



Fact Sheet: Natural Gas-Fired Boilers; > 5 MMBtu

Overview:

The Utah Division of Air Quality (UDAQ) is considering regulating boilers used in industrial, institutional, or commercial operations in an effort to reduce emissions of both oxides of nitrogen (NO_x) and Volatile Organic Compounds (VOCs) as part of the Northern Wasatch Front (NWF) ozone State Implementation Plan (SIP). This rule would apply to all counties included in the nonattainment area (NAA) including: Salt Lake, Davis, Weber and Tooele counties.

Equipment:

Natural gas-fired boilers greater than 5 million British thermal units (MMBtu) per hour rated heat input capacity used in industrial, institutional, or commercial operations.

The Rule:

The proposed rule would set limits for the emission rates of burners at 9 parts per million by volume (ppmv) for the above equipment. The rule applies to the installation of new boilers, operation of boilers, and in the instance of replacing burners on existing boilers. No retrofits or replacements would be required for existing boilers outside of the useful life of the existing burners.

Fiscal Analysis:

The UDAQ conducted a cost analysis on the use of ultra low-NO_x burners to determine if they were economically feasible. The UDAQ concluded that ultra low-NO_x limits for boilers larger than 5 MMBtu/hr would cost between \$575.26 and \$5,221.95 per ton of NO_x reduced. Thus, the UDAQ considers this technology to be economically feasible.

Emission Reductions:

- In the NWF NAA there are an estimated 519 natural gas-fired boilers in operation over 5 MMBtu.
- These boilers combined produce an estimated 1,572 tons per year (tpy) of NO_x emissions.
- The proposed limits result in an estimated 73.0% reduction from current non-regulated boilers.
- The proposed rule would result in an emission reduction of 1,139 tpy of NO_x emissions once fully implemented.
- Since this rule does not require retrofits or replacements, the implementation timeline for these reductions is long, likely around 20 years before the full extent of these reductions will be realized.

Secondary Benefits:

- Sets a standard for future installations helping limit emissions associated with growth.
- Reduced NO_x emissions during the wintertime particulate matter season as well as the summertime ozone season.
- Standardized emission limit for all burners resulting in less time spent engineering projects for BACT during the permitting process.