

**BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO**

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|--|---|-------------------------|
| In the Matter of the Application of Ohio |) | |
| Edison Company, The Cleveland Electric |) | |
| Illuminating Company, and The Toledo |) | Case Nos.12-2190-EL-POR |
| Edison Company For Approval of Their |) | 12-2191-EL-POR |
| Energy Efficiency and Peak Demand |) | 12-2192-EL-POR |
| Reduction Program Portfolio Plans for 2013 |) | |
| through 2015 |) | |

**DIRECT TESTIMONY
OF
DYLAN SULLIVAN
ON BEHALF OF THE
NATURAL RESOURCES DEFENSE COUNCIL**

June 5, 2012

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I: Introduction

Q: What is your name, address, and position?

A: My name is Dylan Sullivan. My business address is 2 North Riverside Plaza, Suite 2250, Chicago, Illinois 60606. I am employed by the Natural Resources Defense Council (“NRDC”) as a Staff Scientist.

Q: Describe your educational background and professional experience.

A: I earned a Bachelor of Arts degree, magna cum laude, in Environmental Geology from the University of Missouri-Columbia in 2004. I was awarded a Master of Science in Civil and Environmental Engineering from Stanford University in June 2008. My Masters degree was energy focused: I graduated from the Civil and Environmental Engineering Department’s Atmosphere/Energy program and took classes on economic analysis of natural resources and climate policy, air quality analysis, and energy efficiency and renewable energy technologies and practices. I joined NRDC in June 2008, where I monitor the performance of Midwestern utilities’ energy efficiency portfolios, recommend new programs or modifications to existing programs to capture cost-effective energy efficiency, and conduct research and advocacy on changes to the utility business model that ensure utilities and customers can benefit from energy efficiency. At NRDC, I have worked on many matters related to these dockets, including:

- Preparing testimony responding to electric utility energy efficiency programs and portfolios of programs, electric utility resource plans, and electric utility proposals for energy efficiency cost recovery mechanisms, including lost revenue adjustment mechanisms, performance incentives, and program cost recovery;
- Participating in groups advising Commonwealth Edison, Ameren Illinois Utilities, American Electric Power-Ohio (“the Companies” or “AEP-Ohio”), Duke Energy-Ohio, Duke Energy Indiana, and FirstEnergy’s Ohio operating companies on implementing energy efficiency programs;

- Researching and writing about utility regulations related to energy efficiency, particularly decoupling, a policy that removes a utility's disincentive to help improve the efficiency with which customers in its service territory use energy, and
- Developing performance incentives that encourage utilities to perform well in delivering energy efficiency programs.

My Curriculum Vitae is attached as Attachment 1.

Q: Have you been published?

A: Yes. In October 2011, I co-wrote a frequently asked questions guide about decoupling that was published in the *Electricity Journal*.¹ I also co-wrote NRDC's recent decoupling fact sheet.² For this year's Summer Study on Efficiency in Buildings, I co-wrote an article³ that articulated a framework for incorporating behavioral science into utility energy efficiency programs (with Dr. Annika Todd of Lawrence Berkeley National Laboratory and Dr. Carrie Armel from Stanford University's Precourt Energy Efficiency Center).

Q: Have you previously testified before the Public Utilities Commission of Ohio?

A: Yes, on several occasions. I most recently testified in support of Duke Energy-Ohio's shared savings mechanism in Case No. 11-4393-EL-RDR. A full list of my testimony experience is included in my Curriculum Vitae.

Q: What is the purpose of your testimony?

A: The purpose of my testimony is to respond to portions of the Energy Efficiency and Peak Demand Reduction Program Portfolio Plans for 2013 through 2015 (the "Plan") of Ohio Edison Company, The Cleveland Electric Illuminating Company, and The Toledo Edison Company ("FirstEnergy" or "Companies"). Specifically, I will:

¹ Sullivan, D., Wang, D., Bennett, D., Essential to Energy Efficiency, but Easy to Explain: Frequently Asked Questions about Decoupling, *Electricity Journal*, 24:8, October 2011.

² <http://www.nrdc.org/energy/decoupling/>

³ Sullivan, D., Armel, C., Todd, A., When "Not Losing" is Better than "Winning:" Using Behavioral Science to Drive Customer Investment in Energy Efficiency, Proceedings of the 2012 American Council for an Energy Efficient Economy Summer Study on Energy Efficiency in Buildings, 2012.

- 1 • Recommend the Companies adopt a broader set of goals for their energy efficiency and
- 2 peak demand reduction effort,
- 3 • Describe NRDC’s interaction with the Companies in the Collaborative Group and
- 4 suggest ways that group could work with the Companies more productively,
- 5 • Briefly describe program process improvements the Companies should implement,
- 6 • Briefly describe a Continuous Energy Improvement program the Companies should
- 7 implement for their largest customers,
- 8 • Recommend changes to the shared savings incentive mechanism proposed in the direct
- 9 testimony of Eren Demiray, and
- 10 • Propose an alternative to FirstEnergy management and administration of the residential
- 11 portfolio.

12 **Q: Are you generally familiar with Ohio’s statutes and rules related to energy efficiency?**

13 A: Yes. Although I am not a lawyer, I am generally familiar.

14 **II: FirstEnergy’s Goals and Strategy**

15 **Q: What are the Companies’ goals for the Plan?**

16 A: FirstEnergy’s four primary goals for this plan,⁴ which they used as they designed programs, are:

- 17 • Comply with statutory requirements,
- 18 • Provide programs for each of the main customer classes,
- 19 • Develop a portfolio that provides implementation flexibility, and
- 20 • Maximize kWh reductions per dollar spent basis during the Plan period (*sic*).

21 **Q: What is your opinion about these Plan goals?**

22 A: The pursuit of these primary goals is unlikely to generate a comprehensive energy efficiency and

23 peak demand reduction program portfolio that will meet or exceed the energy efficiency

⁴ EE & PDR Program Plan, Toledo Edison, Page 2.

1 benchmarks and promote innovation and market access for cost-effective energy efficiency in all
2 customer classes, as envisioned in O.A.C. 4901:1-39-04(A). Specifically:

- 3 • The Companies plan focuses too heavily on meeting statutory requirements by capturing
4 the results of actions that would have happened without their involvement and don't
5 actually generate any new savings. By choosing this strategy First Energy forgoes
6 opportunities to promote innovation and market access for cost-effective energy
7 efficiency. Moreover, the Companies' short-term focus fails to position them to meet
8 statutory requirements in the years outside the Plan, when the demands get larger
- 9 • The Companies should have some degree of implementation flexibility, because we
10 cannot be certain about how the market will react to a particular program, but this
11 flexibility should be balanced by Collaborative and Commission influence on how that
12 flexibility is employed. Moreover, "flexibility" should not be an excuse for poor
13 planning, as it appears to have been in this Plan. The Plan's program descriptions are not
14 detailed, and FirstEnergy labeled as "measures" many efforts that other utilities term
15 "programs," such as retro-commissioning or new construction, meaning detail on the
16 strategy for these "measure/programs" is absent from the Plan.
- 17 • The Companies' goal to maximize the ratio of kWh-saved per dollar spent during the
18 plan period harms customers in the long-term and is in my opinion contrary to Ohio
19 Rules. The Rules require the Companies to consider a number of criteria when designing
20 programs, including relative cost-effectiveness, the avoidance of lost opportunities, the
21 degree to which a program engages the energy efficiency supply chain, and the degree to
22 which a program promotes market transformation.⁵ Relative cost-effectiveness is only
23 one of the criteria, and "cost effective" is defined on a Total Resource Cost test basis, not
24 on the limited "life of the Plan" basis that the Companies designed programs to fit. I
25 estimate that if the Companies fielded a portfolio of programs as comprehensive as AEP-

⁵ O.A.C. 4901:1-39-03(B)

Ohio's, getting the same portion of their benchmarks from programs that actually proactively encourage customer energy efficiency, the service territory's energy bill would be \$184 million less over time.⁶

Q: How should the Commission respond to the Companies' short-sighted approach to meeting the goals?

A: I recommend the Commission require that the Companies design programs according to the criteria in O.A.C. 4901:1-39-03(B). Specifically, it appears the Companies did not adequately design programs to promote market transformation and avoid the creation of lost opportunities. The Commission should also require the Companies to design programs so that they capture and pay for savings *beyond what would have happened anyway*. Even if the goals in the Ohio are interpreted as gross savings goals – that is, the impacts of a program is the physical reduction in energy use from a project, without taking into account why a customer participated – designing programs without taking into account what the market is already doing is unprecedented and wasteful.

The Commission should also require the Companies to expand their goal of “compliance with statutory targets” to include the years outside the plan period, when the statutory targets become more aggressive. The Companies should be exceeding their targets now, banking the savings for future use when the target reaches 2% of three year average load (in 2019). A longer-term focus would lead to more efforts to:

- Increase the efficiency of new construction (to prevent the creation of lost opportunities),
- Address end-uses other than lighting (like fast-growing computer server energy use),
- Build a pipeline of programs and projects that will create savings outside the Plan period,
- Build relationships with trade allies and other market participants, and

⁶ See Exhibit DES-1.

- Build program infrastructure.

The Commission should clarify that, when assessing an Electric Distribution Utility's compliance with Revised Code Section 4928.66, it will take into account the performance of other EDUs. The Companies should not be able to declare *force majeure* if and when they are not able to meet their 2019-2025 goals if other EDUs are able to comply.

III: The Collaborative

Q: Is NRDC a member of the Collaborative Group?

A: Yes, but we have not been as consistently and productively engaged in the Collaborative Group as we have in cognate groups that assist AEP-Ohio and Duke Energy Ohio in meeting their energy efficiency benchmarks.

Q: Why have you engaged more consistently and productively with these other utilities?

A: An informal understanding undergirds our interactions with AEP-Ohio and Duke Energy Ohio: the development, implementation, and continuous improvement of cost effective energy efficiency programs are, in general, good things for the service territory and each EDU's customers. That does not mean that either utility is unconcerned about the headline cost of energy efficiency programs – far from it – but we can bring forward good ideas to increase efficiency and the utility will work with us to develop those ideas into programs. Moreover, these utilities understand that they should be planning now for the future: when the targets become more aggressive and there are fewer savings opportunities in CFLs and T-12 retrofits.

Q: What is different about FirstEnergy?

A: Rather than planning for the future, the Companies seems to be narrowly focused on the next regulatory filing. The Companies have articulated no strategy for meeting the cumulative 22.5% by 2025 energy efficiency benchmark. Moreover, the Companies' management is hostile to the energy efficiency benchmarks and resents being made to run energy efficiency programs.

1 FirstEnergy President and Chief Executive Officer Anthony J. Alexander recently blamed layoffs
2 at FirstEnergy Solutions on dampened demand, the result of the recession and “interference” from
3 state renewable energy and energy efficiency mandates.⁷ There, it is clear that Alexander is
4 speaking as the President and CEO of a generation company, rather than the President and CEO
5 of a distribution utility that is attempting to deliver reasonably priced energy services to its
6 customers. Similarly, William Ridmann, a FirstEnergy Vice President, recently stated that the
7 energy efficiency benchmark “distort[s] competition and tends to pick winners and losers.”⁸

8
9 Both statements indicate a complete misunderstanding of the policy rationale for Ohio’s energy
10 efficiency benchmarks. They exist not to distort the market or pick winners and losers, but to
11 *correct* existing market distortions that keep customers from accessing energy savings
12 opportunities, and to acquire energy efficiency resources that are cheaper than the cost of new
13 electricity generation (even at low natural gas prices). It is not just organizations like NRDC that
14 recognize these existing market distortions, the nation’s most respected management consultants⁹
15 and physicists¹⁰ recognize them too.

16
17 Unfortunately, First Energy’s attitude towards efficiency has affected the way it runs the
18 collaborative. While it has been willing to make some minor changes to its Plan, it has been
19 unwilling to consider the major issues we have attempted to raise.

20 **Q: Nonetheless, did NRDC provide input into this Plan?**

21 A: We were able to provide some input, but the quality of that input was limited by the nature of the
22 Companies’ request for input. We needed to view and comment on a draft plan (and said so in

⁷ Alexander, A., presentation to Barclay’s CEO Energy-Power Conference, September 5, 2012, at 23:16.

⁸ Funk, J., Shale Gas Dominates Energy Efficiency Conference, Cleveland Plain Dealer, September 25, 2012.

⁹ Choi Granade, H., Creyts, J., Derkach, A., Farese, P., Nyquist, S., Ostrowski, K., Unlocking Energy Efficiency in the U.S. Economy, McKinsey Global Energy and Materials, 2009.

¹⁰ American Physical Society, Energy Future: Think Efficiency, 2008.

1 February 2012), but instead the FirstEnergy requested feedback on a list of programs and
2 measures (on February 24, 2012), and on a 42-slide presentation (on July 10, 2012). After the
3 February meeting, I did suggest that the Companies develop a program to encourage retailers to
4 stock and sell energy efficient consumer electronics. The Companies added consumer electronics
5 as sub-program to their existing Energy Efficient Products Program (without articulating a
6 strategy to capture the consumer electronics efficiency opportunity). We did try to understand the
7 Companies' avoided cost methodology prior to Plan filing, but were unable to get the Companies'
8 attention.

9 **Q: Why were the Companies presentations not sufficient for you to provide input?**

10 A: Because the key factor in program performance is not what measures the Companies are offering,
11 or what the programs are called, but *how* the Companies plan to encourage the adoption of each
12 of those measures or practices. We did not have any of that information prior to Plan filing, and
13 when asked the Companies just pointed to their Existing Plan, where most programs have been
14 poorly implemented.¹¹ This is in contrast to Duke and AEP-Ohio, where we were able to view
15 and comment on complete program plans and descriptions prior to filing.

16 **Q: Do you have any suggestions for how the Collaborative should work in the future?**

17 A: It is going to be very hard to engage productively with the Companies until they change their
18 energy efficiency goals and strategy. In fact, as I'll discuss later in the testimony, I recommend
19 the Commission remove the burden of administering the residential program portfolio from the
20 Companies and place that responsibility instead with a Board.

21
22 In the NRDC/Sierra Club objections and in the testimony of Swisher and Loiter, we suggest
23 several near-term tasks for the Collaborative:

- 24 • The development of avoided costs using common analytic practices,

¹¹ Comments of the Natural Resources Defense Council and The Ohio Environmental Council, Case No. 12-1533-EL-EEC, et al., July 16, 2012.

- The development of new, supplemental programs for Commercial/Industrial new construction, computer servers, continuous energy improvement, small businesses,
- The implementation of program process improvements, like a faster application turn-around, and an online application.

The Commission in this case could direct the Companies, working with the Collaborative Group, to implement each of these tasks, with the goal of reaching consensus on each. It may be that working together on projects builds relationships and trust in a way that rushing to complete a filing does not.

In the future, the Companies should send out meeting materials one week in advance of meetings, allow Collaborative members to add agenda items, and send meeting notes and next steps within 3 business days of the Collaborative meeting.

IV: Program Process Improvements

Q: Did NRDC and the Sierra Club, in their Objections to the Plan, recommend that the Companies improve program processes?

A: Yes. In Section IV(A) of our Objections we recommended that the Commission require the Companies to reduce the wait time for the Companies to confirm application completeness, reduce the wait time for application approval, and develop an online application for Commercial and Industrial incentive programs. I hereby adopt that section of the Objections, though I won't spend more time explaining why the process improvements are necessary.

V: Continuous Energy Improvement Program

Q: Did NRDC and Sierra Club, in their Objections to the Plan, recommend that the Companies work with the Collaborative to develop and implement a Continuous Energy Improvement Program, modeled on AEP-Ohio's program?

1 A: Yes. In Section IV(D)(2) of our Objections, we noted that, according to ADM Associates’
2 Evaluation of the Companies 2011 Commercial and Industrial Incentive Program,¹² 40% of the
3 Companies’ Large Enterprise C&I program participants have corporate policies that incorporate
4 energy efficiency in operations and procurement. Account Representatives interviewed for the
5 Market Potential Study reported that customers in the larger than 700kW demand sector are
6 reacting to the improving economy by hiring additional staff, adding a new production run, or
7 investigating a vacant commercial property for development. Black & Veatch states “this may be
8 an opportunity for FirstEnergy to focus on as its large customers consider expansion of their
9 facilities”¹³ and “there continue to be opportunities for improvements in manufacturing process
10 and behavioral improvements, particularly for the largest customers who are looking for higher
11 potential EE savings.”¹⁴

12 **Q: Do you agree with Black & Veatch’s assessment of this opportunity?**

13 A: Yes, but the Companies propose no program in this plan that would proactively encourage its
14 largest customers to incorporate energy efficiency into these major decisions, or proactively
15 encourage manufacturing process and behavioral improvements.

16 **Q: Are there program models that FirstEnergy could adopt to do this?**

17 A: Yes. AEP-Ohio is currently launching its Continuous Improvement Program, which we
18 supported, and the Energy Trust of Oregon operates an Industrial Energy Improvement Program.
19 I’m attaching the Year 1 evaluation of the Industrial Improvement Program as Attachment 2. The
20 AEP-Ohio program is targeted to its largest customers, while the Industrial Energy Improvement
21 Program is not size-targeted. Both programs help customers set up energy teams with broad
22 representation across the organization (not just the facilities manger), set an energy goal, and
23 make progress toward that goal in a “plan-do-check-act” cycle.

¹² ADM Associates, Appendix G, 2011 Evaluation of EnergySaveOhio Commercial and Industrial Energy Efficiency Incentive Programs, Case No. 12-1533-EL-EEC, et al.

¹³ Black & Veatch, Market Potential Study: Energy Savings and Demand Reduction for Ohio Edison, Toledo Edison, and The Illuminating Company, June 22, at 48.

¹⁴ Id. at 50.

1 **Q: What do you recommend in this case?**

2 A: I recommend the Commission require the Companies to work with the Collaborative on the
3 development on a Continuous Energy Improvement Program that would help interested large
4 customers set up energy teams, set an energy goal and a baseline, make progress toward that goal.
5 Program participants should be able to use the technical assistance program recommended by the
6 OMA Energy Group in their Objections.

7 **VI: Shared Savings Incentive Mechanism**

8 **Q: Describe the public policy rationale for performance incentives, of which the Companies’**
9 **shared savings incentive mechanism is an example?**

10 A: Investor-owned utilities (“IOUs”) have a fiduciary responsibility to their shareholders, and the
11 financial incentives created by regulations guide their decision-making and investments. All
12 regulation creates financial incentives for IOUs, so the question for regulators is not *whether* to
13 adopt incentives but how to *align* them with the public interest. Regulators should make investing
14 in the lowest cost, least risky, and cleanest resources (i.e., energy efficiency) the most
15 profitable option for utilities. The National Association of Regulatory Utility Commissioners’
16 recommendation to its members more than two decades ago to “ensure that the successful
17 implementation of a utility’s least-cost plan is its most profitable course of action”¹⁵ remains an
18 urgent priority today.

