Living Up to its Potential: Industrial Energy Efficiency in the Midwest

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ABSTRACT

The need and potential for industrial energy efficiency in the Midwest are large. Thirty-eight percent of the Midwest's electricity is consumed by the industrial sector. Moreover, a recent study shows that nationwide, 40% of the economy's energy efficiency potential exists in the industrial sector. With a high proportion of electricity consumption coming from industrial customers, Midwestern utilities need strong industrial efficiency programs to meet their energy savings goals and efficiency portfolio cost-effectiveness requirements. For industrial corporations in the Midwest, utility industrial efficiency programs offer a path for improving their bottom line and achieving a competitive advantage. However, recent trends include some industrial customers, business associations and policymakers pushing for policy and regulatory changes to allow large commercial and industrial (C&I) customers to opt-out of ratepayer-funded energy efficiency programs.

In this paper we explore the high cost-effectiveness of C&I energy efficiency and its impact on the cost-effectiveness of total portfolios. Data is presented that illustrate continued cost-effectiveness of C&I programs over time. We discuss how opt-out provisions weaken the cost-effectiveness of those portfolios, how industrial energy efficiency can play a role as a least-cost compliance option for the Clean Power Plan, and the need for improved data collection and reporting. Industrial energy efficiency is a valuable resource for the Midwest, strengthening portfolios, supporting energy policy goals and clean air standards, and supporting economic development. A better understanding of the benefits and costs of industrial energy efficiency will provide more effective tools for communicating this value to shareholders, stakeholders, and policymakers to ensure this resource is not overlooked.

Introduction

The industrial sector is a very large consumer of energy in the United States, and much of this industry is concentrated in the Midwest[1]. Five Midwest states are in the top ten consumers of total energy in the industrial sector: Indiana (4), Illinois (5), Ohio (6), Kentucky (9), and Iowa (10). Four more are in the top 25: Michigan (12), Minnesota (13), Wisconsin (17), and Kansas (22) (EIA 2014). Nationally, 40% of energy efficiency potential is found in the industrial sector (Granade et al. 2009), and as there is a concentration of industrial consumption in the Midwest, it can be expected that this region also has a concentration of potential energy savings. Based on this it can be expected that the potential savings from industrial energy efficiency will also be concentrated in the Midwest. Capturing these savings through utility energy efficiency program offerings is vitally important for meeting states' energy efficiency goals, associated public policy objectives, and creating a compliance path for states to meet carbon emission reduction targets set forth in the impending Clean Power Plan.

[1] As our definition of the Midwest for this paper we use the footprint of the Midwest Energy Efficiency Alliance, covering 13 states: Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.

Among Midwestern states, several figure most prominently in both total industrial electricity savings and in the proportion of the industrial sector in utility portfolios. Figure 1 shows the ten largest administrators of industrial-sector electric energy efficiency programs (out of seventy-nine program administrators that reported incremental industrial energy efficiency savings) in the Midwest in 2012 (the latest year of EIA data availability at the time of writing). Wisconsin's statewide administrator has not only the largest industrial portfolio, almost 163 GWh saved in 2012, but also the largest total electric portfolio of the top ten industrial program administrators. First Energy (whose three subsidiary utilities in Ohio are reported separately on Form EIA-861[2], but have been combined for this analysis) had the second highest reported industrial electricity savings and is one of three utilities (along with Iowa's Interstate Power & Light, and Indiana's NIPSCO) who derived a third or more of their electricity savings from the industrial sector (EIA 2013).

