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RE: HESNI Conference – Presentation Abstract

Optimizing Thermal Energy Management in Healthcare Facilities via Modular On-demand Boiler Systems

Both recent economic and environmental conditions in the U.S. have converged to bring about unprecedented attention to energy efficiency and sustainability in the country's healthcare sector.

A recent 2010 survey conducted by ASHE of its member hospitals indicate that energy costs in the healthcare sector are increasing to unsustainable levels, where over 90% of hospitals report energy cost increases from the year before and over half of those report increases in the double digits.

A recent survey indicates that the current U.S. inventory of commercial / industrial boilers stands at around 163,000 units and 2.7 million MMBtu / hr. total fuel input capacity. These boilers consume nearly 8,100 Tbtu per year, representing about 40% of all energy consumed in the commercial / industrial sectors. Moreover, this same survey indicates that nearly 50% of all commercial / industrial boilers in the U.S. are 40+ years old while nearly 80% are 30+ years old.

Boilers account for as much 60% of hospital facilities total energy consumption and represent one of the most energy intensive systems in healthcare facilities. Furthermore, the stringent N+1 100% redundancy requirements of HVAC systems exacerbate thermal energy losses from boilers idling in back-up mode. Given the preponderance of aged, obsolete boiler technology currently in service in the U.S., it is critical to raise awareness and examine the role of emerging new technologies to address the energy and environmental challenges inherent within heating systems in healthcare facilities.

In the same way that tank-less / instantaneous water heating systems are eschewing a new era in energy efficiency in the residential sector, compact modular *on-demand* boiler systems are poised to support the same kind of transformation in the healthcare sector by addressing the significant thermal energy losses associated with part-load & back-up boiler operation.

This presentation will illustrate how emerging *on-demand* boiler technologies can play a part in addressing the energy and environmental challenges facing the country's healthcare sector and in doing so help hospitals better meet their energy & environmental goals first, by illustrating synergies between the technology & energy management BEST PRACTICES and finally by citing a few case studies of successful application of the technology in healthcare facilities.

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