

Are Free-Riders Actually a Good Thing? Revisiting What Free-Riders Are Actually Telling Us

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Abstract

As evaluators, we understand that free-riders distort the effects of a program and render it less cost-effective. Unquestionably, we need to account for their actions and remove their savings from program impact reports. Or do we? Discussing results from a recent impact evaluation with the program staff, we encountered stiff resistance to this premise. More than one program manager made the case that embracing rather than rejecting free-riders engenders more goodwill among customers toward the utility company sponsoring the program and leads to both greater numbers of “legitimate” participants and spillover than many other marketing methods. Have evaluators, as well as policy makers/regulators, been too parochial in our conceptualization of free-riders in the full context of program objectives and the fundamental mission of at least one type of program: market transformation? Might free-riders themselves be a measure of market transformation that we can incorporate into program tracking and planning? This paper will explore the roles and effects of free-riders and what their actions really tell us. It may not be the bad news that we’ve often assumed.

Introduction

As evaluators, we understand that free-riders distort the effects of a program and render it less cost-effective. Traditionally, it was understood that free-riders are participants that programs should avoid at all costs. But discussing results from a recent impact evaluation with the program staff, we encountered stiff resistance to this premise. More than one program manager made the case that embracing, rather than rejecting, free-riders engenders more goodwill among customers toward the utility company sponsoring the program and leads to both greater numbers of “legitimate” participants and spillover than many other marketing methods. Perhaps evaluators (as well as policy makers/regulators) have been too parochial in the conceptualization of free-riders in the full context of program objectives and the fundamental mission of at least one type of program: market transformation. Might free-riders themselves be a measure of market transformation that evaluators can incorporate into program tracking and planning?

To test the reasonableness and persistence of the traditional view of free-riders as a negative reflection on energy efficiency programs, and to make a fresh assessment of what the presence of free-riders may really be telling program evaluators (as well as policy makers and program administrators) about these programs, we did some informal polling of colleagues and reviewed recent literature, and in February 2012 we conducted a survey of energy efficiency professionals.

This paper explores the roles and effects of different types of participants, in different types of programs, and what their actions really tell us. The array of opinions and perspectives on

the meaning of free-riders and how we treat them in designing and evaluating programs underscores the complexity of the issue. Free-ridership is not strictly bad news. Its value is nuanced and conditional on program type, program and market maturity, and even the way in which evaluation results are used.

An Evolving View of Free-Riders

Who Is a Free-Rider, Anyway?

In common parlance among energy efficiency practitioners, the simple definition of a free-rider is a program participant who takes an action within a program, but would have taken the same action in the absence of the program. In these stark terms, a customer who goes to a store to buy a CFL and purchases it at a program-sponsored discounted price is a free-rider, because he would have purchased that CFL even without the discount. A customer who calls her plumbing contractor to install a highly efficient water heater and then takes a program rebate for that unit is also free-rider, since this person was prepared to purchase that water heater without the rebate. In this simple world, a participant either is or is not a free-rider. Program savings that ignore (i.e., include) the effects of free-riders (and other factors) are called gross savings. Those savings that net out these effects are termed net savings.¹

Over time, we've come to see that this definition is a bit too simplistic. As one colleague put it, "[Free-riders] may achieve deeper and/or more sustained levels of savings than they would absent the programs—in other words, being a free rider or not shouldn't be a binary thing." Continuing the above examples, what about that shopper who plans to buy one CFL, sees the attractive price and as a result buys a 3-pack? Or the customer replacing a water heater who sees a program advertisement and makes the purchase a year earlier than planned? The program participant in each of these examples could be defined as a partial free-rider—but how much of a free-rider? If not 100%, then 80% free-rider? 30% free-rider? Defining the level of free-ridership becomes a slippery slope that has contributed considerably to differences of opinion about whether free-riders should be avoided at all costs or accepted for what good they bring.

