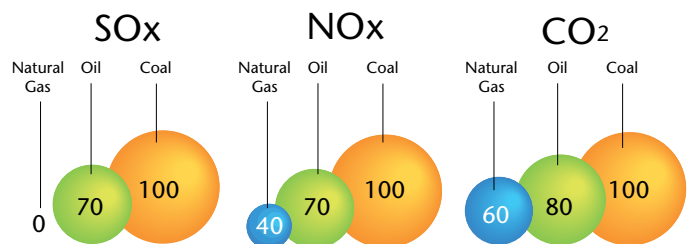


# Environmental Conservation

At COP3 held in Kyoto in December 1997, targets were set for the reduction of CO<sub>2</sub> emissions. The Japanese government has embraced Japan's goal of a 6% average cut in emissions between 2008 and 2012, compared with 1990 levels. Natural gas—one of the cleanest burning of all fossil fuels—is seen in many quarters as one way to achieve this. Tokyo Gas will work to develop cogeneration and other energy-saving systems to improve our energy-efficiency rate by 18%, compared with 1990 levels, by the year 2010. All our environmental activities are guided by our General Environmental Policy, which we formulated in September 1992.

## The Inherent Advantages of Natural Gas

The environmental advantages of natural gas are clear. Statistics bear this out. In terms of carbon dioxide (CO<sub>2</sub>) emissions, the leading cause of the greenhouse effect, natural gas produces fewer emissions than oil and coal to generate the same amount of energy (see diagram). Furthermore, unlike oil and especially coal, natural gas does not produce any sulfur oxides (SO<sub>x</sub>), which cause acid rain. Nitrous oxide (NO<sub>x</sub>) emissions, another cause of acid rain, are lower with



Source: IEA, *Natural gas prospects to 2010*, 1986.

natural gas than with oil and coal. This makes natural gas the cleanest fossil fuel currently available.

## THE "WONDER SHIP"

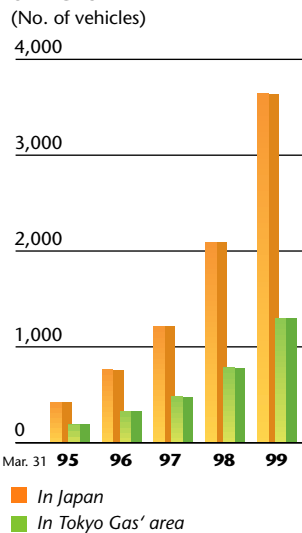
On November 5, 1998, we opened the Earth & Energy Exploratorium. Located in Yokohama, the new facility, known locally as the Wonder Ship due to its shape, is at the vanguard of our efforts to promote environmental issues. Visitors are introduced to various technologies, recycling activities and other environmental initiatives through demonstrations, movies, displays and other means. Technologies that hold considerable promise for the future are also featured: solar power generators, fuel cells and wind power generators.



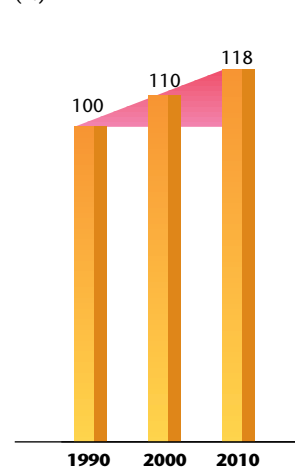


A "CNG (compressed natural gas) Non-Step Bus" operating in Tokyo.

### Growth in Number of NGVs



### Energy-Efficiency Targets (%)



### ISO Certification

Obtaining ISO certification has been positioned as a high management priority. In 1998, both the Negishi and Sodegaura LNG terminals had their ISO 14001 certificates renewed following an annual inspection. In 1997, these facilities were first in Japan's gas industry to obtain this international certification, which attests to the quality of environmental management systems. The next step is ISO 14001 certification for the new Ohgishima LNG Terminal.

### Recycling Initiatives

Recycling and lower volumes of waste are other ways we reduce the environmental impact of our activities. SRIMS (Saving Recycling Innovative Model System) is at the heart of these efforts. This system facilitates the efficient collection, separation, management and disposal of gas equipment, pipes and other industrial waste. In a similar vein, we are sharply cutting the amount of earth removed from pipeline construction sites.

### Technologies to Reduce Environmental Impact

Tokyo Gas feels that it has the responsibility to further reduce the environmental impact of natural gas. That's why we are developing new ways to increase energy efficiency. Gas

cogeneration systems and gas-fired air conditioning are just a few of the many technologies that are being widely adopted. Recently, we have had success with highly efficient Planar Solid Oxide Fuel Cells (SOFCs), which emit low levels of NOx and no SOx emissions. These cells may soon be incorporated into cogeneration systems. Concern over dioxin emissions has also been increasing. To help deal with this issue, Tokyo Gas has developed natural gas "reburning technology" for municipal solid waste incinerators.

The story wouldn't be complete without mentioning natural gas vehicles (NGVs). Environmentally friendly, these cars are likely to be seen more and more on Japan's roads. The Japanese government has set a target of 1 million NGVs by 2010. Finally, with an eye on the future, we are also seeking new, environmentally friendly forms of energy, such as methane hydrate.



Tokyo Gas received the "Minister's Prize for Activities to Prevent Global Warming" from the Environment Agency for its efforts to promote NGVs at an award ceremony held on December 12, 1998.