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Optimal sizing of a heat pump booster for sanitary hot water production to maximize benefit for the substitution of gas boilers



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### **ACCEPTED MANUSCRIPT**

#### **HIGHLIGHTS**

- To substitute a gas boiler by a heat pump for SHW is thermo-economically profitable.
- Optimal sizing of a heat pump and a recovery heat exchanger to maximize henefit
- The introduction of a recovery heat exchanger is always positive
- The maximum benefit does not correspond to the highest heat pump COP.
- The most influent external variable on the benefit is the number of operating hours.

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