P 2 V I E W

VOLUME 16, ISSUE 2 POLLUTION PREVENTION VIEW SPRING 2016

NEWSLETTER FROM THE CONNECTICUT DEPARTMENT OF ENERGY & ENVIRONMENTAL PROTECTION

Something to Chew On

Look in the garbage can of most households and you'll find a lot of food scraps, such as banana and orange peels, watermelon rinds, onion skins, egg shells, unused leftovers — what we call "organics." Mixed with the rest of the trash, they end up at one of Connecticut's resource recovery plants where trash gets burned to generate electricity. Since food scraps are very moist, they are not a good material to burn for energy production. Composting is a better way to get rid of our organic waste and one small town in Connecticut, Bridgewater, is leading in a big way.

Residents can drop off food scraps (aka organics) for composting in some Connecticut towns.

Back in spring 2014, Bridgewater began a program to collect organic waste from all residents and haul it to a nearby facility for composting. It's voluntary; there are about 140 participants who received kits with containers, bags and information on what to include. In the first three months alone they composted more than five tons, and to-date, 32 tons. The program began with curbside collection but is shifting to a drop-off at a central location to cut costs. As an added bonus, participants are offered finished compost to use in their gardens. Compost enriches the soil and reduces the need for chemical fertilizers.

Newtown and Ridgefield also have started town-wide organics composting programs. This trend is starting to really take off with New Fairfield intending to come onboard next, and New Milford, Redding and Sherman in the planning stages. You might have noticed that these towns are all clustered in the northwest part of the state and there's a reason a lot is happening there. Jen Iannucci, Director at the **Housatonic Resource Recovery Authority** is very committed to the state's goal of diverting 60% of solid waste generated in Connecticut from being disposed — and it also helps that two of the three permitted composting facilities in Connecticut are located in that area, New Milford Farms and New England Compost.

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Something to Chew On

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The third composting facility, Harvest New England, is located in Ellington and new **commercial composting facilities** will soon be permitted throughout the state to take this material, making it more convenient for towns to start collections. A few towns in other parts of the state are already collecting organics from schools or residents, like Mansfield and Greenwich.

If they can do it, maybe your town can too! DEEP has **waste reduction incentive grants** available that can help get things started. Columbia, located in the eastern part of the state, is one example of a town that was recently awarded this grant for its organics drop-off program. These grants can fund creative ways to reduce the amount of trash being disposed and increase what gets recycled. Doing so benefits the environment and composting organics puts food waste to a better use — turning Connecticut's trash into treasure for our yards and gardens.

Going Ductless

Looking for a way to save money on your energy bills? More home and business owners have been turning to ductless heat pumps for their heating and cooling needs. Also known as mini-split heat pumps, these systems have been around for more than 30 years and are widely used in other countries.

Ellen Rosengrant of Middletown controls the air-handler unit with a hand-held remote. In addition to being energy-efficient, she says the "system has made our home much more comfortable." (EnergizeCT case study)

Operating at a fraction of the cost of electric baseboards and window air conditioners, ductless heat pumps evenly distribute heated or cooled air throughout the room — making living and work spaces more comfortable. They can be used to supplement existing inefficient systems, or in additions where it would be costly to expand the existing HVAC system. Ductless heat pumps can also be used as the primary source of heating or cooling, especially in buildings that are constructed to be highly energy-efficient.

How do ductless heat pumps work? There are two main components in the system. First, a **compressor unit** is located outdoors (typically on the ground or mounted on brackets). These compressors are smaller than conventional central air conditioning outdoor units and less intrusive. Second, the **air-handler unit(s)** are located indoors and mounted on a wall or the ceiling. A conduit, which houses a power cable, refrigerant tubing, and a condensate drain, links the outdoor and indoor units. The system is usually operated with a remote control that is used to control temperature and air flow.

Using a refrigerant vapor compression cycle, ductless heat pump systems collect heat from outside the building and deliver it inside on the heating cycle, and vice-versa on the cooling cycle (like a household refrigerator). Their variable speed compressors with "inverter technology" (AC to DC) continuously match the heating and cooling load. This prevents the on/off cycling of conventional electric resistance and central heating systems, which are often associated with uncomfortable temperature variations and high-energy consumption.

What are the advantages? Studies have shown that that ductless heat pumps can reduce heating and cooling costs 25 to 50 percent. In addition to saving money, their small size and flexibility can be a cost-effective option for heating and cooling individual rooms. Some models have as many as eight indoor air-handling units (for eight zones or rooms) connected to one outdoor compressor. However, most installations include one to three zones. The number depends on how much heating or cooling is required for the building or each zone (which in turn is

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affected by how well the building is **insulated** and **air sealed**), and whether the unit is designed to supplement or replace existing heating systems. Each of the zones has its own thermostat, so you only need to condition occupied spaces. This will save energy and money.

Ductless heat pump systems are now competitively priced and available from many well-known manufacturers. These systems typically cost less to install than other heating and cooling methods because they don't need any expensive duct work. Rebates and low-interest loans are available for the installation of qualifying units. Visit **www.energizect.com** or call -877-WISE USE (877-947-3873) for more information.

Chemical Jeopardy: What are PFCs?

Per- or poly-fluorinated chemicals (PFCs) are a diverse group of compounds resistant to heat, water, and oil. For many years these chemicals have been used to make water- and grease-repellent coatings for industrial applications and consumer goods. A commonly thought-of example is nonstick cookware, but other examples include carpeting, clothing, upholstery, fast-food wrappers/containers, fire-fighting foams, and metal plating.

