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NEWSLETTER FROM THE CONNECTICUT DEPARTMENT OF ENERGY & ENVIRONMENTAL PROTECTION

Heating Things Up at Gaylord Hospital

Gaylord Hospital may be located on a quiet road in Wallingford, but it was the center of attention when healthcare facility representatives from throughout the state met there last November. They came to hear about and see the first solar thermal heating system operating at a Connecticut hospital.

Like all hospitals, Gaylord uses a lot of water. With 137 beds, 30,000 gallons of water is required daily; 60% of that is hot water used for patient care, food preparation, bathrooms, and showers. The hot water was traditionally heated with fuel oil and the cost was continuously rising. Their challenge was to find a better, more cost-effective, cleaner way. Switching to natural gas was not an option at the time as there were no gas lines leading to the area.



Mark Vere of Gaylord Hospital and Orlin Karabadzhev of Legacy Mechanical Group at the storage tank discussing the solar thermal distribution system.

Mark Vere, the Hospital's Director of Facilities Support Services, gathered a team that came up with a solution that is saving the hospital money, reducing fuel use, and benefiting the environment. A solar thermal heating system was installed and has been operating since 2012. The system consists of 70 rooftop panels that contain tubing filled with propylene glycol. Sunlight heats the liquid which is pumped to a heat exchanger in the system's 3,750-gallon water storage tank. Hot water is then distributed throughout the building. Most of us are familiar with solar photovoltaic systems that utilize sunlight to create electricity, but solar thermal is not as widely known and hasn't been used much by large facilities yet.

Converting sunlight into heat for hot water is a win-win. Gaylord will use 7,000 fewer gallons of fuel oil and save up to \$28,000 a year. The project is part of the hospital's overall energy strategy that also includes low flow toilets, lighting retrofits, motion sensors, a high voltage transformer upgrade, and installing dual fuel boilers for central heating. Dual fuel boilers will allow either natural gas or fuel oil to be used – the decision

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Heating Things Up at Gaylord Hospital

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can be made by the facility depending on the price of fuel. Until recently this was not possible to do at Gaylord, but the utility company is now installing gas lines to the area.

The project cost \$550,000 with a little over \$300,000 coming from a clean energy grant from CT Energy Finance and Investment Authority (CEFIA). **CEFIA** has financing programs that healthcare and other facilities can take advantage of.

In addition to cost savings, the solar heating system will reduce Gaylord's carbon footprint by 135,000 pounds annually. "We pride ourselves in leading the way toward stronger reliance on renewable and sustainable energy sources, all part of our strategy to reduce our dependence on fossil fuel," said Vere.



Can I use this technology for my home? Solar hot water systems are technically simple and tend to be less expensive than other types of renewable energy systems. They can be a cost-effective water heating choice for homeowners, especially as an alternative to conventional electric, oil, or propane water heating. Although installing a solar hot water system costs more than a conventional water heater, energy cost savings – coupled with federal incentives – can typically pay back the cost of the system in 5 to 12 years. For more information, visit www.energizect.com.

Additional Resources:
Presentations given at the November **CT Healthcare Environmental Roundtable event** and **Case Study** on Gaylord's solar installation.

Don't Trash that TV (or computer or...)

Did you get some new electronic "toys" for the holidays, like a new laptop computer, gaming console, tablet or flat-screen TV?

If so, you are not alone as these were very popular gifts this year. Now it's time to deal with clearing out your unwanted devices, known as "e-waste." Connecticut has a ban on throwing e-waste in the trash since it contains many toxic substances and heavy metals, including lead, mercury, plastic, copper, brominated flame retardants, and others. It's important to keep these from ending up at our resource recovery facilities or any landfills in order to prevent pollution.



It is now both free and easy for all Connecticut residents to recycle their old computers, TVs, monitors and printers – visit www.ct.gov/recycle for more information. DEEP recently created an entertaining **video** to get the word out about this program. The PSA has been airing on local cable access channels and is available on **DEEP's YouTube channel**. But if your old electronics are still in working condition, consider giving them to a friend, relative or local charity, or selling them. For more information, go to www.ct.gov/deep/WhatDoIDoWith.

