



MEMO

DATE **March 20, 2014**

TO **Kathy Kuntz and Raj Shukla, Cool Choices**

FROM **Ashleigh Keene and Ingo Bensch, Energy Center of Wisconsin**

SUBJECT ***Impact of Cool Choices Game on Milwaukee Fire Department Electricity Use***

Milwaukee Fire Department employees played the Cool Choices game for eight weeks during September and October 2013. One hundred and thirty of the department's 900 employees participated, organizing themselves into 52 different teams across 29 engine houses.

With electricity usage available from the City of Milwaukee, the Energy Center of Wisconsin conducted an analysis of electric savings experienced by participating engine houses during the two months of the game, as compared to usage during September and October of the prior year (2012).

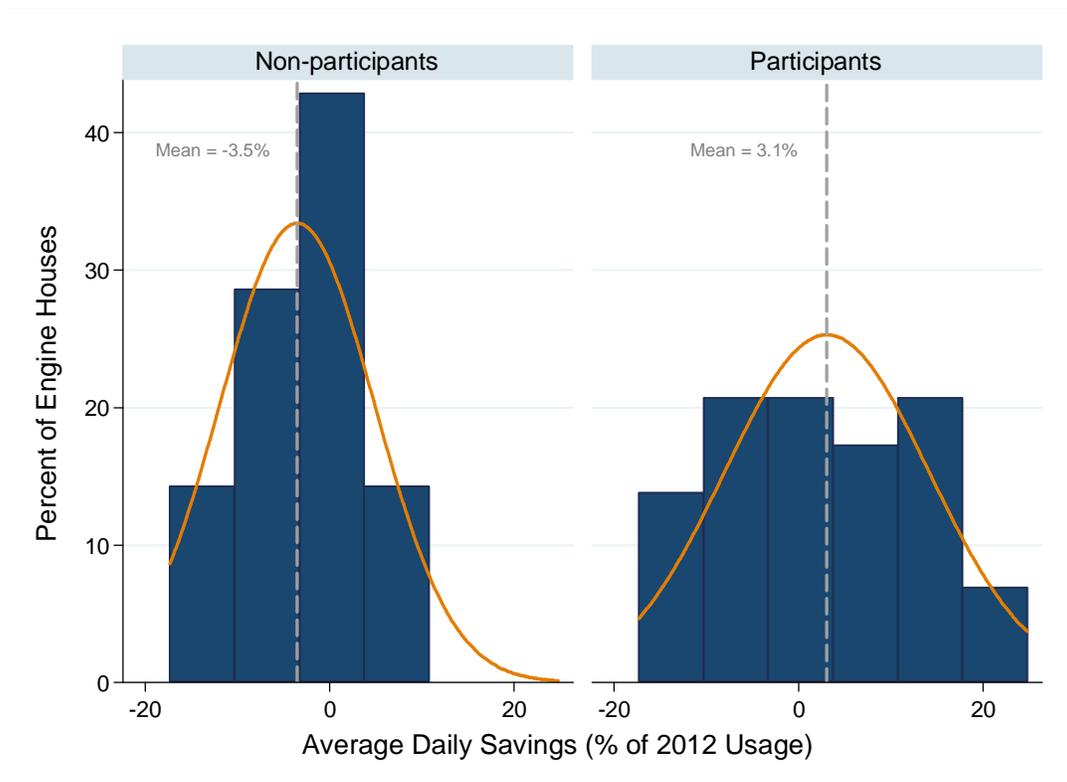
On average, participating engine houses used 3.1% *less* electricity during the game period than in the comparable 2012 period, while non-participating engine houses used 3.5% *more* electricity. This difference in savings between participants and non-participants yields a net savings rate of 6.6%, or about 25,000 kWh across all engine houses over the two-month period, a cost savings of approximately \$3,500. This analysis did not examine whether or not these savings persist beyond October 2013.

The table below shows electricity usage and savings for participating and non-participating engine houses. Values are cumulative for two-month game period.

	Ave. Usage per Engine House (kWh)	Usage per Group (kWh)	Ave. Savings Rate from 2012 (%)	Net Ave. Savings Rate from 2012 (%)	Num. of Engine Houses
Participating	14,457	419,253	3.1%	6.6%	29
Non-participating	9,882	69,174	-3.5%		7
All Stations	13,542	487,512	1.8%	-	36

Two notes on methodology: one, September and October 2013 usage data were weather normalized to the respective 2012 month prior to savings calculations; and two, all engine houses were invited to play the Cool Choices game. Those that opted out did so by choice and should not be interpreted as a randomly-assigned control group.

This analysis is based on a census of engine houses within the Milwaukee Fire Department. As such, the population statistics in the table describe observed electricity usage at each location. It is important to note, however, that the average usage and average savings values presented above actually reflect distributions of engine house-specific values. For example, while the average savings rate for participating engine houses was 3.1%, some locations experienced a higher rate, while other experienced a lower, even negative, rate. The distribution of savings (as a percentage of September/October 2012 usage) for each group is presented below.



We also explored whether the differences in energy usage between participating and non-participating engine houses are statistically attributable to Cool Choices game or inherent variation in month-to-month consumption between the two groups. Statistically attributable net energy savings from the game hovered near the 90 percent statistical confidence level, which is the traditional industry threshold for assigning attribution. If desired, we would be happy to provide additional details about this analysis.