

# Reducing CO<sub>2</sub> Emissions

The goal of our “CO<sub>2</sub> reduction project” is to meet the company-wide reduction targets for 2010

## Implementing large-scale energy conservation improvements at our primary operating sites

### Our CO<sub>2</sub> reduction project finds new energy conservation opportunities in our plants

Most energy consumed in NTN plants is by facility requirements such as compressors, air conditioning, and lighting, so we utilized various subsidies to carry out large-scale energy conservation improvements.

In April 2008, we started our “CO<sub>2</sub> reduction project” to find and implement new measures to reduce CO<sub>2</sub> emissions from our plants. This project is led by the heads of the Monozukuri centers at our primary operating sites. The Production Engineering R&D Center and the Head Office’s managing departments were also involved in implementing various measures over the year. The project involved discussing how to obtain and disseminate information on the newest energy conservation technology, how to exchange information about energy conservation improvements and equipment purchases going on at the various operating sites, and how to report this information to other operating sites. The newest heat treatment facilities were also toured and external experts were invited to explain new technology.

### Improving energy conservation

As part of this project, NTN Kongo Corporation participated in the “Japan Voluntary Emissions Trading Scheme” (JVETS) in fiscal 2009, in which we received subsidies to make improvements for air conditioning and oil-cooling devices, resulting in an expected CO<sub>2</sub> reduction of 3,000 tons/year. This system provides subsidies for energy-conserving equipment on the condition that CO<sub>2</sub> emissions are reduced by a certain amount. Any variances from the target reductions are bought and sold as emissions credits by the participating companies.

In recent years, we have introduced high-efficiency compressors at Iwata Works through independent Energy Service Company (ESCO\*), which currently carry out most energy conservation improvements in

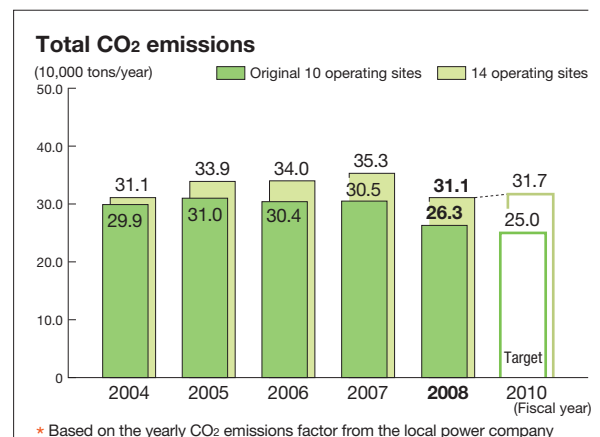
plants. We expect a reduction in CO<sub>2</sub> emissions of 4,000 tons/year. In addition, at Okayama Works, we received subsidies from the Ministry of Economy, Trade and Industry to replace the air conditioning there with the newest thermal storage air conditioning system, and we expect a reduction in CO<sub>2</sub> emissions of 1,000 tons/year.

Through these activities, we expect a reduction of approximately 20,000 tons of CO<sub>2</sub> by the end of fiscal 2010. In fiscal 2009, project members will continue to spearhead these efforts in each workplace. Going forward, we will also implement energy conservation technologies at our overseas operating sites.



High-efficiency screw compressor at Iwata Works

\* ESCO: ESCO businesses invest in the equipment and renovation costs required to conserve energy, enabling ESCO contractors to achieve energy conservation without the need to shoulder the initial investment.



A thermal storage tower for the new air conditioning system installed at Okayama Works

### Taking responsibility for our plant's large environmental impact

Kenji Horizumi

Iwata Works  
Head, Monozukuri Center



Approximately 30% of the CO<sub>2</sub> emitted by the entire company comes from Iwata Works, making it imperative for us to implement energy conservation measures. Our latest improvement was high-efficiency compressors. All of us at Iwata Works will also carry out accessible, small-scale energy conservation activities.

## CO<sub>2</sub> reduction targets and the introduction of natural energy sources

### Drastic reduction in total CO<sub>2</sub> emissions

To achieve the company-wide limit of “317,000 tons in total CO<sub>2</sub> emissions from all domestic sites by 2010” (a 10% reduction from fiscal 2007), we are carrying out energy conservation improvements in our plants and making use of natural energy sources.

