

Energy Assessment Information

40 CFR Part 63 Subpart JJJJJ

National Emission Standards for Hazardous Air Pollutants for Area Sources:
Industrial, Commercial, and Institutional Boilers

<http://www.gpo.gov/fdsys/pkg/FR-2013-02-01/pdf/2012-31645.pdf>

Who must conduct an Energy Assessment? §63.11194

Owners and operators of existing boilers firing coal, biomass, or oil with a heat input capacity of 10 million Btu per hour or greater ($\geq 10\text{MMBtu/hr}$) must conduct an energy assessment. An existing boiler is defined as a boiler that commenced construction or reconstruction on or before June 4, 2010.

Are there any exemptions? §63.11195

The following types of boilers are not required to conduct an energy assessment:

new boilers that fire coal, biomass, or oil,	electric boilers,
natural gas-fired boilers,	boilers used as control devices
dual fuel boilers firing natural gas*	temporary boilers, and
boilers that fire solid or hazardous waste,	residential boilers.
limited use boilers (capacity factor <10%)	

When must I conduct an Energy Assessment? §63.11196(a)(3)

A one-time energy assessment must be conducted by no later than March 21, 2014.

What if I conducted an Energy Assessment prior to the rule being published? §63.11201(b)

An energy assessment that was completed on or after January 1, 2008 but before March 21, 2012 can be used to comply with the rule. It must meet or must be amended to meet the energy assessment requirements in the rule.

*What if I switch from firing gaseous fuel to solid, liquid, or biomass fuel? §63.11194(e) and §63.11210(h)

An existing dual-fuel fired boiler that switches from firing gaseous fuel to solid fossil fuel, biomass, or liquid after June 4, 2010 is considered to be an existing source under this subpart as long as the boiler was designed to accommodate the alternate fuel. This source must conduct an energy assessment upon switching from gaseous to non-gaseous fuel. A source that switches fuels or makes a physical change to the boiler that results in the applicability of this rule must demonstrate compliance within 180 days of the effective date of the change.

If the boiler was not designed to accommodate the alternative fuel it is considered a new source under the rule.

What are the Requirements? §63.11201 Table 2 and §63.11201(b)

Existing coal, biomass, or oil boilers ($\geq 10\text{MMBtu/hr}$) must have a one-time energy assessment of the boiler and its associated energy use systems performed by a qualified energy assessor. The assessment must identify cost-effective energy conservation measures for the boiler and its energy use systems. The results of the assessment must be documented in a report prepared by the assessor.

A source that is operating under an energy management program established through energy management systems compatible with ISO 50001 that includes the affected boiler(s) by March 21, 2014 also satisfies the energy assessment requirement.

What is a “boiler system” and “energy use system” under the Rule? §63.11237

A boiler system is comprised of the boiler and the associated components directly connected to and serving energy use systems. It includes but is not limited to such components as the feedwater system, the combustion air system, the boiler fuel system, burners, combustion control system, blowdown system, steam system, and condensate return system.

The energy use system(s) is defined as the system using energy clearly produced by the affected boiler(s). Such systems typically include, but are not limited to, process heating, facility heating, and hot water heater systems.

Energy use systems using electricity purchased from an off-site source are not required to be evaluated.

How do I demonstrate compliance? § 63.11214(c) and § 63.11225(a)(4)

Owners or operators of affected boilers must submit a signed certification in the Notification of Compliance Status (NOCS) report that an energy assessment of the boiler system was completed. An example NOCS report is available at: http://www.epa.gov/ttn/atw/boiler/imptools/area_energy_assess.docx.

The NOCS must be submitted no later than 120 days after the compliance date.

The notification must be submitted electronically using the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (www.epa.gov/cdx). However, if the reporting form specific to this subpart is not available in CEDRI at the time that the report is due, the written Notification of Compliance Status must be submitted to the Administrator at the address listed in § 63.13.

If you completed an energy assessment on or after January 1, 2008 but before March 21, 2012, and 1) it meets the requirements under 40 CFR part 63 subpart JJJJJJ, and 2) you certified completion of the assessment in your “Initial Notification of Compliance Status for Boilers Subject to Tune-ups” then you do not need to re-submit this notification form. If the above is not true, you need to submit a NOCS form for the energy assessment.

What records must I keep? § 63.11225(c)(2)(3)

Owners or operators of affected sources must also maintain on site and submit, upon request, the energy assessment report.

