



energy innovation
integrity

The Commercial Industrial Boiler Efficiency Program, a partnership with Pacific Gas and Electric Company, provides no-cost technical services, cash incentives and rebates to identify and implement energy efficiency improvements for boiler systems.



Pacific Gas and Electric Company supports a variety of companies promoting energy efficiency through funding by public goods funds. Enovity is working with PG&E to support our customers by assisting their efforts in energy efficiency.

For additional information, contact:

Boiler Efficiency Program
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BOILER EFFICIENCY PROGRAM

CASH IN ON INCENTIVES AND REBATES AVAILABLE FOR BOILER ENERGY EFFICIENCY PROJECTS

Combine Energy Efficiency Upgrades with NOx Upgrades

- Mitigate efficiency decreases and increased operating costs from NOx reduction
- Realize energy and utility cost savings
- Combine projects for more cost-effective energy efficiency upgrades than when done separately
- Create a payback for a project that may have otherwise been a straight compliance project
- Reduce greenhouse gas emissions
- Take advantage of cash incentives that may be available for energy efficiency upgrades

EXAMPLE ENERGY EFFICIENCY PROJECTS DIRECTLY RELATED TO NOx UPGRADES*

- Selective Catalytic Reduction (SCR) System & High-efficiency Burner
 - Replace a less efficient, ultra-low NOx burner with a high-efficiency, 30 ppm NOx burner and a SCR for ultra-low NOx control
 - Can result in natural gas & electric savings
 - Applicable to boilers larger than 20 MMBtu/hr
- Burner Combustion Fan VFD
 - Upgrade from a fixed-speed fan with damper control
 - Provides part-load electric savings
- High-Efficiency Boilers
 - If replacing, evaluate the highest efficiency boiler possible
 - Non-condensing boilers available up to 86% efficiency
 - Condensing boilers from 87 to 95% efficiency
 - Consider replacing steam boilers with hot water boilers for additional savings

OTHER ENERGY EFFICIENCY OPPORTUNITIES*

- Exhaust feedwater economizers
- Exhaust condensing economizers
- Blowdown heat recovery
- Condensate recovery
- Process heat recovery
- Insulation on bare pipes, tanks, heat exchangers, and process equipment
- Boiler pump VFDs

*Example energy efficiency measures may not be applicable to all facilities or systems. Applicability should be evaluated by a qualified engineer.



NOx EMISSIONS LIMITS

BAY AREA AIR QUALITY MANAGEMENT DISTRICT REGULATION 9 RULE 7 SUMMARY

Rule #	Rated Heat Input (million BTU/hr)	NOx Limit (ppmv @ 3% O2)	Compliance Dates		
			Effective Date 33% of devices at a single facility	66% of devices at a single facility	100% of devices at a single facility
307.1	> 2 to 5	30	later of January 1, 2011 or 10 years after manufacture date if manufactured prior to January 1, 2011	One year after Effective Date	Two years after Effective Date
307.2	> 5 to < 10	15	later of January 1, 2012 or 10 years after manufacture date if manufactured prior to January 1, 2012	One year after Effective Date	Two years after Effective Date
307.3	10 to < 20	15			
307.4	> 20, load-following unit	15	later of January 1, 2012 or 5 years after manufacture date if manufactured prior to January 1, 2012	One year after Effective Date	Two years after Effective Date
307.5	20 to < 75	9			
307.6	> 75	5			

Footnotes:

Table does not include low usage boilers.

Table only includes boilers using natural gas.

See the actual regulations for further information and specific compliance requirements.

SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT RULE 4307 AND 4320

Rated Heat Input (million BTU/hr)	NOx Limit (ppmv @ 3% O2)	Compliance Option/Schedule	Compliance Deadline
≥ 2 to ≤ 5	30	Unless new units installed after January 1, 2010, which are required to meet 9 or 12 ppm NOx (see Rule 4307)	
> 5 to ≤ 20	9	Option A. Standard Schedule	July 1, 2012
	6	Option B. Enhanced Schedule	July 1, 2014
		Option C. Pay an Annual Emissions Fee for Compliance	(January 1, 2010)
> 20	7	Option A. Standard Schedule	July 1, 2010
	5	Option B. Enhanced Schedule	July 1, 2014
		Option C. Pay an Annual Emissions Fee for Compliance	(January 1, 2010)

Footnotes:

Table does not include oilfield/refineries, schools, and low usage boilers.

Table only includes boilers using natural gas.

See the actual regulations for further information and specific compliance requirements.

California consumers are not obligated to purchase any full fee service or other services not funded by this program. This program is funded by California utility customers under the auspices of the California Public Utilities Commission (CPUC). Contact Enovity for a complete list of all program eligibility requirements and restrictions.