In fiscal 2008, these efforts, on top of the reduction in production in the latter half of the year, reduced our total CO<sub>2</sub> emissions 311,000 tons, which was below the 2010 CO<sub>2</sub> reduction target. Because there is a possibility that production could rebound, however, we did not change the 2010 target and will look at what happens in 2009 before reviewing this target again.

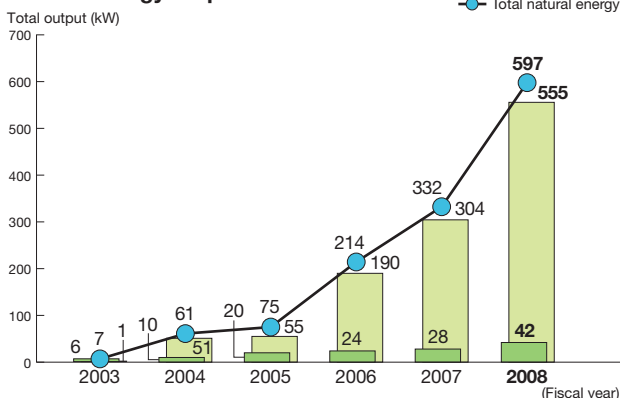
To help reduce the CO<sub>2</sub> emitted by the NTN Group, we have been actively using natural sources of energy to generate wind and solar power. In fiscal 2008, we installed a 94kW solar power generator at Kuwana Works and a 62kW solar generator at Mie Corporation. To date, we have installed 10 solar generators, 14 wind power generators, and 13 hybrid generators that harness both wind and solar energy. These generators correspond to a reduction of 290 tons/year in CO<sub>2</sub> emissions.

We also participated in a trial of the Japan Voluntary Emissions Trading Scheme, which was started by the government in 2008. In this system, participating corporations set voluntary targets for total CO<sub>2</sub> emissions or as a CO<sub>2</sub> emissions rate for one year from 2008 to 2010, and then engaged in emissions trading to achieve these targets. The NTN Group is participating in this scheme and has set CO<sub>2</sub> emissions targets for fiscal 2010 for our primary operating sites.

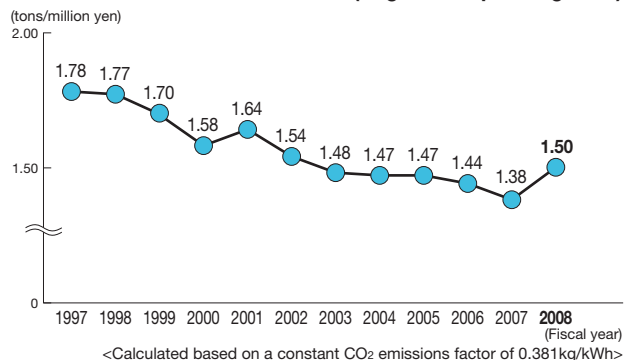


The solar power generation system at Kuwana Works' Extra-Large Bearings Plant 3

### Natural energy output



### For reference: CO<sub>2</sub> emissions rate (original 10 operating sites)



## Reducing the impact of logistics on the environment

### Reducing CO<sub>2</sub> emissions by encouraging a modal shift and environmentally-friendly driving

99.8% of the NTN Group's product output is shipped by truck and all of this is left to logistics companies. Our yearly product output is approximately 90 million ton-km, which means that we are a “Designated Consigner” (ship 30 million ton-km of cargo a year) under the amended Act on the Rational Use of Energy of 2005. In the medium- to long-term, we are required to improve our average annual energy use rate by 1%. The NTN Group had set a target: Reduce CO<sub>2</sub> emissions from logistics (per distance driven) by 12% over fiscal 1998 levels by fiscal 2010. NTN worked to raise awareness of environmentally-friendly driving at logistics companies and to encourage them to switch to low-pollution vehicles.

In addition to these efforts, in fiscal 2008, the target that we set was a 1% reduction over fiscal 2007 (13,400 tons), and we worked to make a modal shift to rail shipments and to modify the way that containers for export are stacked to reduce the amount of cargo. The downturn in the economy also reduced shipments, resulting in a total reduction of 12,000 tons, which was a 10% reduction from 2007.

### CO<sub>2</sub> emissions rate from truck transport