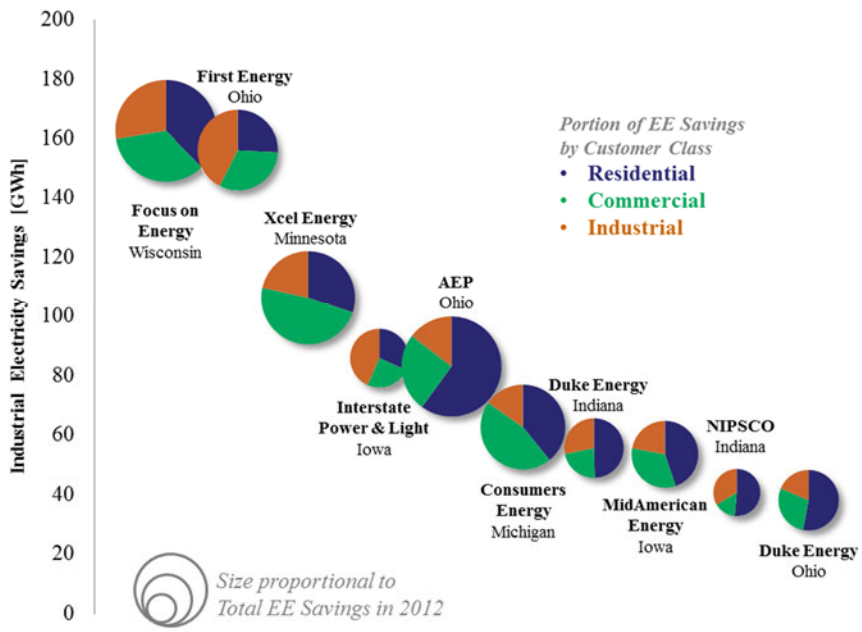

Figure 1: Top ten administrators of electric energy efficiency programs in the Midwest, 2012 (annual incremental electricity savings, GWh). Height on y-axis indicates industrial energy savings, bubble size indicates size of total electrical energy efficiency portfolio, and bubble colors indicate the proportion of electricity savings by customer class. The x-axis is valueless and serves only to provide visual separation of the data. *Source:* EIA 2013.

These program administrators are not only some of the largest in the region, they also provide the vast majority of industrial savings. The ten program administrators shown in Figure 1 account 50.5% of total electricity savings and 82.4% of regional industrial-sector electricity savings for 2012 (EIA 2013).

In 2012, industrial sector natural gas savings were 45.9% of the natural gas saved in the Midwest region (MEEA states excluding Kentucky) (AGA 2014). Further breakdown of those savings by state or utility similar to the electricity side is not possible due to the lack of a granular national dataset of natural gas efficiency similar to EIA-861 for electricity.

[2] While EIA-861 has its shortcomings, this annual utility filing is the only public, national-level source of electricity sales, consumption, and energy efficiency data and, therefore, a vital source for any regional or national energy efficiency research.

As states in the Midwest strive to meet legislative energy efficiency mandates, and as regional and national advocates seek to maximize the use of energy efficiency as a least-cost resource, capturing energy savings in the industrial sector will be critical. As illustrated, utilities are driving significant savings in the industrial sector and the potential for additional savings is great. This paper will demonstrate that beyond the scale of the savings, utility industrial efficiency programs are highly cost-effective and strengthen utilities' total energy efficiency portfolio performance. Policies that allow industrial users to opt-out of utility energy efficiency programs have, and continue, to be debated across the region (with the most recent legislated opt-outs being approved in Indiana and Ohio in 2014). The impact of industrial opt-out policies that have been enacted will have a strong impact on whether the Midwest reaches its energy efficiency potential and on states' ability to comply with the Clean Power Plan.

Commercial & Industrial Cost-Effectiveness

Methodology

For this study, we built a database of cost-effectiveness scores at the program, sector, and total portfolio level from the *ex-post* annual reporting of investor-owned utilities and statewide third-party administrators across the Midwest region. Though there are many program administrators in the Midwest, the investor-owned utilities and statewide administrators cover the largest number of customers and are also subject to energy efficiency resource standards (EERS) in more states than are the municipal and cooperative utilities. To attempt to cover a broad sample across states and utilities, the data was limited to four years, 2010-2013[3]. The period from 2010-2013 was a time of exponential growth in energy efficiency in the Midwest with a number of states ramping-up aggressively to meet recently adopted energy efficiency standards. Based on these parameters, our database covers 22 utilities, 2 third-party administrators, and 1 state agency, across 8 states. It is worth noting, however, that not all of the data was ultimately usable in this study due to reasons discussed following our analysis. The analyses below draw on a subset of the full database as described in each section.

