

# Energy News



## Headquarters Complex gets GREENER

Departmental Administration (DA) has been busy reducing energy consumption, waste, and environmental burdens. Last year Boyd Rutherford, Assistant Secretary for Administration, formed the Sustainable Operations Council, to address the growing demands for sustainability. In addition to the council, DA formed the Headquarters Green Team to work with USDA employees to make the complex more sustainable. You've probably noticed many of the operational changes we've made to reduce energy consumption and costs throughout the complex. Some of those changes are replacing incandescent light bulbs with compact fluorescents and installing vending misers and daylight harvesters. There are many more "behind the scenes" projects underway that you may not be aware of. Read on to find out more...



## Forest Service Donates *BigBelly*



Last Fall, USDA's Forest Service graciously donated three *BigBelly* solar powered trash compactors for placement around Headquarters buildings where visitor traffic is high. They help reduce the frequency of trash pickups from public areas around the buildings and use clean renewable solar energy to power the compaction process. The frequency of trash pickups has decreased and our recycling rates have significantly increased over previous years. Operations staff love them; there are no rodent surprises when they empty

the bags!

The BigBelly units also have a poster frame which allows us to post environmental messages.

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## Office of Operations signs UESC with Washington Gas

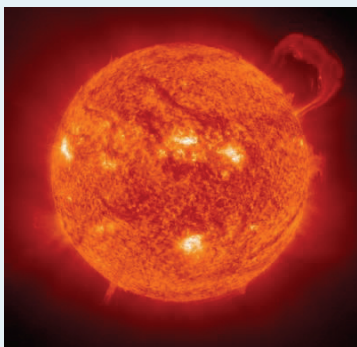
### Solar Power for USDA??

Departmental Administration, Office of Operations is sponsoring a study to determine if we could use a large photovoltaic array to provide electricity to the George Washington Carver Center. Departmental Administration and Agriculture Research Service are partnering on this historic undertaking.



If installed, this solar array will be among the largest in the federal government, and the largest on federal property in this region.

Solar power is good for the environment, reduces our burden from the grid system, and reduces carbon emissions from power plants.



Last October, Departmental Administration, Office of Operations (OO) entered into a Utility Energy Services Contract (UESC) with Washington Gas Energy Services. This contract allows us to permit the utility company to arrange for financing to cover the capital costs of energy conservation measures. The utility is then repaid over the term of the contract from the cost savings generated by the energy conservation measures. With this arrangement, we can implement energy improvements with no initial capital investment. Because of the escalating utility costs, many energy conservation projects have become economically viable. OO and Washington Gas have already identified several improvements we are considering to implement. These include:

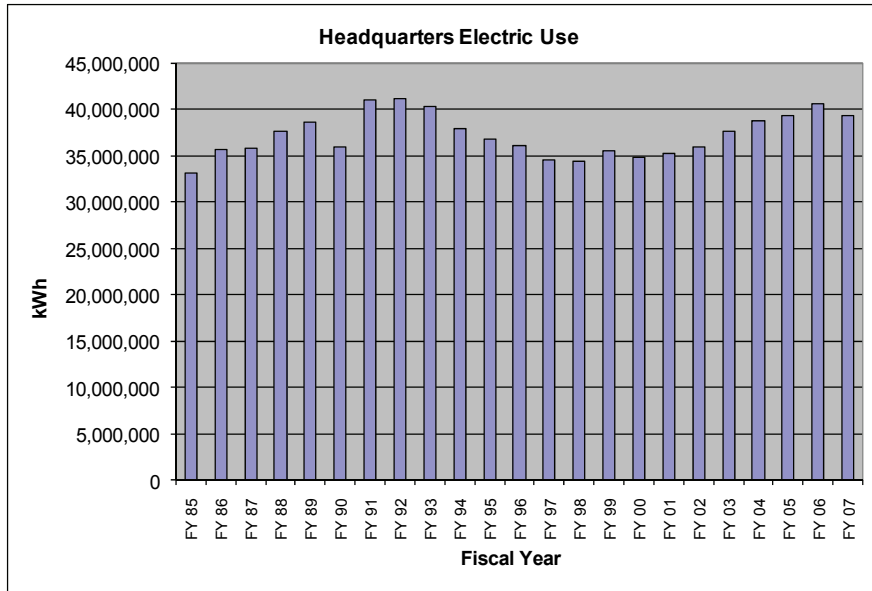
- lighting efficiency upgrades,
- water conserving appliances and fixtures,
- building weatherization,
- Heating Ventilation and Air Conditioning upgrades,
- chiller plant upgrades
- mechanical and electrical upgrades
- summer boiler
- fuel cells, and
- solar power

