World's Leading Producer of Natural-Power Air Conditioning

Geo Power System Co.,Ltd.

GEO Power System Co., Ltd. develops air conditioning systems using natural energy, including the GEO Power System air conditioning unit powered by geothermal energy. Based on the principle that the ground just below the Earth's surface is a nearly constant temperature year round, the system uses a proprietary heat-exchanger pipe (GEO Pipe) sunk to a depth of five meters to supply cool air in the summer and warm air in the winter. The system is more efficient than conventional air conditioning systems because it incorporates insulation know-how, and also cools the structure's roof with rainwater during wetter summer months and heats rooms with solar energy during sunnier winter months. As President Toko Hashimoto notes, "Our geothermal-based system uses natural energy resources that are normally ignored or thrown away."
Unlike conventional air conditioners, the system's temperature cannot be changed with a single touch of a button. It can, however, reduce air conditioning costs by 60 to 80 percent, is eco-friendly and saves energy.

Although the environment, climate and other factors influence the performance of the system, in Yamaguchi Prefecture where the yearly average temperature is 15 °C, for instance, the system can keep a room at around 27 °C in summer and 15 °C in winter. Moreover, compared to conventional air conditioning, the system's use of natural (non-artificially treated) air makes it more human-friendly, does not cause unnaturally rapid fluctuations in bodily temperature and lowers stress on the human immune system.

In addition to air conditioning, the GEO Power system's ventilation function helps to reduce toxic substances and eliminate odors. The GEO Power System is also
low cost. Other geothermal air conditioning systems typically require sinking pipes dozens or 30 to 100 meters deep, a much more costly process.

**Leading Supplier to Homes**

President Hashimoto once worked on cargo vessels and ore carriers plying foreign routes. Using skills in welding and engine repair that he acquired in this occupation, he then founded a company that repaired machinery and made cans. Later, he expanded the business to enter the housing industry.

Hashimoto launched the GEO Power System in 1997 after expending a great deal of effort on its development. The company had to overcome many challenges, such as the high cost of pipes, plus problems with dampness and odors. Through research with Yamaguchi University’s Faculty of Engineering and Tokuyama College of Technology, however, the wrinkles eventually were ironed out.

As of January 2004, the system was being used in 300 domestic residential houses. According to the New Energy Foundation, the company has the largest share of the residential geothermal system market in Japan. Domestic sales agents increased from 32 to 65 in year 2004. Doubling of the preceding year is also expected in year 2005.

The GEO Power System is also used in large facilities, including kindergartens, elementary schools, junior-high schools and community centers. In Fukuoka Prefecture, the system was introduced in elementary and junior-high schools after approval as an Eco-School Pilot Model Project, a program to encourage environmentally conscious school facilities backed by the Ministry of Education, Culture, Sports, Science and Technology; the Ministry of Agriculture, Forestry and Fisheries and the Ministry of Economy, Trade and Industry. The system will
also be used in the Japanese Government Pavilion during the 2005 World Exposition, Aichi, Japan.

**Overseas Sales through Licensing**

GEO Power recently initiated its overseas operations and formed an overseas business department. The strategy is to license technology to leading builders and housing companies in each country. Recognizing the difficulty of independently developing a business overseas, the company plans to transfer its technology to local enterprises. Inquiries have already been received from the United States, Spain, South Korea, China and the Philippines. License agreements are expected to be concluded in several nations in year 2005. Moreover, a joint test currently under way in cooperation with Natural Resources Canada raises expectations for opening up the market in this country.

Since the GEO Power System is particularly efficient in four-season climates, especially areas in very cold winter and very warm summer as a continental climate, overseas markets hold great potential for the company's future growth.

(O Tasaki, JETRO Yamaguchi)

**Company & Contact Information**

- **Established:** April 2001
- **Address:** 2604-1 Beppu, Shuho-cho, Mine-gun, Yamaguchi Prefecture
- **Representing Director:** Toko Hashimoto
- **Capital:** ¥75 million
- **Sales Revenue:** ¥240 million (FY 2003)
- **Business Description:** Development of energy-saving, eco-symbiotic houses and development/sale of home air-conditioning and ventilation systems using geothermal and solar energy
· Number of Employees: 13
· URL: http://www.geo-power.com