Importance of C&I Programs for Portfolio Cost-Effectiveness

In order for utilities to be made whole for program costs, and to receive any possible incentives for meeting or exceeding efficiency targets, they must demonstrate to their regulator that their portfolios meet the standards of cost-effectiveness. Beyond meeting the minimum requirements for regulatory screening (a benefit-cost score greater than 1.0 for the primary test) high cost-effectiveness can also demonstrate to regulators, stakeholders, and shareholders that the utility is putting forth a strong effort to maximize benefits and minimize costs as they utilize energy efficiency as a resource.

Regulatory requirements for cost-effectiveness testing vary from state to state. Most Midwest states (IL, IN, KS, KY, MO, NE, OH, SD, and WI) require the Total Resource Cost (TRC) test as the primary demonstration of the cost-effectiveness while a few (IA and MN) use the Societal Cost Test (SCT). Michigan is the only Midwest state to use the Program

[3] Earlier data for some Midwest states and utilities is available, but states with more recently implemented requirements offer less data history.

Administrator Cost Test (PACT). There is no identified requirement for cost-effectiveness testing in ND (MEEA 2014).

Utility program offerings in the C&I sector are a major determinant of the cost-effectiveness of utilities' total energy efficiency portfolios. To analyze this impact, we examined data from energy efficiency portfolios funded by the ratepayers of investor-owned utilities in the Midwest for which cost-effectiveness data was available at the sector level. The data in Figure 2 is from annual ex-post reporting from 9 utilities and 1 third-party administrator (not the same program administrators as shown in Figure 1, because of data availability), from six states, over four years. The number of data points per graph varies because reported scores vary by state, utility, and year: for TRC scores we considered 72 data points; PACT, 111; and SCT, 80.

As illustrated in Figure 2, C&I programs tend to be more cost-effective than the residential segment. This is true for all of the benefit-cost tests that Midwest states use as their primary measures of portfolio cost-effectiveness, though the magnitude of that difference varies by test format[4]. The superior cost-effectiveness of C&I portfolios relative to residential portfolios on the basis of the TRC, PACT, and SCT tests are depicted by the dashed lines in Figure 2[5,6].

