JFE Engineering's Activities to Prevent Global Warming

Preventing Global Warming through Supplying Energy Conservation Technology

JFE Engineering has been contributing to global warming prevention with cutting-edge technologies to reduce CO_2 emissions, such as biomass technology, energy technology and CO_2 immobilization technology.

Clathrate Hydrate Slurry (CHS)

The Clathrate Hydrate Slurry (CHS) Heat Storage Air-conditioning System is a revolutionary technology that drastically cuts CO_2 emissions and conserves energy for central air conditioners in large scale office buildings and commercial facilities.

Clathrate Hydrate Slurry is a fluid that can store over twice the amount of cold energy as the water used in conventional central air conditioning systems. By efficiently storing a large quantity of cold energy during the night, when the air temperature falls, and using the stored cold energy during the daytime when the air temperature rises, CHS provides a higher level of energy conservation and a dramatic reduction of both CO_2 emissions and air conditioning operation costs. It also contributes to peak cuts and load leveling for energy.

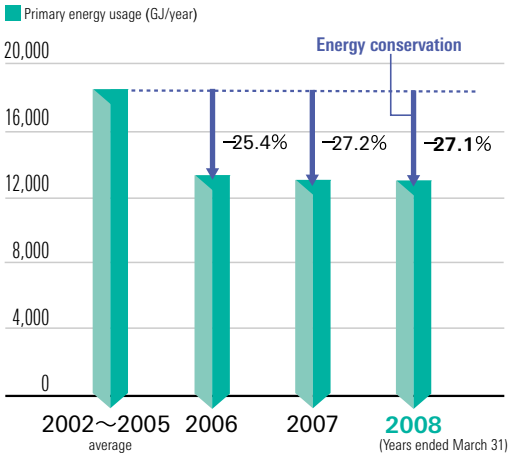
This technology was jointly developed by JFE Engineering and New Energy and Industrial Technology Development Organization (NEDO). As a form of energy conservation technology created in Japan, it was awarded the Prime Minister Prize in 2006 and the Nikkei Global Environment Technology Prize in 2007.

Energy conservation achievement (Cooling period for our company building)

27%

(Compared to period prior to installation)

Usage in energy during the air conditioning period (from April to November)



In our company building, due to comprehensive energy conservation measures centering on the installation of the above mentioned CHS Heat Storage Air-conditioning System, we conserved 27% more energy than our average consumption from the year ended March 2002 to the year ended March 2005 compared with before the system was installed. The CHS Heat Storage Air-conditioning System contributed to about 40% of this achievement.

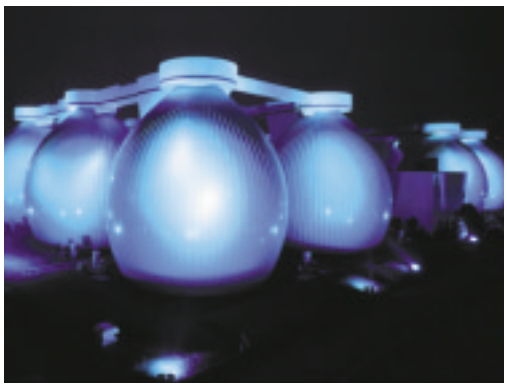
Kawasaki Azalea (Kawasaki City)

California Steel Industries, Inc. (California, USA)

Kuraray Manufacturing Technology Development Center (Kurashiki City)

Sewerage Sludge Digestive Gas Power Generation

The high-efficiency engine of this system converts digestive gases, generated from sludge digestion tanks at sewerage treatment plants, into electricity and thermal energy.



Biomass Boiler System

This system uses a circulating fluidized bed boiler to efficiently generate power and supply heat from carbon-neutral biomass. The biomass boiler system has been adopted and used mainly by wood biomass power plants and paper-manufacturing companies and contributes to the reduction of CO_2 emissions.

Doing Our Part for Global Warming Prevention in the Office and at Construction Sites

JFE Engineering constructs environmental management systems in line with the function and activities of each production center as our part in the fight against global warming.

In the office area, we do what we can to promote energy conservation by using a highly efficient Clathrate Hydrate Slurry (CHS) Heat Storage Air-conditioning System, turning off lights during lunch breaks, and keeping unused computers turned off. In the year ended March 2008, we installed solar street lights at the Tsurumi Engineering and Manufacturing Center.

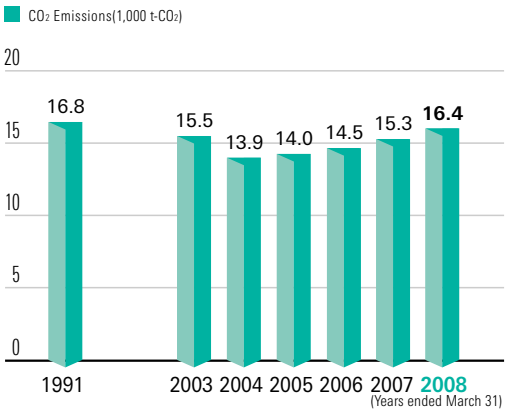
In the production divisions, we have employed measures such as saving electricity by reducing factory lighting on bright days, streamlining compressed air usage, and implementing energy conservation patrols.

In the production divisions and office divisions together, the total amount of CO_2 emissions was 16.4 thousand tons for the year ended March 2008. This is a 2.4% decrease from the 16.8 thousand tons for the year ended March 1991.

From August 2004 onward, we have been striving to assess the amount of CO_2 emissions for local construction sites. In addition, from the year ended March 2007, we began trial implementation of other activities designed to reduce CO_2 output such as reducing occurrences of machine idling at construction sites.

Solar street lights installed at the Tsurumi Engineering and Manufacturing Center

Transition of CO_2 Emissions



CO_2 emissions in comparison to the year ended March 1991 levels

down

2.4%