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HPAC ARTICLE

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Time to Replace an Aging Fleet of Commercial and Industrial Boilers

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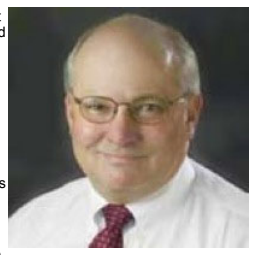

What would the world be like if we all drove 25-year-old cars? Without question, the current fuel crunch would be far worse, and our air would be more polluted.

That is exactly the problem we face with the nation's boilers, the majority of which are well past their intended useful life. By some estimates, more than 25 percent of the 1 million-plus registered commercial and industrial boilers in the United States are more than 25 years old. Among larger boilers, an estimated 50 percent are more than 25 years old. The reliability and safety issues associated with aging equipment weigh down the economy, while significant resources are lost through inefficiency and increased pollution.

Energy Use
An old, poorly tuned boiler lacking newer controls easily can consume 10 to 15 percent more fuel than a modern boiler system. Adding controls allows a boiler to operate over a wide turndown range and increases efficiency.

Opportunities for greater savings and efficiency gains exist with modern systems engineered with highefficiency boilers, heat-recovery options, and condensing-mode operation. These improvements, coupled with high-turndown burners and computerized controls, can increase boiler-system efficiency by 25 percent or more.

Environmental impact
The environmental benefits of a modern boiler are derived from two major improvements:

- Increased efficiency, which directly reduces pollutants. This helps facilities comply with ever-increasing local, state, and federal emissions regulations.
- Controls, which dramatically reduce greenhouse-gas emissions. The majority of aging boilers operate with no control technology. As a result, the nitrogen-oxide emissions of most natural-gas-fired boilers installed prior to 1990 are greater than 100 ppm, while the nitrogen-oxide emissions of most fuel-oil-fired boilers installed prior to 1990 are up to 400 ppm. Modern boiler controls cut those figures to less than 30 ppm and less than 100 ppm, respectively.

Boilers paired with the latest ultralow-emission burners emit less than 9 ppm on natural gas and less than 50 ppm on No. 2 fuel oil. Even lower emissions are achievable with large boilers outfitted with selectivecatalytic-reduction equipment.

When the fuel economy and low emissions characteristic of new boiler technology are combined, the air-quality improvements can be significant.

We can make a difference
The member companies of the ABMA are dedicated to helping commercial and industrial boiler owners improve their systems.

Upgrading and modernizing the current boiler infrastructure will be repaid many times over, resulting in millions of dollars in savings on energy and maintenance. At a time of rising energy costs and increasing environmental concerns, these improvements are indispensable.

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