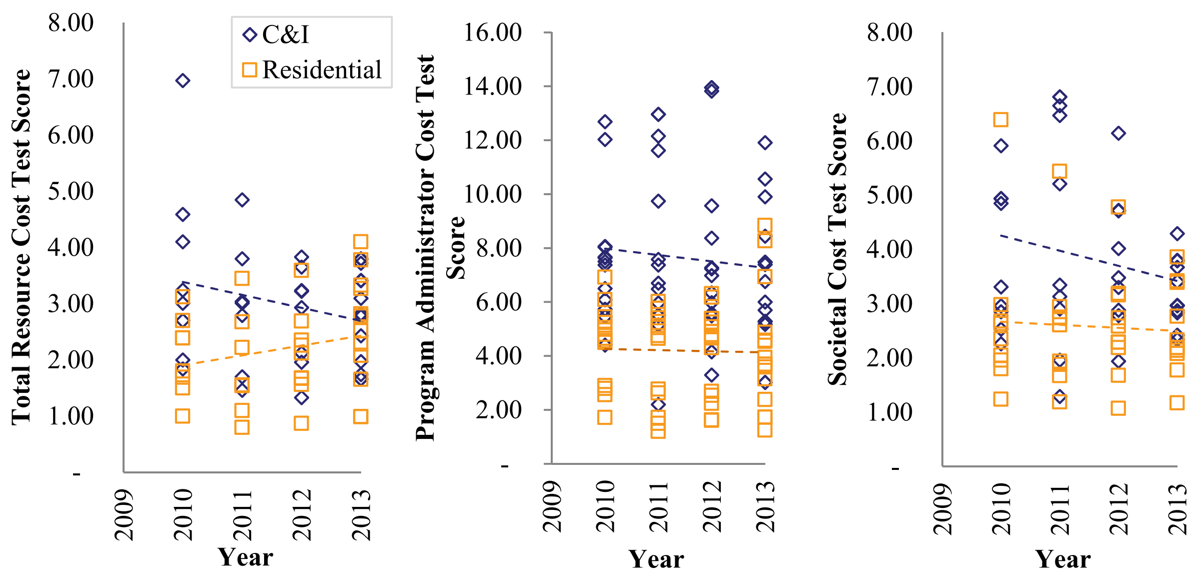

Figure 2. Cost-effectiveness of Midwest electric and natural gas commercial and industrial (C&I) (blue) and residential sector (orange) energy efficiency portfolios for the three standard cost-effectiveness tests used as primary measures of portfolio cost-effectiveness in the Midwest, 2010-2013. Markers indicate individual utility portfolios, while the line shows average cost-effectiveness for each sector. Source: MEEA database.

The fact that commercial and industrial energy efficiency portfolios are more cost-effective is not surprising. Business customers typically have longer hours-of-use and energy

[4] The differences in magnitude come from the way the individual tests measure benefits and costs. For example the PACT does not consider participant costs or additional resource savings and non-energy benefits, whereas those costs and benefits may be part of the TRC and SCT.

[5] Though it is tempting to view those lines as showing change over time, because the number and source of data points available per year varies, that should be avoided. Lines were visually clearer on the graphs than additional individual data points. The issue of change in cost-effectiveness over time is addressed further in the next part of this analysis.

[6] The Rate Impact Measure (RIM) test and Participant Cost Test (PCT), which are not used as primary measures of cost-effectiveness in the Midwest, are not shown.

intensive operations. Thus savings from investments in efficiency measures on the C&I side accrue more quickly, resulting in a stronger return on investment and a shorter payback period than similar residential measures. Additionally, C&I customers are more likely to invest more of their own money towards the incremental cost of utility program efficiency measures (Goldman et al. 2014) because they are more capable of making capital investments and absorbing risks than are residential customers.

The higher cost-effectiveness of the C&I portfolios can help offset the very low or even negative cost-effectiveness scores attributable to low income portfolios. Low income programs are included in utility portfolios for a number of political reasons and provide a societal benefit, but the full cost of those programs is typically borne by the program administrator and thus the ratepayers. The high cost-effectiveness of C&I programs means that even with the less-effective low income programs included, the total portfolio score remains high. Total portfolio scores tend to mirror the trend line of the residential portfolios in Figure 2 (data not shown). Losing a large portion of the highly-effective C&I portfolio through large customer opt-outs, as discussed later in this paper, means that the less-effective programs would have a greater influence, lowering the cost-effectiveness of the portfolio as a whole.

Cost-Effectiveness of C&I Portfolios over Time

An oft-heard critique of energy efficiency is that cost-effectiveness of energy efficiency decreases over time. The assumption is that utilities/program administrators start out by "picking the low hanging fruit" with low-cost, easy-to-implement programs, but that over time as they have to dig deeper for savings, the programs become more expensive and less cost-effective. If this is the case then the previously-mentioned enhancement of the portfolio's cost-effectiveness by the C&I offerings could show diminishing returns as these programs become less effective over time, but this does not appear to be the case.

Our analysis of cost-effectiveness over time is drawn, as illustrated in Figure 3, shows the C&I portfolio cost-effectiveness[7] for 8 Midwest utilities for whom scores were available for at least three consecutive years.

