

# Preserving the Global Environment

## Promoting energy conservation in Japan and around the world

### ➔ Reducing CO<sub>2</sub> emissions

#### A new indicator to track and control "total emissions"

We set two goals for fiscal 2007 at the 10 original domestic operating sites: achieving a 22% reduction in CO<sub>2</sub> emissions rate over fiscal 1997 and achieving total emissions of 261,000 tons or less. Through efforts to reduce our energy consumption, we achieved both of these goals, with a 22.0% and a 240,000 ton reduction respectively (calculated with a CO<sub>2</sub> emission factor of 0.381 kg CO<sub>2</sub>/kWh in electricity). If we include the emissions from the four additional operating sites that we have incorporated into the ISO14001 multi-site certification since 2003, our total emissions were 353,000 tons based on the various power companies' emission factors in fiscal 2006.

In April 2005, the NTN Group set itself the goal of reducing CO<sub>2</sub> emissions rate by 25% over fiscal 1997 by 2010, a target far above the domestic industry target, which was a 13% reduction. We have been working toward this target ever since. Upon further consideration of the crises associated with recent global warming trends, we have set ourselves the more concrete target of reducing total CO<sub>2</sub> emissions including those from new operating sites to 317,000 tons or less by 2010\*. This move to control total

emissions is in response to an increased awareness of energy conservation around the world and the realization that demand for bearings, which contribute to energy conservation, will continue increase, causing our group's bearing production volume and CO<sub>2</sub> emissions to increase yearly.

As for our overseas operating sites, progress with our emissions rate reduction initiatives at our North American operating sites have been significant. A target of a 1% reduction over fiscal 2006 led to an actual reduction of 7.3%. We will continue working to enhance our CO<sub>2</sub> reduction efforts to achieve our fiscal 2010 target.

\* 317,000 tons: Calculated based on the fiscal 2010 target emission factors from the various power companies.

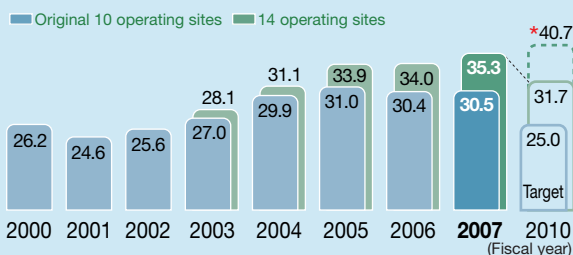
#### Energy conservation efforts underway at each operating site

Our company has been receiving ongoing "energy conservation assessments" under a grant from the New Energy and Industrial Technology Development Organization (NEDO) in order to have energy experts point out problems and to propose fundamental countermeasures to reduce CO<sub>2</sub> emissions. We have created an energy conservation plan based on the results of these assessments and we have made large energy conservation investments. The energy conservation evaluations ended for the nine main sites with an assessment at NTN MIE Corp. in fiscal 2007.

In terms of the results of our energy conservation efforts, the mercury lights in Kuwana Works' heat treatment plant were replaced with high-efficiency metal hydride lamps, resulting in a reduction of 185 tons of CO<sub>2</sub> per year. At NTN Casting Corp., lighting fixtures were converted to high-efficiency metal hydride lamps and inverter-based fluorescent lights; in addition, the compressors here were changed to high-efficiency compressors, resulting in dramatic energy savings. We expect a yearly reduction in CO<sub>2</sub> of 690 tons from these equipment changes.

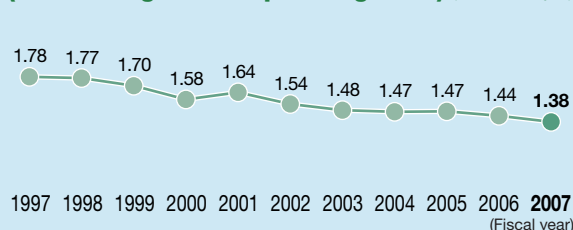
We have also introduced the newest air leak detectors to intensify our efforts to eliminate air leaks from the pneumatic systems at all of our operating sites. We have achieved significant results by actively using these detectors (See p. 43).

#### Change in total CO<sub>2</sub> emissions (10,000 tons/year)



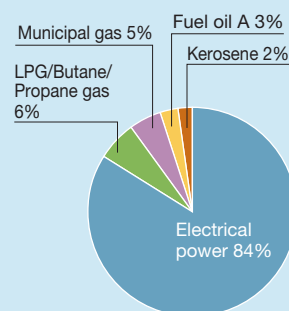
<Based on the yearly CO<sub>2</sub> emission factor from each power company>  
\* Presumed emissions when any measures are not taken.