While the basic definition of a free-rider is not so much in dispute, treatment of them in program evaluation is controversial. Interactions with our (the authors') own utility clients and regulators, and our reading of recent program and evaluation guidelines and other studies have thrown into question whether and in what way our perceptions about free-riders have changed over time. A recent study published by ACEEE (Kushler 2012) shows that there is currently no consensus across jurisdictions in the US regarding how or whether programs should count savings including or excluding free-riders—currently half the states only report net savings, 29% report gross savings, and 21% report both. Ultimately, we want to look at how a change in

¹ The examples used here are deliberately definitive. In reality, it is often hard to tell which participants were truly motivated by the program. And evaluators have developed various methods to reasonably assess free-ridership. Without getting into details about how free-ridership in a program is measured, we note that evaluators do use a variety of methods to tease out participants' motivation for installing the measures they did within the program. These include: self-report (a survey where participants are asked a battery of questions regarding their decision process and awareness of the program), market actor report (where equipment providers are asked similar questions about their customers decision-making and program awareness); and discrete choice analysis (where customer characteristics, measure characteristics, and customers' actual choices are statistically analyzed to estimate what percent of customers would have installed without the program).

perceptions might be contributing to a difference in the way free-ridership is treated in program evaluations.

Perceptions About Free-Riders: Darth Vader to the Energizer Bunny

Having reviewed the definition of a free-rider, we now consider perceptions of these free-riders and their actions. An evaluator’s perception of free-riders has relatively little to do with how we might measure their levels, but the perception does have a great deal of influence on how we use information about their actions and motivations.

From informal discussions with our colleagues, we established that there is a continuum of opinions about the role of free-riders, ranging from “avoid at all costs” to “program champions.” And we found a mix of ideas regarding the positive and negative roles that free-riders play in the soundness of energy efficiency programs. We designed a survey to gain insight regarding how practitioners came to their opinions and see if there is a link between their role and their perception of free-riders. Responses were received from 126 practitioners, including policy makers, program planners, program implementers, and evaluators from utilities, government, and contractors. Figure 1 shows the share of respondents by their role in energy efficiency programs.

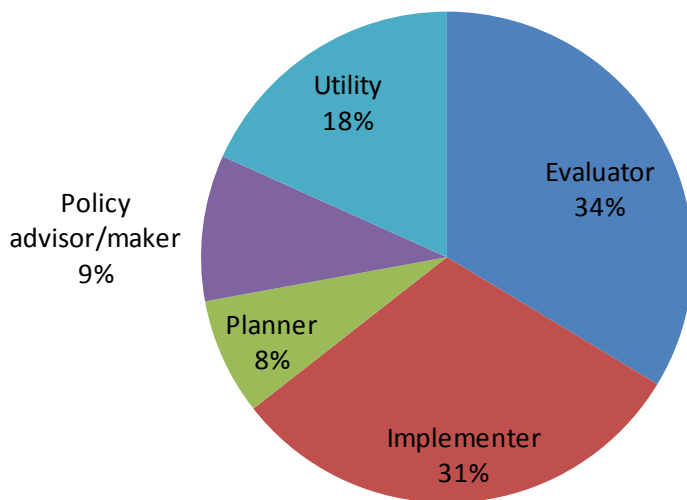


Figure 1. Distribution of Survey Responses by Role (n=126)

In our survey of energy efficiency professionals, we asked respondents to weigh in on their perception of free-riders. On a scale of 1 to 5, with 1 seeing them negatively as Darth Vader and 5 positively as the Energizer Bunny², our 126 respondents gave a rating of 3.7. That is, overall, the respondents rated free-riders as being more toward the Energizer Bunny end of the spectrum. Figure 2 shows the distribution of responses, revealing the preponderance of ratings

² Actual wording of the extremes of the spectrum in the survey was “1 Darth Vader: Free-riders indicate that the program isn’t well designed or isn’t needed. We work to avoid free-riders at all costs.” and “5 Energizer Bunny: Free-riders are mildly annoying, but a fact of life. They can even be helpful in some ways.”

above 3. Many cited value from free-riders as participants who are solidly convinced of the value of energy efficiency and willing to spread the word.

