

# Preventing Global Warming (Manufacturing and Distribution)

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## Efforts at Manufacturing Sites

Carbon dioxide (CO<sub>2</sub>) released through energy consumption at manufacturing sites makes up the bulk of TDK's total greenhouse gas emissions.

In FY2010, TDK's total CO<sub>2</sub> emissions in Japan amounted to 303,314 t-CO<sub>2</sub>, 5.0% down from the previous year (FY2009), and 13.2% less than the FY1991 level.

CO<sub>2</sub> emissions at overseas sites amounted to 588,794 t-CO<sub>2</sub>, 0.3% down from FY2009.

We actively promote various energy conservation programs to reduce CO<sub>2</sub> emissions.

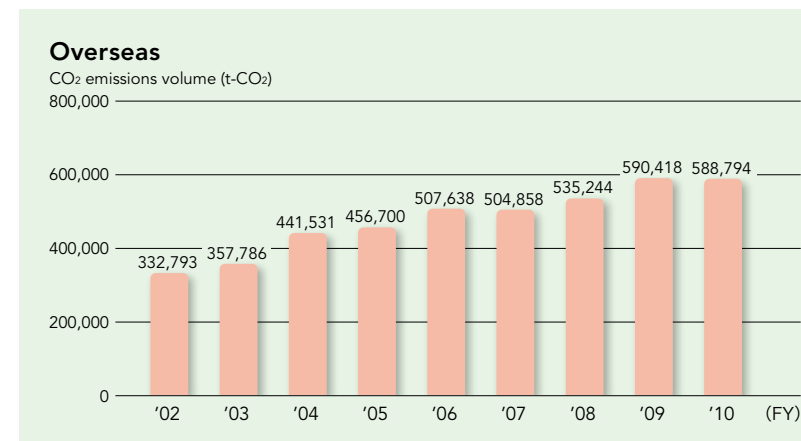
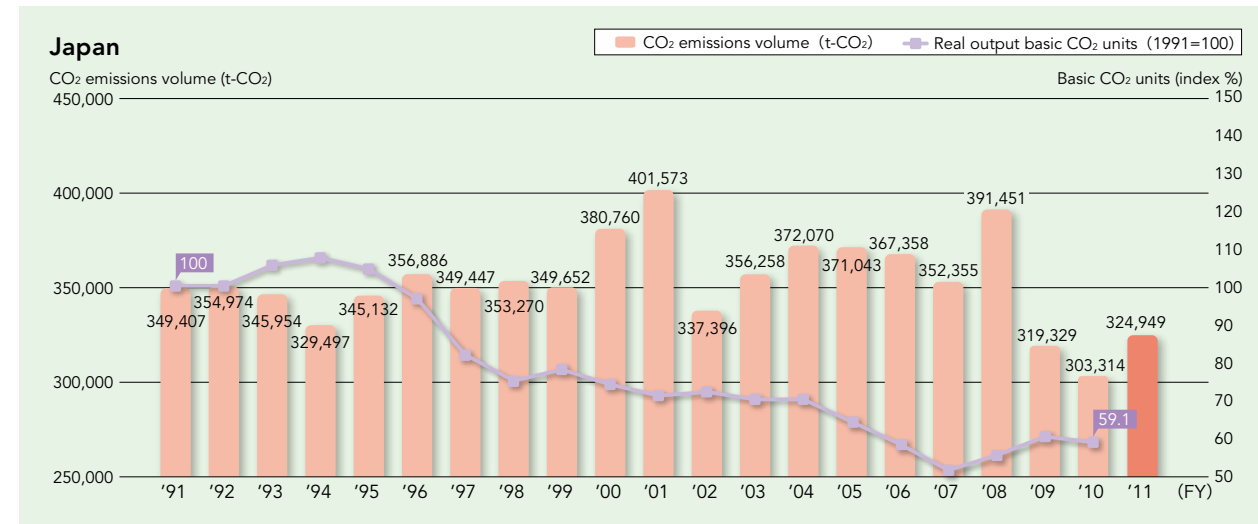
For Type I Designated Energy Management Factories in Japan that consume significant quantities of energy, we have set a stricter target than the nonbinding target set down in the Energy Conservation Law\*, which calls for a minimum 1% annual

improvement in energy consumption per unit of products. We have set a target of at least 2.0% per year. Regarding fixed energy consumption, independent of production volume, we have also set a target of 1.0% or more year on year reduction. By achieving these specific targets, we aim to meet our medium term objective of reducing CO<sub>2</sub> emissions by at least 7% from the FY1991 level by March 2011 (corresponding to a reduction of 324,949 t-CO<sub>2</sub> at domestic sites).

In an effort to bolster energy management at overseas manufacturing sites, we established a medium term target for reducing CO<sub>2</sub> emissions on a global basis (emissions in Japan and overseas combined) in the TDK Environmental Action 2015 launched in FY2007. The goal here is to reduce CO<sub>2</sub> emissions by 5% or more by March 2011, as compared to the FY2006 level.