19
20 In order to allow energy efficiency to compete with other investments for utilities’ time, capital,
21 and ingenuity, regulators must allow utilities to benefit when they perform well in helping
22 customers save energy. NRDC supports incentives that:

- 23
- are based on verified *performance* in delivering energy efficiency, not investments,

¹⁵ National Association of Regulatory Utility Commissioners (NARUC), *Resolution in Support of Incentives for Electric Utility Least-Cost Planning*, adopted July 27, 1989. The resolution framed the term “least-cost” over an extended time horizon. Congress endorsed NARUC’s objective in the National Energy Policy Act of 1992, although the final decision remains with state regulators. (16 USC Section 2621 (d)(8))

- create a *win-win* opportunity for customers and shareholders, and
- provide a balance of potential *risks* and *rewards*.

Well-designed shared savings mechanisms have these features.

Q: Describe shared savings mechanisms.

A: Shared savings mechanisms are intended to provide IOUs an earnings opportunity when their energy efficiency programs are successful by offering shareholders a portion of the net benefits customers receive (that is, the benefits from avoiding costlier energy sources less the cost of the efficiency programs) as a reward for excellent performance at saving energy and lowering customer bills, provided minimum performance thresholds are met.

Q: What choices do parties have to make as they design a shared savings mechanism?

A: Parties have to make several choices:

- The conditions under which the mechanism is triggered,
- The percentage of net benefits retained by the utility,
- The programs that contribute to, and the programs that are excluded from, net benefits, and
- The maximum dollar amount of incentive irrespective of the percentage of net benefits retained by the utility.

It is also quite common for shared savings incentive mechanisms to include penalties for when a utility fails to meet performance expectations.

In designing a shared savings incentive, regulators should be mindful that the mechanisms are traditionally and appropriately designed to encourage the development, deployment, and continuous improvement of programs that will save customers money compared to other energy resources, beyond what would have happened anyway. A shared savings incentive should not grant a utility a share of savings that it had little or no hand in producing, or a share of “savings”

that merely exist on a spreadsheet. In designing a Shared Savings incentive for the Companies, we *must* take into account two features of Ohio law that are different from the other states that have deployed shared savings incentives: the counting of Transmission and Distribution (“T&D”) projects that reduce line losses as energy efficiency programs, and the counting of mercantile customer projects – existing and new – toward a utility’s energy efficiency benchmark. It is not my mission to quibble with Ohio law, but rather to ensure that the Companies’ shared savings incentive encourages the suite of actions that shared savings incentives are designed to encourage.

Q: What choices did the Companies make in the design of their Shared Savings Incentive Mechanism?

A: Under the Companies’ Shared Savings Incentive Mechanism:

- The incentive mechanism will be triggered when an individual operating Company exceeds both its annual and cumulative energy savings targets as set forth in Revised Code Section 4928.66(A)(1)(a), provided the Company makes up any compliance deficit from a prior year
- The percentage of net benefits a Company would retain at a given level of performance relative to its target is shown in the following chart:

| Compliance Percentage | Incentive Percentage |
|------------------------------|-----------------------------|
| < 100% | 0.0% |
| 100-105% | 5.0% |
| > 105-110% | 7.5% |
| > 110-115% | 10.0% |
| > 115% | 13.0% |

- Net benefits from Mercantile customer projects installed prior to March 23, 2011, behavioral programs that show no persistence beyond a year, and “business as usual” Transmission and Distribution projects would be subtracted from the discounted net lifetime benefits from which the Companies will take a percentage
- The Companies propose no cap or maximum dollar amount for the incentive

- The Companies propose no penalties for when the Companies fail to meet the targets in Revised Code Section 4928.66(A)(1)(a), though this is understandable given the non-compliance penalties already included in the law, and
- The Companies propose to use annualized savings in the calculation of the shared savings incentive.

Q: What is your opinion about the Companies' proposed Shared Savings Incentive Mechanism?

A: While I'm heartened that the Companies are beginning to think about opportunities in over-compliance, the mechanism is not sufficiently tied to the Companies' own performance in delivering energy efficiency programs, is overly generous to the Companies, and does not include enough safeguards for customers. I recommend the Commission modify the mechanism before approving it.

Q: Why do you opine that the mechanism is not sufficiently tied to the Companies' own performance in delivering energy efficiency programs?

A: The Companies made decisions on two of the issues I mentioned above – the conditions under which the mechanism is triggered, and which programs contribute to net benefits – in a manner that would reward FirstEnergy for actions that would have occurred without its involvement.

Q: What decisions did the Companies make?

A: I'll address the two issues separately.

First, under the Companies' shared savings mechanism, the Companies would begin earning an incentive when the Companies exceed the benchmarks in O.R.C. 4928.66(A)(1)(a), and make up any deficit, even if they exceeded the benchmarks primarily with T&D projects and mercantile self-direct savings. As mentioned previously, I'm not here to quibble with the law, but we can and should separate the discussion of whether the Companies complied with the law from whether and when customers should begin paying the utility an incentive. The incentive should not be triggered by actions that the Companies had little or nothing to do with (as in the

1 Mercantile Customer Program), or “actions” that are mere accountings of things that would have
2 happened anyway (T&D projects). I will suggest a fair way to address this problem later in my
3 testimony.

4 Second, under the Companies’ shared savings mechanism, the Companies will retain a portion of
5 the net benefits from projects that it had little or nothing to do with (Mercantile customer projects
6 installed after March 23, 2011), from projects that may not actually reflect *additional* action by
7 customers (from the Online Audit program), and from projects on which the Companies are
8 already earning a return (T&D projects). The Companies should not earn a portion of the net
9 benefits from the Online Audit program, mercantile customer projects, or T&D projects. To do so
10 would reward the Companies for *inaction* or actions that occurred without its involvement.

11 **Q: How is the Companies’ shared savings incentive mechanism overly generous to the**
12 **Companies?**

13 A: The proposed shared savings “incentive percentage” – the percentage of net benefits retained by
14 the utility at a given level of over-compliance – is identical to the incentive percentages approved
15 by the Commission for American Electric Power-Ohio (“AEP”), but does not take into account
16 aspects of the energy efficiency business model that differ between the two utilities.

17 **Q: What aspects of the energy efficiency business model differ between the two utilities?**

18 A: Lost revenue recovery. As described in the Objections of the Office of the Ohio Consumers’
19 Counsel, the Commission’s recently approved ESP III settlement allows the Companies to collect
20 distribution revenue “lost” from its energy efficiency programs at least until May 31, 2016, and
21 does not preclude further recovery after that date. The other utilities in Ohio that have shared
22 savings incentives do not collect lost revenues: they are decoupled.

23 **Q: Why does that matter?**

24 A: Because lost revenue recovery has the potential to be much more lucrative than decoupling for
25 the Companies. Under decoupling, a utility collects its Commission-authorized revenue
26 requirement, no less and no more. If a utility over-collects its revenue requirement, it has to return

1 the excess to customers. But under the Companies' lost revenue recovery arrangement, there is no
2 comparison to the Commission-authorized revenue requirement. Instead, the Companies can
3 claim they are losing revenue and collect that revenue for customers (up to the SEET threshold),
4 even if they are not actually under-collecting their Commission-authorized revenue requirement.
5 Lost revenue recovery has some other bad incentive effects, like rewarding the Companies for
6 over-stating the impacts of programs or running programs that only *appear* to save energy. The
7 key point, however, is that the Companies' shared savings incentive mechanism takes the
8 incentive percentages from AEP's mechanism without taking into account the Companies'
9 lucrative lost revenue arrangement.

10 **Q: How does the Companies' proposed shared savings incentive mechanism not include**
11 **enough safeguards for customers?**

12 A: The shared savings mechanism does not include a cap on the absolute amount of incentive the
13 Companies can collect from customers.

14 **Q: Why do the Companies not propose a cap?**

15 A: According to witness Demiray, the Companies do not propose a cap because it would
16 "restrict motivation to continue exceeding targets beyond a point constrained by such a cap."¹⁶

17 **Q: How do you respond to witness Demiray's contention?**

18 A: At the margin, of course, Demiray is correct. A cap will not encourage additional
19 performance beyond the point that the cap is invoked. The right response to this concern is to
20 create a cap that would encourage performance beyond what the Companies propose in this case,
21 rather than dismissing the notion of a cap altogether. Demiray also does not mention another
22 factor that would still support additional over-compliance once the cap is invoked: The ability of
23 the Company to bank over-compliance for use in future years.
24

¹⁶ Demiray Direct at 12.

NRDC usually supports caps in shared savings mechanisms to provide other parties comfort that a change in the assumptions used to calculate the incentive does not lead to unanticipated impacts on the incentive. In this case, we have additional concerns: the lack of trust between the Companies and the Parties – and vice-versa – and the Companies poor track record in implementing the type of energy efficiency programs that shared savings programs are designed to encourage. NRDC is willing to support and encourage the Companies’ shift in strategy – towards over-compliance – with a shared savings incentive, but customers should get some protection from paying an unanticipated windfall to the Companies.

Q: How should the Commission modify the mechanism?

A: I recommend the Commission modify the mechanism in the following ways:

- Ensure that the mechanism is triggered only by the Companies actions, achieved in concert with its customers, that increase efficiency
- Only allow the Companies to retain a portion of net benefits from those programs where savings are achieved in concert with its customers
- Adjust the percentage of net benefits that the utility retains at a given level of over-compliance downward, and
- Put a dollar amount cap on the amount of shared savings the Companies can collect each year.

Q: How should the Commission ensure that the mechanism is only triggered by the Companies’ actions that increase efficiency?

A: For the limited purpose of determining whether the mechanism is triggered and at what Tier each Company will share in the net benefits of programs, each Company’s should calculate an Adjusted Benchmark that excludes savings from Mercantile Self-Direct projects and T&D projects.

1 **Q: Are you recommending that each Company only be allowed to receive a shared savings**
2 **incentive if they exceed the statutory benchmark while not including the results of**
3 **mercantile self-direct projects?**

4 A: Not exactly. The goal here is not to create a shared savings threshold that the Company can never
5 meet, but rather to “blind” the shared savings mechanism to Mercantile Self-Direct projects. The
6 Adjusted Benchmark should be calculated by subtracting Mercantile Self-Direct customer load
7 from the three-year average sales from which the annual energy efficiency benchmarks are
8 determined, and multiplying the result by the annual energy efficiency benchmarks in Revised
9 Code Section 4928.66(A)(1)(a). Impacts of T&D projects should not be used to trigger the shared
10 savings mechanism.

11 **Q: If the mechanism is triggered, from what programs should a Company be able to retain a**
12 **percentage of net benefits?**

13 A: A Company should be able to retain a percentage of the net benefits from all programs except
14 T&D projects, the Plan’s Mercantile Customer Program, the existing Mercantile Self-Direct
15 program, Mercantile Self-Direct projects submitted by a Customer (or representative of the
16 Customer) to the Commission, and the On-Line Audit Program, unless it is evaluated using a
17 Variation in Adoption method.

18 The Companies should not get a portion of the net benefits from T&D projects because these
19 projects have to-date not represented additional energy savings beyond what would have
20 happened anyway, because the Companies will already be earning a return on these investments,
21 and because savings from T&D projects are not achieved in concert with customers.

22
23 The Companies should not receive a portion of the net benefits from any mercantile self-direct
24 projects because mercantile customers implemented these projects largely without the
25 Companies’ involvement. The Companies should not get a portion of the net benefits from the

On-Line Audit program because the Companies plan to evaluate the savings of the program with an invalid control group.¹⁷

Q: How should the Commission adjust the percentage of net benefits that the utility retains at a given level of over-compliance?

A: The Commission should adopt the recommendation contained in the Objections of the Ohio Consumers' Counsel, according to the table below, with an additional tier to provide extra encouragement for more over-compliance:

| Annual Energy Efficiency Performance (% of Adjusted Benchmark) | Shared Savings Incentive (% of Net Benefits) |
|---|---|
| < 100% | 0.0% |
| 100-105% | 2.0% |
| > 105-110% | 4.0% |
| > 110-115% | 6.0% |
| > 115%-130% | 8.0% |
| > 130% | 10% |

I recommend that the Commission base Net Benefits on the Total Resource Cost Test.

Q: At what level should the incentive be capped?

A: I recommend that the amount of incentive not exceed \$10 million per-year, split among the three individual Companies, proportional to the non-Mercantile Self-Direct load each Company serves. This amount is reasonable because it is less than the \$20 million annual cap that parties agreed to in the AEP-Ohio proceeding and the Companies are proposing to get fewer savings from proactive energy efficiency programs than AEP-Ohio: AEP-Ohio's approved plan anticipates the utility getting 125% of its energy efficiency benchmark from non-self-direct, non-T&D energy efficiency programs, while FirstEnergy only proposes getting 69% of its energy efficiency benchmark from non-self-direct, non-T&D programs.¹⁸ Also, according to Application Tables 7,

¹⁷Objections to the Plans As-Filed by the Natural Resources Defense Council and the Sierra Club, Case No. 12-2190-EL-POR, et al. at 37

¹⁸ Ibid 6.

1 FirstEnergy's planned portfolio of customer-directed, proactive energy efficiency programs will
2 generate around \$153 million of discounted net energy bill savings over the lifetime of measures
3 installed (not counting the Low Income program, based on the Total Resource Cost test). Eight
4 percent of this would be \$12.25 million. If the Companies doubled savings from customer-
5 directed energy efficiency programs (and cost-effectiveness stayed the same), their share of net b
6 enefits would be around \$24.4 million over three years. Given that they are currently proposing to
7 get about half the savings from customer-directed energy efficiency programs that AEP-Ohio is
8 proposing, a \$10 million annual incentive cap is reasonable and would encourage performance far
9 exceeding that in the Plan.

10 **Q: How should the incentive take into account the ability of the Companies to bank over-**
11 **compliance for use in future years?**

12 A: Each Company should only claim shared savings once for the measures installed in a given year,
13 and in the year that a measure is installed. In future years, banked energy efficiency savings may
14 be used to determine compliance with O.R.C. 4928.66, but should be subtracted from the energy
15 savings used to determine performance relative to the Adjusted Benchmark in the year in which
16 they are used.

17 **VII: Board Administration of the Residential Portfolio**

18 **Q: You testified earlier that FirstEnergy's management would prefer they did not have to run**
19 **energy efficiency programs. In your opinion, does that reluctance influence program design**
20 **and implementation?**

21 A: Yes, I believe it does. From executives' statements, it is clear that FirstEnergy has a greater
22 supply-side bias than other Ohio utilities. Given management's negative attitude toward energy
23 efficiency programs, it is likely that incentives within the Companies reward doing the minimum
24 amount of efficiency possible, rather than rewarding success in delivering energy efficiency
25 programs that save the most energy given a budget constraint, or that improve relationships with

1 customers. We can see the direction of these internal incentives in the Companies' response to
2 NRDC Interrogatory 21 (attached as Exhibit DES-2): no portion of Account Representative
3 compensation is tied to customer participation in energy efficiency programs. Several of the
4 utilities I am familiar with tie a portion of account representative compensation to the completion
5 of energy efficiency projects at their key accounts: Duke Energy Indiana, for example. I believe
6 we can see this hostility to energy efficiency also in the lack of innovation in the portfolio. I
7 know of no investor-owned utility that relies on energy efficiency kits for such a large portion of
8 savings, for example.

9
10 As stated by Rich Sedano of the Regulatory Assistance Project in the recent report, Who Should
11 Deliver Ratepayer Funded Energy Efficiency (Attachment 3):

12 The utilities that achieved high levels of [energy efficiency] investment in the early 1990s
13 had three factors in common: regulatory policy was clear and sustained, balanced
14 regulatory incentives were in place, *including internal rewards for corporate*
15 *achievement in efficiency*, and stakeholders supported the programs. As the forces of
16 industry restructuring eroded these conditions, the rate of energy efficiency investment
17 dropped. States and utilities with successful programs today will still need these factors.¹⁹

18
19 Given their hostility to energy efficiency programs, it seems unlikely that FirstEnergy will devote
20 management attention and ingenuity to the task of developing, implementing, and improving
21 energy efficiency programs.

22 **Q: In such a situation, what options does the Commission have?**

23 **A:** The Commission has a few options:

¹⁹ Sedano, R., Who Should Deliver Ratepayer-Funded Energy Efficiency? A 2011 Update, Based on work for the Colorado Public Utilities Commission, updating a 2003 report by RAP, supported by funds from the American Recovery and Reinvestment Act, reviewed by the SEE Action Utility Motivation Working Group, Regulatory Assistance Project, 2011.

- FirstEnergy could keep running programs, more or less as it does today,
- FirstEnergy could keep running programs, under clear direction from the Commission to focus more on market transformation and the avoidance of lost opportunities, clear direction to shift strategically to building program infrastructure and relationships that will allow it to meet targets through 2025, and greater Collaborative input into program design and implementation, or
- The Commission could assign a board the task of administering the Companies' programs or a portion of its programs, issuing and managing RFPs, monitoring program progress, making mid-stream adjustments to programs, contracting for evaluation, measurement, and verification, and reporting to the Commission.

Q: What are the benefits of the first option?

A: I see no benefit of the first option. This inadequate Plan and the Companies' poor implementation of the Existing Plan (detailed in our Comments on the Companies' 2011 Portfolio Status Report) give me no confidence that the existing processes are working.

Q: What about the second option: continued administration with greater oversight?

A: The strongest general argument in favor of utility administration of energy efficiency programs is the relationship between the utility and its customers. Often the utility is the trusted source for information about electricity or energy use. Utilities are also generally able to hire and retain quality staff, build program infrastructure, and develop relationships with trade allies and members of the energy efficiency supply chain. The strongest general argument *against* allowing utilities to administer programs is the supply-side bias that still guides many utilities' decision-making. Some utilities are able to overcome this bias, but others – like FirstEnergy – are not.

In the specific case of FirstEnergy, many of the benefits of utility administration are not applicable. Among residential customers, FirstEnergy's Ohio operating companies have below-

1 average customer satisfaction rankings,²⁰ and recent program implementation and regulatory
2 challenges have likely contributed to customer skepticism of the Companies (the original CFL
3 program and the all-electric rate changes, for example). Because the Companies have relied so
4 much on Mercantile self-direct savings, the concern about scrapping program infrastructure or
5 supply chain relationships that customers have already paid for is not very salient.

6
7 Of course we could try this option and hope that it will generate better results.

