

## Energy efficiency is a tough sell, even when it is “free”

*Increasing energy efficiency is good for both the environment and for consumers, as it leads to lower energy bills. But despite the benefits, why do many households not pursue such improvements? In a new study, [Meredith Fowlie](#) and co-authors ran a large field experiment to encourage eligible households to adopt free energy efficiency measures, and found that despite this encouragement, only a relatively small number of households took up the efficiency retrofit. She argues that for many the non-monetary costs incurred to implement an efficiency retrofit are significant and can be prohibitive.*



Everyone says that home energy efficiency improvements are good for us. An insulation upgrade reduces energy costs, reduces emissions (if emissions are not subject to a binding cap), and can make winters cozier. But ask me if I want to spend my Saturday researching the [recommended R-value for insulation in my climate zone](#), and I will come up with a long list of things that are more exhilarating.

Given limited time, motivation, and cognitive capacity, we all have to choose what we pay attention to and what information we act on. In a [recently published paper](#), my co-authors and I document just how hard it can be to get people to pursue privately beneficial energy efficiency improvements.

### Rational inattention?

Economists are increasingly interested in the idea that people possess a finite capacity to process – let alone act on- the information they receive. In the world of energy efficiency, this has some interesting implications.

Jim Sallee notes in a [recent paper](#) that “rational inattention” could help explain the apparent gap between the investments people make in efficiency improvements and the investments that are privately cost effective. The existence of this gap is largely predicated on cost-benefit analyses, including the famous McKinsey reports that do not account for the “process costs” of implementing these improvements. If the additional time, hassle, and cognitive effort could be accounted for, the gap would surely look narrower.

This begs the question: how important are these hassle costs in determining the level of energy efficiency investment?

### Energy efficiency is a tough sell... even when it is “free”

Michael Greenstone and Catherine Wolfram and I have recently completed a study that investigates, among other things, the role of information and process costs in households’ decision to pursue efficiency improvements.

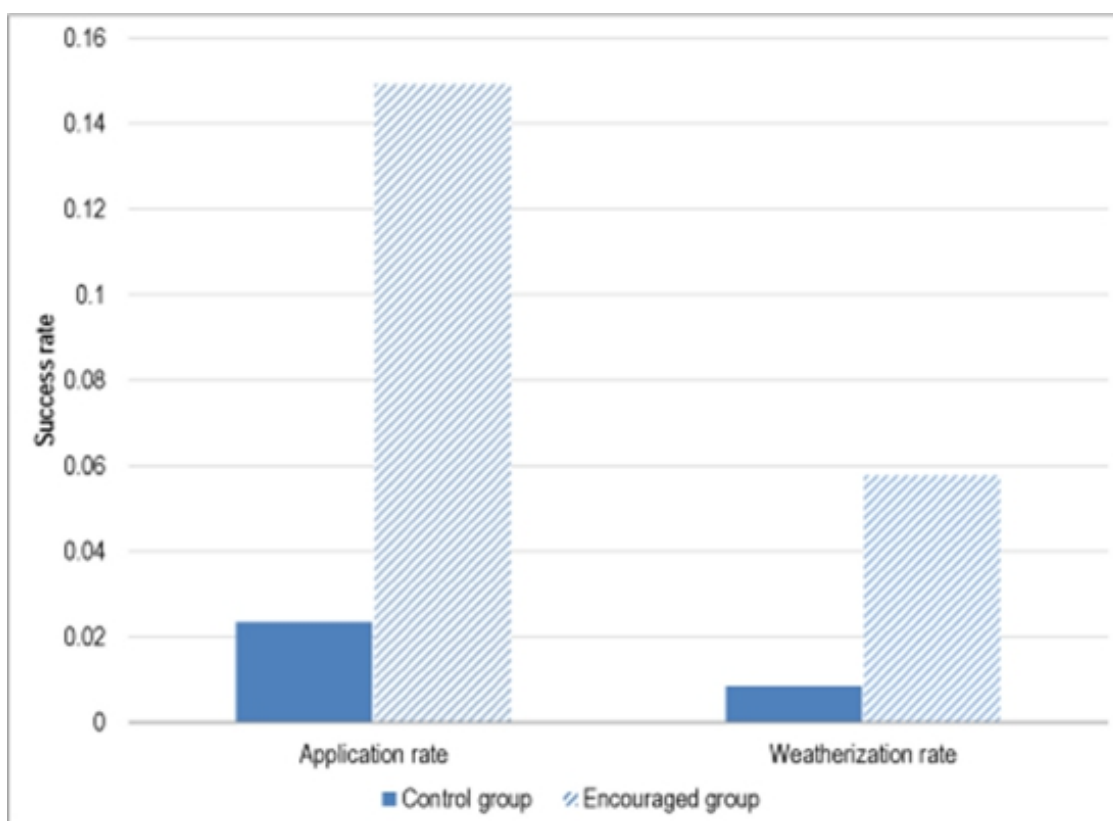
We analyze participation in the Federal Weatherization Assistance Program (WAP), which aims to reduce the energy burden of low-income Americans by installing energy efficiency measures in their homes. Homeowners stand to benefit significantly from reduced energy bills. Importantly, all hardware and installation costs (averaging around \$5000 per household in our study) are paid for by the Federal government.