\* Law promoting more efficient use of energy

## TDK CO<sub>2</sub> Emissions Trends



Note1: Real output: nominal output/price index released by BOJ (electric equipment)  
 Note2: TDK's standards for CO<sub>2</sub> emissions conversion are as follows:  
 • Figures for the energy used by each facility are calculated by multiplying the volume of purchased electricity and fuel (such as gas and oil) by a CO<sub>2</sub> conversion factor.  
 • The CO<sub>2</sub> conversion factor for fuel is a factor stipulated in the Law Concerning the Promotion of Measures to Cope with Global Warming.  
 • The CO<sub>2</sub> conversion factor for electricity purchased (in Japan) is the basic unit of equivalent CO<sub>2</sub> emissions published by the Federation of Electric Power Companies of Japan. For FY2009 and following, an adjusted basic unit for emissions is used. (The FY2010 figure uses the FY2009 factor.) Because the conversion factor was finalized in FY2009, the figures for CO<sub>2</sub> emissions and real output basic CO<sub>2</sub> units for FY2009 (in Japan) have been revised.  
 • The CO<sub>2</sub> conversion factor for electricity purchased (overseas) is the FY2007 factor for each country stipulated in the GHG Protocol Initiative. However, the eGRID2007 conversion factor for FY2006 is used for the U.S., and the factor for FY2007 published by the Taiwan Power Company is used for Taiwan. (The figures for FY2008 and later use the FY2007 factor.)  
 • The figures for CO<sub>2</sub> emissions from FY2002 to 2009 (overseas) have been revised as a result of a change in GHG protocol factor.

## Initiatives to Reduce CO<sub>2</sub> Emissions

### Global Warming Countermeasure Summit (With Special Interest Groups)

In May 2008, TDK organized the first Global Warming Countermeasure Summit, and three special interest groups were formed, headed by energy experts from the TDK Group in Japan. The group topics are sintering (industrial furnaces), air conditioning (clean room air conditioning), and air compression systems. Together, these three areas cover about 60 percent of energy use by the TDK Group in Japan. The aim of the groups is to promote special efforts in these particular areas. TDK's unique Ideal Production System (IPS) is applied to the group activities for promoting energy savings.

The IPS approach starts out by defining the ideal energy usage situation. The discrepancy between the ideal and the actual situation is then examined by assigning an efficiency index, and concrete measures are worked out, oriented towards focused implementation. In FY2010, a total of 21 special interest group sessions were held. Participants were able to determine and verify energy efficiency based on actual measurement data. Building on these results, efficiency targets could be set, and efficiency index comparisons for various sites were carried out. Several energy saving topics were highlighted, and in some instances the efforts led to the implementation of improved measures.

The work of the special interest groups will be further expanded in future with the aim of promoting energy savings and fundamental improvements.



Performing energy measurements at a manufacturing site (October 2009)

### Participation in "Trial Implementation of an Integrated Domestic Market for Emissions Trading"

TDK is taking part in the "Trial Implementation of an Integrated Domestic Market for Emissions Trading," an initiative started in October 2008 by the Japanese government and intended to pave the way for an effective CO<sub>2</sub> emissions trading scheme. During FY2010, we submitted to third party testing to establish actual reduction figures in CO<sub>2</sub> emissions, and worked towards identifying the presence of issues related to CO<sub>2</sub> emission volume and possible areas of improvement. We also took part in consultations with government authorities and various institutions to contribute to a wider acceptance of the envisioned scheme in the industry.

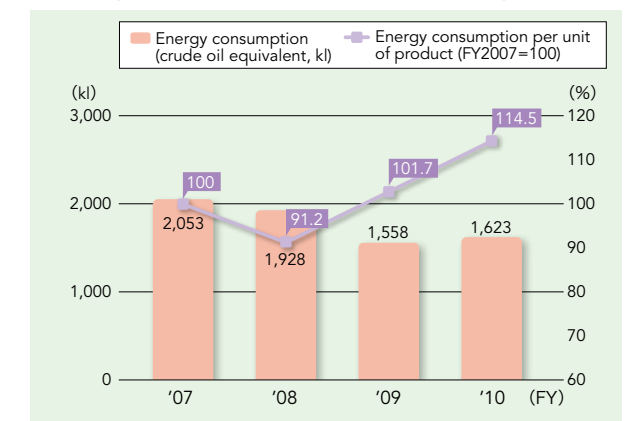
## Distribution Activities

In FY2007, the year when the revised Energy Conservation Law came into effect, TDK established a committee to promote energy savings and improved operation procedures in the distribution sector. Company-wide efforts to reduce distribution related energy consumption are now under way. The following measures are aimed at achieving the goal set down in the Energy Conservation Law to reduce energy consumption per unit of products by at least 1 percent:

- Switch transport between Oita and Akita to rail (modal shift)
- Improve loading ratio by reducing the frequency of deliveries
- Shorten transport routes through centralization of distribution bases
- Use local ports efficiently to reduce the domestic overland transport distances etc.

As a result, caused by the reduction in sales figures, energy usage per unit of products deteriorated by 12.6 percent compared to FY2009 and by 14.5 percent compared to FY2007. However, CO<sub>2</sub> emissions were 5,897 t-CO<sub>2</sub>, which represents an increase by 8.7 percent over FY2009 and a decrease by 22.2 percent over FY2007.

## Trends in Energy Usage for Distribution and Consumption Per Unit of Product (TDK Corporation)



Note: The figures for FY2010 are the combined values for TDK and TDK-EPC.

## Trends in CO<sub>2</sub> Emissions for Distribution (Japan)