8 **Q: What would be the benefits and costs of the third option: assigning a board the task of**
9 **administering all or a portion of FirstEnergy's energy efficiency programs?**

10 A: The key benefit of the third option, board administration, is that, finally, FirstEnergy customers
11 would receive programs administered by a group that does not have cultural conflicts with energy
12 efficiency and that would seek to maximize program effectiveness under a given budget
13 constraint. The costs of switching to board administered programs would not be trivial: the board
14 would need to hire experts to advise it, it would need to build savings tracking and customer
15 relationship management systems, and it would need a budget sufficient to attract qualified staff
16 and implementation vendors. The Commission would need to ensure a quick, safe, bi-directional
17 flow of customer information between the board and the Companies. And there would
18 undoubtedly be a transition period where the Companies would continue to administer programs.

19 **Q: What do you recommend in this case?**

20 A: Because I believe the risks compared to the second option are manageable, and because I have
21 little confidence that the Companies will embrace energy efficiency programs to the degree
22 necessary to implement them well, I recommend the Commission devolve the administration of
23 the Companies portfolio of residential programs to an independent Board.

²⁰ J.D. Power and Associates, 2012 Electric Utility Residential Customer Satisfaction Study, July 11, 2012, Press Release available at: <http://www.jdpower.com/content/press-release/d7cFGW5/2012-electric-utility-residential-customer-satisfaction-study.htm>.

Q: That is a big change, and the term “administrator” is used in Ohio to mean a lot of different things. How would your proposal actually work?

A: The Commission would transition management and administration of the Companies residential portfolio (exclusive of Direct Load Control) to a Board composed of the Office of the Ohio Consumers’ Counsel, a representative of the Environmental Advocates who have intervened in this case, a representative of low income groups or the Community Action Agencies who have intervened in this case, a representative of home performance/HVAC contractors, and a representative of municipal governments in the Companies’ service territory. The Commission Staff and a representative of the Companies should participate in a non-voting role. The Board would attempt to reach decisions by consensus, but could vote if necessary.

Q: How would the “residential portfolio” be defined?

A: The residential portfolio would be defined as those programs directed at energy efficiency opportunities in one to four family dwellings and residential dwellings three stories and under, and individually metered dwellings in larger multifamily complexes.

Q: How would the Board issue a Request for Proposals and judge the responses?

A: The Board would issue an Request for Proposals within 3 months of Commission approval of this settlement for an implementation contractor that would implement a portfolio of residential programs under the same residential sector budget (inclusive of common costs and EM&V costs) the Company proposes in this case, exclusive of budgets for Community Connections and Direct Load Control with additions to account for: the hiring of an expert to advise the board, incremental IT expenses, and other startup costs. The Board would seek public input as it developed the RFP. The Board would judge responses to the Request for Proposals based on the degree to which the response meets the multiple requirements of program planning under O.A.C. 4901:1-39-03, and the degree to which the response credibly plans to meet the energy savings goals the Companies propose from the residential portfolio in this case within the budget. The

Board would not have to choose the lowest bidder. The Commission would review and approve the selected implementation vendor's scope of work.

Q: If this is implemented, how do you recommend the Commission handle the Companies obligation to comply with Revised Code Section 4928.66(A)(1)(a)?

A: If Board Administration is implemented as described here, I recommend the Companies be relieved of their compliance obligation for the savings planned under the residential portfolio (exclusive of Community Connections and Direct Load Control). The Companies should not be liable for non-compliance penalties for the non-performance of its residential portfolio (net Community Connections and Direct Load Control), unless it fails to share all reasonable customer data, including data on multi-family buildings and data on past program participation, with the Board and its chosen implementation vendors in a timely and computer-readable format.

Q: How would you define "reasonable" customer data?

A: Reasonable customer data is data that would help implement a best-practice energy efficiency program.

Q: How would customer confidentiality be protected?

A: The Board and its chosen implementation and evaluation vendors would observe the same data protection and confidentiality standards that the Companies' current vendors observe.

Q: How would programs be paid for?

A: The Companies would collect the budget for approved residential programs (including any additions the Commission makes in this case) through its energy efficiency rider. On a monthly basis, the Company would release the residential portion of these funds to a non-governmental fiscal agent under contract to the Commission, who would then pay the implementation vendor as detailed in the Commission-approved scope of work.

Q: How would the impacts of the Board-selected implementation vendor affect the shared savings incentive mechanism, if approved in this case?

1 A: I recommend the impacts of the Board-administered programs be included under any shared
2 savings incentive approved by the Commission, and any shared savings revenue from the Board-
3 administered programs shall be split 33%/33%/33% between the Companies, the implementation
4 vendor as a reward for good performance, and to fund more programs in the residential sector.

5 **Q: How would the Board report program progress to the Commission?**

6 A: The Board would file a monthly report at the Commission containing minutes of Board
7 meetings, including votes or decisions made by the Board. The Board will report to the
8 Commission and Company every two months (15 days after the end of the two month period)
9 on measures installed and jobs completed the previous two months, as well as major changes
10 made by the implementation contractor in program implementation. The Board would submit a
11 Portfolio Status Report conforming to the requirements in O.A.C. 4901:1-39-05(C) on May 15 of
12 each year (excluding 2013). The Board would continue to implement the Residential Portfolio
13 subsequent to 2015, unless the Commission determines otherwise, accepting all responsibilities
14 under O.A.C. 4901:1-39-04, at budget levels approved by the Commission.

15 **Q: If the Commission approves your recommendation to devolve management and**
16 **administration of the residential portfolio to a Board, how should it handle transition**
17 **issues?**

18 A: A Board would not be able to get an RFP ready for program launch in January 2013. Thus, I
19 recommend the Commission convene a workshop to develop a transition plan. It may be that
20 some programs, like the Energy Efficient Products Program, could be launched under joint
21 Companies and Board administration.

22 **Q: This sounds like a heavy lift. Are parties really ready to accept this level of responsibility for**
23 **the management and administration of residential energy efficiency programs?**

24 A: Speaking for NRDC, we would be prepared to devote significant staff and expert resources to
25 designing an RFP and crafting a scope of work, and then monitoring performance of the
26 implementation vendor.

1 **Q: Should this proposal be understood as a shift in position for NRDC: does NRDC no longer**
2 **support utility administration of energy efficiency programs?**

3 A: This proposal is a reaction to the particular facts of this case, not a shift in position. NRDC does
4 not believe that non-utility administrators are *a priori* better at their task than utilities. There are
5 examples of both utility and non-utility administrators succeeding and failing at delivering
6 energy efficiency programs. And regardless of who administers energy efficiency programs,
7 because of their prominence in the community, role as energy experts, and keeper of customer
8 relationships, we still have to pay attention to the utility business model and ensure that energy
9 efficiency implementation does not have deleterious impacts on a utility's ability to recover its
10 fixed costs of service.

11 **Q: Under what circumstances would you change your opinion about the necessity for non-**
12 **utility administration in this case?**

13 A: If the Companies made a credible commitment to the collaborative design, development, and
14 continuous improvement of energy efficiency programs, if the Companies publicly shifted their
15 strategy to focus on meeting the 2025 goal, if the Companies dropped their public hostility to
16 energy efficiency, and if the Companies hired expert advisors (with the input of the
17 Collaborative) with experience in implementing best-practice energy efficiency programs, I
18 would change my opinion.

19 **VIII: Conclusion**

20 **Q: Does this conclude your testimony?**

21 A: Yes, but I reserve the right to add or modify my testimony based on new or additional
22 information received or discovered.

CERTIFICATE OF SERVICE

I hereby certify that a true and accurate copy of the foregoing *Direct Testimony of Dylan Sullivan* has been served upon the following parties via electronic mail on October 5, 2012.

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Direct Testimony of Dylan Sullivan
Case No. 12-2190-EL-POR, et al.
Attachment 1

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Harry S Truman Scholar, U.S. Government, 2004

Peer- Reviewed Publications

Sullivan, D., Armel, C., Todd, A., When "Not Losing" is Better than "Winning:" Using Behavioral Science to Drive Customer Investment in Energy Efficiency, Proceedings of the 2012 American Council for an Energy Efficient Economy Summer Study on Energy Efficiency in Buildings, 2012.

Non-Peer-Reviewed Publications

Sullivan, D., Wang, D., Bennett, D., Essential to Energy Efficiency, but Easy to Explain: Frequently Asked Questions about Decoupling, Electricity Journal, 24:8, October 2011.
Sullivan, D., Wang D., Bennett D., Removing Disincentives to Utility Energy Efficiency Efforts, NRDC Energy Facts, 2012.

Conference Presentations

Consumer Electronics Programs: What Can Midwest Utilities Do?, 2012 Midwest Energy Solutions Conference, January 12, 2012.
EERS in New Energy Efficiency States: Illinois and Ohio, 2011 National Conference on Energy Efficiency as a Resource, September 27, 2011.

Testimony

June 11, 2012, Kansas Corporation Commission, Case No. 12-GIMX-337-GIV

- Testimony proposing energy efficiency targets, program cost recovery, decoupling, shared savings incentive in generic energy efficiency policy docket

May 30, 2012, Public Utilities Commission of Ohio, Case No. 11-4393-EL-RDR

Direct Testimony of Dylan Sullivan
Case No. 12-2190-EL-POR, et al.
Attachment 1

- Direct testimony in support of shared savings mechanism
- Utility: Duke Energy Ohio

November 29, 2011, Direct Testimony, Public Utilities Commission of Ohio, Case No. 11-351-EL-AIR, et al.

- Direct testimony in support of decoupling mechanism
- Utility: Columbus Southern Power Company, Ohio Power Company

December 22, 2010, Rebuttal Testimony, Illinois Commerce Commission, Case No. 10-0527

- Rebuttal testimony proposing alternative regulation mechanism for energy efficiency
- Utility: Commonwealth Edison

October 15, 2010 and October 29, 2010, Kansas Corporation Commission, Case No. 10-KCPE-795-TAR

- Direct and Cross-Answering Testimony in opposition to energy efficiency plan, lost revenue adjustment mechanism, shared savings mechanism
- Utility: Kansas City Power & Light

August 25, 2010, Indiana Utility Regulatory Commission, Cause No. 43839

- Cross-Answering testimony opposing lost revenue adjustment mechanism proposed by Office of Utility Consumer Counselor
- Utility: Vectren Energy Delivery of Indiana

April 15, 2010, Public Utilities Commission of Ohio, Case No. 10-388-EL-SSO, et al.

- Direct testimony in opposition to lost revenue adjustment mechanism
- Utility: The Toledo Edison Company, The Cleveland Electric Illuminating Company, Ohio Edison

February 17, 2010, Public Utilities Commission of Ohio, Case No. 09-1947-EL-POR, et al.

- Direct testimony in opposition to energy efficiency/peak demand reduction plan
- Utility: The Toledo Edison Company, The Cleveland Electric Illuminating Company, Ohio Edison

September 29, 2008, Direct Testimony, Public Utilities Commission of Ohio, Case No. 08-935-EL-SSO, et al.

- Direct testimony in opposition to energy efficiency/peak demand reduction plan
- Utility: The Toledo Edison Company, The Cleveland Electric Illuminating Company, Ohio Edison



INDUSTRIAL ENERGY IMPROVEMENT

Cohort 1, Year 1 Report

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Introduction

Energy Trust of Oregon (Energy Trust) is operating an Industrial Energy Improvement (IEI) pilot program within its Production Efficiency (PE) Program. The IEI is being implemented by Strategic Energy Group (SEG) under Energy Trust oversight. The IEI seeks to reduce participant site energy intensity and production costs by applying continuous improvement practices. Under the IEI, energy is treated as a variable and manageable (as opposed to fixed) cost for industry. It is assumed that energy intensity can be reduced by five to ten percent with little capital investment and that continuous improvement practices applied to energy can have other benefits for productivity, safety and environmental impact.

The IEI assists participant firms by putting in place a structured energy program which includes establishing accountability for tracking energy and engaging employees to reduce energy use through the “Plan, Do, Check, Act” cycle. The IEI services are delivered to participants in a group environment. Monthly trainings are held over the course of a year in various formats, consisting of six, day-long in person workshops, four, two-hour Webinars, and two individual, on site meetings. The workshops are held at the Energy Trust offices and IEI participant firm locations on a rotating basis.

Pilot Goals and Objectives

The goal of the pilot is to put into operation a process of continuous energy management improvements which enables energy savings and reductions in energy intensity. Energy savings come from operational and maintenance improvements, incremental increases in capital energy efficiency projects (i.e., more lighting efficiency), additional capital projects that would not otherwise have been considered (i.e., process changes, consideration of energy efficiency in all capital efforts), and improved persistence for operations and maintenance (O&M) and capital projects. Through the pilot, Energy Trust will learn the level of commitment it can expect from industrial firms in continuous improvement energy management programs.

Evaluation Objectives and Approach

Navigant Consulting was selected to conduct an evaluation of the IEI pilot to gain feedback from participants on their IEI participation. The evaluation objectives for the IEI pilot are to:

- Determine what motivated the firms to participate;
- Determine what expectations the firms had from the initiative and what goals they hoped to achieve;
- Assess how the initiative can be improved;
- Determine what elements of the IEI pilot the firms found the most valuable;
- Determine whether there are differences in the types of the organizations participating;
- Determine whether there are industry or organizational differences that drive success;
- Determine what classifications of individual participated from each organization;
- Determine whether IEI has the data collection processes in place to provide the basis to assess if the initiative is progressing towards and reaching its goals; and
- Recommend best methods for mainstreaming the pilot into the PE Program.

To accomplish the evaluation objectives, Navigant Consulting conducted a review of the pilot materials and interviews with pilot participants. Navigant Consulting analyzed the results of pilot review and participant interviews and prepared this report on the findings.

Pilot Review

Navigant Consulting conducted a review of the pilot marketing materials, workshop and Webinar materials, supporting documents, participant evaluation forms and summaries, and available evaluation reports, monitoring and verification plans and data.

The pilot review assessed the general approach to delivering the IEI to participants. Workshop materials were reviewed for clarity and relevance. Supporting materials such as checklists and guidelines for developing action plans and site assessments were reviewed for applicability to the industrial sector and for relevance.

Program Management Interviews

Navigant Consulting conducted interviews with the Energy Trust's Senior Industrial Sector Manager and SEG's IEI Program Managers. Both interviews were conducted via telephone.

The intent of the interview with Energy Trust's Senior Industrial Sector Manager was to solicit feedback on the Energy Trust's satisfaction with the IEI pilot's results and whether the pilot is meeting its original objectives. Specifically, the interview sought to determine:

- Original objectives of the IEI pilot and whether they've changed over time;
- The role of the IEI within the industrial sector;
- The role of the IEI within Energy Trust's industrial sector programs;
- Direct and indirect benefits realized by the IEI pilot since its inception;
- Issues or conflicts as a result of the pilot; and
- The overall satisfaction with the IEI Pilot.

The program management interview with Energy Trust was conducted on April 27, 2010.

The interviews with SEG included both a formal interview as well as follow up communications to clarify questions on the pilot or the documents provided by SEG. The purpose of the formal interview with SEG was to:

- Understand the original objectives of the IEI and whether they've changed over time;
- Understand how the implementation of the IEI has changed over time and what lessons have been learned;
- Discuss how the IEI originally came about, how it has been implemented in other areas, and what lessons can be learned;
- Identify and discuss the successes and challenges of the various components of the IEI strategy, including:
 - Customer recruitment
 - Customer screening
 - Training meetings and Webinars
 - Follow-up technical support and mentoring
 - Customer relationships/satisfaction

Two program management interviews were conducted with SEG, one on April 28, 2010 and a second on May 3, 2010.

Participant Interviews

Navigant Consulting conducted interviews with an individual from eight of the ten IEI Cohort 1 participant firms. The interviews were conducted approximately one month after the end of their IEI course (one month interview) in order to capture their recollections about the IEI experience while they were fresh in their minds. The IEI Energy Champion was typically the primary interviewee, though at one firm three individuals were interviewed, including the Energy Champion. All participant interviews were conducted via telephone.

Cohort one completed their final IEI meeting on March 24, 2010. The participant interviews were conducted between May 17th and May 26th, 2010. The objectives of the **one month interview** will be to:

- Feedback on training
- Applicability of training
- Assessment of mentoring and support
- Anticipated near-term and long-term project induced actions
- Challenges in achieving goals
- Assessment of pilot strengths and weaknesses
- Recommendations for changes/augmentation
- Economic and production baseline questions

The evaluation team was not able to schedule one month interviews with two of the Cohort 1 participants. Initial contact was made via e-mail to the primary contacts with several follow up e-mails and voice mail messages. When these attempts were unsuccessful, SEG provided secondary contacts for each firm who were also contacted unsuccessfully via e-mail and voice mail. Subsequent discussions with SEG on these firms and their responsiveness throughout the IEI process indicate that they were likely unresponsive to the interview requests due to busy production schedules and short staffing.

A second interview will be conducted with the Cohort 1 participants a year after completing the IEI cycle (one year interview). The objectives of the **one year interview** will to assess the near-term and long-term outcomes of the IEI, including:



- Challenges and progress
- Whether their expectations are being met
- Long term energy efficiency plans/strategies/outlook
- Status of the energy teams
- Facility economic and production status
- Determine a good time to check back on the facilities progress in the future

Cohort 1, one year interviews will be conducted in March of 2011 and a report of the findings delivered in April 2011.

Findings

This section summarizes the findings from the participant interviews for each of the key research areas. Key conclusions and recommendations from Navigant Consulting are in the next section, “Conclusions and Recommendations”.

Overview

Ten firms participated in Cohort 1 of the IEI. Navigant Consulting was able to complete interviews with eight of these firms. The remaining two firms did not respond to requests for interviews. One of the interviews included multiple individuals from the participating firm.

What motivated the firms to participate

Five of the eight firms interviewed indicated that their prime motivation for participating in the IEI was to reduce utility costs through energy savings.

“Initial goal was to reduce power consumption.”

“Economic times were very poor when we first heard of the IEI and there was no rock left unturned on how to save money...energy was a big driver of cost.”

“Wanted a smaller electric bill. Electricity isn’t a trivial part of our budget.”

Two of these five participants saw being a good corporate citizen as an ancillary benefit. Another indicated that they wanted to increase their company’s awareness of the site energy usage. Over the course of the IEI, a fourth participant realized an added benefit: reducing the equipment run time resulted in a significant reduction in equipment wear and tear.

The remaining three firms indicated that their primary motivation for participating was to leverage the IEI to facilitate corporate sustainability or energy management efforts.

“Liked the idea of getting some guidance and focus to our energy management plan. It wasn’t well coordinated.”

What expectations the firms had from the initiative and what goals they hoped to achieve

In addition to the energy savings and support for corporate sustainability efforts, seven of the eight firms set numeric energy savings goals for their IEI efforts. These targets and the respondents' indication of the achievement of the targets are summarized in Table 1 below.

