

Commercial Industrial Boiler Efficiency Program (CIBEP)

CASE STUDY

Facility Installs Digital Controls to Improve Energy Efficiency

Quick Facts

By participating in the Program, many facility owners have seen benefits such as:

- Reduced Energy Consumption
- Lower Energy Bills
- Reduced Waste Water and Chemical Costs
- Reduced Greenhouse Gas Emissions
- Reduced Maintenance Costs
- Improved System Efficiency



energy innovation
integrity

For more information or to apply for the Program contact:

www.enovity.com/programs/cibep.html

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NEW WAYS TO CUT COSTS

With the increase in energy demand and fuel costs over the past few years, facility owners across Northern California are looking for new ways to save energy and cut costs. The Commercial Industrial Boiler Efficiency Program (CIBEP), administered by Enovity, offers practical solutions for industrial and commercial facilities by identifying energy efficiency opportunities for boilers and offering incentives to buy-down the cost of installation. The Program offers no-cost professional energy evaluation services and gives financial incentives to PG&E customers who implement boiler system energy efficiency improvements that will result in natural gas and/or electrical energy savings.

A TIMELY REPLACEMENT

A recent project evaluated by the Program coincided with a lower-NOx and end-of-life burner replacement project that was already required at the facility. After a no-cost detailed evaluation, the Program identified a controls upgrade that could be installed in conjunction with the new burner. The facility's existing boilers had standard-efficiency mechanical linkage jack-shaft burner controls and constant

speed burner fans. The Program recommended that the new, lower NOx burner be upgraded from standard-efficiency burner and fans controls to parallel positioning and a burner fan variable frequency drive (VFD). By providing more precise digital control of the fuel and air inputs throughout the firing range, this project will increase the combustion efficiency



Upgraded controls on an industrial boiler

of the boiler and reduce its natural gas consumption. In addition, by adding a VFD to the combustion fan, the fan motor is able to modulate the motor speed when the system is not fully fired, resulting in reduced electrical consumption.

FAST PROJECT PAYBACK

As a result of this project, the facility will see an incremental annual energy reduction of 4,342 therms and 40,000 kWh, leading to a reduction in energy cost of \$9,542 annually. By doing the controls upgrade project at the same time as the

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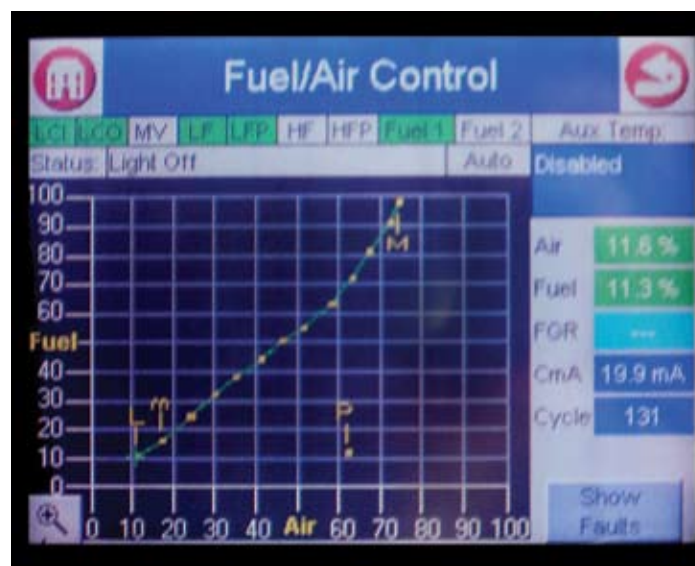
Depending on the size of the facility and the condition of its equipment, the CIBEP team can evaluate and provide a cash incentive for a number of additional boiler system energy savings opportunities for your facility. Common upgrades include:

- Parallel Positioning and O2 Trim Control
- Burner/Combustion Fan VFD
- Exhaust Stack Feed-Water Economizer
- Condensing Exhaust Stack Economizer
- Feed-Water Pump VFDs
- Steam Boiler Blow-Down Heat Recovery
- High-Efficiency Direct-Contact Water Heaters
- Installing Higher-Efficiency Boilers (Condensing)
- Installing Condensate Recovery Systems
- Installing Pipe and Tank Insulation
- Custom Projects

new lower-NOx burner, the facility will see a reduced incremental installation cost for the energy efficiency project resulting in a more cost-effective project overall.

Based on the energy savings, the CIBEP offered an incentive to the owner of \$10,776, paying 60% of the \$23,000 total incremental project cost. The simple

payback for the controls upgrade at this facility is 1.3 years. As a result of this project, the facility's boiler contractor and Program worked together to help the facility meet its code compliance for air quality and emissions standards while reducing the facility's energy consumption, energy costs, and greenhouse gas emissions.



Digital Controls Allow for Better Air-to-Fuel Ratio

Owner must allow for two on-site assessments (one screening and one detailed). The on-site assessments must demonstrate cost-effective energy savings opportunities. Incentives will only be provided for cost effective measures.

This program may be modified or terminated without notice. Program incentives will be paid to customers on a first-come, first-served basis, through October 31, 2011 or until Program incentives have been fully committed. Incentives are paid upon installation verification of recommended boiler projects.

California consumers are not obligated to purchase any full-fee service or other service not funded by this program. This program is funded by California utility ratepayers under the auspices of the California Public Utilities Commission.

Los consumidores en California no están obligados a comprar servicios completos o adicionales que no estén cubiertos bajo este programa. Este programa está financiado por los usuarios de servicios públicos en California bajo la jurisdicción de la Comisión de Servicios Públicos de California.