

## Measures to Prevent Global Warming



In doing our part to prevent global warming, we actively implement measures that include the introduction of effective cogeneration systems.

### Challenge of energy consumption increase with use of clean rooms

In recent years, electronic devices such as personal computers, mobile phones and various home appliances, have become increasingly compact and multifunctional, necessitating the downsizing of their circuit components. Because such downsizing requires processing accuracy to the micron level, the slightest changes in temperature or humidity can result in uneven quality, while the intrusion of dust may result in component failure. To prevent such problems we use clean rooms, where temperature and humidity are kept constant. Accordingly, the ratio of production in clean rooms is on the rise.

In clean rooms, air is circulated via high-performance filters to remove dust from the production process and from outside sources. Moreover, maintaining constant temperature and humidity entails additional energy consumption for dehumidification and humidification, in addition to air conditioning. For these reasons, the energy consumed by a clean room air conditioning system is about two to four times that consumed by conventional air conditioning systems. This was a major factor in the energy consumption increase seen during our production activities.

### Introduction of large-scale cogeneration systems

Thus far, Murata has taken such steps as waste heat recovery, and replacing freezers with higher-efficiency models, so as to curb the increase in energy consumption for air conditioning. However, we have not yet reached our self-imposed targets for helping alleviate global warming.

To achieve these targets, we introduced large-scale cogeneration systems into Murata's Yokaichi Plant and the Miyazaki Plant of Fukui Murata Manufacturing Co., Ltd. These Plants consumed greater amounts of energy than other plants of the Murata Group in Japan. The systems introduced comprise lean-burn gas engine power generators fueled by natural gas. Using exhaust heat, these systems heat and cool water for air conditioning. Introduction of these cogeneration systems enabled us to cut air-conditioning energy consumption at these plants by about half.

These cogeneration systems, recognized as excelling in energy-saving effect, are subsidized by the New Energy and Industrial Technology Development Organization (NEDO), under its Energy Use Rationalization Business Support Project.



Monitoring of cogeneration system operations



Gas engine in the cogeneration system



Clean room

## Substantial effects of cogeneration system introduction

As a result of our introducing the gas engine cogeneration systems in fiscal 2005, the Yokaichi Plant and the Miyazaki Plant of Fukui Murata Manufacturing are each expected to achieve nearly 20% reduction in CO<sub>2</sub> emissions. Taken together, the CO<sub>2</sub> reduction effects of these two plants are estimated to comprise 3% of CO<sub>2</sub> emissions for the entire Murata Group.

In future we plan to introduce the cogeneration systems to other plants, and develop additional measures for helping prevent global warming to the maximum extent.

## Voice



Members in charge of facility operation management (Yokaichi Plant)

**We are uncompromising in our total commitment to energy conservation.**

We have already taken almost all energy-saving measures in our manufacturing sites in Japan. It was therefore said that reducing CO<sub>2</sub> emissions by 1% is like trying to wring out a dry rag. Under such difficult conditions, our two plants, if combined, achieved about 4% reduction in the entire Murata Group. We are pleased with such outstanding results.

We will continue working to contribute to global warming prevention by implementing further energy-saving measures, including a three-year project to replace approximately 30,000 lighting fixtures with high-efficiency HF lighting systems.