Table 1. IEI Cohort 1 Summary of Participant's Energy Savings Targets

| Site # | Business Type | IEI Goal | Goal Achievement |
|--------|----------------------------|--|--------------------------------|
| 1 | Cement terminal | @ least 5% | Yes |
| 2 | Manufacturing with offices | 15% | Exceeded goal |
| 3 | Manufacturing | 5% | Yes |
| 4 | Manufacturing | Baseline equipment and employee engagement | Yes |
| 5 | Manufacturing with offices | 10% | "Close" |
| 6 | Water distribution | 5% | Yes |
| 7 | Manufacturing | 10% | Hit 4% and climbing towards 5% |
| 8 | Manufacturing | 3% | 8.7% |

Site 4 was the only participant interviewed that did not indicate that they set a quantitative energy savings target, but they did indicate that their goals of establishing equipment baselines and engaging employees had been met. All other participant goals are expressed as a percent reduction in kWh consumption over the previous calendar year, in this case, 2008.

How the initiative can be improved

Overall, satisfaction with the IEI was very high with six of the eight participants interviewed rating their overall satisfaction with the IEI as a "five" on a scale from one to five. One participant gave a rating of "four". Only a single participant indicated that their satisfaction was neutral with a "three" rating.

The suggestions for improvements to the IEI were focused on several key areas, as described in the following sections.

Format of Training Sessions

Several participants suggested that the IEI conduct more in-person meetings than Webinars. They indicate that the participants are less likely to interact and share stories in a Webinar than in person and that it's easy to be distracted by other work, and therefore not participate closely. Three of these participant's verbatim comments were:

"The Webinars were more instructional and I get more out of sharing experiences with other participants."

"I have a hard time with Webinars in general. I'd rather do fewer sessions at somebody's site than trying to glean information about what somebody's doing out of a Webinar."

"When you have a Webinar you multitask and are distracted by other things."

However, several interviewees indicated that they, or their energy team members, had to miss one or more of the in-person meetings because they had conflicts on those days or were not able to be away from the office for an entire day.

Another participant suggested shorter meetings rather than all day events:

"...when you have sit through an all day on something that doesn't apply to you."

One participant suggested that more field trips to other participants' facilities "would have been an eye opener for them...getting to learn hands on." It should be noted that several of the participants indicated that they enjoyed the field trips to other participants' facilities in other interview responses, though they did not offer this as a suggestion for improvement.

Because of its central location, the Energy Trust's Portland location was a preferable venue for one participant, but this participant also admitted to enjoying going to the other participants' sites "to see how they worked."

Pace of the IEI

One participant indicated that they would have preferred to identify more goals at the early stages. However, they also acknowledged that this may have been the modus operandi of the IEI:

"They were probably letting them do it on their own ... Maybe that's the way it works; going through the program helps you identify things."

However, a different participant thought that the IEI approach was good in that it gave them the tools necessary to develop their own energy programs:

"...more of an assistance approach that made them get on their own feet and be self-directed after a year."

Although not a recommendation, another participant who got off to a late start wishes that they could have gotten off the ground earlier:

"If we had covered the ground we covered in the last few months for the entire time we would have achieved a lot."

This participant acknowledged that SEG "pushed by them as hard as they could push them". They also indicated that they feel that they will be able to meet their goals even though the formal IEI process is complete.

IEI Content

One participant watched his energy team struggle "to get off the ground" and believes that it's because the energy team participation represented the organization too broadly:

"There was a focus on educating [employees] but a lot of the improvements are technical in nature so the program needs to be tailored to a certain group within the organization, like maintenance and engineering."

The SEG records indicate that this participant's energy team was made up of the following job titles: plant controller, maintenance and EHS technician, lean manufacturing engineer, coatings supervisor, electrician, finance employee, manufacturing engineering manager. With the exception of the finance employee, from the job titles, these participants seem to be engaged in maintenance and

engineering activities. However, in the interview, the contact gave seven additional names (without job titles) as energy team members, confirming that the energy team participation may have been too broad for this firm.

This same participant commented that the IEI could be streamlined to focus on elements more directly tied to energy savings:

"A lot of the approach was high level with a lot of fluff...To run an energy program you fix the lighting, you fix the air and HVAC. You don't need an elaborate program and huge committee."

"If I was running the IEI, I'd come in and say 'here's the five things you need to do'."

Despite these comments, this participant undertook several key behavioral activities, such as organizing a steering committee, review of start up and shut down procedures, employee engagement in the form of a plant-wide survey and suggestion box. He also indicated that the IEI helped them to change culturally across the organization, from the shop floor to the purchasing department, and that employees are now trained to identify areas of savings. He also indicates that although they had not met their savings goal the time of their interview, they were still engaged and the energy savings was still increasing.

Miscellaneous suggestions

Consider shortening the IEI for participants that already have some energy management practices in place:

"If a company goes into it with nothing, one year is good. But if a company already has practices, then six months might be good."

One participant would like the IEI and the Energy Trust to include natural gas efficiency, including support to their customers on natural gas hedging.

"It's a little frustrating to call yourself Energy Trust and have no purview over natural gas."

Lastly, one participant suggested giving more assignments (like homework) that carried from one session to the next.

What elements the firms found the most valuable

The participants were asked which aspects of the IEI they found most valuable. Their responses are summarized below. Remember that the respondents often cited multiple elements as most valuable so the total number of responses is greater than eight.

Energy Use Baselines, Tracking and Reporting

Establishing energy tracking and reporting capabilities, including establishing baseline usage, was the aspect of the IEI found most valuable by the participants. Five participants gave this response.

"Tracking – if you can't track it you can't prove it."

Two of the five participants who found energy tracking to be valuable indicated that the tracking reports are a valuable tool for communicating the success of energy effort to employees and upper management.

"Helpful for putting the graphs on the Web site and in helping to prove savings to others and upper management."

Support from SEG

The support provided from SEG was specifically mentioned by four of the participants as one of the most valuable aspects of the IEI, with Steven Scott and Martin being mentioned by name. Respondents appreciated their technical expertise, the good ideas they brought to the energy teams, as well as the gentle coaxing to keep them motivated. They were also a valuable resource to help explain the Energy Trust program rules and processes and to help the participants identify sources for equipment.

Several participants indicated that they were always available to answer questions and were extremely responsive, returning phone calls and e-mails promptly. One firm considered Steven to be such an integrated member of their energy team that they provided a facility access badge to him.

"Coaxing from Steven Scott was good... Got more value out of hands-on pushes from Steven than anything."

"Most valuable was meeting Martin and Steven and them coming over while they explained everything."

"The support that they [SEG] gave them in measuring equipment and energy use was valuable."

It should be noted that although only four participants mentioned support from SEG when asked about the most valuable aspects of the IEI, when asked specifically about the support received from SGE, six of the eight participants gave very enthusiastic responses and high marks for overall satisfaction.

Employee engagement

Four of the firms believed that the employee engagement aspects of the IEI were valuable aspects.

Identifying Opportunities

Learning to identify energy saving opportunities was cited by two participants.

"Definitely found the step about identifying opportunities to be good because it caused them to think outside the box...broaden their consideration."

Miscellaneous

The sharing of ideas and experiences by participants in group meetings and learning the appropriate resources and contacts at the utilities and Energy Trust were also mentioned as valuable.

What elements the firms found the least valuable

Only five participants identified an IEI element that found least valuable. Three of these participants indicated that some aspect of the IEI was not applicable to their firm. One found some of the workshop topics to be redundant. And the fifth participant didn't seem to appreciate the continuous improvement principals but would rather have been given specific action items to complete.

Already had energy management practices in place:

"Some we already had them in place so they were redundant. If we didn't have anything in place already, all topics would be relevant."

Topics did not apply to their operations:

"Some days were full of HVAC stuff that doesn't apply very much. We aren't big on carbon footprint stuff because we are only distributing and not manufacturing."

Concepts weren't applicable to their organization structure:

"A lot of things were built on being a much larger corporation where you have to gain buy in from people below you and sell it to upper management. We are a small company and didn't have to do any of that."

Topics were redundant:

"Some of the engagement activities were redundant – it was valuable once but not the second time."

Didn't appreciate the IEI process:

"Think there is a lot of real high-level concepts...not detailed action items...need to know T8 and T5 and what candle power you need and how to measure it...need something actionable."

Three of the participants could not identify any aspects of the IEI that were not valuable:

"Not that I can think of."

"It was all pretty valuable to them."

"None. Thought they were all really valuable."

Differences in the types of the organizations participating

The Cohort 1 IEI participant firms were largely homogenous with six being privately-owned product manufacturers. However, two of these firms indicated that a large portion of their facilities are for office-related functions, such as sales and marketing.

One of these six product manufacturers is different organizationally in that they are significantly smaller than all other participants and owned by a small group of individual investors rather than a corporation. This participant indicated that "they had to beg" to be let in to the IEI because of their small size. Despite the difference in facility size and ownership structure, this participant found their participation in the IEI to be valuable.

The seventh firm, a cement terminal, could also be placed in the manufacturing category.

Only one firm was significantly different operationally from the others. This participant is a water distribution facility and was the only municipal entity in Cohort 1.

Industry or organizational differences that drive success

All interviewees were asked about the organizational attributes or practices necessary to benefit from the IEI.

Three of the respondents indicated that corporate and direct management support was a key element; one specifying that the team energy members needed to be “empowered to work across the organization to make changes.” Another participant had recently purchased the firm with three partners and had a direct personal interest in reducing energy consumption to save money.

Having a corporate culture for innovation and responsibility was cited by another participant as a key driver for IEI success while another mentioned that past acknowledgment of energy efficiency (through the Energy Star award) made the IEI concepts and easy sell throughout the organization.

Lastly, one participant indicated that an organization needs to have resources available to dedicate to the process in order to take the proactive approach necessary to drive success. For this firm, downsizing has caused the remaining employees to be busier with less time to dedicate to programs like the IEI.

Classifications of individual participating from each organization

The job title and responsibilities, as described during the interview, of each Cohort 1 energy champion is indicated in Table 2.

Table 2. Titles and Job Responsibilities of Energy Champions

| Site # | Energy Champion Title | Job Responsibilities | Overall Satisfaction |
|--------|---|---|----------------------|
| 1 | Maintenance Supervisor | Maintenance supervisor for cement terminal | 5 |
| 2 | Facilities and General Services Manager | Responsible for the maintenance and operation of the facility | 5 |

| | | | |
|---|------------------------------------|---|---|
| 3 | Director of Supply Chain | One of the owners | 5 |
| 4 | Maintenance and Facilities Manager | Maintenance and facilities manager | 5 |
| 5 | Environmental Programs Manager | Responsible for all environmental programs and compliance | 3 |
| 6 | Maintenance Engineer | Development, tracking and implementation of energy efficiency savings projects | 5 |
| 7 | Manufacturing Engineering Manager | In charge of continuous improvement, lean initiatives, quality improvements, capital investments, and cost reduction projects | 4 |
| 8 | Facilities Supervisor | Supervises all outside contractors - janitorial companies, plumbers, electrical, network cabling, phone cabling, security access, vending and food services. Oversee renovation projects. Hazardous waste disposal. | 5 |

The energy champions were primarily involved in maintenance and engineering functions in their organizations, with three notable differences. Neither of the two individuals rating their overall satisfaction with the IEI as less than “five” are directly in facilities operations, but rather responsible for related functions, such as environmental and continuous improvement programs.

The third, a director of supply chain, is not directly involved in day to day operations, but as an owner of the small firm, is very interested in the success of cost-saving initiatives.

How heard about the IEI

Half of the participants heard about the IEI through their utility representatives (2 - Pacific Power and 2 - PGE). A fifth heard about the IEI at a PGE training seminar.

Another attended a lean consortium group (possibly the High Performance Enterprise Consortium) where SEG made presentation on how a firm can reduce its energy costs.

Two participants couldn't remember exactly where they'd learned about the IEI. One thought it was probably through Tektronix or the High Performance Enterprise Consortium. The other indicated that their boss heard about it either from Energy Trust directly or through the Portland Business Journal.

IEI activities undertaken

Each of the participants interviewed described the specific activities undertaken during (and as a result of) the IEI. These activities were self-reported by the participants from memory and were not matched to or verified by their Opportunities Log. These activities included:

Energy Team

All participants indicated that they formed an energy team through the IEI. Two indicated that they had a team in place prior to the IEI but admitted that the IEI helped to add structure and focus.

All participants reported that their energy teams are still in existence. One indicated that meetings have changed from monthly to ad hoc but that it's still an important way to get things done. One is going to merge the energy team with the corporate environmental team.

Compressed Air

Seven participants undertook compressed air changes, including:

- Ultrasonic leak detector;
- Training the operators;
- Leak test/tag program;
- Removing a redundant compressor/taking a compressor off line;
- Reduced system pressure;
- Replaced compressor with fans for cooling equipment; and
- Adjust set point for air compressors for operation pressures.

HVAC

Four participants indicated that they made changes to their HVAC operations, including:

- Correcting heating and A/C problems;
- They turn off hot water for periods use electric duct heaters;
- Adjusted/lowered set points for HVAC temp settings; and
- Adjusted set points for timing of HVAC fans.

Lighting

Lighting changes made by three participants included:

- Lighting controls – occupancy sensors and photocells; and
- Lighting retrofits.

Capital Improvements

Capital projects included:

- Converted chilled water systems to a tower water system; and
- Upgraded equipment.

Energy Audits, Tracking and Baselines

Most participants conducted an energy audit and established baselines for equipment. Some specific aspects included:

- Conducted and audit of the existing energy management program - Carbon Trust Energy Management Assessment;
- Developed baselines of energy usage;
- Determined a ways to measure energy usage based on production;
- Placed watt stoppers on vending machines, computers, space heaters, and other equipment to determine what different devices cost to run. Provided this information to employees; and
- Changed purchasing specifications from fan-powered space heaters to radiant heaters.

Behavioral

- Sharing energy usage data with employees;
- Employee engagement: posting signage, newsletter articles, participating in internal sustainability fairs with a booth or table, CFL give-aways, suggestion box, and energy as a weekly tailboard topic;

- Light/equipment shut off program; and
- Changing equipment/manufacturing procedures related to equipment start and stop.

Natural Gas

Although not a focus of the IEL, some participants reported expanding IEL practices to natural gas-using equipment and systems:

- Insulated steam lines;
- Fixed seals so they were able to turn boiler off in the summer months; and
- Turning down oven temperature.

Conclusions and Recommendations

Conclusions

The key conclusions from the IEI Cohort 1, one- month interviews are:

- Participants thought their participation in the IEI was valuable and a good use of time and resources.
- Most participants reached their energy savings goals with many indicating that they expect the savings to persist and to be able use the tools they've learned through the IEI to leverage additional savings.
- The majority of the participants rated their overall satisfaction with the IEI, as well as the support they received from SEG, as very high.
- Upper management or corporate support was a key success factor for the IEI.
- Participants preferred face to face meetings, especially those at other participant facilities, as the preferred meeting format, but admit that scheduling a day away from the office is challenging.
- Despite the high level of satisfaction with the IEI, some participants seemed to struggle with the continuous energy improvement concept or felt that some aspects weren't applicable to their firms.

Recommendations

Based on the participant feedback from the IEI Cohort 1, one-month interviews, Navigant Consulting recommends the following:

- Continue the IEI as a regular component of the PE program:
 - Ensure high-level management support and a mix of involvement, including team members from the shop floor
- Continue the current recruitment strategies as they are effective at identifying appropriate candidates for the IEI:
 - Utility reps understand their customers and can help screen good candidates and introduce them to the IEI; and
 - Lean manufacturing consortiums are also an effective outreach as these customers are already familiar with continuous improvement concepts.
- Modify the format of trainings to emphasize face to face meetings;

- Analyze the content of the training to make sure that topics aren't redundant and differences between materials are clear;
- Have participants respond to Energy Trust's industrial energy management battery of questions at start of IEI to establish a baseline;
- Expand the IEI to include natural gas efficiency;
- Consider funding SEG as an ongoing resource to IEI participants:
 - Possibly allow SEG to continue on as energy team members for an additional period of time.
- Leverage participants' enthusiasm for the IEI and their plans to continue and expand IEI activities by:
 - Asking past IEI participants to speak at current trainings; and
 - Hosting annual follow-up meetings to discuss progress with initiatives.

It should be noted that, prior to this evaluation report, Energy Trust had already implemented several improvements for Cohort 2, including modifying the format of the trainings to emphasize face-to-face meetings and asking past participants to speak at current trainings.

Areas for further investigation

Energy Trust should undertake an investigation of PE program records to determine if IEI participants are more likely to undertake capital projects than IEI non-participants. As several interviewees indicated that they would have included capital projects in their IEI activities but for the current economic conditions and because large capital projects often involved significant lead time for budgeting, planning and equipment procurement, this follow-through analysis should be conducted one to two years after the completion of the IEI. This analysis should also investigate to what degree IEI participants implemented capital projects prior to their IEI involvement and whether this likely influenced their decision to participate.



Appendix 1: Cohort 1, Year 1 Interview Guide

Energy Trust of Oregon Industrial Energy Improvement Pilot Evaluation

Cohort 1: One Month Interview Guide

Project #:

Organization Name:

Call/Email Attempts

| | Date | Time | Result | | | Comments |
|---|------|------|--------|--|--|----------|
| 1 | | | | | | |
| 2 | | | | | | |
| 3 | | | | | | |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |

Num of Calls _____ Num of Contacts: _____

Comments: _____



Notes to interviewers

This topic guide is designed to help you to complete an approximately 30- to 40-minute in-depth interview (IDI). As you know, the qualitative research process is about discovery, not coverage. As such, we expect you to cover all areas of investigation, but, if necessary, to focus on those questions that seem most relevant to each respondent or those that develop new and/or useful information. Additionally, you are not required to ask questions in the order they are given herein; based on your experience in qualitative interviewing, allow the flow of the conversation to dictate the order in which you ask them.

Background

Summit Blue Consulting is evaluating the Industrial Energy Improvement (IEI) Program. The IEI is being run as a pilot under the Production Efficiency Program, which promotes energy efficiency at industrial customer sites. Strategic Energy Group runs the IEI pilot for the Energy Trust.

The IEI seeks to reduce participant site energy intensity and production costs by applying continuous improvement practices, the premise being that energy is a variable and manageable (as opposed to fixed) cost for industry. The IEI assists participant firms by putting in place a structured energy program which includes establishing accountability for tracking energy and engaging employees to reduce energy use through the “Plan, Do, Check, Act” cycle. The IEI services are delivered to participants in a group environment. Monthly trainings are held over the course of a year in various formats, consisting of six, day-long in person workshops, four, two-hour Webinars, and two individual, on site meetings. The workshops are often held at IEI participant firm locations on a rotating basis.