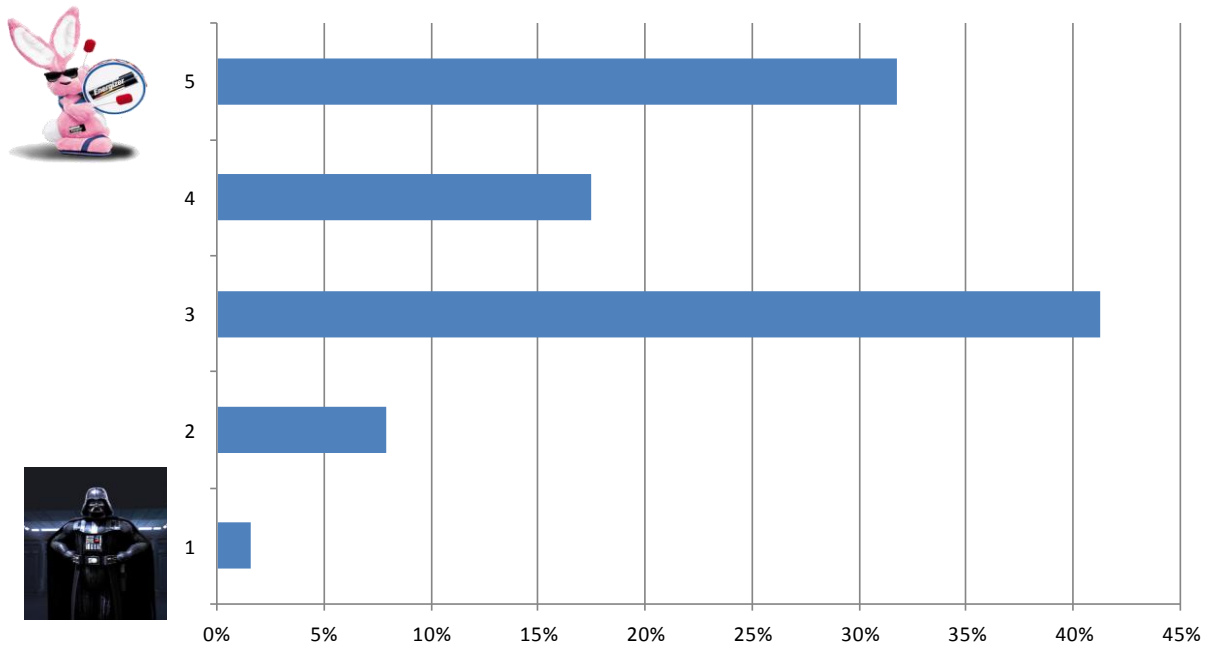


Figure 2. Distribution of How Energy Efficiency Professionals Characterize Free-Riders

Given past position statements, papers, and regulatory rulings, we thought that if we compared responses by the respondents' role we might see average ratings for at least some of the groups to be toward the Darth Vader side of the spectrum. But, as Table 1 shows, the average rating in every one of the groups is on the Energizer Bunny side. And, perhaps as surprising, the least free-rider friendly score was given by utility staff. The utility respondents' ratings did not differ based on their role, whether for planning, implementation, or evaluation or research-related.

Table 1. Characterization of Free-Riders by Respondent Energy Efficiency Program Role

Role	Number of Respondents	Average Rating (1 to 5 scale)
Policy maker/advisor	10	4.4
Utility staff	19	3.3
Non-utility planner	8	3.3
Non-utility implementer	32	3.8
Evaluator	35	3.9
None given	22	3.5
Total	126	3.7

We also asked survey respondents whether their characterization of free-riders has changed over time and how. Almost half of respondents reported that their perception of free-

riders has changed over time. For those whose perception had changed over time, an overwhelming 86% gave a higher rating to their current perception, rising from an average of 2.3 previously to 3.9 now. This is among the most telling finding. It confirms a more historical demonization of free-riders within the industry and reflects the softening of this view over time, to an acknowledgement that, not only are free-riders not always a bad thing, they provide some benefit. Explaining the evolution of their thinking, these respondents offered some of the following rationales, which range from mild acceptance to active embrace:

“Wisdom comes with age; we have to recognize the futility of trying to eliminate all free-riders.”

“Estimating free-ridership is fuzzy; we shouldn’t get so hung up on it.”

“Free-riders measure market change; we can learn from them.”

“They can encourage others to participate in programs who otherwise wouldn’t.”

