

## Utility Savings Initiative Low or No Cost Suggestions

During this current climate of rising utility costs and changing economy, the USI program is continuing to look for innovative ways to reduce energy use. We must explore all the opportunities possible to control costs in our facilities. The State Energy Office is committed to providing training and promoting energy conservation awareness and it is with the help of our partners that this list has been created. These recommendations are compiled to help state agencies and authorities achieve immediate energy-use and cost reductions. The measures are intended to augment the good work performed by facilities staff. Recent budget pressures, however, demand that the state review its operating procedures to ensure optimal efficiency. Extra efforts can have big results: for example, research by the State Energy Office indicates a 1 to 2 percent change in energy use for each degree temperature is raised or lowered for cooling or heating.

### **Administrative Suggestions:**

#### No Cost:

1. Create an employee awareness and training program.
2. Create and mobilize a green team.
3. Survey facilities to establish a baseline energy use.
4. Implement a computer power management policy / program. Computers need to be shut down when not used or install deep sleep software.
5. Track information on Utility Bills.
  - a. To spot abnormal increase in consumption
  - b. To spot billing errors
6. Continue to seek and implement energy related training.
7. Get upper-level buy-in.
8. Employ / expand recycling program.
9. Publish successes.
10. Lead by example.
11. Publish the utility bills.
12. Perform account and meter audits to ensure best possible rate structures.
13. Scheduled Transition Season Shutdown of Equipment should be considered.
14. Refrigerators should be limited and food stuff consolidated into as few as necessary. Routine maintenance should include these appliances.
15. Turn off all equipment not in use. Remove all old unused equipment.
16. Remove non-essential plug load from work spaces. (Portable heaters, personal fans, toasters, personal refrigerators, coffee makers, etc that are in addition to those provided in break rooms. This could include copiers and printers when a group copier or printer is provided.)
17. Create a Strategic Energy Plan.
18. Look at scheduling off times of electrical loads to control peak demand.
19. Shut down not needed buildings when not in use.
20. Are after hour meetings scheduled in locations that do not require HVAC in the entire facility?

21. Strategically locate classes and meetings to most efficient buildings. The goal is to achieve maximum use of conditioned buildings and stop the energy waste due to underutilized buildings.
22. Has housekeeping duties been moved to reduce operating hours of building HVAC?
23. Schedule shut down for buildings during holiday breaks.
24. Maximize use of Work Away programs for tele-working and other work scheduling options by each Agency for qualified employees.
25. Are employees recognized for car pooling or using mass transit?

Low Cost:

26. Considering hiring an Energy Manager for your facility to lead this effort.
27. Replace gas vehicles with electric carts if feasible.
28. Be responsive to any type of utility leak.
29. Is Energy Star equipment specified for new purchases?
30. Install smart power strips that eliminate phantom power.
31. Look closely at Performance Contracting to see if it is right for your facility.

## **HVAC Suggestions:**

### Heating

No Cost:

1. Thermostat Setback:
  - Temperature Set points during Heating Season should be 65-68 degrees during occupied times. And no higher than 55 degrees for unoccupied times. This should include cutting thermostats off 30 minutes prior to close of business.
2. Cease all heating when building is unoccupied (except for freeze protection or situations where temperature and humidity levels must be maintained).
3. Boiler temperatures should be at lowest setting necessary.
4. Isolate of-line boilers on multi-boiler installations.

Low Cost:

5. Are boilers being routinely tuned?

### Cooling

No Cost:

1. Thermostat Setback:
  - Temperature Set points during Cooling Season should be no lower than 74 degrees. Systems should be set to 78 degrees during unoccupied times (this will depend on ability to control humidity). Systems should be switched out 45 minutes prior to close of business.
2. Cease all mechanical cooling when building is unoccupied (as soon as normal building hours are over) – except as may be required for humidity control.
3. Increase chilled water temperatures.
4. Electric in duct heater coils must be shut off during cooling season.

5. Use economizers for free cooling when outside temperature is below 65 degrees?

Low Cost:

6. Are chillers being maintained and gauges checked for proper operations?

HVAC – Other

No Cost

1. Shut down exhaust fans when not needed.
2. Do not heat and cool unused areas or storage rooms.
3. Are the thermostats properly located to provide balanced space conditioning?

Low Cost

1. Install programmable thermostats.
2. Install HVAC controls to better handle set back times and temperatures. Check regularly to assure settings have not reverted to default.
3. Do not neglect routine maintenance, HVAC tune ups, filter changing, seasonal start up and checkout.
4. Seal heating and cooling ducts to eliminate loss of conditioned air.
5. Are motors replaced with premium efficiency motors?
6. Are variable speed drive motors being considered as replacements?
7. Repair leaks in compressed air lines and evaluate compressor run times.

**Lighting Suggestions:**

No Cost:

1. Simply turn off the lights when not in use or you leave the room.
2. Remove lamps from vending machines.
3. Are light levels measured to remove unused lights or de-lamp over lit areas?
4. Reduce lighting in corridors and stairways while not compromising safety.
5. Can day lighting be used during parts of the day?

Low Cost:

6. Change lighting that is on 24/7 to CFL , LED or T-8.
7. Change from T-12 bulbs to T-8.
8. Change exit signs to LED's.
9. Has the use of decorative or unneeded exterior lighting been discontinued?
10. Install automatic room lighting controls.
11. Use task lighting to allow background lighting to be reduced.
12. Move building functions to exterior or daylight areas.

**Water Suggestions:**

No Cost:

1. Shut down of water heaters should be done during unoccupied times. Timers should be used daily.
2. Stop all unnecessary outdoor watering.

Low Cost:

1. Install sink aerators and low flow shower heads to cut down on water use.
2. Use automatic or dual flush toilets and faucets when possible.
3. Wrap water heaters with an insulated blanket.
4. When changing out plumbing fixtures, upgrade to lower flow devices.

**Building Suggestions:**

Low Cost:

1. V-Cool safety window tint in areas affected by heating and cooling swings due weather.
2. Seal and caulk holes to ensure a tight window or tight building exterior.
3. Keep windows and exterior doors closed and seal air leaks due to poor weather stripping.
4. Use blinds to shade windows during cooling season to avoid solar heating.
5. Add insulation to areas where it is lacking or non-existent.

Thanks should be given to all of our partners especially those that participated in our no cost/low cost free for all at the annual Sustainable Energy Conference. Please note that when implementing any of these measures look at your consumption both prior to and after implementation to be sure you are achieving the desired results. Especially in the case of HVAC systems not every measure will have the anticipated result.

Many of the partners are looking at reducing the work week. This is working well at Gaston College. Appalachian State University and Western Carolina University are planning to go into hibernation over the holiday break. This means shutting down as many buildings as possible on campus. The steam system will be on only to keep pipes from freezing. Also being considered is the consolidating of summer activities to keep as many buildings shut down as possible. It is this kind of thinking that is needed to ensure survival under tough economic and budget times, as well as, protecting valuable resources for future generations.

Regards,

State Energy Office USI Team  
Len Hoey  
Richard Self  
Reid Conway  
Len Martin  
Joe Davis  
Renee Hutcheson