This interview is being held approximately one month after the last IEI meeting/training. Strategic Energy Group has sent an e-mail to the participant to let them know to expect your call.

Interview Preparation

The interview notes should detail the responses. “Yes” or “no” responses are not sufficient and should be probed for “why”.

Interview Recording

If you record the interview, you must obtain explicit permission from the respondent.

Confidentiality

If respondents ask, tell them yes, their answers will remain confidential.

Introduction

Hello, my name is _____ and I work for Navigant Consulting. I am calling on behalf of Energy Trust of Oregon. As one of only ten participants in the Industrial Energy Improvement (IEI), your feedback is critical to Energy Trust as they determine how to expand the offering and make it more effective and compelling for future participants. I anticipate that the interview will take approximately 45 minutes. This interview is for research purposes; your feedback will only be reported to Energy Trust anonymously and will not affect the status of any Energy Trust project(s) you are involved with.

NOTE: IF RESPONDENT QUESTIONS THE LEGITIMACY OF THE SURVEY, YOU MAY GIVE THEM THE EVALUATION MANAGER’S CONTACT INFORMATION:



Phil Degens
Evaluation Manager
Energy Trust of Oregon
Phil.degens@energytrust.org
503-445-7620

Interview

Background

For each interviewee:

What is your title?

What is your role within your organization?

How long have you been with your organization?

What was your involvement with the IEI project?

Who else from your firm participated? What is their level within your organization?

Motivation to Participate

How did your firm originally hear about the IEI pilot? What originally motivated you to participate?

What specific goals or results did you hope to achieve from your participation when you first began?

Now that you've been through the IEI process, have these goals changed? Describe.

Have any of these goals been realized so far?

Energy Management Practices

1. Which of the following has your organization engaged in during the past two years to control energy consumption? Please indicate if any were done as part of your IEI participation. [READ EACH ONE.]

| | Activity | Done prior to/outside of IEI | Done as part of IEI |
|----|--|------------------------------|---------------------|
| a. | Purchased energy efficient equipment | | |
| b. | Hire or assign a staff member who is responsible for energy use and efficiency | | |
| c. | Sent staff to energy management | | |

| | | | |
|----|--|--|--|
| | training | | |
| | <p>Were energy management practices implemented in your facility as a result of this training?</p> <p> <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> DON'T KNOW </p> | | |
| d. | Create a committee or team that addresses energy | | |
| e. | Develop an energy plan | | |
| | <p>Does your energy plan include numerical goals for its energy savings objectives?</p> <p> <input type="checkbox"/> Yes (ASK Q3A) <input type="checkbox"/> No <input type="checkbox"/> DON'T KNOW </p> <p>What are the goals?</p> <p>Have you achieved these goals?</p> | | |
| f. | Use an energy scorecard to track key performance indicators for energy | | |
| g. | Develop corporate policies for energy efficiency regarding procurement or operations | | |
| h. | Track energy use | | |
| | <p>How often do you track energy use?</p> <p> <input type="checkbox"/> Annually <input type="checkbox"/> Bi annually <input type="checkbox"/> Monthly <input type="checkbox"/> Daily <input type="checkbox"/> Hourly <input type="checkbox"/> DON'T KNOW <input type="checkbox"/> Other (please specify) </p> <p>ASK Qs 1 and 2 below.</p> | | |

| | | | |
|----|--|--|--|
| i. | Conduct a plant-wide energy assessment (audit, engineering review) | | |
| j. | Conduct an energy assessment of specific equipment systems | | |
| k. | Manage motors through procedures to repair or replace critical motors when they fail | | |
| l. | An asset management system | | |

1. Have you heard of any of the following quality improvement methods?

| | Yes (Ask Q43) | No |
|------------------------------------|--------------------------|--------------------------|
| a. ISO (9000, 14000 and 14001 etc) | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Six Sigma | <input type="checkbox"/> | <input type="checkbox"/> |
| c. TQM (Total Quality management) | <input type="checkbox"/> | <input type="checkbox"/> |

2. For each of these quality improvement methods, please let me know if you are doing it or are planning to do it, have tried it or are not considering it. How about...

| | Are Doing It | Are Planning On Doing It | Tried It | Are Not Considering It |
|---------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| a. ISO (9,000, 14,000 and 14,001 etc) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Six Sigma | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. TQM (Total Quality management) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

IEI Activities

What actions did you take during the IEI? How influential was the IEI in making these changes?

What activities are currently underway? How influential was the IEI in making these changes?

What challenges did you encounter in undertaking the various activities and how were these overcome?



What actions do you anticipate taking over the next year as a result of the IEI? How influential was the IEI in making these changes?

What actions do you anticipate taking beyond the next year? How influential was the IEI in making these changes?

Besides those activities just discussed, are there other ways that your firm changed the way they manage energy since the IEI?

Was MT&R hard to generate? What production variables are you tracking? Will you continue to use the MT&R in the future?

Do you still have your energy team in place? Do you foresee maintaining the team on an ongoing basis?

Pilot Assessment

Please rate your overall satisfaction with the program on a scale of 1 to 5, with 5 being "very satisfied," and 1 being "very dissatisfied."

| | | | | | |
|-----------------------------|---|---|----------------|---|--------------------------|
| Very <u>Dissatisfied</u> | | | <u>Neutral</u> | | Very <u>Satisfied</u> |
| 1 | 2 | 3 | 4 | 5 | |

What step(s) in the process did you find most valuable? Why?

What step(s) did you find the least valuable? Why?

Are there any steps that you did not complete? Why?

Overall, what were the most positive aspects of the IEI?

Were there any negative aspects? What were they?

What suggestions do you have for improvement to the IEI?

Please rate your overall satisfaction with the support you received from SEG on a scale of 1 to 5, with 5 being "very satisfied," and 1 being "very dissatisfied."

| | | | | | |
|-----------------------------|---|---|----------------|---|--------------------------|
| Very <u>Dissatisfied</u> | | | <u>Neutral</u> | | Very <u>Satisfied</u> |
| 1 | 2 | 3 | 4 | 5 | |

What aspects of SEG's support did you find most valuable?

Is there any other support you would have liked to receive?



Was the IEI applicable to your industry and organization? Yes/No. Describe.

Participation in the IEI represented a large investment of time and resources by your firm. Knowing what you know now, would you do it again?

Would you recommend the IEI to other firms in your industry? To sister plants within your organization?

What (attributes? Organizational practices?) do other firms or plants need to have to benefit from IEI?

Closing

Thank you very much for your time today. If I have a clarification question as I'm reviewing my notes, is it all right to call you back or email you? Yes/No

Thanks again, and have a great day.

MEMO

Date: October 4, 2010
To: Board of Directors
From: Philipp Degens, Evaluation Manager
Kim Crossman, Sr. Industrial Sector Manager
Subject: Staff Response to the Process Evaluation of the Industrial Energy Improvement Pilot

The Industrial Energy Improvement (IEI) Pilot has proven to be an innovative pilot that has engaged industrial clients in adopting a continuous energy improvement process, where many such programs have failed in the past.

A second cohort of 9 companies is completing its year of training and workshops in October 2010. The third cohort is currently being recruited and will start before the end of 2010.

Many of the evaluation recommendations have been adopted or are being addressed for the third cohort. We have reviewed training format and eliminated webinars in favor of face to face training. The IEI workshops are also being condensed from full day to primarily half day sessions. SEG, the implementation contractor is now an official Industrial Technical Service Provider (ITSP) and as of cohort 3, the IEI is now part of the on-going PE program offerings. The PE program released an RFQ for other ITSPs to see if similar strategic energy management services focused on the industrial and agricultural sector are available that would benefit program participants. A pool of 8 qualified ITSPs, including SEG, has been formed to provide these types of services.



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Who Should Deliver Ratepayer-Funded Energy Efficiency? A 2011 Update

**Based on work for the Colorado Public Utilities Commission,
updating a 2003 report by RAP**

Author

Richard Sedano

November 2011

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Who Should Deliver Ratepayer-Funded Energy Efficiency? A 2011 Update

**Based on work for the Colorado Public Utilities Commission,
updating a 2003 report by RAP**

Author, Richard Sedano

Purpose of this Update

Over the eight years since the Regulatory Assistance Project published *Who Should Deliver Ratepayer Funded Energy Efficiency?*, the U.S. has realized a greater than threefold increase in energy efficiency deployment. The U.S. power sector has seen a sleepy natural gas price awaken with volatile shocks and then resettle. Older generators are eight years older, perhaps closer to retirement or critical reinvestment decisions for life-extension and/or pollution control. The costs of new generation are coming into focus and that picture appears a bit scary. Preparations for carbon regulation are underway despite the lack of a clear national direction.

There are also eight more years of experience with energy efficiency program delivery and administration in those states where energy efficiency was already underway in 2003, and several states with new experiences to share. Several states continue to struggle to strike the right balances with state and utility roles in the effort to get good value for utility consumer dollars while promoting stable regulation and markets for efficiency service.

The Colorado Public Utilities Commission asked RAP to prepare this update of our 2003 report to address pressing questions. Keith Hay provided insights about Colorado stakeholder attitudes based on interviews he conducted,

which we appreciate. In addition to support from the commission, funding assistance is provided from American Recovery and Reinvestment Act funds through the National Association of Regulatory Utility Commissioners. RAP expects this update will provide insight to many who are responsible to assure that energy efficiency program administration is appropriate for the place and time. Subsequent to a version of this report being delivered to the Colorado Public Utilities Commission and prior to its publishing, a subgroup from the Utility Motivation Working Group of the State Energy Efficiency Action Network agreed to review the paper and offer further suggestions. RAP appreciates the contributions from Susan Stratton, Anne-Marie Peracchio, Jennifer Easler, and Scott Johnstone, which further strengthened this report.

This report will reassess the most important factors for states to consider and will review performance to learn what lessons experience offers. The report offers guidance to state legislators and utility regulators as they consider ways for administration and delivery of energy efficiency to be more effective, especially as some states engage this question for the first time, and experienced states implement significant increases in savings goals.

The author appreciates the support from RAP's research office in preparing this report, notably Brenda Hausauer and the original work done for the 2003 report by Cheryl Harrington and Cathie Murray.

Introduction

This paper examines policy options and approaches for the administration and implementation of ratepayer-funded electric utility energy efficiency programs. Although use of the term “ratepayer” is fading in favor of the terms “customer” or “consumer,” the term is aptly used here. Energy consumers do pay for energy efficiency products and services with their own funds. This paper focuses on the products and services organized through the pooling of utility ratepayer funds, so our title is meant to convey this regulated activity.

The administrative structures used in the states fall broadly into four categories:

- Independent, non-government statewide organization
- Utility administration (ownership by investors, cooperatives, the public)
- Government administration at both state and local level
- Hybrid – responsibility divided between or among multiple administrators

RAP applied the results of its routine research on energy efficiency practices nationwide; this research is available on the RAP website.¹

RAP’s earlier version of this report assessed nine substantive areas:

- 1) Process and length of time to establish administrative body
- 2) Details of organizational structure (budget, staff, customer, or geographic segmentation)
- 3) Funding means for administration and for programs
- 4) Degree of association with a long-run resource plan
- 5) Guidelines for program effectiveness
- 6) Pre-implementation program evaluation guidance

- 7) Results of program evaluation
- 8) Significance of financial incentives, revenue decoupling, or other performance-based incentives
- 9) The degree of apparent success and sustainability of each administrative approach

The primary assessment here is Query 9, above, the degree of apparent success and sustainability of each administrative approach. This update provides a comparative discussion of each of the four major approaches drawing upon state experience and relative success in achieving the stated goals of each.

The hybrid approach is new in this report update. It represents the fact that states, fulfilling their role as laboratories, are developing structures that work for them, and in distinct instances are not content with the obvious alternatives. Somewhat out of view of the regulated utility sector, municipalities and cooperatives are also exploring new ways to work together.

More states are directing natural gas utilities to do energy efficiency at present than eight years ago. In general, the pros and cons about the different administrative structures apply for natural gas in the same way as they apply for electricity. This means that state policymakers or decision-makers can consider energy efficiency administration for natural gas in the same manner as for electricity, and can arrive at a conclusion to administer both in the same manner, or in different ways depending on local conditions and priorities. Similar approaches for both energy sources may allow for easier program implementation under emerging “whole house” and “whole building” approaches to energy efficiency.

A word about scope: as the practice of consumer-funded energy efficiency matures, it prompts more intricate questions. How can these ratepayer-funded energy efficiency programs support and connect with mandatory policies,

¹ Regulatory Assistance Project, 2009

like building energy codes and appliance and equipment efficiency standards? How can overall building and system efficiency across all energy forms, regulated and unregulated, and all natural resources, like water, be better accomplished? Who should organize these services in ways that make sense for owners and decision-makers in buildings? These questions suggest more of a beginning of a conversation about delivering “resource efficiency” than a conclusion to the subject of delivering energy efficiency. These questions will no doubt be the subject of a future work.

Comparative Discussion

Successful deployment of cost-effective energy efficiency requires three fundamental cornerstones, regardless of administrative structure:

Clarity of stated purpose at every level (from overarching goals to individual program design and evaluation metrics). Clarity begins with the policy reasons for pursuing energy efficiency found in underlying enabling legislation and PUC orders. The PUC needs to know when to step in forcefully and when to step aside. Once an administrative structure has been designed and put in place, it needs some time to prove its operative abilities.

Consistency of policy over time² Energy efficiency programs take time to implement, and savings are realized over time. Frequent changes in goals, program design, or commitment to purpose do great harm to achieving efficiency results. Additionally, frequent changes may impair potential growth for the industries serving the market. Furthermore, efficiency policy requires ongoing political support and regular supportive public pronouncements from policy makers.

Consensus of key stakeholders as to goals and structure, as well as program design, measurement metrics,

and performance based regulation. At a minimum, key stakeholders include the utilities and the regulators. Ideally, it includes all major interveners, customer classes, trade allies, and environmental and low-income stakeholders. The broader the consensus, the more successful programs and energy savings results will be.

Leadership and commitment from political authorities and public acceptance are important to maintaining this foundation.

Background

Ratepayer-funded energy efficiency programs evolved in the 1980s primarily as utility demand-side resource investments. Efficiency investments were required when they lowered costs as compared to utility supply-side resources (most often generation, but occasionally

transmission and distribution as well). Because efficiency programs were seen as integral pieces of a utility’s overall resource portfolio, it was universal regulatory practice to rely upon utility administration of demand-side interventions. Utilities designed and implemented energy efficiency programs for their customers, with whom they had an exclusive relationship when it came to providing electricity services. Regulators set policy parameters for efficiency investments by designating how cost-effectiveness will be measured, approving budgets, verifying results, and in many jurisdictions, by providing

The restructuring question gave states an opening to reconsider whether utilities lacked sufficient commitment to the success of energy efficiency to be entrusted with administration and to consider new models. On the other hand, the ubiquity of the utility remains a strong rationale to maintain utility administration.

regulatory incentives designed to align utility financial motives with ratepayer interest in achieving cost-effective efficiency investment (thus avoiding more expensive supply-side alternatives). Industry restructuring came along, throwing into question the premises that utilities needed to be or should be vertically integrated or that they should be further involved in energy efficiency markets.

2 Consistency of policy does not necessarily mean consistency of administrative structure. Administration can be and has changed in several successful programs. It is clear enough, however, that major structural changes can be chaotic, causing delay, loss of infrastructure, and weak program results. Only those jurisdictions that maintained the highest levels of clarity, consistency, and consensus among key stakeholders while implementing major renovations in administration were able to achieve an ongoing high level of program results without dropping the ball.

The restructuring question gave states an opening to reconsider whether utilities lacked sufficient commitment to the success of energy efficiency to be entrusted with administration and to consider new models. On the other hand, the ubiquity of the utility remains a strong rationale to maintain utility administration.

The restructuring debate and the uncertainty it engendered for utilities and for regulators cast a deep chill on demand-side investments in many states. Nationally, investment in ratepayer-funded energy efficiency, not including load management expenditures, declined precipitously from \$1.6 billion in 1993 to \$900 million in 1997.³ Efficiency funding in some jurisdictions suffered, sometimes as a matter of free market philosophy, sometimes through ordinary neglect due to finite regulatory attention. In intervening years, efficiency funding has increased and is exceeding earlier nominal spending levels, and leading states are matching proportionate spending for energy efficiency as a percentage of total revenue.⁴

Some states maintained ratepayer funding for energy efficiency through the creation of a non-bypassable surcharge instead of embedding the cost in rates. Efficiency program development was no longer economically integrated into a comprehensive resource portfolio as such in many states.

Several states (many of which considered the retail competition model) looked for entities other than utilities to administer efficiency programs. Some assigned the duties within state government as part of industry restructuring. Other states decided to let the energy efficiency duties remain with the distribution companies. The Oregon PUC created a non-profit entity to contract with for efficiency programs. Vermont decided to have its Public Service Board contract with a private entity as a regulated *energy efficiency utility*, dedicated exclusively to providing statewide energy efficiency services for electricity, believing it to be a superior model whether or not restructuring occurred. Meanwhile, its gas utility remains tasked with delivering energy efficiency for its customers.

Energy Efficiency Goals

States declare a variety of goals for the ratepayer-funded energy efficiency resource. The two most common goals remain (1) energy resource acquisition (peak and energy reduction) and (2) market transformation. These complementary goals tend to result in different kinds of efficiency program designs and different approaches to measurement of results. They also require slightly different mindsets of program administration. A priority on measured net savings will probably lead to programs slanted to resource acquisition, whereas an “all cost-effective” standard leaves room for market transformation. Both goals can be accomplished with sufficient funds to support acquisition of all cost-effective energy efficiency. When budgets are limited, priorities and choices balancing public goals are necessary. Additional goals addressing environmental quality and economic vitality are emerging and tend to add to program value if program screening is allowed to count it.

Energy Resource Acquisition

The goal of *energy resource* acquisition was the original goal of most ratepayer-funded programs. Using this goal signifies a philosophy that energy efficiency is a resource much like any other electrical energy supply-side resource, only it happens to reside in the hands of the customers.⁵ It is a unique resource with cost savings benefits for the system as a whole but which can only be obtained by actions that reduce the demand of the customer. Efficiency programs designed to meet an energy resource goal are directed to finding and releasing the cost-effective efficiency held by customers while holding the customers’ amenity level (e.g., amount of light, heat, power drive) to the same or in some cases even higher levels than existed before the implementation of the efficiency measure or process.

