



## Harvard Kennedy School Energy Policy Seminar Series, Spring 2015

### Belt and Suspenders and More: The Incremental Impact of Energy Efficiency Subsidies in the Presence of Existing Policy Instruments

**Monday, February 2, 2015**

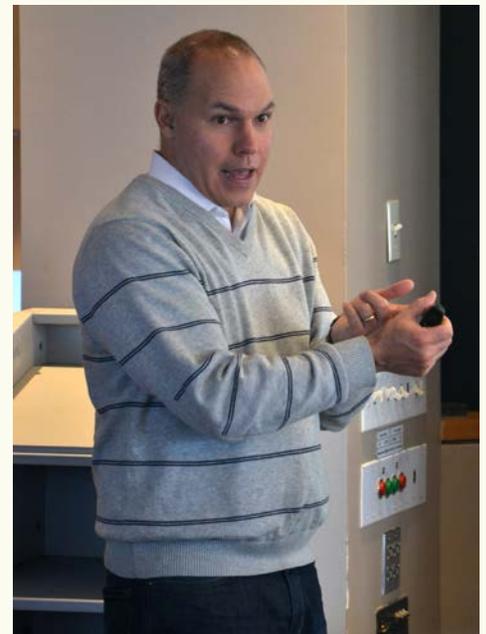
**By Louisa Lund, Program Director, Consortium for Energy Policy Research**

In a talk that could serve as a cautionary tale for policymakers, Professor Joe Aldy explained the results of his recent research on the impacts of rebate programs intended to increase purchases of energy efficient appliances.

Aldy and co-author Sébastien Houde conducted an analysis of State Energy Efficient Appliance Rebate Program (SEEARP), which provided states with federal funds to support state-level rebate programs for the purchase of energy efficient appliances. Taking advantage of differences in state program designs and of transaction-level data on appliance purchases, Aldy and Houde used regression analysis to identify the impact of rebates on the purchase of energy efficient appliances.

Their findings highlight some of the difficulties of public policy. The rebate programs have had an extremely small impact in terms of producing overall reductions in the average energy consumption of purchased appliances (less than one percent), with the effect that that federal government paid somewhere between \$0.25 and \$1.50 for each kilowatt hour of energy saved (a kilowatt hour of energy itself costs only about \$0.13).

Aldy went on to discuss some of the reasons for this small impact. First, the program itself was tied to the EnergyStar rating of appliances, which is not quite the same thing as how much energy an appliance uses. Criteria for EnergyStar vary with the size and complexity of the appliance—so a large refrigerator could qualify for an EnergyStar rating, even though, over the course of a year, it uses more energy than a small refrigerator that doesn't qualify. As a result, customers might be motivated by the rebate to choose EnergyStar, but this does not necessarily mean they are buying appliances that will consume less electricity on a yearly basis.



Second, the program likely suffers from a large “free riders” problem. A “free rider,” in this case, is someone who would buy an energy star appliance even without the rebate. According to Aldy and Houde’s calculations, depending on the appliance, it is likely that somewhere between 73% and 91% of appliance rebate claimants were free riders. Some of these free riders were individuals who delayed purchase of an EnergyStar appliance until the start of the rebate program in order to claim the subsidy.

Third, the EnergyStar rating is layered on top of already-existing minimum energy efficiency standards—so all possible consumer choices already meet a minimum energy efficiency standard. EnergyStar rated appliances typically exceed the minimum standard by about 20%—meaning that the maximum possible impact of the program is limited to moving customers from reasonably efficient appliances to very efficient appliances—truly inefficient choices are already prevented through other regulations.

Aldy spoke as part of the Kennedy School’s Energy Policy Seminar Series, which is jointly sponsored by the Energy Technology Innovation Policy research group of the Belfer Center and by the Consortium for Energy Policy Research of the Mossavar-Rahmani Center on Business and Government.