japan, the National Institute for Environmental Studies, the Meteorological Research Institute, and the University of Tokyo are participating in global warming modeling.

Hamazaki said there are only about 260 ground observation points at present, and they are not evenly distributed, "so we can by no means say we are observing the entire globe."

"Thus, under the present circumstances, global warming predictions vary and may not be accurate," he said.

By comparison, he said, GOSAT will have 56,000 observation points on the Earth, and will be able to acquire data covering the entire globe every three days. "We think this will improve the accuracy of global warming predictions."

IBUKI will be "watching how the Earth breathes," he said.

Hamazaki says Japan hopes the data gathered by IBUKI will be useful to the Intergovernmental Panel on Climate Change, which summarizes research results from all over the world. The IPCC will be publishing a report on climate change predictions for the next 100 years.