The resource planning horizon in which energy efficiency is evaluated matters. Considering ratepayer-funded efficiency as an immediate energy resource places emphasis on approaches that can achieve the efficiency in a relatively short period of time and in which the savings

3 York, 2002

4 Molina, 2010

5 This idea also can be applied to demand response and distributed generation on customer premises.

can be measured with some precision over the life of the efficiency measure. Programs that fund the incremental costs of building a home or commercial building to efficiency standards that greatly exceed existing building codes or that pay to change out light bulbs or to upgrade heating and air conditioning systems are examples of common energy resource programs.

Using efficiency as a resource is often coupled with a secondary goal of equitable distribution of opportunity to participate in programs. Otherwise, the efficiency investment would be more narrowly targeted to only the most cost-effective opportunities, which may be held in the hands of very few customers, such as efficient process changes for large industrial customers.

A long planning horizon allows the cumulative effects of energy efficiency to make a difference in capital asset investments (if system planning considers energy efficiency as a resource), and practices that target energy efficiency specifically to delay or to avoid capital spending can be a very economical strategy.⁶

Market Transformation

The other common broad goal of ratepayer-funded efficiency is *market transformation*. This goal is based upon the understanding that a great deal of cost-effective efficiency does not occur because of certain well known barriers in the markets for efficiency goods and services. These barriers, which have been well described, include (1) high customer discount rates, in which the customer demands a very short payback for what is essentially a capital resource; (2) split incentives such as that between landlord and tenant in which a tenant who pays the energy bills might see savings from an efficiency program but the landlord who would need to make the capital improvement would not realize any savings; (3) lack of awareness and information, including among engineers, architects, customers, the buyers of equipment and services, and equipment distributors; and (4) high upfront costs that prevent customers from making efficient purchases; such customers may understand there are savings to be had over time, but nevertheless don't have the cash to retrofit a household with expensive LED lights or to purchase a \$1,000 front-loading efficient washing machine.

Market transformation programs seek to understand what the barrier is for a specific device, appliance, process, or measure and to use funds to permanently alter or remove the barrier so that a particular market will function on its own in the future with no further investment of ratepayer funds. An example might be a program designed to encourage distributors of water heaters to have highly efficient models on hand and to promote their sales when customers call (almost always in an emergency mode) for replacement. Another example would be working with the homebuilding community to educate all homebuilders on cost-effective materials and techniques for building highly efficient homes that exceed model energy codes with the goal of having the industry adopt and use the efficiency techniques as an ordinary commercial practice.

Market transformation programs seek to change behavior over an entire sector. It takes time, and the energy savings results rarely occur quickly. In fact, it can be difficult to measure results with the precision of energy resource programs, but when effective, the efficiency device/process becomes the market standard and savings are broadly realized on a permanent basis. For this reason, market transformation programs can become a low priority in the presence of energy efficiency savings targets of the type that apply to utility administrators and motivate the regulated entity to focus management attention and program skill on hitting the target.

Other Goals

Other common ratepayer-funded efficiency goals are *environmental improvement* and *economic development*. Environmental goals arise from the fact that not all environmental harm (societal costs) resulting from the production of electricity is captured in the price of electricity. Thus, efficiency expenditures are made to reduce the environmental harm, such as efficiency programs targeted to reduce use, thereby improving air quality. Increasingly, risks of environmental harm are monetized and can be included in avoided costs and in sensitivity analyses, either by the cost to mitigate the effects of existing and future regulation through pollution control equipment and other means, or through pollution allowance markets for SO₂, NO_x, and CO₂. Economic development goals may

6 Gazze, 2010

target funds to geographic areas or sectors of the economy that are in need of an economic stimulus. Targeting industrial manufacturing process improvements to critical industries or older manufacturing sites, or building system improvements in brownfield developments might be examples of this kind of efficiency program. This sort of comprehensive process improvement program is usually highly customized to an individual business. Process improvements often capture not only the economic benefit of lowering the cost of doing business (perhaps saving jobs), but often bring environmental benefits as well by reducing air or water pollution or other waste outputs. The labor-intensive nature of energy efficiency also provides a local economic stimulus. Generally, energy efficiency can be thought of as a strategic option to meeting environmental and economic goals.⁷

Collaborative Efforts

The collaborative efforts of multiple parties in a number of states have been a significant factor in designing administrative structures as well as in designing effective efficiency programs.⁸ A formally organized collaborative, mandated by statute as in Massachusetts and Connecticut or by the commission's own initiative, as with the energy efficiency oversight boards in Indiana, can be a logical outgrowth from the general commitment to the idea of consensus. Having multiple parties, each with a stake in the success of efficiency programs, reaching agreement about how programs should be administered strengthens the effectiveness of the administering institution regardless of which administrative structure is used.

Multi-party collaboratives have included efficiency providers, distributors, and contractors of efficiency products and services as well as ratepayers, environmentalists, utilities, low-income and large user representatives, state agencies, and regulators. Collaboratives can be statewide or utility-specific. Reaching a unified vision can be tough work, but reaching consensus

can add significant stability to the efficiency institution and to its programs.

For non-utility stakeholders, a statewide collaborative offers the opportunity to focus on a single venue and to promote consistency among utilities. Utility administrators sometimes disfavor a statewide collaborative because it can divert focus to low priority topics of more interest to other utilities. Commissions are generally faced with the choice of what sort of collaborative process is most appropriate in a given state. States that decide on a statewide collaborative tend to value consistency, creating a forum in which everyone learns from everyone, and that helps advocates (and the commission itself if it chooses to participate) manage their limited time efficiently. States that choose utility-specific collaboratives acknowledge the differences among utilities and the utility's interest in managing a process that is 100% about the priorities associated with their programs and serving their customer base. Key considerations may also include the number of utilities within a state, the size of various utilities, and the variation in customer demographics between service territories.

States that eschew collaboratives rely on commission dockets, typically rate cases and integrated resource plan reviews, to resolve these issues. Litigation can constrain communication and innovation and promote conflict, but it avoids the creation of a new forum.

Energy Efficiency Funds and Administrative Structures

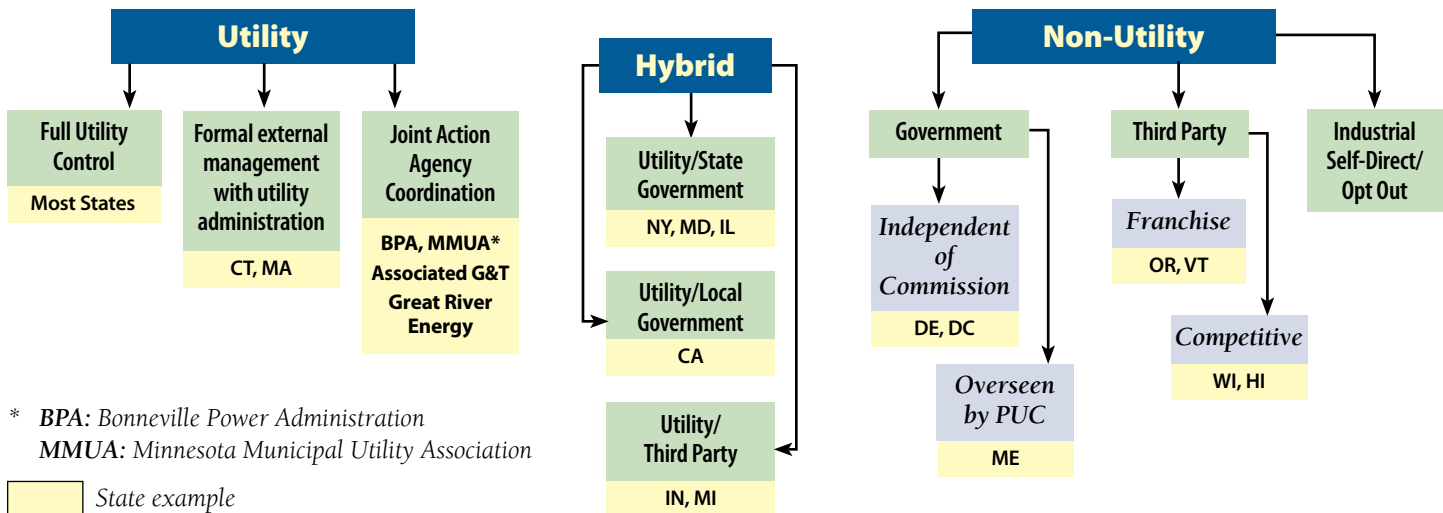
Many states use a separate charge, placed on per kWh sales to fund energy efficiency, and some also implement a surcharge on natural gas therm sales to fund additional energy efficiency programming. This is instead of embedding the cost of efficiency in utility rates like most other costs of utility service. These charges were widely implemented during industry restructuring as a means of preserving a minimum level of funding for energy efficiency and other "public goods." The funds are generally placed in

⁷ New energy efficiency goals may emerge. For example, energy efficiency could be targeted to promote reliability by RTOs and control area operators in updated system planning practices. See Federal Energy Regulatory Commission, 2010.

⁸ California also had a successful experience with a multi-party energy efficiency collaborative in 1989-90. See Raab, 1995.

Types of Energy Efficiency Administrative Structures

With State Examples



Note: This figure refers to types of administrative structures for consumer-funded energy efficiency programs. State examples refer to the primary administrative structure existing in each state.

the custody of the efficiency program administrator – the utility, the independent administrator, or the government administrator. So if a non-utility is the administrator, some way to collect and convey funds from consumers through the utility is needed. In general, the separate charge has proven to be an effective device for accomplishing the declared purposes, but the charge can be an irritant to consumers, and these funds are vulnerable.

In the current era in which almost all state governments are facing large budget deficits (this condition seems to recur with some regularity), any dedicated fund, including the energy efficiency account, faces serious threat of being raided to fill gaps in the state budget. The reassignment of energy efficiency funds to general state budgetary purposes is most clearly a problem where the funds are held in a state account. For example, a portion of efficiency funds in Maine, New Jersey, and Wisconsin were appropriated to government over the last decade.

One might think these “raids” are less likely to occur where dedicated energy efficiency funds are directly paid by the utility to its own program contractors or to a third-party independent non-governmental administrator, but two large raids occurred in Connecticut.

There are no raid-proof funds. Presumably, where efficiency costs are incurred as part of a utility’s ordinary cost of doing business and are not segregated into identifiable funds, as with the traditional practice of integrated resource planning, there will be no state budget intrusion. Statutes can at least clarify this intent and minimize the chances of future raids, as in Vermont:

... Balances in the fund shall be ratepayer funds, shall be used to support the activities authorized in this subdivision, and shall be carried forward and remain in the fund at the end of each fiscal year. These monies shall not be available to meet the general obligations of the state....⁹

9 Vermont Statutes Annotated, Title 30, Section 209 (d)

Evaluating Administrative Structures

A useful set of criteria for comparing administrative structures for ratepayer-funded energy efficiency programs was suggested in a 1998 study and applied in the RAP 2003 report:

- Compatibility with Broader Public Policy Goals
- Accountability and Oversight
- Administrative Effectiveness
- Transition Issues¹⁰

We use these four broad criteria to organize our comparative discussion of the administrative structures in the surveyed states, adding the following sub-criteria, which we believe provide deeper context for thinking about good outcomes from efficiency program administration:

Compatibility with Policy Goals

- Harmony of financial interests
- Integrated resource portfolio
- Resource acquisition
- Strategic deployment
- Environmental improvement
- Economic development
- Energy efficiency market transformation
- Sustainability of effort over time
 - Funding stability
 - Institutional stability

Accountability and Oversight

- How is the budget set?
- Who participates in program development (opportunity for public participation)?

- Are measurement and evaluation metrics an integral part of program design?
- Program evaluation?
- Process evaluation?
- How are results verified?
- Frequency of reporting
- Protocols and capabilities for periodic program review
- Can the effort be successfully managed and overseen at large scale?

Administrative Effectiveness

- Efficient, non-redundant administrative costs
- Budget competency
- Ability to acquire and retain high quality staff, experts, and contractors
- Flexibility to adapt programs to evolving market conditions/opportunities
- Ability to target funds geographically
- Local options for program design
- Ability to facilitate timely payment of incentives to customers and trade allies

Transition Issues

- Start-up costs of new organization covered
- Smooth transfer of program responsibility
- Preserving structure and potential transfer of data to facilitate subsequent program evaluations

The following sections of this report describe and compare energy efficiency programs administered by independent entities, by utilities, by the government, and by a hybrid of administrators. The figure shown on the previous page illustrates the various types of administrative structures, with examples of states with each type of structure.

¹⁰ Eto, 1998

Independent Administration

The states discussed in this section have decided to use an independent, non-governmental structure to administer ratepayer-funded energy efficiency programs. Oregon and Vermont are long-standing examples of independent administration.¹¹ Other instances include:

- Wisconsin transitioned primary responsibility for its utility-run efficiency programs to an independent administrator in 2001. The oversight agency for the utility-run programs was the utility commission, whereas the oversight agency was switched to the State Energy Office with the switch to an independent administrator. The *Focus on Energy* Administrator oversight was switched back to the utility commission in 2007. Administration is divided into four segments with three organizations initially delivering them. During a business segment rebid, one of the existing administrators took on a third sector. Wisconsin Energy Conservation Corporation managed the Residential, Business, and Renewable sectors and the Energy Center of Wisconsin managed a research grant sector. In 2011, after 10 years of the third-party administration model, all administration was consolidated in a competitive rebid to a single firm. Shaw Environmental and Infrastructure Group won the right to manage all sectors of the program. Shaw reports to the commission. A transition is underway, with new sub-contractors being selected consistent with the objectives in the Shaw contract, as this report is being prepared.
- *Hawaii Energy* was created by state regulators to administer energy efficiency programs to most utilities in the state. SAIC/RW Beck won a competitive bid to operate Hawaii Energy beginning in 2009.
- The Michigan Public Service Commission requires utilities to deploy energy efficiency but also allows utilities to opt into a commission-selected third-party administrator, called *Efficiency United*. The commission prescribed that Efficiency United would be a non-profit and would be competitively selected. The commission selected the Michigan Community Action Agency Association, which is also tasked with delivering all low-income energy efficiency programs for investor-owned gas and electric utilities. Efficiency United was launched in late 2009.
- Indiana is in the process of creating a third-party administrator for designated statewide energy efficiency core programs under the direction of the Indiana Demand Side Management Coordination Committee, with ultimate oversight by the commission. The decision to create this system was the commission's. Utilities in Indiana are responsible for meeting energy efficiency targets and will use a combination of efforts from the third-party administrator and custom programs they run to meet these targets.¹²
- A recent New Mexico law authorizes its commission to order third-party administration, and no action has ensued.

¹¹ New York is also commonly thought of as using an independent administrator. New York State Energy Research and Development Authority (NYSERDA) is a quasi-government entity – a state-chartered corporation with a Board of Directors appointed by the Governor. We grouped NYSERDA with government administration, although it shares features with independently administered programs. Here, NY is included in the hybrid administration section, because utilities now also have significant program administration responsibilities.

Oregon and Vermont came into the restructuring era with unusually strong energy efficiency records. Both states had clear regulatory policies requiring the investment in energy efficiency and both had well designed incentive regulation for energy efficiency (revenue decoupling in Oregon and lost revenue recovery in Vermont, in addition to program incentives). Eventually both states decided that despite consistent support from regulators, reasonable financial incentives to utilities, and a supportive public policy context, utility corporate culture and concerns about competition placed inescapable dampers on energy efficiency efforts. Both states decided to create an independent efficiency entity to administer the ratepayer-funded programs in most of the state whose sole business would be energy efficiency. These entities are *Energy Trust of Oregon* and *Efficiency Vermont*. Eliminating the utilities' mixed financial motives when faced with energy efficiency requirements was important in each of these two states. Websites of several administrators appear in Appendix 2.

Compatibility with Broader Public Policy Goals

The distinct strength of the independent administration model is the ability to focus its mission statewide, consistent with statewide energy goals, while eliminating conflicting business objectives that burden utility administration, therefore achieving a high degree of compatibility with broader public policy goals.

What is the conflict that burdens administration? Utility rates assume a level of sales, and rates are set to collect revenue to cover approved fixed costs. Because unsold kilowatt-hours/therms do not generate utility revenue, utilities suffer a loss of revenues against fixed costs that remain, at least in the short run, when energy efficiency programs are more successful than the sales forecast embedded in rates. This relationship is called the *throughput incentive* and presents a dilemma requiring some effective regulatory means of restoring revenue to cover previously approved fixed costs. Further, investor owned utilities' net income is proportionate to the size of its capital account,

or rate base. If sales growth adds to earnings and energy efficiency interferes with this relationship, it is easy to see a potential for conflict.

How to create the right regulatory incentives to get over the lost revenue hurdle is a well briefed topic, but achieving effective implementation of incentive regulation requires careful and ongoing attention. Parties can get lost in endless bickering over whether incentives are too generous or too sparse. Nor is it always a question of lost revenues and program incentives. Utilities may have management cultures that reward those who provide supply-side solutions, not those who excel at energy efficiency implementation. Both the financial and the cultural conflicts can be markedly worse under a regime of retail competition.

Assigning energy efficiency obligations to an independent administrator avoids these vexatious conflicts. Interviews with policymakers in Vermont, Oregon, and Hawaii confirm the avoidance of financial and cultural conflicts as a major reason for creating their respective independent administration approaches, even though none of these states has opted to create full retail competition.

Structures that address throughput incentives were phased out in both Oregon and Vermont following the creation of the independent administrator. Utility decoupling was introduced in both states later, however, and is part of the third-party administration concept in Hawaii. Because successful efficiency programs threaten utility revenues, regardless of what entity implements the programs, utilities may be expected to resist program expansion over time unless disincentives are removed. Most utilities of any size have an active "life politic" as part of their ordinary business existence. Utilities with their revenues at risk from efficiency programs may react by engaging in aggressive advertising programs encouraging greater consumption or may make forays into the regulatory and legislative processes to reduce or limit efficiency funding. Stated more positively, utilities are important in the community and have a permanent connection to their customers, so they can be important supporters of energy efficiency delivered by a third party.

12 In 2011, GoodCents was chosen as the Indiana third party administrator for energy efficiency; see Indiana Utility Regulatory Commission, 2011 12NAPEE Leadership Group, 2006

13 NAPEE Leadership Group, 2006

Attention to utility incentives may be useful to ensure or support desired results.

Vermont law enabled a franchise for a regulated energy efficiency utility (EEU), a model with strong conceptual parallels to the state franchise of public utilities in general.¹⁴ The Vermont Public Service Board, in turn, created a detailed scheme for competitively selecting the energy efficiency utility and for overseeing and evaluating its performance. Vermont Energy Investment Corporation was selected from several bidders and commenced operating the EEU (Efficiency Vermont) in 2000, and was selected in a rebid six years later.¹⁵ It took Vermont less than three years to move from utility implementation of energy efficiency to full operation of the energy efficiency utility. With the EEU firmly in place, by statute, the state's electric utilities remain responsible for energy efficiency. The regulator has ruled that the utilities' energy efficiency responsibility is satisfied by the EEU, but this could be reversed at a future time. This technical reading of the statute is important when asking the utilities to support the efforts of the EEU, because through the utilities' support, they are still addressing a statutory requirement that applies to them.

