

Energy saving activities in two plants that consume a large volume of electricity

Kiyohara Sumiden, Ltd. and Sumitomo Electric Tochigi Co., Ltd. are both located in Kiyohara Industrial Park, which is one of the largest industrial complexes in Japan situated inland by the clear Kinugawa River in Utsunomiya City, Tochigi Prefecture. These two companies consume so much electricity that both are among the top five Sumitomo Electric Group companies in Japan in terms of power use.



Tadashi Sugiyama General Manager
Yoshinobu Onishi Assistant Manager, Plant Engineering Group, Manufacturing Department

Sumitomo Electric Tochigi Co., Ltd.

Sumitomo Electric Tochigi Co., Ltd. started production activities in 1985, and its main products include steel cords used to reinforce car radial tires (high-strength steel wires). The plant uses large gas furnaces and hundreds of electric motors to manufacture products. We are making energy saving efforts including recovery of waste heat from the furnaces to generate hot water and steam, as well as introduction of LED lights and high-efficiency motors and air conditioners. We also strive to reduce gas consumption, along with power use, by adjusting the air ratio in boilers and furnaces in a more meticulous manner. In addition to such equipment improvement, we are committed to improvement on the "software" aspects, such as review of the operation of compressors and inverters. As exemplified by the accumulation of these energy saving efforts, we are making steady efforts with creative ideas.

In recent years, steel tire cords have been required to be stronger to reduce the weight and contribute to the improvement of fuel efficiency of cars. This gives us an opportunity to take advantage of the features of our products, which have high strength and high quality. We also consider that such features result in the reduction of total CO₂ emissions throughout the life cycle of the products including emissions at the stages of production and use. We will keep working for research and development in cooperation with tire manufacturers and contribute to the reduction of environmental impact



Generation of steam with waste heat recovered from the quenching furnace



Steel cords for radial tires

through energy saving and various other efforts.



Hiroshi Takamizawa
 Manager of Plant Engineering Group, Manufacturing Department

Kiyohara Sumiden, Ltd.

Having started production activities in 1998, Kiyohara Sumiden, Ltd. supplies optical fibers and preforms used for base materials of optical fibers to customers all over the world. Our company consumes much electricity because of the large production volume, in addition to the process to transform quartz glass, which has high melting point, into fibers in ultra-high purity. We are therefore committed actively to reduction of power use mainly in air conditioners and other utilities. All of our manufacturing processes are implemented in clean rooms, and we have focused on saving energy used by air conditioners because it is most effective.

Specifically, the number of freezers was cut from seven to three by introducing inverter ones and review of the system, and we optimized the setting of air conditioners in consideration of temperature and humidity. We are also working to improve their operation through such initiatives as reduction of the waiting time of furnaces by the use of IT. While exhaust gas is generated as a by-product, we are also trying to reduce energy use of blowers and other devices in the process to purify the gas as our original initiative.

As a result of these efforts, the energy consumption in fiscal 2015 was lower than the fiscal 2012 level although our production increased during the period. We have also succeeded in plant management, and the energy consumption per unit of products produced was lowest ever. We will keep accumulating the effects of ideas for energy

saving, and promote detailed saving activities.



High-efficiency freezers



Reduction of the waiting time of furnaces by the use of IT