Once implemented, most of these of these changes won't be obvious to employees who work in the Headquarters Complex, but the savings will be significant. For example, we currently use \$45,000 per month to provide steam to the South Building kitchen during the summer. The cost is very high because the central heating system that provides steam in the summer was designed to heat the building and it is oversized to feed only the kitchen. As a result, most of the steam is wasted through heat loss. By installing a small summer boiler close to the kitchen, we can provide steam at a substantial energy and cost savings.

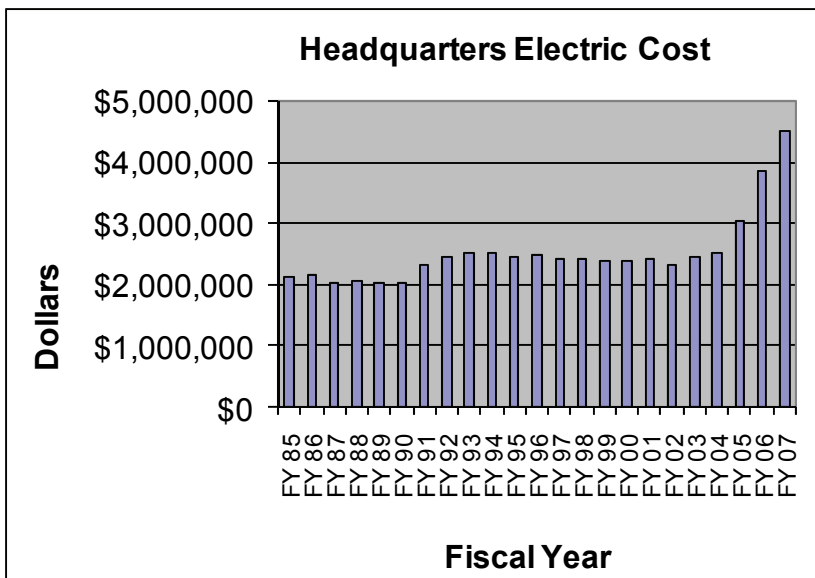
Overall, \$16 million in capital improvements have been identified, which will result in an annual savings of \$1.7 million from our utility budget.

# Increasing Utility Costs We Need Your Help

The following graphs illustrate the difficulties we face managing your energy needs. You can see that even though we have decreased use, energy costs have continued to rise. Over the past several years, increasing demands for



technology have placed additional burdens on our aging electrical infrastructure. The Office of Operations has made significant impacts in stabilizing and even reducing the overall facility demand for energy by implementing a comprehensive energy conservation strategy. Many systems are now at their maximum efficiency level and require replacement in order to achieve additional energy efficiency. This is where you, the building occupants, can help. Vampire electric loads from all kinds of electronic devices plugged in overnight, such as battery chargers, televisions, and printers cause a significant increase in electrical consumption. We need your help to shut these items down after hours. During the *USDA Unplugged* event we demonstrated that building occupants play a crucial role in energy conservation. Your habits can affect our ability to meet your energy needs. By shutting down unnecessary equipment after duty hours, we can save enough electricity to power over 200 homes for a year.



## Fuel Cells for Power?

Departmental Administration is working jointly with the U.S. Department of Energy to explore and implement fuel cell technology at the headquarters complex.

The Office of Operations is hosting talks with DOE and several hydrogen fuel cell manufacturers to determine if fuel cells are a viable option to reduce electrical consumption from the power grid. If installed, USDA will reduce some of the increasing burden placed on the PJM electrical grid, which serves 51 million customers from Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia, and the District of Columbia. This will have a significant impact as fuel cells can produce heat/cooling and power simultaneously, reducing costs in both areas.



