

Aviano Officials Tap Into Earth's Energy

by Staff Sgt. Julius V. Delos Reyes
31st Fighter Wing Public Affairs

AVIANO AIR BASE, Italy (AFNS) -- Construction has begun to build a \$680,000 geothermal plant here, the first of its kind in U.S. Air Forces in Europe.

"Aviano (AB officials are) actively leaning forward on numerous utility and energy-saving initiatives," said Lt. Col. Bo Bloomer, the 31st Civil Engineer Squadron commander. "The geothermal plant is one cutting-edge technology that we're bringing to the base. We are excited to bring the first geothermal technology on Aviano (AB), and we're excited about the savings that will come."

Geothermal is one method of obtaining renewable energy by using the Earth's temperature to either heat up or cool down liquid, usually water.

"By sending down water or liquid inside the ground, you can have this heat exchange," said Damiano Rigo, the 31st Civil Engineer Squadron asset management optimization chief.

This heat exchange is especially beneficial during the winter and summer seasons. During the winter, the geothermal system sends down cold water through 50-meter-deep pipe structures, where it undergoes heat exchange. The "trade-off" will produce hot water that can be used for the boiler system to heat the facility as well as for personal use. That concept is used in the summer, when hot water will be sent underground and cooled.

The project is being built at the fitness center because of its massive consumption of warm water, Mr. Rigo said. With this endeavor, officials at Aviano AB will save approximately \$39,000 yearly on energy costs. The projected completion date is the end of August.

"With the geothermal system, we will be able to eliminate the boiler that currently heats the hot water," he said. "With this, we can save the gas being used to heat the water. We are not going to spend any money to heat the water anymore."

During the summer, electricity costs for the air conditioning system will be eliminated. This is accomplished as the geothermal plant has the capability to cool down the air conditioning system's refrigerant.

The idea for this project came from members of Aviano AB's energy team, which consists of energy experts, such as mechanical and electrical engineers, energy managers, utility managers, and technicians from various organizations.

"It is really a brainstorming process for finding solutions to save energy and to improve how systems work," Mr. Rigo said. "After brainstorming, we develop projects. It is really a holistic approach to develop projects and solutions."

Channeling those saved energy funds to other projects highlights the importance of the base's energy-saving programs, he said.

"Energy costs a lot of money," Mr. Rigo said. "The idea is also to become more energy independent. The fact

that we have very strong goals to produce renewable energy, that means we will be more independent."

The geothermal plant is a big innovation that provides free ways to obtain energy without depleting the resources, he said.

"This project is the best example you can have for energy conservation," Mr. Rigo said. "The Air Force invested so much into this path that this is the way to go."

Other Aviano AB energy-saving projects include installing solar panels at the dormitories; developing a system to collect rain water for irrigation; replacing 900 existing street lights with energy efficient bulbs; and converting old boilers with new ones that use methane gas instead of oil-based products.

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