Here’s how one respondent explained the evolution of his thinking, *“Initially I thought that utilities must do more to avoid free-ridership, because having high free-ridership rates in DSM programs ultimately means wasted money and wasted effort. But it’s wrong to characterize the problem specifically as one of free-ridership. There are multiple reasons free-ridership (and spillover) cause such huge headaches: lack of regulator knowledge, mistrust of utilities among intervenors and misalignment of goals with regard to IOUs and DSM.”*

The complexity reflected in these sentiments has been referred to in other studies in recent years (Skumatz et al. 2009; Kushler 2012), where policy makers, program administrators, and evaluators have given evidence of rethinking their views on the meaning and role of free-ridership in program impacts on the market. The common experience of regulators holding a harder line (stronger disallowance) of free-riders in evaluation (Mahone 2011) belies a more benign perception about the meaning of free-riders among these same policy makers (supported by the results of our survey). The perception is open-minded, but the policies are not particularly well aligned with this perception, at least not yet. Regulatory policy across the country still generally takes a strong stance on disallowing the effects of all free-ridership when counting program impacts; and in a good many states, it does so while also excluding the additive effects of spillover on program impacts (20 states, according to Kushler 2012).

Evolutionary thinking has not been limited to policy makers or evaluators, though it is most pronounced in these groups, as Figure 3 shows. It seems to be true of energy efficiency professionals across the majority of roles. The one very notable exception revealed in the survey results is utility practitioners. As a group and by their different responsibilities—whether planning, implementation, or other support—utility staff seem to have been the most steadfast in their perception of free-riders over time. In the survey, the fewest of them said they had changed their opinion of the role of free-riders. Utility practitioners stuck to their average rating of 3.3 on the 5-point scale. This places them on the high side (more benign or beneficial view) of how respondents from the other groups rated the way they *used to* characterize free-riders (all of which showed “previous” ratings below or = 3.3) and at the very lowest end of the *current* perception ratings by other groups. That is, almost all the other groups used to think of free-riders as being more detrimental to programs than utility staff did. And now they generally think of them as less detrimental or possibly more beneficial than utility staff do. To us (the authors), this finding was perhaps the most surprising. It does, however, support opinions provided to us by our own utility clients.

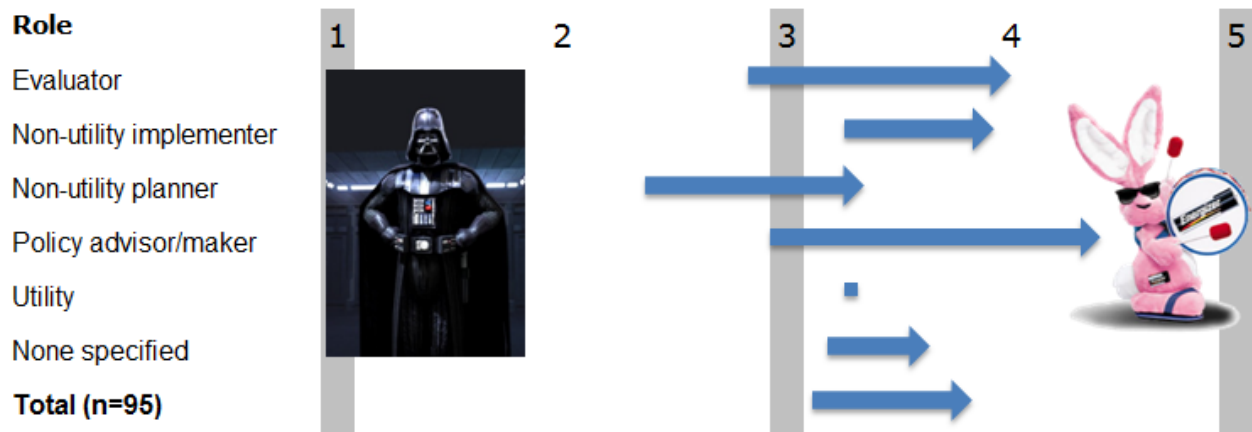


Figure 3. Shift in How Professionals in Different Roles Have Characterized Free-Riders³

The comparison highlights how dramatic the shift has been outside of utilities. Where history has considered utilities as less disparaging of free-riders than, say, policy makers and evaluators (a position well supported by these survey results), they have been surpassed in their tolerance by their non-utility colleagues. Maybe utility energy efficiency practitioners knew something all along that the rest of the community has more recently caught onto. Utility practitioners provided among the more philosophical of explanations for their seeing value in having and monitoring free-riders as illustrated by one utility staffer’s comment, *“If one could really identify actual free riders, their presence would indicate broad market acceptance of the program’s objectives.”*

