

Green Proving Ground Test Bed Project

Technology Fact Sheet

Category:

HVAC

Technology Name:

Commercial Condensing Boilers

What is this Technology?

A condensing boiler extracts additional heat from waste gases by condensing the water vapor to liquid water, thus recovering its latent heat.

Why is GSA interested?

Energy Efficiency – Condensing boilers can achieve up to 98% thermal efficiency compared to 70%-80% with conventional boilers. Integrated project design that allow for boilers to be used only as required by demand will yield additional energy savings.

Cost effectiveness – Condensing boilers have achieved widespread adoption in Europe; however, there is little installed experience in North America. Preliminary estimates indicate that this technology will have an installed cost approximately 50% greater than conventional boilers, but a simple payback of 2 - 5 years based on energy savings.

Operations and Maintenance – Condensing boilers are more complicated than conventional boilers, and in Europe they have a reputation for being less reliable, requiring specialized experience for successful installation and regular service. Claims of unreliability have been contradicted by European research.

Applicability - If it proves reliable and achieves predicted life cycle cost effectiveness, this technology will be widely applicable and deployable at GSA facilities

Adapted from a report by Pacific Northwest National Laboratory