Opportunity to Reduce Plant Energy Costs and Air Emissions

Energy efficiency strategies are some of the most cost effective ways to reduce the commercial and industrial sectors' environmental impact. Reduced energy consumption provides businesses with a competitive advantage that helps reduce their operating costs as well as air emissions.

The North Carolina Division of Air Quality (DAQ) is presenting an opportunity to take part in an ongoing state-wide voluntary program to reduce energy usage, energy costs and associated air emissions at industrial, commercial and institutional facilities.

The first step to reducing energy is to get an energy assessment. An energy assessment identifies energy conservation measures (such as process or equipment changes) that could be implemented to reduce plant energy demand. This would reduce fuel consumption, with corresponding reductions in energy costs and emissions of greenhouse gas, criteria and hazardous air pollutants. The Department of Energy has determined that implementing energy conservation projects at manufacturing facilities can reduce energy use by 10 to 15 percent.

From 2011 to 2014, North Carolina State University (NCSU) and Waste Reduction Partners (WRP), under contract with DAQ, conducted energy assessments at over 70 facilities (facility-wide and source specific). Case studies developed from the results of the energy assessments estimated average annual energy reductions of about 15 percent and average annual cost savings of about $100,000 per facility. Total projected annual air pollution emission reductions were: SO_2, 160 tons; NO_x, 90 tons; and CO_2e, 54,000 tons.

NCSU and WRP provide reduced-cost energy assessments and technical assistance to reduce energy consumption at interested facilities. Experienced engineers or scientists conduct an onsite survey to collect data on plant operations and energy costs. The data are analyzed and a report is provided which consists of the following:

- Assessment of facility-wide energy consumption
- Potential energy reduction strategies including specific project upgrades/retrofits
- Recommendations to improve overall efficiency of operations
- Estimated cost of implementation
- Cost benefits of each strategy
- Potential reductions in air emissions from each strategy

Types of equipment surveyed may consist of the following:

- *Boilers*
- *Motors & Pumps*
- *HVAC Systems*
- *Chillers and Cooling Towers*
- *Compressed Air*
- *Process Equipment*
- *Lighting*
- *Steam Systems & Steam Traps*
- *Preventative Maintenance*

For more information on our technical partners, go to
http://daq.state.nc.us/planning/iee/energy_assessment_partners.pdf

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