#### For reference: Change in CO<sub>2</sub> emissions rate (for the original 10 operating sites) (tons/million yen)



<Calculated based on a constant CO<sub>2</sub> emission factor of 0.381kg/kWh>

#### CO<sub>2</sub> emissions by power source



#### Yearly energy consumption

|                  |                        |                          |
|------------------|------------------------|--------------------------|
| Electrical power | 583 GWh                |                          |
| Gas              | LPG/Butane/Propane gas | 7,567 t                  |
|                  | Municipal gas          | 7,960,000 m <sup>3</sup> |
| Petro-leum       | Fuel oil A             | 3,693 kL                 |
|                  | Kerosene               | 3,279 kL                 |

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### ➔ Reducing CO<sub>2</sub> emissions from logistics

#### Going forward with a modal shift in our logistics

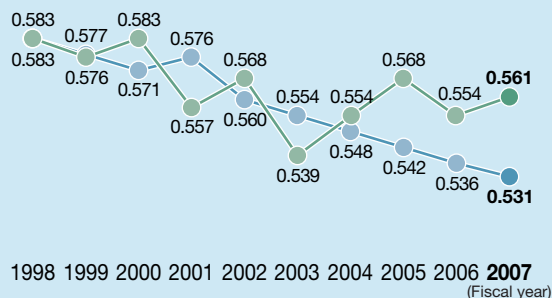
99% of NTN Group products are transported by truck, and logistics companies handle all of this cargo. Our annual product output is 90 million ton-km, meaning that we fall under the requirements for “Designated Consigners,” which are large consigners that ship 30 million ton-km of cargo a year; we are thus required to achieve an average reduction of 1% in CO<sub>2</sub> emissions rate per year in the medium term.

Since 1998, the NTN Group has been committed to achieving the following goal by fiscal 2010: to reduce the CO<sub>2</sub> emissions rate for logistics to 12% over fiscal 1998.

In addition, we have been working on a modal shift to rail and ship transport, which both have less of an environmental impact. In fiscal 2007, we switched our long-distance transport routes joining Hokkaido to the Kanto region to rail transport, and we started using ferries to transport the high-volume transportation of heavy products.

#### CO<sub>2</sub> emissions rate from logistics (kg/km)

—●— Target —●— Actual



### ➔ Reducing the use of hazardous chemicals

#### ➔ Reducing the use of PRTR-designated chemicals

#### We will ensure that quality is not affected as we reduce usage

In order to reduce the use of hazardous chemicals designated by the PRTR law, the NTN Group selected eight substances that are used in large quantities in our production processes and we established a plan to reduce their use. Our target for fiscal 2008 is to reduce the use of these substances by 33.5% over fiscal 2006. Our target for fiscal 2010 is a 40% reduction over fiscal 2006.

Targeted substances used in large quantities by the NTN group include the amine-based additives found in machining fluids and rust-proofing agents. We have already selected alternative agents for these substances, but because of the large number of products that are tied directly to safety such as automobiles, we plan to methodically carry out these changes making sure as we do so that we do not affect quality.

\* PRTR Law: A law that requires companies to measure and report the emission and transfer of designated chemicals.

#### ➔ Total phase-out of halon fire extinguishers

#### Making certain progress towards total phase-out

The halon fire extinguishers used in special areas such as electrical equipment contains brominated fluorocarbons that destroy the ozone layer. There are no legal restrictions on their use, but NTN has voluntarily committed to phase out their use by 2010.

In fiscal 2007, we changed 112 units with 235 units remaining. In fiscal 2008, we plan to change 99 units.

### Column Checking for air leaks and repairing them

An average of about 30% of a company’s electrical power is used by the compressors used to create compressed air; 30% of this (approximately 10% of total electrical power usage) is lost to air leaks. This is why in fiscal 2007, NTN purchased the newest air leak detectors for our primary operating sites, and we are methodically carrying out checks for air leaks and making repairs, and we are doing this even in areas that are difficult to reach.

We are working to dispel the preconceived notion that “air and water are free” through initiatives to increase worker awareness such as indicating the volume of air and money lost at actual air leak locations.



Air leak check at Kuwana Works