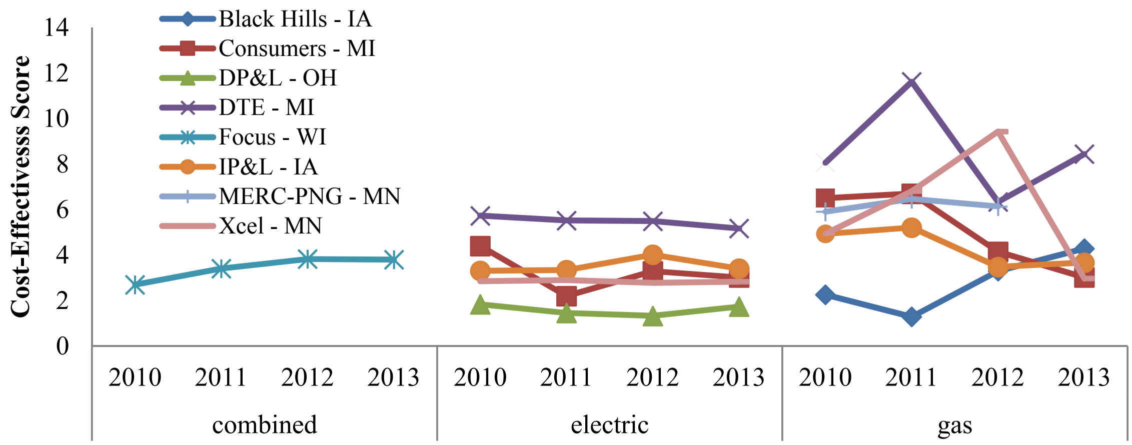

Figure 3. Cost-effectiveness scores for C&I portfolios of Midwest utilities, 2010-2013. The cost-effectiveness test score graphed varies depending on the primary test used in the state – IA, MN: SCT; OH, WI: TRC; MI: PACT. Source: MEEA database.

[7] Data reflects whichever cost-effectiveness test is the primary test used in the state in question – a mixture of TRC, SCT, and PACT scores.

This data does not show a drop-off in cost-effectiveness over time for C&I portfolios in the Midwest. On the electric side, there is less variability than is seen on the gas side, which is consistent with the higher price volatility of natural gas supplies. Even as gas prices fluctuate, natural gas energy efficiency programs remain cost-effective, though the magnitude of that effectiveness can change significantly from one year to the next as avoided cost of supply varies. This data comes from a mixture of utilities from 'mature' efficiency states (IA, MN, WI utilities have been running statewide efficiency programs for more a decade) and from states that were in the midst of rapid portfolio ramp-up from 2010 – 2013 (MI, OH). If there really was a strong "low hanging fruit" effect, we would expect to see a pattern of decreasing cost-effectiveness over time, which we do not. Nor do we see any evidence of the mature states having lower cost-effectiveness in their long-running C&I portfolios compared to the states that are newly implementing their efficiency standards.

Cost-effectiveness does not drop off likely due to several reasons. Technological improvements bring on new opportunities for programs to address previously unmet efficiency needs – for example LED lighting programs replacing saturated CFL programs. Program administrators also evaluate their programs and make changes to their annual operating plans to provide improvement to their programs and restructuring of their portfolios from program year to program year. The availability of real time data also makes it possible for program administrators to adapt to changing market conditions rapidly, and if allowed the flexibility by their regulator can make budget and operational adjustments to their program offerings to optimize the impact of their portfolio.

Exempting Industries from Energy Efficiency

The data reviewed for this report is derived from utilities that – at the time – were operating under statewide EERS that applied to all customer classes. However, in a number of states in the Midwest, there has been support for exempting large energy users from these mandates and the customer charges imposed to support the implementation of ratepayer-funded efficiency programs. Some large users argue that energy efficiency mandates are a burdensome cost, subsidizing energy efficiency for other customer classes.

An opt-out policy allows large energy users – meeting criteria that vary state-to-state – relief from paying into or participating in utility energy efficiency programs. The opt-out presumes that the large user can and will manage their own energy use and implement energy efficiency measures that meet their business needs. An alternative to an opt-out is the self-direct, which gives the large customer relief from paying in to the utility energy efficiency programs, but with the requirement that the customer will be required to provide evidence of actual energy efficiency savings or spending on energy improvements equivalent to what they would be paying to the utility.

