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# Energy Efficient CT Systems Create New Cost-Savings

A video display on the door of Lake Constance Radiation Oncology Centre (Singen, Germany) includes the message "Let the Sun Shine," exhorting patients to think positively and have sunny thoughts despite the reason for their visit to this Southern Germany clinic. The message might as well also signify a plea for cloudless skies, as the radiotherapy center's lights, treatment systems and other machines and systems get a major percentage of their power from the sun.

In August 2011, Lake Constance Radiation Oncology Centre installed an array of 232 solar panel modules on its roof, creating a 400m2 energy collector that converts sunlight into hundreds of kilowatt-hours of electricity daily. During the summer, the array's output will be more than the Radiation Oncology Centre needs to run its two Elekta Synergy® systems, a large bore CT system and the clinic's IT technology, lighting and air-conditioning. In the winter months, the clinic will need to supplement its solar power generation with electricity from the power grid, resulting in Lake Constance Radiation Oncology Centre purchasing more electricity than it will produce when averaged over 365 days. However, it is the concept of decentralized power production that is critical, according to Holger Wirtz, the clinic's Technical Director/Chief of Medical Physics, and brainchild of the solar power project.

"This is a brand new idea. We are shifting the paradigm from centralized to decentralized energy production. We are the first in Germany to follow this model in healthcare and the environment and generate our own energy to drive our 'industrial processes,'" Mr. Wirtz pronounces. "This decreases the financial investment and effort that utilities expend in creating electricity at a central production point - such as an atomic, coal or hydroelectric plant - and distributing it to every energy consumer. Imagine if every home produced energy from its own solar array independent of the power grid; the current needed to be carried on the grid would be much lower."

Although Mr. Wirtz is a biomedical engineer who chose a medical physics career, he was intensely interested in renewable energy production while in high school and college. That curiosity carried forward to 2011 when he proposed to Lake Constance Radiation Oncology Centre's management that the clinic adopt solar power to offset its electricity costs.

"I told them that each year energy costs increased three to five percent in Germany," he recalls. "I calculated a positive return on investment of eight years at that annual energy cost increase and assuming consistent sunshine year to year. Depending on energy cost fluctuations, that could even be less than eight years."

Mr. Wirtz's preoccupation with energy conservation and Lake Constance Radiation Oncology Centre's bottom line even led him four years ago to acquire the two Elekta Synergy systems for the centre and an Elekta Synergy for its satellite department in Friedrichshafen.

"In 2007, these linacs consumed 30 to 40 percent less power than other treatment systems on the market," he says.

The manufacture of energy-efficient linear accelerators is just one way that Elekta strives to minimize its technology's environmental impact. For more information, visit: http://www.elekta.com/corporate_international_sustainability_the_environ....

"With this project, it is now possible to achieve environmentally friendly radiation therapy that patients and employees can identify with," adds Prof. Johannes Lutterbach, M.D., M.B.A, Medical Director.

Published on : Mon, 27 Feb 2012