

# Environmental Activities of Fiscal 2001

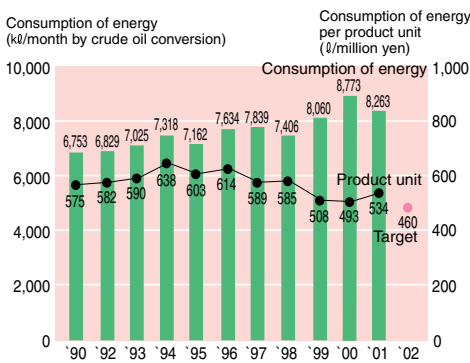
## Initiative for Reducing CO2 Emission

Introducing a cogeneration unit and boiler turbine that uses waste heat at our Toyohashi plant, we have begun to take measures including reexamination of forms of supplying energy. Concerning consumption of energy per product unit, it may be impossible to achieve the fiscal 2002 targets and we may have to revise the targets downward.

### Consumption of energy and consumption of energy per product unit

Consumption of energy was reduced to 8,263kl/month, but consumption of energy per product unit took a step backward to 534l/million yen. We may therefore be unable to achieve the targets for fiscal 2002. The cause of this is the influence of approx. 40l/million yen because of decline in production due to economic recession and, approx. 20l/million yen due to a reduction in price, and approx. 30l/million yen due to insufficient energy saving measures. To resolve this situation, we are considering introducing a cogeneration unit at our Tohoku, Kanto and Kameyama plants.

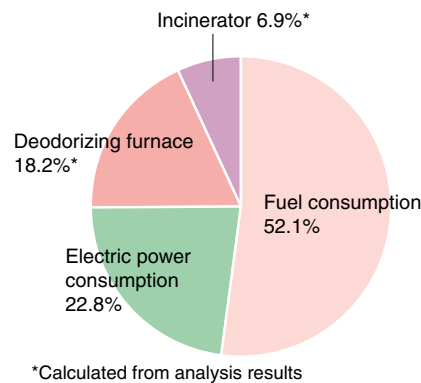
### Consumption of energy and consumption of energy per product unit



### Energy consumption and CO2 emission

By introducing cogeneration, the ratio of CO2 emission tends to be reduced but emission increases due to fuel consumption. CO2 emission from deodorizing furnaces that treat organic solvents by burning and incineration of waste converted to fuel are independently calculated from analysis results.

### CO2 emission by application



### Establishment of special subcommittees for saving energy

To promote a comprehensive study of ways to reduce consumption of energy, the Nitto Denko Group established special subcommittees for saving energy under the environment committee at all our companies in April 2002. Activities are carried out by the members of the subcommittees, who are those in charge of saving energy appointed by the various plants and applicable group companies.

#### Objective of the special subcommittees for saving energy for all Nitto Denko Group companies

Bolstering system/structure for saving energy (mainly providing side) energy saving examples, company-oriented information sharing, outsourcing, consideration of ESCO service\*1 etc., considering introduction of new energy such as fuel batteries\*2 etc.

\*1 ESCO service: Service that proposes ways to save energy and guarantees the effect.  
\*2 Fuel battery: Clean energy system that binds hydrogen of fuel with oxygen from the air to create electric power and steam.

### Boiler turbine that uses waste heat begins operating

A boiler turbine that uses waste heat of deodorizing furnaces was completed and began operating at our Toyohashi plant in July 2001. This is a system that produces electricity using excess steam and waste heat that up to then could not be utilized. A system that efficiently converts 47% of the energy possessed by steam and waste heat, the boiler turbine is a gift of the leading energy saving technology of the New Energy and Industrial Technology Development Organization (NEDO). The system offers superior energy savings when load changes. Together with cogeneration, operation of this equipment that can handle ratio fluctuation of heat and electric power covers 75% by self-generation of electric power, realizing energy savings of 245 kl per month by crude oil conversion.



Steam turbine that produces electricity

### Boiler turbine system flowchart