From the perspective of the energy efficiency advocate, self-direct is preferred to opt-out because it assumes a higher level of reporting and accountability for meeting savings goals, and provides savings that can be attributed toward utility efficiency targets. With a self-direct, all customer classes are still contributing their share towards achieving a state's efficiency objectives. With an opt-out, on the other hand, that customer's energy usage is subtracted from the baseline load used to calculate utility savings goals and any energy that industrial users save is essentially "invisible" to the public, advocates, and policymakers. The opted-out customer could still be making efficiency improvements and saving a great deal of energy, but regulators and advocates have lost the ability to track those energy savings and subsequent benefits.

Maintaining Industrial Customer Participation

There are cases where self-direct options have been available to customers but have not been adopted or customers are opting back in to utility programs. Michigan, which allows for self-directed energy efficiency for large users, has consistently seen customers opting back in to utility programs, In 2009, 77 customers opted-out, but only 29 in 2013 (MPSC 2014). This has continued to occur even after the megawatt threshold for opt-out was lowered by half in 2011 (MPSC 2012). This reduction of opt-outs "reflects the flexibility and comprehensive program options that are being offered under utility programs" (MPSC 2012, 12). Minnesota's Xcel Energy has seen similar movement away from self-direct. In 2013, Xcel's self-direct program did not meet either its savings or participation goals, with a projection of 10 participants on the electric side and two on the natural gas side, but zero actual participants in either case (Xcel 2014) because the utility's "customers gravitate to holistic, full-service programs" (Xcel 2014, 50).

In some cases, there has even been political opposition to opt-out when proposed. The Iowa Utilities Board came out strongly in opposition to industrial opt-out, writing in their order approving Interstate Power & Light's energy efficiency plan for 2014-2018, *"…the Board is not persuaded that allowing an opt-out is good public policy… All utility customers, even those who do not directly participate in energy efficiency programs, benefit from the avoided cost savings that are the primary goal of energy efficiency programs… Iowa has a strong public policy of supporting and developing energy efficiency and the Board will not undermine Iowa's policy by allowing certain customers to opt-out of the energy efficiency paradigm"* (IUB 2013, 25).

The Rise of Opt-Outs in the Midwest

There is, however, a flip-side to the rather optimistic view of industrial participation in efficiency programs seen in Wisconsin, Minnesota, and Iowa. In 2014, Ohio and Indiana both passed legislation that amended (Ohio) or eliminated (Indiana) their established energy efficiency resource standards, and allowed for industrial customers who had previously been required to participate to begin opting-out.

In addition to eliminating the state's 5 year-old, regulatory-enacted statewide energy efficiency standard, Indiana's 2014 Senate Enrolled Act 310 included an opt-out provision. Under Indiana Code 8-1-8.5-9, customers over 1MW capacity may opt-out of utility energy efficiency programs any time before July 1, 2019 (Indiana Code). There are no requirements for opt-out customers to report or verify any energy savings.

Though the statute gives customers until 2019 to opt-out, the impact will be felt much sooner. Indiana's utilities' plans for their 2015 demand-side management efforts have already included estimates of their opt-outs. For the utilities shown in Figure 1 from Indiana, at the time of plan filing Duke had already seen 25% of their eligible customers opt out, and estimated that 65% of their customers would opt-out by the end of 2015 based on their experience with industrial opt-out in North Carolina (IURC 2014a). NIPSCO estimated that 54% of their C&I load–43% of their total load–would opt-out (IURC 2014b). The other Indiana IOUs estimated similar levels of opt-out in their plans. Overall, the 2015 plan filings for Indiana's utilities show 44% lower C&I program budgets and 55% lower C&I electricity savings than were planned for 2014. Based on these filings, we anticipate that the opt-out provision may decrease the cost-effectiveness of C&I programs as well as the utilities' entire 2015 efficiency portfolios when compared to the third-party administered programs in 2014[8].

