

Energy Usage at GSFC

As a follow on to past energy laws and policies (commencement with the National Energy Conservation Policy Act of 1978), in June of 2007, the U.S. Senate passed the “The Energy Independence and Security Act of 2007” whose stated purpose was:

...to move the United States toward greater energy independence and security, to increase the production of clean renewable fuels, to protect consumers, to increase the efficiency of products, buildings, and vehicles, to promote research on and deploy greenhouse gas capture and storage options, and to improve the energy performance of the Federal Government, and for other purposes...

The act was subsequently passed in the U.S. House of Representatives in December of 2007, and almost immediately signed into law by the President. This law has four sections (titles):

- Title I: Energy security through improved vehicle fuel economy
- Title II: Energy security through increase production of biofuels
- Title III: Energy security through improved standards for appliance and lighting
- Title IV: Energy savings in buildings and industry

It is this last title that is of direct relevance to us here at GSFC since it aims to reduce the energy used of all Federal buildings by 30% (from a 2003 baseline) by 2015. From there, a further reduction rate of 2.5% per year in energy usage and corresponding 30% increase in a reliance on renewable energy sources by 2030 are also called for in the current, March 2015, Executive Order 13693.

GSFC has been working to meet these federally mandated goals by instituting a series of building energy audits beginning with a Preliminary Feasibility Assessment (PFA) conducted from December 2014 through July 2015. Subsequent to that, annual “Energy Audits” will be conducted according to a rotating schedule that will ensure 25% of the center is reviewed every year so that every building is audited once every four years. The audits will identify energy conservation measures that can be executed to reduce the Center’s overall energy and water usage.

Our Facilities Management Division is currently investigating options for solar array farms, as well as other cutting edge technologies to meet the mandated goals and schedule. These are the “global” factors that upper management can effect from above, but there is a great deal we can do to contribute in our everyday life, here at GSFC:

1. **Turn projectors and non-motion activated lights off whenever possible.**
2. **Conservative use of heaters.** Eliminate or reduce the power requirement of the heater—instead of getting a standard 1200/1500 kWh heater get a 600 kWh one.

3. **Unplug or disable “wall warts” when not needed.** Wall warts are those obnoxious, chunky wall chargers that convert AC to DC power for most electronic devices (and take up way too much room in your power strip). These blocks deliberately house the charger outside the device to avoid Underwriters Laboratory (UL) approval requirements for devices with internal converters. They also have the unfortunate effect of wasting anywhere from 0.5W to 10W (depending on the design) while plugged in – even when the device it powers is off!

One simple way of conveniently helping is to employ two power strips at your work station (not in a daisy chain arrangement); one switched and the other unswitched. Many of us leave our computers on overnight, whether to let long term procedures run or to schedule security updates, and the like. These you plug into the unswitched power strip, along with any other devices that require 24/7 power. Everything else (monitors, speakers, external hard drives, etc.) that do not need to be powered overnight, you plug into the switched strip. At the end of each day, you can simply turn the power strip switch off and disable all the wall warts associated with unused equipment while still leaving any needed equipment (plugged into the other strip) powered.

It may not seem like much, but with more than 6,000 employees on center, it adds up quickly and can have a significant impact on overall energy usage! Small steps like these not only serve to make us good stewards of our environment, but also help avoid future, perhaps uncomfortable, impositions later. For further energy tips, checkout the GSFC energy website <http://energy.gsfc.nasa.gov>.