

## Field Testing Combis with Condensing Gas Water Heaters and Electric Heat Pumps

2016 ACEEE Hot Water Forum February 22<sup>nd</sup>, 2016 Tim Kingston Gas Technology Institute (GTI)



## **Research Discussions**

Development of an Integrated Forced-Air Combi — Forced-Air Unit (FAU) condensing waters, heat pumps

>Guiding principles in the FAU development

Preliminary results of field testing in New York

Further development with GTI-Auburn University

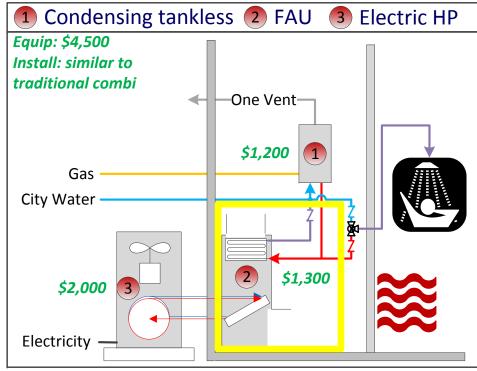
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## **Integrated Forced-Air Combi**

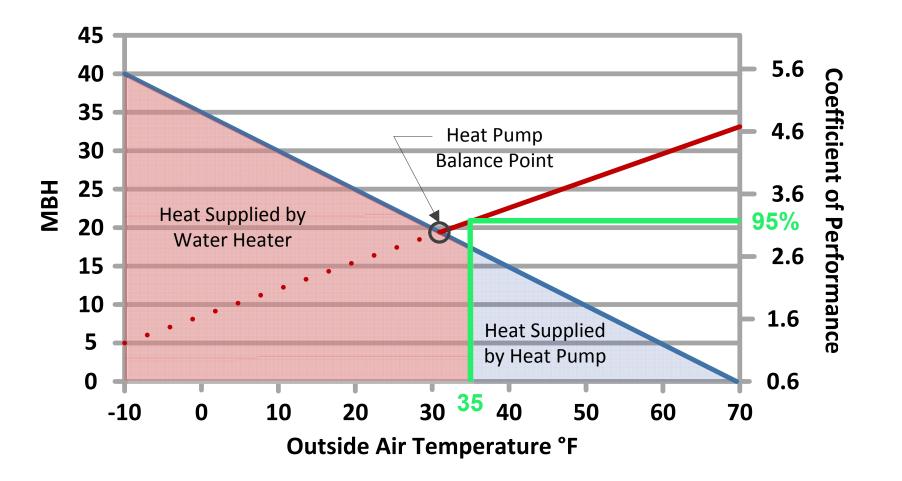
- > DHW, Space heating, AC
- > Fuel agnostic technology
- > FAU governs heat source
- > Exceeds 100% efficiency
- > Cold-climate capable
- > Enables condensing WH
- > Tank-type or tankless WH
- > Hydronic FAU only difference
- > \$ Furnace = \$ Hydronic FAU

Absent unnecessary installation premiums, near-zero incremental costespecially for new construction



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## **Supplemental Heat Sources**



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