Ohio's 2014 Senate Bill 310 created Ohio Revised Code 4928.6610–6616. Under those provisions, Ohio industrial customers with annual usage more than 45 million kWh will be able to opt out of participation in utility energy efficiency programs beginning January 1, 2017. They will be required to provide a report to the Commission on what they "may consider implementing, based on the customer's cost-effectiveness criteria" (ORC 4928.6616) and report confidentially to the Commission biennially on their achieved efficiency savings, if any, subject to self-verification. An opt-out customer's failure to achieve planned energy reductions would give the Commission the option of suspending the opt-out, but only for as long as it would take to achieve the cumulative reduction level that the customer had specified (ORC 4928.6616). Since Ohio utilities have not yet filed 2017 plans, it is hard to estimate the impact of the opt-out on industrial energy efficiency in that state. However, both Duke Energy and AEP Ohio may use their sister utility's experience in Indiana as a basis for their modeling in Ohio. The level of opt-out expected from First Energy is unknown at this time, but it may be high as First Energy was one of the strongest utility supporters of the opt-out provision in Senate Bill 310 (Funk 2014).

Industrial customer opt-outs from utility programs in Ohio and Indiana that currently have some of the largest industrial efficiency portfolios (Figure 1) are going to have a large negative impact on regional energy efficiency achievement. They will also have a detrimental impact on the cost-effectiveness of the utility energy efficiency portfolios as these highly cost-effective programs are reduced in size and the less-effective residential and low-income programs become a higher proportion of the utility's energy efficiency offerings. In the end, the residential and small business ratepayers will absorb a higher share of the costs without gaining the benefit of industrial customer energy efficiency participation. Industrial customers will lose out on valuable opportunities to work with program administrator experts to lower their energy use and enhance their bottom line and will still continue to reap the societal benefits of efficiency performed by residential and small business customers, but without contributing toward the shared costs.

Industrial Efficiency and the Clean Power Plan

The role of energy efficiency as a resource may be enhanced should policymakers use it as a compliance pathway for the EPA's Clean Power Plan. Energy efficiency was included as a "best system of emission reduction" (BSER) in the draft rule and a multitude of stakeholders submitted comments supporting energy efficiency as a compliance option. Industrial energy efficiency will potentially play a significant role in achieving states' emissions reduction targets and utility industrial efficiency programs offer one means for capturing savings from this sector. Opt-out policies leave industrial energy savings on the table or require states to develop new methodologies for capturing those savings. Energy efficiency from just the residential and small business sectors will still play a valuable role, but some of the most cost-effective means of meeting this new carbon emissions standard will be lost.

[8] Author's analysis of utility filings in IURC Causes 42693-S1, 43955-DSM 02, 44486, 44495, 44497, and 44501.

Data Challenges

Industrial vs. "Commercial & Industrial"

Data availability and consistency are two issues that make the study of industrial energy efficiency programs difficult. One of the problems with using data from EIA-861 is that self-reporting can lead to some significant gaps and discrepancies. Refer back to Figure 1 (which used EIA-861 data) and notice that there are several major utilities, and a major energy efficiency state in the Midwest, that are not represented on that graph. In this case, Illinois' ComEd (with the highest total electric energy efficiency savings in the Midwest) did not report any industrial savings, nor did Ameren Illinois (the seventh highest total savings), nor Michigan's DTE Energy (second highest total savings).

Program design and reporting within utilities' energy efficiency portfolios tend to aggregate industrial and commercial customer savings, and it appears that they are calling all those savings "commercial" for EIA reporting. Looking more closely at state-level plans and reports reveals that these utilities are doing industrial-specific energy efficiency programs even if they are not reporting it separately. For example, the evaluation report for Ameren Illinois' 2012 C&I Custom program indicates a number of measures that would certainly fall under most definitions of the industrial sector including "an electric arc furnace…a grain dryer…[and] upgrades at an ethanol plant" (Opinion Dynamics 2014, 8-9). ComEd's 2012 portfolio included, an Industrial Systems Study Program, a pilot program of efficiency measures for compressed air systems, process cooling, and industrial refrigeration specifically for the industrial sector (Navigant 2014, 1). The aggregation of industrial with commercial savings means that the efficiency savings from both sectors are still being counted, but it skews the analysis of savings by customer sector and leaves gaps in our understanding of the real magnitude of energy efficiency in the industrial sector.