After more than a decade of favorable experience, Vermont is now committing more completely to the third-party administrator. Regulators are supervising a transition to what might be termed a cable television franchise model, a long-term (11-year) franchise, which is reviewed at the end and which does not require a rebid. In its order of appointment, the Vermont Public Service Board appointed the incumbent operator of the EEU, Vermont Energy Investment Corporation, to operate the Efficiency Vermont franchise.¹⁶ This change will promote a longer term focus, promoting longer term planning between the EEU and the many customers and markets in the state.

Oregon law gave the Public Utilities Commission discretion to order independent administration. After study, the PUC decided to create and use an independent non-profit trust, Energy Trust of Oregon, Inc. (ETO) for the

purpose of delivering Oregon's energy efficiency programs. Oregon law initially provided the ETO with a 10-year funding mechanism, through 2012, and this was reflected in its contract with the Oregon PUC. In 2007, this funding mechanism was extended to 2026.

Both Oregon and Vermont have created single entities with statewide jurisdiction, eliminating redundant administrative and program expense, although participation by smaller utilities in Oregon is voluntary. Both states use the societal test (Oregon also uses the program administrator test) and

evaluate both programs and the entire portfolio. Both states encourage multi-fuel savings and environmental protection and both conceive of efficiency as a resource and seek the transformation of efficiency markets. Vermont's system excludes natural gas, however, because the one gas company has effective programs and covers only two of the state's 14 counties. The Energy Trust of Oregon covers natural gas, but not unregulated fuels. In 2009, a change in OR statute allowed the large electric utilities to collect funds to do supplemental energy efficiency programs. Recent developments in Vermont with carbon allowance revenues and revenues from selling energy efficiency capacity value into ISO-NE now enable the energy efficiency utility to support energy efficiency in end uses using fuel oil and other unregulated fuels – emphasis on payback to utility

Oregon Contract Guidelines

- Seek to encourage competitive markets for energy efficiency and renewables
- Competitively bid unless unwarranted
- Independently evaluate programs on individual basis
- Majority of conservation funds committed in year received
- All classes and geographic areas should benefit
- Complement, not compete with, existing programs

14 Vermont Statutes Annotated, Title 30, Section 209 (d)

15 Efficiency Vermont was set up such that if a different contractor has been selected in the rebid, it would have transferred whole to the successor.

16 Burlington Electric Department was granted a separate 11-year order of appointment to act as an energy efficiency utility for its service area. See Vermont Public Service Board, Docket 7466.

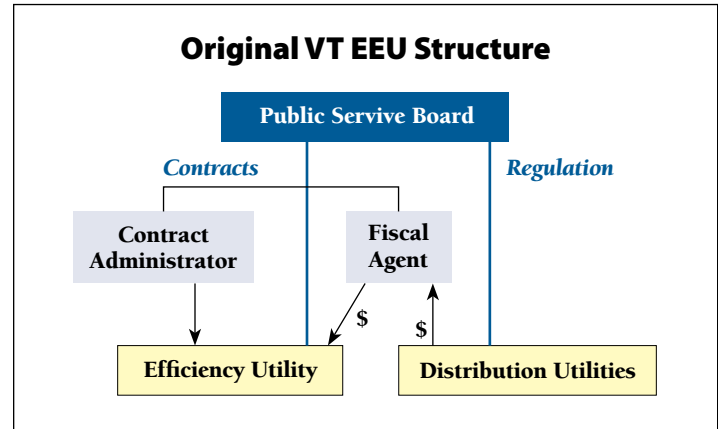
consumers is supplemented by a mission to address whole buildings and systems. Vermont's program, however, does not address renewable energy investment opportunities, whereas Oregon's does.

Both states continue to require long-run resource plans from their electric utilities. In Vermont, the state legislature has taken steps to assure that the EEU participates in utility planning by directing the regulator to create the Vermont System Planning Committee. This committee includes all the utilities, the EEU, and other stakeholders and represents an iterative process to inform how efficiency can meet system planning needs and how system planning needs should guide energy efficiency deployment. Vermont regulators are also supervising efforts to "geo-target" energy efficiency to places in the state that can avoid capital investments if load growth is actively managed through demand-side investments. These processes also feed utility Integrated Resource Plans (IRPs).

Both Efficiency Vermont and Energy Trust of Oregon have developed organizational stability through their good performance. Funding stability is also good, with appropriate processes from consistent overseers in place to reassess funding levels from time to time. Their statewide branding has cemented their position in the markets as the energy efficiency authority in their states.

Accountability and Oversight

The Vermont Public Service Board (VTPSB) paid careful attention to the details of oversight and accountability. It created the post of contract administrator (non-governmental and put out to bid) with the duty of closely monitoring the details of the EEU's franchise on behalf of and reporting to the Public Service Board. The contract administrator device allowed close but responsive oversight with less burdensome process than would occur if the VTPSB exercised oversight directly. This sort of responsive oversight is particularly important when doing market transformation programs, which often require frequent adjustment to match market changes. In addition, the contract with the energy efficiency utility set out very specific guidelines for program areas as well as frequent reporting intervals. The activities of the EEU are well reported and easily accessible by interested stakeholders and the general public. Contract disagreements with the EEU have been brought to the contract administrator



first. Appeals may be made to the VTPSB for decision and resolution with limited rights of appeal to the courts (abuse of discretion only). This places primary oversight authority in the VTPSB. Hawaii has adopted this contracted contract administrator structure. In the Vermont transition to a long-term energy efficiency franchise, the role of contract administrator was dropped. The Vermont Department of Public Service (VDPS) will serve many of the functions performed by the contract administrator.

VTPSB also established a fiscal agent (non-governmental, totally separate from energy efficiency utility, and engaged by competitive bid) who holds, disburses, and accounts for the ratepayer money collected by distribution utilities and expended by the EEU. Hawaii has adopted the fiscal agent also. The fiscal agency disburses funds upon approval by the contract administrator. The use of a fiscal agent is a device borrowed from telecommunication regulatory practice to support universal service. The use of a non-governmental fiscal agent has kept ratepayer efficiency dollars out of the hands of state government and thus protected from the budget raids experienced in several other states. Use of a fiscal agent under contract to the VTPSB assures to the extent possible that efficiency funding remains within the utility system under the supervision of the regulator, rather than being treated as "funds of the state" subject to state budgeting limitations, appropriations trade-offs, and state procurement requirements. Transparency promotes confidence that these service contractors are seen as serving the program.¹⁷

An important distinction involves customer premises information. Efficiency Vermont was built to have access to usage data for all electric utility customers in the state, sharing access with the utilities. This choice enables the

EEU to maintain a database for every customer premises that tracks all contacts, while dovetailing usage data that can be vital to recommending the most suitable work plan for the customer. This choice also enables the utility to be aware of the services its customers are receiving. The energy efficiency utility protects this information in the same way the utility does. Non-utility administrators operate at a disadvantage in fully understanding customers' needs without this information.

Part of accountability is performance evaluation. In the case of Efficiency Vermont and Hawaii Energy, incentive plans are in place to set clear goals and to provide financial performance incentives to meet those goals. The level of these incentives provides a useful comparison to the levels of incentives claimed to be necessary by utilities to administer energy efficiency.

The VDPS, an agency that includes both consumer advocate and energy office functions, is responsible for measurement and verification of the efficiency programs implemented by the EEU. A portion of the efficiency funds is used to pay for this piece of administrative oversight. Hawaii has employed an independent measurement and verification contractor reporting through the contract administrator for this purpose.

The Oregon model is different from that originally used in Vermont, although Vermont's changes bring it closer to Oregon's. The Oregon PUC has a direct contract with the ETO, with contract oversight exercised by PUC staff rather than an independent contract administrator. The contract allows either party to air grievances with the other. Presumably any unsolvable disagreement would be resolved by the court system just as with any contract dispute, but no such major disagreements have yet occurred. Close communication and active collaboration exists between the ETO and the PUC (a PUC member sits as an ex officio member of the ETO's Board of Directors), which to date has prevented major disagreement from developing. The ETO's original 10-year contract now extended to 2026 allows a long period of stability for program implementation and the documentation of results.

All state third-party administrators covered here have used stakeholder advisory groups and deliver detailed

Oregon PUC / ETO Agreement

- Controls manner in which ETO receives and expends funds
- Establishes operation guidelines
- PUC
 - Appoints non-voting, ex officio board member
 - Adopts orders and rules to assure funds paid
- ETO
 - Provides action plans for review
 - Provides annual budget and report
 - Advances notice for long-term contracts
 - Contracts for independent management review
- Either party can issue a "Notice of Concern"
- Either party may terminate for breach of contract

annual reports to the regulators, although Vermont's and Wisconsin's have fallen into disuse.

Based on experience to date, there is no upper size limit to a third-party administrator.

Energy service companies (ESCOs) report mixed experiences in third-party administration situations. On the one hand, the market may look stacked against value-added ESCOs in favor of a dominating statewide service provider. On the other hand, sound programs can supply a springboard to enhance the attractiveness of ESCO performance contracts.

Administrative Effectiveness

The Oregon and Vermont state models provide lean, centralized administration, reducing transaction costs. Transaction costs include not only the design and oversight of programs, but the costs of processing cost recovery requests at the regulatory commission. Both states' programs have attracted very high caliber personnel. The Vermont model uses fewer contractors to provide services. The Vermont energy efficiency utility relies on its own staff to do a large majority of program planning design and implementation (short of the actual installation of measures). The ETO has a smaller staff and relies more

17 In at least one state, New Jersey, there was a finding that the Board of Public Utilities is not allowed to set up the Vermont/Hawaii structure. Clarifying what is allowed is an important step in any transition.

on outside contractors. Staff at all four entities includes recognized national leaders in energy efficiency. The Vermont model raises the question of what effect the EEU might be having on the competitive provision of efficiency, as the consolidation of activity could result in fewer competing entities doing market-based efficiency. Experience indicates, however, that ESCOs are working in Vermont, using the energy efficiency utility's programs as a point of departure to provide additional services to customers.

Although administrative costs appear higher in Vermont than in other states and for other administrators, they fund powerful information and relationship management systems that return benefit in the form of more responsive and customized service as part of their programs. Problems benchmarking administrative costs are discussed in the Utility Administration section.

The ability to plan into the future for market and technology development is important, especially if market transformation is a priority. Independent administrators with short (three-year) terms may be constrained from making financial commitments that represent the long view. This was one motivation for making the change to a long-term franchise in Vermont, and the long-term agreement in Oregon reflects that state addressing this issue.

There is public participation in the shaping of efficiency delivery in Vermont through the periodic VTPSB hearings to review program accomplishments and to set budgets. The volunteer, self-perpetuating Board of Directors of the ETO, originally appointed by the PUC, is ultimately responsible for program decisions. In addition, the ETO has open advisory council meetings and its policies are published on its website and are subject to periodic mandatory review. Opportunity for public input into program design can occur through open solicitations by the administrator in both states.

All third-party systems have some obligation for savings to reflect the sources of funds in their states. Oregon measures equity by utility system over a multi-year horizon. Vermont also considers a multi-year horizon and primarily measures against county size. Vermont has done the most

to overlay strategic deployment of energy efficiency on a foundation of long-term geographic equity.

Transition Issues

Vermont, Oregon, and Wisconsin had clear agreement among key stakeholders, including the legislature, to consolidate political as well as policy support essential to establishing a new independent brand or entity. In Hawaii, the third-party administrator Hawaii Energy is part of an established statewide strategy, the Hawaii Clean Energy Initiative. All involve the commission in a significant way.

There are start-up costs for establishing a new entity. The ETO needed to arrange outside financing prior to the transfer of utility collected revenue, and needed to build itself from scratch. Regulators need to support temporary start-up costs, generally via the energy efficiency charge. Vermont's early incentive plan for its energy efficiency utility was laden with process milestones to assure attention to organizational development – these metrics fell away as the organization matured. Vermont, Hawaii, and Wisconsin benefitted from selecting through RFP organizations that were ready to house and run the third-party administrator.¹⁸ Although the success of Efficiency Vermont has led to efforts to make its relationship with Vermont Energy Investment Corporation more durable, its original design allowed for the entire operation to transfer to a new administrator (not unlike the management contracts that control administration of the U.S. DOE's national laboratories).¹⁹

The utilities in Oregon had continuing jurisdiction for a period of time over the existing or "legacy" programs, whereas the transition from utility programs to Hawaii Energy programs took just six months. The transfer of programs and duties may not always go as smoothly as anticipated. Policy makers thus must establish clear protocols on the details of transfer and enforce them if delays can't be appropriately justified. Speaking of utilities, attention to their incentives to support energy efficiency is an important and easily overlooked part of the transition. Oregon and Vermont regulators took some time before

18 They also benefitted from technical assistance in preparing the RFP from Lawrence Berkeley National Laboratory's Energy Analysis Program.

19 Vermont Public Service Board, 2010

coming to address the utility throughput incentive, whereas Hawaii regulators are considering it right away.

Scale is an issue. The Efficiency Vermont programs at the start were smaller than Vermont utility programs had been at their peak. Since its first year in 2000, until 2011, Efficiency Vermont spending has increased by a factor of nearly \$6 to \$41.8 million. This ramp-up allowed a steady increase in staffing and program capabilities while applying lessons to a smaller-scale operation.

The role of the regulator is also a transition issue. New processes may be needed. Striking the right balance while transitioning from litigating energy efficiency issues as part of rate cases to more of a contract management relationship is not trivial, especially when there remains the same need at the end of the day to be comfortable about savings totals and incentive payments.

Independent administrators in Wisconsin, Hawaii, and, until recently, Vermont, are designed to be replaceable. Contracts with administrators expire. These states built their independent organizations to enable transport of the brand (i.e., Wisconsin's Focus on Energy) to

new administration with minimal service disruption. With forethought, this can be accomplished effectively. Wisconsin, in 2011, is the first state to demonstrate this transition.

Key to the transition is an expectation of stability at the end. Vermont and Oregon have clearly achieved that, as they have broad public recognition, utility support, and good performance to buoy them. Awareness of customer care during a transition is important, and customer-specific project information from a previous administrator should be available to a new administrator. Another key is recognizing that continuously improving not just the organization but the mission of the organization is essential to realizing full potential. In other words, the transition shows no sign of really ending. As this report is being written, Efficiency Vermont is part of a statewide project with the state's utilities to implement smart grid systems to benefit all customers while at the same time improving energy efficiency services from their existing successful level of achievement.

Utility Administration

Most states use utilities to administer energy efficiency programs. Even in Oregon and Hawaii, states with independent administration, non-investor-owned utilities choose to retain their energy efficiency authority; in Vermont, Burlington Electric Department has been granted an Energy Efficiency Utility franchise to deliver energy efficiency services in its territory, and Vermont Gas Systems delivers a full range of programs to its customers. In Michigan, utilities are obliged to deliver energy efficiency but have the opportunity to opt out of administering programs in favor of a third party, as discussed in the independent administration section. Several smaller utilities have opted out, but the two largest investor-owned utilities (IOUs), DTE Energy and Consumers Power, are administering their own programs.²⁰

Utilities come in many forms and sizes, yet there is much in common among utilities whether they operate as vertically integrated, distribution only in restructured states, municipals, or cooperatives. All have the fundamental task of operating the distribution system connecting customers to the grid. All touch all customers every day. In this respect, they are monopolies and represent an obvious choice to administer energy efficiency services as part of their scope. As discussed in the introduction to the previous section, the utility financial motivation is an important consideration among many in assessing this choice.

Compatibility with Broader Public Policy Goals

The single strongest feature favoring utility implementation of energy efficiency is that the utility has the relationship with the customer (usually a relationship of

trust and perhaps familiarity) and is knowledgeable about the customer's individual energy use. This relationship offers many existing communication channels that can be leveraged to promote the programs.

The greatest incompatibility, as discussed in the previous section, is that utilities make their profits by selling electricity. Other public policy goals such as environmental improvement and market transformation for efficiency products or processes are not inherently mainstream business interests for a utility. It takes a major corporate conceptual change of mission to make them so. This change of corporate mission requires consistent policy on the part of the governing body or state government, and regulatory incentives that align the policy goals with utility financial goals. Even when a utility has effective financial incentives, however, efficiency programs can be the odd duck within the corporation, vulnerable to internal competing sales objectives and general budget pressures unless specific priorities are established, either by government or internally by utility management.

A second beneficial feature of utility program administration is the potential for engaging in integrated long-run resource acquisition and capital investment planning. Many states continue to require integrated resource plans from their utilities and the efficiency investments are economically linked to those plans. The choice of tests to screen in economic programs is pivotal. A longer-term test that evaluates the resource value of efficiency compared with supply-side (generation) alternatives, such as the total resource cost test (TRC), the societal cost test (SCT), and the utility cost test (UCT), more successfully values energy efficiency than a test that measures short-term effects to those who only pay for and do not participate in the programs. Most states use one or more of the TRC, SCT, or UCT. Capital investment

20 Michigan Public Service Commission, 2010

planning has a growth management aspect, so if energy efficiency can slow or curtail growth in specific parts of the system, a utility can save the cost of more expensive substation and conductor investments. Con Edison is one utility that has made this a priority. Although internalizing the synergies of energy efficiency, capital planning, and resource acquisition is a sound idea, many utilities do not fulfill this potential, and Vermont's System Planning Committee and other cooperative efforts are showing how this function can be accomplished with independent administration. Where states no longer have integrated utilities, consumers still rely on effective use of the cost tests to screen in energy efficiency programs that will provide a system benefit.

A third beneficial feature of continued utility administration is retention of the existing infrastructure, knowledgeable staff, and relationships within the energy services professional community as well as relationships with distributors. Once a utility has developed a staff and infrastructure to develop and deliver cost-effective efficiency programs, there is reason to be cautious about taking steps to dismantle that infrastructure by assigning the duties elsewhere, although a transition into a third-party administrator can expressly seek to preserve knowledgeable staff and relationships in the new entity.

A fourth beneficial feature of utility administration is the opportunity to elevate "enterprise-wide" efficiency as a business imperative. Customer efficiency can be equated with cost-effective line loss reduction, for example, each reducing system needs. Efficiency for both customers and the utility system can be equally high priorities with accumulated benefits from delayed or avoided construction. A utility not motivated by throughput would be more likely to adopt an enterprise-wide efficiency imperative.