Because PFCs are persistent and resist degradation, these chemicals have been found at very low levels both in the environment and in the blood samples of the general U.S. population. They also bioaccumulate, which means their concentration increases over time in our blood and organs. At higher concentrations, certain PFCs have been linked to adverse health effects.

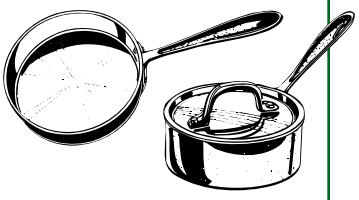
Want an easy way to avoid toxic chemicals? Detox Me, a new mobile app from the **Silent Spring Institute**, can help you limit your exposure to these substances by recommending which products to buy and which to walk away from. This free app also lets you scan product barcodes to look up information about items you're about to purchase.

Leading manufacturers of PFCs signed a voluntary agreement with the U.S. EPA to phase out the most notorious of these chemicals, PFOA, by the end of 2015. There is concern that PFOA is still being produced by companies that are not participating in this stewardship program and EPA plans to take action to address this issue.

However, even if PFOA is completely phased out, there is no evidence that the other PFCs that have replaced it are much safer. EPA is currently in the process of reviewing these substitutes under its **New Chemicals Program (NCP)**.

If you want to avoid PFCs, here are some ways:

Don't use cookware with nonstick coatings. PFCs are used in the manufacture of the polymer coating (PTFE) on nonstick cookware, including the brands Teflon and Silverstone. While these pots and pans are helpful to avoid having foods stick and for easy clean-up, they pose real concerns. Toxic fumes from PFTE released from pots and pans at high temperatures (over 500 degrees) have been shown to kill pet birds and cause people to develop flu-like symptoms (known as polymer fume fever).



There are some new cookware options on the market, but not enough is known about them to say they are safe — even if they're advertised as "green." Cast iron and stainless steel cookware are safer options for stove-top cooking, and oven-safe glass for baking.

Cut back on carry-out or fast food. Greasy foods often come in PFC-treated wrappers or containers. Even microwave popcorn bags and paper plates can have PFC-coatings.

Find products without stain- or water-repellent pretreatment. Read the tags on clothing, carpets and furniture to avoid buying ones with these chemicals.

Want more information on PFCs? Visit **EWG.org** and **epa.gov**.

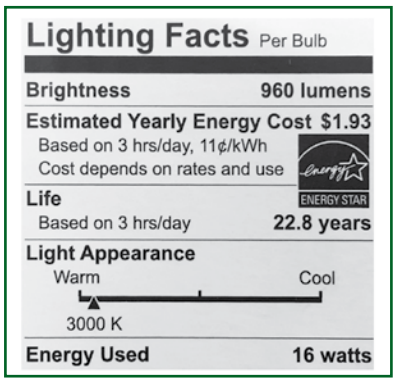
Ask Eartha

I want to put energy-efficient bulbs in my existing light fixtures but I have noticed when reading the boxes at the stores that they say "Not for use in enclosed fixtures." Why do they say that and what do you recommend instead? John S., Windham, CT

We looked in the stores and agree with you that figuring out what light bulbs to buy can be a daunting task. Now that traditional incandescent bulbs are no longer manufactured for most standard fixtures, there are a lot more energy-efficient choices — but some are better than others. Since lighting can be 20% of your electric bill, it pays to be efficient!

First, what bulbs are good for enclosed fixtures? Light emitting diode (LED) bulbs — the most energy-efficient and long-lasting bulb choice — are now available for enclosed fixtures. Some LED technologies still do not perform well if they get too hot, which is why a package label may tell you a particular LED is "not for use in enclosed fixtures." CFLs are not recommended for enclosed fixtures since they are temperature sensitive and the excess heat can decrease the bulb lifetime.

Halogens are a slightly more efficient type of incandescent, but none of them meet **Energy Star** certification, only CFLs and LEDs do. Sometimes marketed as "ecobulbs," halogens have a gas that circulates inside to increase



the efficiency of the filament, but they operate at an even higher lamp temperature than the old style incandescent. If you must buy a halogen for an enclosed fixture, make sure you get the correct wattage for the fixture to avoid any kind of fire.

When you go light bulb shopping, it helps to know that energy-efficient lighting sources are best compared by looking at lumens — the light output of the bulb. For example, you would replace a 60 watt bulb with one rated at 1100 lumens. The U.S. Dept. of Energy has a **handy tip card** to take shopping that charts watts to lumens and describes more about the new **Lighting Facts label** that the Federal Trade Commission requires for light bulb packages. On the Lighting Facts label, look for the **Energy Star** logo, indicating that the LED or CFL bulb is not only energy efficient but also meets the rigorous performance requirements, including longevity.

If you can't find what you need at your local retailer, ask for help, or check out these online resources:

- The Energy Star **Light Bulb Product Finder** has detailed product information about every energy efficient bulb available.
- The Lighting Guide section of the **Energize CT** website has an overview about light bulbs as well as purchasing information.
- You can also search the online **Smart Living catalog** for energy-efficient bulbs at reasonable prices.

Eartha

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

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P2 View is published by the Connecticut Department of Energy & Environmental Protection, Office of Pollution Prevention. Editor: Judy Prill. Contributors: Connie Mendolia, Mary Sherwin, Kim Trella.

Publication of this newsletter is funded by a grant from the U.S. EPA. The listing of websites in this publication is provided as a public service and does not constitute an endorsement by DEEP.

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