An example of well reported data can be seen in Wisconsin's Focus on Energy annual Form EIA-861. Focus on Energy's portfolio is divided into only two market segments – residential and nonresidential (Cadmus 2014a), and whose Large Energy Users program covers "Wisconsin's largest commercial, industrial, and institutional customers" (Cadmus 2014b, 367). In spite of this aggregation at the portfolio and program level, however, Focus does still reports savings that are disaggregated by commercial and industrial sectors for their annual Form EIA-861 reporting (EIA 2013).

These inconsistencies across energy efficiency data make it difficult for researchers and advocates for industrial energy efficiency policies to really see a completely accurate 'big picture' of regional trends for industrial energy efficiency as separate from commercial. Unfortunately there is no obvious solution to this except to encourage the utilities that stand out as 'missing' from the industrial efficiency data to modify their reporting approach to provide more precise segmentation of industrial from commercial energy efficiency savings in their annual Form EIA-861 so the large national database will accurately reflect the real savings in the industrial sector for all of the states.

Some of the Tests, Some of the Places, Some of the Time

The other big issue with the data for this study was a matter of the consistency of the data available at the state level. Some utilities report scores on all of the cost-effectiveness tests, in every report, every year, at the program, sector, and total portfolio levels. Those, unfortunately, are not the norm. In many cases, only the portfolio-level scores are reported, sometimes for just the primary test required by their state, sometimes for all the tests. Other utilities report the full suite of test scores for programs only, or do not report ex-post cost-effectiveness at all. Some utilities report itemized costs and benefits, others just total costs and benefits, and others just the cost-effectiveness scores.

Billingsley et al. (2014) found problems with cost-effectiveness data availability across the nation. In a database of programs from 45 states, less than 10% of the programs from 11 states had the necessary data for their Cost of Saved Energy calculations (among many other data limitations they discuss). Our own dataset saw similar limitations. For instance, though the collected data covered scores from 22 utilities, 2 third-party administrators, and 1 state agency, from 8 states, only 9 utilities and 1 third-party administrator, from 6 states, had cost-effectiveness scores disaggregated between residential and C&I at the portfolio level.

The muddled data makes it difficult to make broad "apples to apples" comparisons of the cost-effectiveness of energy efficiency programs and portfolios across the region, and even sometimes within a single state. The lack of consistency means that compiled datasets can often end up missing key data points that would make for more robust and accurate analysis of the bigger picture, or enable deeper analysis beyond what commissions and utilities might feel is sufficient for regulatory purposes. Broader availability of comprehensive and complete data will lead to an improved ability for advocates and researchers to communicate the value of energy efficiency to all stakeholders.

Better data can lead to improved program design and delivery. Utilities, policymakers, energy efficiency service and technology providers, researchers, and advocates would all benefit from deeper insights into the strength of energy efficiency efforts, trends in cost-effectiveness as programs scale up, and which energy efficiency measures and programs provide the most benefit at the lowest cost to the ratepayers. To ensure high quality data availability, regulators may consider a broad multi-state consensus on at least a minimum standard of reporting. Billingsley et al. (2014) provide an excellent framework for reporting standards that would enable deeper and more cross-cutting analysis at multiple levels and the reader is encouraged to visit that resource for further details.

Conclusions

Utilities' commercial and industrial energy efficiency programs are cost-effective and contribute significantly to their overall energy efficiency portfolio performance. These programs have remained cost-effective over time and are integral for meeting statewide energy efficiency goals. Moreover, as states explore their options for complying with the EPA's proposed Clean Power Plan, all energy resources – including energy efficiency from the industrial sector – should be on the table. Unfortunately, industrial opt-out policies seem to be gaining ground in the Midwest. Exempting industrial customers from utility-run efficiency programs may potentially eliminate a cost-effective path for compliance. The ability of advocates to communicate the importance of these programs to policymakers can be greatly enhanced by more attention to data consistency and availability that will enable deeper and more comprehensive analysis of the impact of energy efficiency in the commercial and industrial customer sectors. Ensuring the continuation of policies that support utility commercial and industrial efficiency programs will improve industrial corporations' bottom line and achieve states' energy, reliability, and environmental objectives.

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