



Orleans Citizens Forum

October 20, 2009

A few energy efficiency information, equipment and service sources

Cape Light Compact: www.capelightcompact.org. The Cape Light Compact, as administered through Barnstable County, is an inter-municipal regional energy services organization designed to represent and protect consumer interests in a restructured utility industry. Site provides complete information and a monthly consumer information newsletter.

Cape & Islands Renewable Energy Collaborative (CIREnew): www.cirenew.org. CIREnew is a participatory collaborative of diverse Cape Cod constituencies—such as advocacy groups, government agencies, research centers, businesses, energy service providers, and educational institutions—pursuing common goals for a sustainable energy future.

Cape & Islands Energy Information Clearinghouse, www.cirenew.info, a central location for the collection, classification, and distribution of data, information, and tools addressing energy supply and use on the Cape & Islands. Site includes **comprehensive tips for conserving home energy**, from inexpensive steps to major investments, at www.cirenew.info/groupsolutions.php

Cape & Islands Go Green Guide, www.cigogreen.org, promotes wise decision-making at the individual level and resource efficiency across local, regional, national, and global scales.

U.S. Department of Energy Office of Energy Efficiency and Renewable Energy (EERE), at <http://www.eere.energy.gov/>

MassSAVE: www.masssave.com is the website linking customers to energy efficiency programs available across the Commonwealth of Massachusetts.

NEED www.need.org is the National Energy Education Development project promoting science based curricula for a more literate society from grades K-12

EIA www.eia.doe.gov is the Dept. of Energy's Energy Information Administration that provides Up-to-date energy information.

ACEEE www.aceee.org is the American Council for an Energy-Efficient Economy includes energy saving consumer tips and publications.

ENERGY STAR® www.energystar.gov is the national program supported by U.S. Dept. of Energy, EPA, program administrators, utilities, manufacturers, retailers and other partners.

Insulation Fact Sheet and Building Envelope Research, www.ornl.gov/sci/roofs+walls/insulation/, from Oak Ridge National Laboratory

R-Values for Enhanced Home Energy Savings and Comfort by Region of U.S., www.simplyinsulate.com/savings/index.html

Federal Tax Credits for Energy Efficiency from the ENERGY STAR®
www.energystar.gov/index.cfm?c=products.pr_tax_credits

Sustainable building siding products, www.jameshardie.com/builder/products_siding_hardieplankLapSiding

Taming 'Vampire Power'

The wasted standby power (vampire energy loss) of individual household electronic devices is typically very small, but the sum of all such devices within the household becomes significant. Standby power makes up a portion of homes' miscellaneous electric load, which also includes small appliances, security systems, and other small power draws. Standby power can be as high as 10 to 15 watts per device, and occasionally more.¹

Vampire energy is estimated to cost U.S. consumers \$3 billion a year. Based on \$0.22 a kWh rate, the annual costs of common household device unused standby power can total:²

Radio (\$2.88)

Cordless phone base station (\$6.36)

LCD monitor (\$5.02)

Computer (\$68.42)

Laptop (\$31.79)

Laser printer (\$24.86)

Plasma TV (\$319.53)

DVD player (\$17.34)

Game console (\$51.46)

Microwave (\$51.46)

Rechargeable toothbrush (\$2.71)

The **One Watt Initiative** is an energy saving proposal by the International Energy Agency (www.iea.org) to reduce standby power-use in all appliances to just one watt. According to Dr Alan Meier, a staff scientist at the Lawrence Berkeley National Laboratory, standby power accounts for as much as 10% of household power-consumption. A study in France found that standby power accounted for 7% of total residential consumption; while further studies have put the proportion of consumption due to standby power as high as 13%. The IEA estimates that standby produces 1% of the world's CO₂ emissions. To put the figure into context, total air travel contributes less than 3% to global CO₂ emissions.

Technical solutions to the problem of standby power exist in the form of a new generation of power transformers that use only 100 milliwatts in standby mode and thus can reduce standby consumption by up to 90%. Another solution is the 'smart' electronic switch that cuts power when there is no load and restores it immediately when required.³

The most common contemporary solutions involve "pulling the plug," or, more conveniently, using easily accessible remote switches or individually controlled power strip sockets, to manually cut power to standby power adapters. For example, the Ultra 7-Outlet Surge and Spike Protector costs \$17 (MSRP).



(http://www.ultraproducts.com/product_details.php?cPath=35&pPath=172&productID=172)

Automatic switching: Use devices such as the \$30+ Smart Switch line with "Autoswitching Technology" Which allow the "controlling device" on/off switch to control current to peripherals plugged into the smart strip. See <http://www.usnews.com/money/blogs/daves-download/2008/4/18/a-power-strip-that-kills-vampire-power> and retail sites such as http://catalog.bitsltd.us/power_strips/



Home Area Networks (HAN) and Smart Meters

A **home area network** in a user's home "connects a person's digital devices, from multiple computers and their peripheral devices to telephones, VCRs, televisions, video games, home security systems, "smart" appliances, fax machines and other digital devices that are wired into the network." — *Webopedia*

Smart meters Smart meters are digital meters that will communicate energy use information to user households and their utility suppliers. They employ a computer chip to enable two-way communication via broadband internet connections, allowing ratepayers to make money-saving and environmentally friendly changes.

There could be 20 million home area network-enabled households worldwide by the end of 2013, according to recent research conducted by On World. The authors claim that the sector has attracted hundreds of startups including large companies such as Cisco, GE and Google. Smart grid standards and wireless sensor network technologies promise a revolution for consumers and energy providers. "While smart metering and the home area network are complementary, they are distinct markets that are developing independently of each another," said Mareca Hatler ON World's research director. "Information technology giants and telecommunication service providers are positioning themselves within standards groups and alliances to seize this opportunity." — <http://kn.theiet.org/news/jul09/homeareanetworks.cfm>

Utilities will provide smart meters in the future, but growing numbers of vendors are already selling automation networks directly to homeowners. For example, The Control4® Energy Management System, available in Orleans at Nausett TV & Sound (www.nausettv.com), is described by its manufacturer as "a bundled product offering that includes an in-home energy controller, the EC-100, a wireless, programmable thermostat, the WT-100, the Control4® Network Management and Energy Analytics software packages. Now with Control4, utilities can connect with their customers, via the smart meter, in a whole new way." — www.control4.com

Additional references:

¹ http://en.wikipedia.org/wiki/Standby_power

² EPA data as reported in *Cape Light Compact Energy News* (v. 1, n. 5) October 2009 at www.capelightcompact.org

³ Various sources cited at http://en.wikipedia.org/wiki/One_Watt_Initiative