PEVs Powering Up

More people in Connecticut are getting 'charged up' about plug-in electric vehicles (PEVs). There are many different types of PEVs available – but what sets them apart from conventional gasoline vehicles is that PEVs can be recharged from an external source of electricity and have a rechargeable battery pack which drives (or in some vehicles, partially drives) the wheels of the vehicle.



There are independent reviews available on PEVs, but many people still have questions which we would like to address:

Why do people drive PEVs?

There are some key reasons that people drive a PEV: most PEV owners never need to buy gasoline again, PEVs are easy to operate, there are low financing offers available from car dealers, and the environmental benefits include the reduction of greenhouse gases and other pollutants. A fully battery electric car emits no pollution into the air!

Where can I charge my car if I need to while I'm out running errands?

The majority of PEV owners power up at home and some are able to take advantage of greater savings through reduced overnight energy rates. If you find that you might need an extra top off, Connecticut is leading the way in building public EV charging stations across the state. You can see the charging stations that are now available to the public by visiting the [EVConnecticut Website](#).

How much money will I save by driving a PEV?

PEVs typically only cost about 2-3 cents a mile to operate versus a comparable gasoline powered car, which costs about 14 cents a mile or more. Some insurance companies provide an additional 5-10% discount for PEV owners. All this could save you thousands of dollars over the life of your vehicle.

Further questions about PEVs?

You can also use the U.S. Department of Energy's [Vehicle Cost Calculator](#), an interactive tool which helps calculate the total cost of ownership and emissions output of a vehicle that you're considering buying.

What is Connecticut doing to encourage people to buy PEVs?

PEVs are a key part of Connecticut's cheaper, cleaner, more reliable energy future, and will put us on a path toward greater energy independence. The state has made it a goal and is working on ensuring that everyone interested in owning a PEV knows that they will always have access to public charging stations when needed. Please check out www.ct.gov/deep/evconnecticut to learn more.

Ask Eartha

I'm still working on my New Year's resolutions and one of them is to join a gym. Is there such a thing as an eco-friendly one?

Hank M., West Hartford, CT



Gyms and fitness centers are buildings – so your gym should have features that any green building has, like being energy-efficient and water-conserving and utilizing sustainable or recycled materials.

Here's a quick list of "green" qualities you can look for or encourage in a sports and fitness center:

- Sustainable, low toxic, resource-conserving materials used in the building. For example, bamboo flooring is considered a sustainable choice – its re-growth is so quick compared with oak. Re-purposed wood and recycled rubber are also good choices.
- **ENERGY STAR** labeled products, such as lighting, TVs and other electronics, and heating/cooling equipment.
- Low-flow faucets/showers and dual flush toilets to reduce water consumption.
- Infrared saunas – they use about

half as much energy as the rock type saunas commonly in gyms.

- Pool and spas – use alternatives to chlorine disinfection and cover when not in use.
- Energy and water-saving appliances to launder towels and other items.
- Green Seal or other eco-friendly products for equipment and facility cleaning.



An example in your area is the **Downtown Yoga Studio** (DYS) in Hartford, which is easily reachable by bus (another sustainable choice). Located in an older building, DYS has repurposed furniture and wood floors which were reclaimed by **Urban Minors**. They use vinegar-based homemade cleaners, which

are easier on the environment than the conventional cleaning products containing hazardous ingredients.

DYS used to have "self-powered" sporting equipment that converted cycling into electricity but the Connecticut company that developed and maintained this equipment is no longer in business. Continue to watch for this technology to evolve.

Another sustainable resolution you could make to be healthy and "eco" is to put on your sneakers and walk or get on your bicycle and pedal to work and there is no monthly fee! To get started, check out www.bikewalkct.org.

Eartha

Eartha answers selected environmental questions. Email your question to judith.prill@ct.gov and watch future issues for your answer.

Using a wood stove to stay warm this winter? Find out how you can burn wood more efficiently and create less pollution – www.ct.gov/deep/air



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