Although households incur no direct monetary costs to participate, the process of applying for weatherization is onerous and time intensive. We ran a large field experiment in which we significantly reduced information and process costs for a random subset of presumptively eligible households. Households assigned to our “encouraged” group were inundated with information about the program. In addition, households were offered extensive personal assistance with completing their application.

To get the word out about both the program and our enrollment assistance, our field staff knocked on 7,000 doors, launched 23,500 targeted “robo-calls”, and mailed thousands of post cards. Once a household signaled interest, our staff would schedule a meeting to assist with the application materials. Over the course of more than 2,700 personal meetings and 9,000 phone calls, our staff worked with households to navigate the application process.

Figure 1 below shows the impact of our efforts to reduce information and process-related barriers to weatherization.

**Figure 1 – Effects of encouragement to participate in Federal Weatherization Assistance Program**



This graph makes two important points. First, it documents surprisingly low take-up of this substantive (and “free”) energy efficiency retrofit, even among households that have been informed- via multiple channels- about the sizable benefits. The figure shows that the application rate in our encouraged group is less than 15 percent (up from 2 percent among households that did not receive our encouragement and assistance).

Second, the graph shows an underwhelming response to our overwhelming encouragement efforts. The rate at which households took up the efficiency improvement increased by only 5 percentage points as a result of our encouragement. In other words, a lot of effort to encourage a relatively small number of efficiency retrofits.

It is important to keep in mind that our intervention eliminated some – but by no means all – of the time and effort required to participate in the program. Households in the treatment group had to actively decide to participate, engage with our staff, meet with contractors, endure the hassle of having a construction team working in their home, etc. One interpretation of these findings is that these remaining hassle and effort costs exceeded the expected benefits from weatherization for a majority of households.

### **Not worth the hassle?**

Our study suggests that non-monetary costs incurred to implement an efficiency retrofit are significant and can be prohibitive. Of course, we should be very cautious about drawing general conclusions from this specific context. For one thing, the importance of process costs is likely to vary across efficiency improvements (surely changing a light bulb requires fewer cognitive resources!).

When it comes to more involved efficiency retrofits, however, these two qualitative findings generalize to my own experience. In my house, the hassle/time/attention costs of making these kinds of home energy efficiency improvements have been prohibitive. And frankly, it will take a serious nudge to draw my attention away from my other going concerns (parenting, economics, Season 6 of *Downton Abbey*) up to the bare rafters of my roof.

While there is a need for accurate, field-based estimates of returns on energy efficiency investments, there is also

real value in accounting for hard-to-account, non-monetary costs. Taken together, accurate and comprehensive measures of benefits *and* costs can help policy makers identify the biggest megawatt for their nudge.

*This article is based on the paper, ‘[Are the Non-Monetary Costs of Energy Efficiency Investments Large? Understanding Low Take-up of a Free Energy Efficiency Program](#)’, in *American Economic Review: Papers & Proceedings 2015*. The authors have also recently released a more substantive companion paper, [here](#).*

*A version of this article originally appeared at the [Energy Institute at HAAS blog](#). Readers may also be interested in the authors’ follow-up blog post which [can be found here](#).*

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*Note: This article gives the views of the author, and not the position of USAPP – American Politics and Policy, nor of the London School of Economics.*

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## About the author

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Meredith Fowlie is an Associate Professor at the Department of Agricultural and Resource Economics at the University of California, Berkeley. Much of her work investigates how market-based environmental regulation- and emissions trading programs in particular- are working in practice. She is also interested in the demand-side of energy markets and work that integrates methods and models from other disciplines into economic analysis of policy outcomes.



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