



## Opportunity to Reduce Plant Energy Costs and Air Emissions

The North Carolina Division of Air Quality (NC DAQ) is presenting an opportunity to take part in a state-wide program to reduce energy usage, energy costs and associated air emissions at industrial, commercial, and institutional facilities across the State. The program is funded by a grant from the US EPA.

This voluntary program provides cost-free or reduced-cost energy assessments and technical assistance to reduce energy consumption at participating facilities. 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, and result in corresponding reductions in energy costs and emissions of greenhouse gases (GHG), criteria pollutants, 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.

Facilities will participate in a 1-year follow-up study to document which recommendations were implemented, and any cost savings and/or emissions reductions that resulted. A specific focus will be placed on the interdependency of energy consumption, energy costs, and air emissions. The results will be presented as case studies for others facilities to use in their efforts to reduce energy consumption and air emissions.

### What is an Energy Assessment?

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, and
- Potential reduction 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 energy systems*

*Lighting  
Steam Systems & Steam Traps  
Preventative Maintenance*

### Who Performs the Energy Assessments?

Audits are to be performed by two groups of certified energy auditors (for more information, go to [http://www.ncair.org/monitor/eminv/gcc/energy\\_assessment\\_partners.pdf](http://www.ncair.org/monitor/eminv/gcc/energy_assessment_partners.pdf)).

#### 1. North Carolina State University Mechanical and Aerospace Engineering Department (NCSU)

NCSU is offering resources from federal and state programs to integrate environmental performance assessments into energy efficiency analysis. Experienced faculty and graduate students will provide energy

conservation and cost reduction assessments to manufacturers, commercial, governmental, and institutional facilities. NCSU energy assessments will be performed under two programs:

NCSU Industrial Assessment Center (IAC) – one of 24 centers at Universities across the country funded by the US Department of Energy’s Industrial Technology Program.

NCSU Energy Management Program – reduced-cost assessments funded by the NC State Energy Office.

## 2. **Waste Reduction Partners (WRP)**

WRP is a group of volunteer retired engineering professionals who conducts non-regulatory on-site assessments for small industrial and commercial businesses and public facilities throughout North Carolina. Waste Reduction Partners is a partnership program of the NCDENR’s Division of Environmental Assistance and Outreach.

## What is the Facility Selection Process?

Approximately 80 energy assessments are planned under the grant program. Small facilities without engineering professionals on staff to facilitate energy reduction projects are encouraged to apply. Facilities will be selected on a first-come basis. Types of facilities eligible under the program include:

*Title V air permitted sources  
Synthetic minor air permitted sources*

*Small air permitted sources  
Non-permitted sources*

NCSU and WRP each have additional program specific criteria for selecting facilities.

Interested facilities may apply now. Applications will be accepted until July 2013, depending on availability. Energy assessments must be completed by the end of September 2013 with a 1-year follow-up study.

## Do these Energy Assessments Qualify Under the New Boiler Rules?

On March 21, 2011, the EPA published National Emission Standards for Control of Hazardous Air Pollutants (NESHAP) for Industrial, Commercial, and Institutional Boilers at major sources ([40 CFR Part 63 Subpart DDDDD](#)) and area sources ([40 CFR Part 63 Subpart JJJJJ](#)). On May 18, 2011, EPA delayed the effective dates for boilers at major sources. The compliance dates and requirements for area source boilers were not delayed, and remain in effect. For area sources, owners and operators of existing coal, biomass, or oil-fired boilers with a heat input capacity of 10 million Btu per hour or greater must conduct a one-time energy assessment by no later than March 21, 2014. Owners and operators are encouraged, but not required, to use the energy assessment to increase the energy-efficiency and cost efficiency of their boiler system. For more information, go to <http://www.ncair.org/toxics/areasources/areasourcetable.shtml>.

The primary focus of the grant program is to mitigate GHG emissions by increasing energy efficiency of combustion units and electrical components. The energy assessments conducted under this grant are expected to meet the boiler rule requirements.

### NC DAQ CONTACTS

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**To submit pre-application form, go to:**

[http://www.ncair.org/monitor/eminv/gcc/energy\\_assessment\\_pre-application.doc](http://www.ncair.org/monitor/eminv/gcc/energy_assessment_pre-application.doc)