

## Case Study #1: HeetMeter Tracks Fuel Savings from Weatherizing a 19th Century Home



- Oil-heated home in Massachusetts installs a Mitsubishi Mr. Slim® heat pump, along with insulation and sealing improvements.
- HeetMeter™ data from only 7 days post-install, pins net annual energy cost savings of \$786 from improvements
- Encouraged by the data, homeowner installs a second Mitsubishi Mr. Slim heat pump in her home, to further reduce or eliminate heating oil consumption.



A HeetMeter™ installed in an 1860-vintage Massachusetts home quantified the savings on heating oil during the brutally cold winter of 2013-2014. The homeowner received the HeetMeter™ as part of a state-sponsored energy conservation program, MassSave®, to track the impact of the weatherization work that was done.

The house received the following improvements:

- Mitsubishi Mr. Slim heat pump, as a parallel heat source, to reduce the runtime of the oil-fired boiler
- Additional attic insulation, a 6mm poly barrier over the basement crawl space, new door sweeps
- New thermostat, LED bulbs, faucet and shower aerators

The weatherization work was completed by a MassSave® contractor, and the \$3,500 cost of the heat pump was offset by \$2,500 in grants and rebates. After the heat pump was installed on Jan 15, 2014, the HeetMeter™ monitored the furnace. It calculated fuel oil gallons/day usage, determined the Home Heating Index (HHI) and indicated the level of fuel oil remaining in the tank.

**Although the electricity bill increased by \$51 (we compared Feb-Apr. 2013 vs. Feb-Apr 2014), the fuel oil bill decreased by \$174 over the same period.**

After seeing the fuel savings and short payback period of the first heat pump, the homeowner had a second, larger Mitsubishi Mr. Slim® heat pump (\$4,000) installed on 20 June 2014 with a \$2,200 rebate and grant under the Mass Save® energy-conservation program.

### Conclusion:

The HeetMeter™ is critical to quantifying real dollar savings for the homeowner. It provides this information using actual heating system run-time data and real-time compensation for outdoor climate conditions, as opposed to the ballpark estimation that is common in the industry, which is usually never verified in a systematic manner. The HeetMeter™ provides energy savings information in an easy-to-understand format, backed by hard data specific to the home, giving homeowners the confidence they need to invest in further improvements to their home, as witnessed in this case study.



06 Sep 2014  
Device S/N: 1022



Used: 17.2 gal  
Cost: \$68.8  
HEc: 34.56%  
Tank Size: 275 gal  
Remaining: 0 gal

dwld  
updt  
help



Red bars indicate the gallons/day fuel consumption of this specific home, as measured by the HeetMeter™

Gray bars indicate the fuel consumption of an average home (of the same size using 10 BTU/sq.ft./degree-day).

On 3/13/2014, the homeowner agreed to switch off the heat pump for one day, to see the fuel-oil consumption without the heat pump. As seen here, gallons/day spikes dramatically when compared to other days. Homeowner installed a second Mitsubishi heat pump to reduce this even further or eliminate it altogether.