

Press Release

Freiburg
December 22, 2010
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Innovative and Prizeworthy Energy-efficient Laboratory und Office Building Reduces Carbon Emissions and Costs

In a comprehensive energy concept from the Fraunhofer Institute for Solar Energy Systems ISE, geothermal energy, energy-efficient building and modern building technology are combined. This concept is one of the many measures implemented by Pfizer Manufacturing Deutschland GmbH to supply their facility in Freiburg with renewable energy. The plant was distinguished repeatedly for its commitment, most recently with the Environmental Award 2010 (Umweltpreis 2010) from the State of Baden-Wuerttemberg.

“Energy efficient buildings are the prerequisite for making renewable energy cost-effective,” states Jens Pfafferott, project leader at Fraunhofer ISE. The energy balance shows what efficiency means in the practice: Insulating the façade, employing external sun protection and many other such measures save 4.5 million kilowatt hours of energy annually. This amount is equivalent to the yearly energy consumption of 1000 four-person households and reduces carbon emissions by 2200 metric tons each year.

The geothermal system at the Pfizer facility supplies the building with 132 megawatt hours of heat and 110 megawatt hours of cooling annually. The system has 19 earth probes each with 150 kilowatts heating or cooling power from a depth of 130 meters. The four operating stages of the system exemplify its especially innovative character: It can provide free cooling to the building in spring when the ground temperature is still low. The heat pump can provide cooling in summer and heating in winter respectively. Also, the system is able to move heat when cooling is required in one part of the building and heating in another part.

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Michael Becker, the Site Engineering Manager of the Facility in Freiburg sums up his philosophy in these words: "Economy and ecology do not oppose but rather complement each other!" For Pfizer, it was worth it by all means: In addition to excellent economic results, Pfizer's dedication to the environment has been distinguished with several awards. Most recently they received the Environmental Award 2010 (Umweltpreis 2010) from the State of Baden-Wuerttemberg in the category "Industry".

In a long-term monitoring project the building and energy concept are to be evaluated, and top grades for the thermal comfort and indoor air quality have already been received. The primary energy consumption for the building energy services of heating, ventilation, air-conditioning and lighting amounts to 267 kilowatt hours per square meter per year. This is a factor of 3 or 4 lower than for a comparable laboratory and office buildings using conventional system technology.

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Link to monitoring:

<http://lowexmonitor.ise.fraunhofer.de/demonstrationsgebaeu/de/buro-und-laborgebaude-der-firma-pfizer-freiburg>

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Heating and cooling with environmentally friendly energy dominates the energy efficiency concept at the Pfizer Manufacturing Deutschland GmbH facility in Freiburg. The chiller installed at the facility is shown in the photo. ©Pfizer Manufacturing Deutschland GmbH, Werk Freiburg

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