What we glean from all of these comments is that energy efficiency professionals have become more accommodating in their views about free-riders’ role in programs and most think that free-riders tell us something useful about the programs and the markets in which they operate. Also, while negative views are not just because of the difficulty in measuring the extent of free-ridership or dissatisfaction with the methods evaluators currently have available for making these estimates, these are continuing issues of concern and the topic of much ongoing discussion among evaluators (Friedman 2011; Mahone 2011). Though it was not the focus of the survey to address free-ridership measurement, frustration with our collective inability to measure it justly was noted in the comments. A sample of the respondents’ comments reflecting this dissatisfaction, along with the context for these statements noted in parentheses, illustrates this finding:

“If one could really identify actual free riders, (their presence would indicate broad market acceptance of the program’s objectives).”

“Truly identifying free riders is nearly impossible (due to spillover and other impacts of programs).”

“(I don’t see them as beneficial as much as) I see their impact as being difficult to quantify reliably”.

“(Free riders add to gross energy savings, and) determining free ridership is an educated guess, at best.”

³ Not broken out as a separate group but included within the responses by role, is the shift in ratings from respondents who said they had changed their perception (n=42). Of the 95 respondents who provided both a “previous” and a “current” perception rating, 42 (44%) changed their ratings over time. The average for this “change” group alone moved from 2.3 to 3.9.

Lastly, most of the professionals with whom we discussed views on free-riders or who responded to the survey seem to think that the term free-rider is inappropriately derogatory. Regardless of whether they perceive free-riders as providing value or not, many feel that it would be more appropriate to use a more neutral label. The overwhelming sentiment was that free-riders will happen and, regardless of how they are ultimately accounted for in program results, they should not be maligned. This is surely a shift in attitude from years gone by. Some of the more neutral terms they suggested that the energy efficiency community might adopt include “market-driven efficiency,” “early adopters,” “naturally occurring efficiency,” or “first movers.” Perhaps with the shifts we are seeing in practitioners’ attitudes, developing a new terminology will become a hot topic and find its way onto a workshop agenda.

Reassessing the Value of Free-Riders (or What Free-Riders Are Telling Us)

Whether energy efficiency professionals believe that free-riders are truly detrimental, legitimately valuable, or a combination of the two, with few exceptions, they feel pretty strongly that free-riders provide us with information that can be useful in program planning, program design, and/or assessing program impacts.

Free-ridership measures market transformation. Many of the survey respondents see free-ridership as a bellwether of market transformation. Some went so far as to say that a long-term goal of a good program should be to have all participants be or become free-riders. The majority sentiments are best reflected in these comments:

“It means the overarching goal of market transformation is occurring!”

“They’re an indicator of market transformation and prior program success.”

Free-ridership tells us what is and is not working. Another free-rider contribution commonly cited by the survey respondents is that the level of free-ridership can tell us what is and is not working in a specific program and help program designers better redirect a program to a different target. It provides feedback on program design and customer behavior. But there is less agreement about using the information to trigger decisions. Some notable comments about free-riders:

“They push better program design.”

“They help you learn about your audience.”

“They can help identify when a program needs to be fundamentally changed or retired.”

“Free-ridership is one of multiple sources of information ...(but) by itself not a trigger indicator of a decision to terminate a program; high free-rider programs can still be cost-effective and worth pursuing depending on a range of other factors and considerations.”

“If free ridership is pervasive enough, it’s a sign that it’s time to stop meddling and let markets do the work naturally.”

Free-riders help promote programs. Perhaps the most commonly cited comment we received from discussing free-ridership perception with colleagues, and from utility staff in particular, is that free-riders are great marketing tools. They are the “already converted” who champion the benefits of improving energy efficiency in word and deed. They spread the word that energy efficiency actions are worth it. Some comments from the survey respondents include:

“They can encourage others to participate in programs who otherwise wouldn’t.”

“They are useful as industry leaders and fodder for case studies.”

“They are at least paying attention to our marketing information.”

To these comments, we can add our own experience from working with utilities that administer their own programs. In discussing some findings regarding the ready acceptance of applications from “free-rider” commercial/industrial customers into the company’s new custom measure program, the program manager cited examples of how free-rider participants helped promote his program. He said:

- They undertook additional projects that they had not previously planned to do, on the strength of their satisfaction with their original (free-rider) participation.
- They provided verified savings and persuasive testimonials that the utility was able to use to attract other customers with similar characteristics or needs.
- They talked with their counterparts in other companies and spread the word to more customers than the utility staff had resources to reach.

