

Assessing Gas Program Opportunities in Commercial Boiler Systems

Thursday, June 12, 2008
1:30 – 3:00 PM Eastern



Working Together, Advancing Efficiency

Brief Summary of Market Characterization

- Condensing Boilers are selling faster than predicted in 2001
- Condensing Boilers are often installed in systems where their full efficiency potential cannot be achieved due to high return water temperature
- There are competing efficiency tests
- Savings potential is conservatively 50 to 80 trillion Btu.

The opportunity is attractive, but the market is complex.



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Scope of the Boiler System

Savings Category	Category Contribution to Overall Efficiency	Item	Type of System (i.e. Steam or Hot Water)	Fuel Savings Potential		Efficiency Improvement Potential		Cost	Max Payback (years)
				(Min)	(Max)	(Min)	(Max)		
Heat Loss in Flue Gases	18%	Stack Economizer	Both	5%	10%	3%	4%	\$10-\$15 per tube	2
		Flue Gas Condenser (a.k.a. Condensing Economizer)	Both		10%		10%		
		Turbulators	Both	5%	15%		1%		
Heat Loss in Blow Down	3%	Blowdown Heat Recovery	Both				2.7%	\$6,000-\$44,000	3
		Automatic Blowdown Control	Both	2%	5%			\$2,500-\$6,000	
Combustion Efficiency		Combustion Air Pre Heater	Both		1%			\$10,000	
		O2 Trim System	Both		5%	1%	2.5%		
		Efficient Burner	Both	1%	3%				
Heat Losses to Radiation & Convection	4%	Exhaust Draft Control	Both	10%	30%				
		Boiler Reset Control	Hot Water		5%				
		Boiler Sequence Control	Both						
		Insulation	Both	0.0%	0.0%				
Condensate & Steam Recovery		Condensate Recovery	Steam		"significant"				
		Steam Traps	Steam						
		Flash Steam Recovery	Steam						
		Steam Vapor	Steam						
		Recompression	Steam						
Other		Water Treatment	Both	2%	5%				



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Standard Program Types

- Education and Awareness
- Technical Assistance
- Prescriptive
- Custom
- New Construction
- Standard Performance Contract
- Financial Assistance

Which are best applied to commercial boiler systems?

How Some Programs Are Taking On This Market, Part 2

- Michael Pace, National Grid
- Ray Keller, Vermont Gas
- Subid Wagley, PG&E

Next Step: Commercial Boiler Program Summary



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Grappling with Complexity: How Can CEE Help?

- It may take more than Common Efficiency Specifications to transform the market.
- How do we reduce this complexity?
- Where are the commonalities that we can exploit?
- What tools exist now and what would help programs to get further along?

Is There a Role for Common Efficiency Specifications?

- There are competing measures of efficiency (i.e. AHRI's Hydronics Institute vs. ABMA)
- Is there value in attempting to work with these groups to establish a common industry efficiency standard?
- Is there value in setting either minimum efficiencies or common efficiency specifications?

Carving Up the Market

- The line between commercial and industrial boilers is grey.
- Programs often have particular markets they wish to target based on their customer base.
- Should we distinguish between Commercial & Industrial for the purpose of an Initiative?

Next Steps

- Begin Approaching Manufacturers?
- Develop Common Efficiency Specifications?
For Boilers? For Auxiliaries?
- Develop a Recommended Program Approach?