Special Feature: Realizing a Sustainable Society

Fuji Electric aims to realize a safe, reliable, and sustainable society through its business activities.

In this section, we spotlight how our electric and thermal energy technologies help resolve customer problems and social issues in various fields around the globe.

1 Pursuing Energy Savings, Security, and Safety for Manufacturers' Factories and Production Equipment

Fuji Electric draws on its technologies in transformer, drive control, and measurement control systems to support manufacturers through products and systems that help save energy and through services that underpin equipment security and safety.

Case Example — Taiheiyo Cement Corporation — Saitama Plant

Diverse Range of Products and Services Help to Solve Issues in Safe Plant Operations and Energy Saving

The cylinder in the foreground at the Saitama Plant of Taiheiyo Cement Corporation is a cement incineration kiln

The Saitama Plant of Taiheiyo Cement Corporation conducted joint research with the municipal government of Hidaka City to tackle the issue of aging waste disposal facilities. The solution was to develop a cement recycling system using municipal waste[*1]. The setup employs an in-house rotary cement kiln for the AK System, which recycles the waste. The AK system enables the effective use of the waste as a cement material after fermentation.

The fermentation process for recyclable waste necessitates gradual fermentation by slashing garbage bags inside a more than 10-meter-long-cylinder rotary kiln over three days while processing a large volume of waste. Fuji Electric's inverter and motor rotate the heavy kiln consistently at low speeds. Such a kiln must be extremely reliable, as once started it must operate uninterrupted around the clock for at least six months. Operations to date have been stable.

Fuji Electric has been helping the Saitama Plant with electrical equipment since the facility entered service in 1995. As the customer's primary concern is stable operation, we built a monitoring control system for the entire cement production process with a DCS[*2] to support process control and quality management. We contribute to energy savings with a large inverter-controlled

The production monitoring control system visualizes cement production processes

boiler fan and kiln exhaust fan.

We will continue to respond to the customer's expectations and uphold their trust by supporting the entire plant with a diverse range of products and services.

*1 Municipal waste: Combustible waste generated from households and businesses in Hidaka City, Saitama Prefecture, Japan (excluding such recyclable resources as used paper and PET bottles).
*2 DCS: Distributed Control System.

The drive control system (inverter) controls kiln rotation

Power receiving and distribution substation equipment

Voice Comment from the Customer

Naomitsu Shinoda,
Manager, Maintenance & Engineering Department
Taiheiyo Cement Corporation

As a raw material manufacturer, a key challenge we face in pursuing customer satisfaction is fulfilling our supply stability responsibilities. We therefore strive daily to run production facilities without any hitches. The AK System, which has operated since 2002, delivers complete recycling without such secondary waste as incinerated ash, recycling almost 100% of municipal waste for cement manufacturing. With municipalities encountering numerous waste disposal issues, we aim to contribute to communities as we cultivate our business. We will continue to build resource recycling systems for the future of the earth in keeping with our commitment to CSR.

Case Example

Emirates Aluminium Company PJSC, UAE

The World's Largest Rectifier for Aluminum Electrolysis to Ensure Customer's Frontline Safety and Security

Aluminum smelting has become popular in such Middle Eastern countries as the United Arab Emirates (UAE) owing to the locally low cost of fuel. Emirates Aluminium Company PJSC (EMAL) is accordingly upgrading its facilities to become the world's largest aluminum smelting business.

Aluminum smelting consumes a lot of electricity in the electrolysis process. The rectifier that generates electricity through power conversion must constantly ensure high energy savings and efficiency. Operations must remain reliably stable over long periods. EMAL chose the Fuji S-Former rectifier for its high reliability and conversion efficiency and a global track record underpinned by technologies that we have accumulated over more than 50 years.

Product performance is not the only priority for customers. More than anything, they prize accident-free installations and operations at sites. EMAL rated our safety-oriented systems designs very highly and placed its trust in our local construction work driven by highly experienced engineers. We are currently moving forward with the second phase of construction.

Aluminum is used around the world to reduce weight in automobiles and aircraft. Demand for this material is expected to keep growing, especially in emerging countries. We will continue to ensure safety and security to customers around the globe through our products and services, thereby earning their trust.

This photo at EMAL's aluminum smelting plant shows some of 12 S-Formers delivered for first-phase construction. Once six more S-Formers are delivered for the second phase, the smelter will be among the world's largest