# Is All This Stuff Working?

## Whitten Stairwells Harvest Daylight

Did you notice that the lights in the Whitten Building are a little dimmer when the sun is brighter? That is because the stairwells have been fitted with daylight harvesters. Daylight harvesters are a combination of dimmable ballasts and light measuring sensors that work to reduce the light level when there is sufficient sunlight to light the space. Daylight harvesting is an energy saving way to keep lighting levels from becoming too intense on bright sunny days. Look for more harvesting technology in the future. Photo below shows light fixture close to window dimmed.



With significant reductions in appropriations to operate the USDA headquarters, energy cost reduction is critical. Several Operational changes have been made to reduce energy costs throughout the complex, such as using only two of the three elevators in each wing of the South Building, shutting down the escalators, delamping every other hallway light, and reducing the operational time of the building systems. Is this having any effect you ask? The numbers below show the headquarters electrical usage for January through April 2007 compared to and January through April 2008.

### Total Energy Used (kWh)

January—April 2007

**12,435,000**

### Total Energy Used (kWh)

January—April 2008

**11,900,000**

In the first four months of 2008, we saved over 535,000 kilowatt hours. According to the Department of Energy, the average house in Washington, D.C. uses 725 kWh monthly. We saved enough energy to power 738 homes in D.C. for a month.

With your help, we can continue to save energy and reduce our burden on the environment. For more information on how you can help reduce energy waste, go to:

[http://greening.usda.gov/simple\\_things.htm](http://greening.usda.gov/simple_things.htm)



## USDA Unplugged was a success

The *USDA Unplugged* successfully demonstrated that USDA employees, by shutting down equipment when they leave for the day, can significantly reduce electric use in the facility. During October, the green team hosted 6 Energy Awareness Tables in the South, Whitten and Yates Buildings.



Several hundred employees learned about conserving energy at work and at home.

Your efforts can continue to help keep our energy costs low. Learn more at:

[www.greening.usda.gov](http://www.greening.usda.gov)

## USDA Employees Pledge to Save energy at Home.

In addition saving energy at work, we have been encouraging USDA employees to take home what they learned at work about saving energy. As part of EPA's "Change a Light, Change the World Campaign," over 200 USDA employees pledged to change at least one incandescent light bulb with a compact fluorescent light. When all those light bulbs get replaced, almost 500,000 kWh of electricity will be conserved. One ton of coal is needed to produce 2,500 kWh. So employees' actions at home can save 200 tons of coal from being mined. It is not too late take the pledge, visit [http://www.energystar.gov/index.cfm?fuseaction=join\\_change\\_light.showActivityParticipantForm](http://www.energystar.gov/index.cfm?fuseaction=join_change_light.showActivityParticipantForm)

When you pledge, don't forget to say you are with USDA.



#### USDA Departmental Administration

Departmental Administration strives to make headquarters facilities the safest, most efficient in the Federal government. With your continued support, we can achieve the goals set in recent legislation and Executive Orders. Departmental Administration thanks you for your participation in headquarters energy conservation programs. For questions about the DA Energy Program, please visit the HQ Green Team Webpage at :

[http://www.usda.gov/da/HQs\\_GreenTeam/](http://www.usda.gov/da/HQs_GreenTeam/)

## Headquarters is an EPA Green Power Partner

The Headquarters complex has been recognized by the EPA as a Green Power Partner. The Headquarters purchases 15% of its total electrical power through the GSA Area-wide contract from renewable sources. This helps USDA to achieve the goals of the Energy Policy Act of 2005 and Executive Orders. Headquarters is responsible for 10 percent of USDA's total energy use.



## See the Whitten Building in a Whole New Light!

Recently, the Office of Operations has been replacing the older, inefficient incandescent bulbs in our chandeliers with energy saving compact fluorescent (CFL) light bulbs. These CFLs provide a smooth, even light, while reducing electrical consumption by over 75%. CFLs last longer as well, which reduces maintenance costs associated with changing them frequently. Look up next time your in the Whitten Building!



For more information on what we are doing to save energy and resources at the USDA Headquarters Complex, visit the USDA Sustainable Operations website at:

<http://www.greening.usda.gov>