Implications For Treating Free-Ridership in Evaluating Program Savings

That the role of free-riders as constructive versus destructive varies by program purpose and maturity and that free-riders might actually be providing us with constructive information, is not exactly new. A number of papers in recent years have reported this (Mahone 2011; Vine et al. 2011; Skumatz et al. 2009). Despite this, there is little evidence that treatment of free-ridership in regulatory settings has evolved in a way that matches the current wisdom about free-riders. At one extreme, in a substantial number of jurisdictions, free-ridership is ignored or assumed to be offset by the actions taken by customers who are motivated by the program, but take them outside the program (so-called spillover or free-drivership) (Kushler 2012). At the other extreme, in some jurisdictions, programs are forced to apply the same fixed free-ridership “penalty” to savings across all programs. For example, at least one commission requires all energy efficiency programs in the state to apply a free-ridership rate of 20%, regardless of the target market—from large industrial facilities with custom projects to grade-schoolers with take-home workbooks and efficiency kits.

Whether they currently require gross impacts, net impacts, or both, jurisdictions seem to treat all programs by the same entity (e.g., an investor-owned utility) in similar fashion. Many, if not all, evaluators take issue with this. And a number of papers and best practices studies (Kushler 2012; Skumatz et al. 2009) have made the case for more conditional guidelines on the treatment of free-riders (and spillover) and other factors, such as whether a program’s purpose is market transformation or resource acquisition, the program is nascent or mature, the market is fresh or saturated with information about energy efficiency, and the intended use of the results. And, indeed, our survey respondents gave strong support for more varied treatment of free-ridership.

What we are seeing, however, even in the regulatory arena is an active discourse on free-ridership and how it should be treated. Policy makers, often with the help of evaluators are issuing clearer guidelines for program administrators and on evaluation, measurement and verification (EM&V). And at least one state, Maryland, has reversed itself, eliminating the use of free-ridership in program savings in favor of gross savings (Kushler 2012). The variation and zigzag direction of the guidelines, while confusing, strongly suggests that energy efficiency professionals across the country are thoughtfully considering the role of free-ridership in helping to make programs effective and cost effective, rather than focusing exclusively on how to rid programs of it.

Previous research, cited throughout this paper, and results from our survey all suggest that policy makers and evaluators need to continue to develop alternative measurement methods and treatment of free-riders. The approaches currently in use do not adequately take into account or give recognition to the positive contributions that free-riders often make to a program, even as their own impacts may detract from program savings claims. Put most dramatically (in Friedman 2011), “Business as usual...evaluations are in an agonizing death spiral...Given that what you measure affects what you do, we need to modify our evaluation paradigm and regulatory policies so that they lead to actions that are aligned with public policy objectives.” The most recent status report on evaluation practices across the country (Kushler 2012) strongly supports continuing discussion and input from the evaluation community to work toward a more common set of approaches to evaluating programs.

Conclusions

Perceptions about the role of free-riders have shifted over time. And, the shift is decidedly away from demonization toward acceptance of them as an inevitable and possibly a useful part of programs. Today, many energy efficiency practitioners see free-riders as a source of information about customers in a program’s target market, a measure of program and market maturity toward transformation, and often as helpful in promoting programs. Some see them as providing a net contribution by jump-starting adoption of certain measures in certain markets.

Having taken the pulse of energy efficiency practitioners, we see two “next steps” that evaluators could explore:

1. With the evolution of perceptions, dissatisfaction with the use of “free-rider” and “free-ridership” as pejorative terms seems stronger than in the past. Perhaps it is time for the energy efficiency community to consider new terminology to replace these terms.
2. With apparently increasing acceptance that free-riders provide valuable information about the performance of programs and the markets in which they operate, the time is ripe for development of new free-ridership measurement methods. We will expect these new approaches to accommodate and reflect the shift in the community’s perceptions that free-riders make beneficial contributions to energy efficiency program achievements, rather than just ones that decrease program savings tallies.

It will be interesting to see whether and how practitioners resolve these issues over the next few years. In the meantime, it certainly is an exciting time for energy efficiency policy makers, program planners, and evaluators.

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