What comprises an Energy Assessment under the Rule? §63.11237 and Table 2

An energy assessment must include the following components:

- a. A visual inspection of the boiler system(s).
- b. An evaluation of operating characteristics of the facility, specifications of boiler system(s), operating and maintenance procedures, and unusual operating constraints.
- c. Inventory of major systems consuming energy from affected boiler(s).
- d. A review of available architectural and engineering plans, facility operation and maintenance procedures and logs, and fuel usage.
- e. A list of major energy conservation measures.
- f. A list of the energy savings potential of the energy conservation measures identified.
- g. A comprehensive report detailing the ways to improve efficiency, the cost of specific improvements, benefits, and the time frame for recouping those investments.

There are limits for the maximum on-site technical evaluation time based on the heat input of the affected boiler(s). There is no requirement for the minimum time spent on an assessment; however, the assessment must include all components discussed above. See the following table for the requirements.

In addition, the rule specifies a minimum percentage of boiler system(s) energy use that must be evaluated when identifying cost saving opportunities. The limits are based on the heat input of the affected boiler(s). See the following table for the requirements.

Heat Input (trillion Btu/year)	Maximum Number of On-Site Technical Hours	Minimum Percentage of Boiler Energy Use to be Evaluated
< 0.3 TBtu/yr	8 hours	50% of boiler(s) energy output
0.3 to 1 TBtu/yr	24 hours	33% of boiler(s) energy output
> 1.0 TBtu/yr	24 hours for the first 1.0 TBtu/yr and 8 hours for each additional 1.0 Tbtu/yr, not to exceed 160 hours.	20% of boiler(s) energy output

Note the owner or operator may choose to conduct an energy assessment that is longer in duration or evaluates a larger percentage of the boiler(s) energy use at their discretion.

Who is a Qualified Energy Assessor? §63.11237

1. Someone who has demonstrated capabilities to evaluate typical energy savings opportunities available in steam generation and steam energy using systems, including but not limited to:
 - Boiler combustion management
 - Boiler thermal energy recovery including feed water economizers, combustion air preheaters, and condensing economizers
 - Boiler blowdown thermal energy recovery
 - Fuel switching
 - Primary energy resource selection (changing steam energy to direct fire or electricity)
 - Insulation
 - Steam trap and steam leak management
 - Condensate recovery
 - Steam end-use management

2. Capabilities and knowledge includes, but is not limited to:
 - Background, experience, and recognized abilities to perform the assessment activities, data analysis, and report preparation
 - Familiarity with operating and maintenance practices for steam or process heating systems
 - Additional potential steam system improvement opportunities including improving steam turbine operations and reducing steam demand
 - Additional process heating system opportunities including effective utilization of waste heat and use of proper process heating methods
 - Boiler-system turbine cogeneration systems
 - Industry specific steam end-use systems

Energy assessor approval and qualification requirements are waived in instances where an energy assessment completed on or after January 1, 2008 meets or is amended to meet the energy assessment requirements in the rule by March 21, 2014.

Can I expand the energy assessment to include other energy consuming equipment?

Yes. The owner or operator may choose to do a more comprehensive energy assessment at their discretion. The assessment may include purchased electricity or other sources of energy and include equipment such as machine drive (motors, pumps, fans), compressed air systems, process cooling, ventilation and air-conditioning (HVAC) systems, building envelop, and lighting. A comprehensive assessment may identify measures for significantly reducing both energy use and costs at your facility.

How do I find a Qualified Energy Assessor in North Carolina?

The **North Carolina Association of Energy Engineers** is a good starting point for finding a qualified assessor. NC DAQ recommends that you review the qualifications and experience of any potential assessor. In addition, the State of North Carolina and the Department of Energy fund energy assessment programs through North Carolina State University Mechanical Engineering Department and Waster Reduction Partners.

NC DAQ will begin offering **reduced cost energy assessments** to reduce energy usage and greenhouse gas emissions at facilities through a voluntary program funded by the EPA. These assessments are expected to meet the requirements for a boiler energy assessment under GACT Subpart 6J. Funding is limited under this program and all assessments must be completed before September 2014. To obtain more information on the program and the energy assessment requirements, please contact Paula Hemmer at 919-707-8708 or go to <http://www.ncair.org/planning/iee/>

Non-Profits and Associations

Waste Reduction Partners

Triangle J Council of Governments
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North Carolina State University

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Advanced Energy

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North Carolina Association of Energy Engineers

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