History demonstrates that implementation of energy efficiency by utilities can be successful. Among investor-owned, vertically integrated utilities in Utah, utility energy efficiency programs have grown over the last several years to be among the national leaders. Iowa, Minnesota, and Washington programs have been successful for years and

are in process to achieve higher levels of savings. California utilities have had successful programs supported by affirmative resolution of the throughput incentive through decoupling, and a principle of maximizing cost-effective energy efficiency by making it the priority resource and creating a shared savings performance incentive system to reinforce that policy. Distribution only, investor-owned utilities in restructured states have also been successful, perhaps led by utilities in Massachusetts, Connecticut, and Rhode Island.

These efforts are poised to grow based on statutory and regulatory actions within the last four years. Energy efficiency managers in states such as California and Massachusetts, where significant attention to utility financial motives has been explicitly addressed, report that energy efficiency is a higher priority to top executives and others in the company when program success and financial success are linked and sufficient. Conversely, where these issues are not fully resolved, such as in Missouri and Arkansas, this condition is seen by the utility administrator as a deficiency.²¹ On the other hand, focus on the performance reward system can become intense and reveals the importance of a clear and reliable performance reward system. California, which had a system of shared benefits for the utility programs in place from 2006 to 2008, saw significant unrealized utility expectations for performance reward when the independent evaluation, measurement, and verification (EM&V) process produced lower savings numbers than they expected.

The picture is not always clear. Iowa has seen years of consistent and productive program performance by its utility administrators without any adjustment to traditional regulation except a cost recovery rider. A significant increase in energy efficiency savings is now underway in Iowa. In interviews with several participants on the scene, it is unclear whether the increase can be accomplished with the same level of utility cooperation in the absence of some adjustment to the utility financial incentives.

Making a priority out of energy efficiency has mixed results across the range of U.S. municipal and cooperative

21 Both Missouri and Arkansas commissions have adopted a policy to address the throughput incentive through a lost revenue adjustment.

utilities. Successful performance in places like Sacramento CA, Austin TX, Long Island Power Authority, and New Hampshire Electric Coop indicate that non-IOUs are fine administrators with similar positive and negative attributes as their IOU brethren. Non-IOUs have to contend with the throughput incentive, by raising rates as needed to cover fixed costs, delaying raising rates and using reserves in hopes that other circumstances will mitigate rate increases, or dialing back energy efficiency to mitigate the lost revenue. Utilities with successful energy efficiency programs generally have a population (this does not mean every single customer) who is willing to pay for energy efficiency in anticipation of lower future costs. Although in most states municipal and cooperative utilities have the ability to adjust rates at will, a rate increase due to lost sales may encounter popular resistance, discouraging managers and trustees. Managers can be motivated to avoid this dilemma by diminishing commitment to energy efficiency, just as IOUs may.

Levels of spending on energy efficiency remain largely below those of a substantial number of utilities prior to the chaos introduced by restructuring. Many companies before restructuring made investments of an average of 4.5% of overall revenues in cost-effective energy efficiency.²²

The utilities that achieved high levels of investment in the early 1990s had three factors in common: regulatory policy was clear and sustained, balanced regulatory incentives were in place, including internal rewards for corporate achievement in efficiency, and stakeholders supported the programs. As the forces of industry restructuring eroded these conditions, the rate of energy efficiency investment dropped. States and utilities with successful programs today will still need these factors.

As more states and utilities get involved with energy efficiency and the energy efficiency savings targets get larger, there is more discussion about paying attention to the business incentives faced by utilities. Perhaps the most

extreme example of this emerged from a proposal from Duke Energy to link energy efficiency cost recovery and incentive payments to a fraction of the avoided cost of a power generator, rather than the typical “cost plus” method of compensation. An important aspect of this discussion is benchmarking what an independent administrator might cost to do the same job, and their comparative strengths and weaknesses applied in a particular state.

In a related concern, the increased use of energy efficiency resource standards for utility administrators has increased the emphasis on resource savings, potentially to the point of diminishing market transformation. Utility administrators focused on compliance are prone to this concern.

The following passage from a 2009 order from the Oregon PUC summarizes the views of many about the influence of utilities on energy efficiency:

... PGE (Portland General Electric) does have the ability to influence individual customers through direct contacts and referrals to the ETO. PGE is also able to affect usage in other ways, including how aggressively it pursues distributed generation and on-site solar installations; whether it supports improvements to building codes; or whether it provides timely, useful information to customers on energy efficiency programs. We expect energy efficiency and on-site power generation will have an increasing role in meeting energy needs, underscoring the need for appropriate incentives for PGE.²³

Accountability and Oversight

Utilities administering energy efficiency programs are under the supervision of their state commissions or governing boards as they are for all their other functions. Some state statutes require annual reports on energy efficiency activities. Budgets are set by rule or statute, and

22 Hirst, 1994. Efficiency efforts are commonly reported both as spending as a percentage of total utility revenues or as achieved savings as a percent of sales. Either is a good way of judging the relative level of effort among utilities that may be of vastly dissimilar size or climate conditions. The expended revenues are costs that have been allowed to be recovered in rates. Savings as a percent of sales may be a better gauge when developing energy efficiency as a resource, because it measures results, but it may not work as well for market transformation programs, which often take time before they yield savings, and those savings may be very hard to accurately measure. See ACEEE, 2010.

23 Oregon Public Utility Commission, 2009

programs are designed to meet the budget. Increasingly, savings targets are set by rule or statute, or they emerge from an IRP; then programs and budgets are designed to meet these targets. In some cases, the objective is acquiring all cost-effective energy efficiency, whereas other cases aspire to less than that.

As discussed earlier, ongoing collaborative processes provide a forum to discuss changes in energy efficiency markets and effectiveness of program strategies in real time, creating a community obligation to improve programs with agility, rather than rely solely on *ex poste facto* reviews with inevitable opportunities for second guessing and exposure to disallowances. The Connecticut Energy Conservation Management Board and the Massachusetts Energy Efficiency Advisory Council are perhaps the clearest statewide examples of these, as they are founded by statute.

It is also evident that there is tension between accountability to use consumer dollars wisely and the flexibility that energy efficiency program administrators need to respond to changing markets, technologies, and best practices. This is a challenge that is less often and less intensively encountered with independent administrators, for whom performance is more clearly the objective and the choices made along the way are not as intensely analyzed as they seem to be with utilities. An exception is Washington, however, where the utilities set their own goals and have considerable flexibility in meeting them. It appears that the Washington Utilities and Transportation Commission (WUTC) has not been closely involved in program design. Washington utilities participate in the Northwest Energy Efficiency Alliance (NEEA) market transformation programs but may also run transformation programs of their own. In either case, market changes can be met without first obtaining regulatory sign-off. Many states have determined that, as for independent administrators, utility administrators should be subject to independent evaluation measurement and verification organized by the regulator, rather than relying on the utility to self-assess.

Despite funds collected for utility energy efficiency administration remaining with a utility, there have been raids on these monies in state appropriations processes. Connecticut presents an example.²⁴ These experiences indicate that regulators interested in assuring that funds

collected for energy efficiency are used for that purpose should consider ways to discourage state legislatures from considering raids. Solutions include: (1) embedding energy efficiency costs in regulated rates rather than reporting them as a separate charge on the bill (a rider to collect energy efficiency funds could be managed this way), (2) requiring multi-year program plans that require a network of business commitments that would be disruptive to untangle if budgets are abruptly reduced, (3) explicitly deploying energy efficiency to solve reliability problems or avoid capital investments, and (4) reporting results to demonstrate system value.

Based on RAP interviews with regulators and utilities, it is evident that energy efficiency is the most scrutinized of the routine things utilities do. Why does this appear to be so? One likely answer traces back to the persistent concern that utilities' interests in the success of energy efficiency are chronically compromised by their attraction to growth, leading to more capital assets, more sales, and more net income. A significant aspect of regulatory oversight of utility administered programs, then, is to resolve this concern successfully. Absent a resolution of inherent incentives that promote growth, oversight of energy efficiency administered by a utility is likely to be characterized by excessive conflict as expectations of regulators and the utility fail to match up. Defining success may take many forms, from achieving all cost-effective energy efficiency with flexibility and innovation, to minimizing complaints, to making clear demands for performance under threat of penalties for non-compliance.

Administrative Effectiveness

Utilities have developed and largely retained capable staff. Most, however, significantly supplement their staff from a fleet of contractors organized to support them. As spending levels rise and programs become more ambitious, there is reason for concern industry-wide (regardless of administrative model) about shortages of experienced program managers.

Regulators are properly motivated to maximize dollars collected for energy efficiency for buildings and systems as opposed to overhead. Skilled program administration is

24 Database of State Incentives for Renewables and Efficiency, 2011

an investment, however; simply minimizing administrative costs may be costly in such outcomes as uncoordinated programs and poor customer relationships. Attempts to benchmark administrative costs are inherently frustrated by inconsistent accounting methods and justifiable differences among states in program deployment strategies. Utilities do make significant use of contractors to moderate additions of fixed costs and get access to specialized talent. Regulators can assure that contractor management follows sound practices and may tend to scrutinize these relationships more than they do for independent administrators. As discussed earlier, management flexibility needed to address changing markets and technologies may conflict with regulators' desire to manage utility decisions to modify programs and strategies in mid-course. With sufficient flexibility, utilities can use operations and other data to target resources to their best uses and apply lessons quickly to improve programs.

Many states have encouraged the use of common programs statewide to reduce costs and also avoid confusion among consumers. New Hampshire has established a set of core programs that all utilities implement. Organizations like the Midwest Energy Efficiency Alliance, the Northwest Energy Efficiency Alliance, the Northeast Energy Efficiency Partnership, the Southeast Energy Efficiency Alliance, and the Southwest Energy Efficiency Project provide support to states to bring this consistency region-wide, while also supporting market transformation efforts.

In a similar vein of scale efficiencies, municipal joint action agencies like the Minnesota Municipal Utilities Association and American Municipal Power, as well as generation and transmission cooperatives like Great River Energy (serving Minnesota) and Associated Electric Cooperative (serving in Missouri, Oklahoma, and Iowa), provide support to member companies that want simple ways to deliver energy efficiency service to their retail customer/members. Bonneville Power Administration

also provides energy efficiency program support for its municipal and public utility district customers. Performance of self-governed municipal utilities and cooperatives on energy efficiency ranges from very high to non-existent.

Transition Issues

For the most part, transition issues have not been relevant for utility administration. One counter-example stands out: New Jersey. Here, a series of decisions over the course of several years has shifted energy efficiency program responsibility among the utilities, the Board of Public Utilities, and an independent administrator. Longer-term implementation roles have been unclear for several years. Regulators announced in 2010 that another shift may occur. This back and forth and uncertain experience has shown that it is very challenging for the program administrator (whether the utility or the independent administrator) to reassign its energy efficiency staff – as a result of the uncertainty, many staff leave their companies. This sort of dislocation happens in business regularly, however. Perhaps more challenging was a short ramp-up period to resuming administering the programs with all the accountability typical of utility regulation. Returning to an early point in this report, New Jersey appears to have lacked consistency and consensus over how to administer energy efficiency programs, while it maintained clarity that having a commitment to this resource is important.

Looking forward, a new transition issue is emerging. State energy efficiency resource standards adopted in statute or by regulators indicate that many utilities around the U.S. will be increasing energy efficiency spending and savings quickly over the next several years. Commissions will need to pay close attention to the needs of the community of interests, including the utility administrators, to assure that these achievable goals are successfully met.

Governmental Administration

The government is a significant actor in independent energy efficiency administration and utility administration as an overseer. The utility commission may choose the independent administrator and review and approve its plans and performance. When, however, government chooses to maintain significant authority over programmatic decisions and when state lines of authority in the executive and legislative branches assert control of plans and budgets, then the government is truly administering energy efficiency and contractors are implementing these centralized decisions.

Generally, government administration of consumer-funded energy efficiency programs has not gone as well as administration by other means. Maine and Wisconsin have abandoned a pure state agency administration and New Jersey is considering it, owing to obstacles peculiar to state government and enumerated later. As the next section on hybrid models will demonstrate, it may be that targeting the mission of a government program may improve its prospects for success.

NYSERDA with its *Energy \$mart* brand is the stand-out success among government-administrated programs. Its status as a quasi-government corporation, as reported earlier, holds an important reason for its success. NYSERDA, a state authority with a long history of managing energy projects across a diverse state, was uniquely situated to take on the challenge of running the state's energy efficiency programs in 1998. Yet even here, New York will appear in the hybrid section owing to the fact that regulators have determined that utilities and NYSERDA will share responsibility to meet a growing savings target.

The Efficiency Maine Trust took over responsibility for utility consumer-funded programs, known as Efficiency Maine, in July 2010, implementing a state law.²⁵ The state

PUC had been administering the program, an example of government administration that is now concluded. The Efficiency Maine Trust's board of directors is designated by statute or appointed by the governor, so it may act in the manner of NYSERDA. Like NYSERDA, the Efficiency Maine Trust board has significant autonomy. The board hired an executive director who is supervising staff that numbers at least 12. Statute exempts the Efficiency Maine Trust from state procurement rules, enabling a nimbleness

The Sustainable Energy Utilities of Delaware and District of Columbia

The state legislature of Delaware and the city council of the District of Columbia have each created a new structure for energy efficiency administration. This structure is called a Sustainable Energy Utility (SEU). The SEU operates in each jurisdiction out of a state agency, the state energy office, and in Delaware is to be funded primarily by bonds issued to support energy efficiency, as well as revenues from sources like carbon allowances and wholesale capacity markets. Consumers in both jurisdictions provide revenue also. Programs seek to maximize participants paying for their services, so they would emphasize information and financing. These administrators are not under the supervision of the utility regulator, and the extent to which they will coordinate with utilities is unclear. The District of Columbia awarded the contract to manage its SEU to Vermont Energy Investment Corporation, the same entity managing the energy efficiency utility in Vermont, and it is getting organized as this report is being completed. Progress in Delaware has been slower and the energy office is working on new legislation to clarify priorities and direction.

25 Maine Legislature, 2009

that is generally essential for effective administration of energy efficiency. The Maine PUC must approve 3-year program plans that authorize the Trust to spend money.

Compatibility with Broader Public Policy Goals

State government is likely to be attuned to statutory goals, but without care may not be nimble enough to manage changing markets or have sufficient influence with utilities to address them effectively.

Accountability and Oversight

When the state is the administrator of energy efficiency programs, the role of the regulator can diminish. Legislative committee overseers, who lack detailed expertise in energy efficiency, may focus on macro issues, diminishing the pressure on the administrator to improve service. Appropriators may see the government's energy efficiency program as an emergency source of revenue, even though the revenue came from ratepayers for a utility purpose. Politics may more directly drive decisions.

Oversight may focus more on proficient contract management than effective program performance and can be overtly influenced by politics. NYSERDA and Efficiency Maine Trust each have active boards with some autonomy to keep on top of staff activities and address policy issues promptly. Both

are also accountable to their PUCs to some degree.

Administrative Effectiveness

Concerns here include:

- State in the market as a competitor to generators and ESCOs
- State becomes concerned about assuring revenue that supports a staff infrastructure first before worrying about quality service
- State may not be able to attract the best staff, at least not for long, and staff may be diverted to other government matters. Hiring rules can also be limiting. As a result, significant use of contractors becomes less of a choice and more of an inevitability.
- Fiscal rules and procurement rules may limit management and financial flexibility.

Transition Issues

Transition to program administration by a state agency is likely to encounter most of the same issues described earlier regarding transition to independent entities. Attention to the process limitations of government hiring and fiscal management tends to take more time than is usually anticipated and accounts for obstacles that emerged in New Jersey. Maine's transition from PUC administration was not too complicated because of its small size owing to its emphasis to date on contract management.

Hybrid Administration

Several states in recent years have made affirmative, intentional decisions to divide administration responsibilities between multiple types of administrators. Each choice represents important local concerns for such priorities as market transformation, service to low-income customers, and service to state and local government. For these states, including Maryland, Illinois, New York, Michigan, and California, they deploy two or more administrators, generally from the categories covered here. The added challenge is how they interact to serve the public as a whole.

Compatibility with Broader Public Policy Goals

The act of dividing the responsibilities generally makes clear the specific goals and reasons for the split. In Maryland and Illinois, attention to low-income customers and government buildings is the key mission carved out for the state energy offices in these states. The Illinois Energy Office receives a quarter of collected funds, and the rest go to the utility administrators. These state agencies are program administrators for their specific market segments, and have a strong focus to get the savings that are there to be had. Market transformation will also be a mission for the states. Program plans for each are approved by the commissions. These approved program plans detail savings targets for each entity.

Experience is inadequate to discern whether system planning and resource acquisition objectives will be melded in these two states or if the staffing at the energy office will be adequate and stable.

In New York, the utilities are now tasked by the

commission to focus on savings-oriented programs, whereas NYSEERDA focuses more intently on market transformation and finance opportunities. The commission, when launching the hybrid approach, indicated interest in fostering a diversity of approaches to energy efficiency, while also creating more accountability for the use of consumer dollars through its oversight of the utility administrators.²⁶ By taking this step, New York will not need to multiply the size of NYSEERDA's energy efficiency operation to meet increased energy efficiency savings objectives. The commission has taken on a significant task in the New York hybrid model to manage overlapping administrators that in some ways operate in parallel and in other ways operate in competition. Again, experience is too thin to evaluate the success of this division. Utilities do have to staff up, and the commission is evidently considering all the issues characteristic of utility administration.

Michigan has hybrid administration because its optional third-party administrator, Efficiency United, has been directed to deliver all low-income programs for the investor-owned electric and natural gas utilities that are delivering an otherwise full portfolio of programs. This choice folds the consumer-funded low-income program mission together with the state weatherization program, creating significant efficiencies and customer clarity.

Indiana is in the process of creating a third-party administrator for designated statewide energy efficiency core programs. Utilities in Indiana are responsible for meeting energy efficiency targets and will use a combination of efforts from the third-party administrator and custom programs they run to meet these targets.²⁷

In California, the division is driven by an apparent

26 New York Public Service Commission, 2008

27 In 2011, GoodCents was chosen as the Indiana third party administrator for energy efficiency; see Indiana Utility Regulatory Commission, 2011

political desire to enable communities to drive their own energy efficiency programs. Regulators there have directed that utilities will make up to 20% of energy efficiency funds available to sound proposals from communities to do energy efficiency. Some might say that this is not shared administration, that the utility is the administrator of this community program. However, the utility does not control or specify how the community uses the energy efficiency funds; it can reject a community's application for EE funds, but is accountable to state regulators if it does. And the utility has significant bargaining power in the contract negotiation with the community. In the aggregate, however, all the community programs that go on in California lead to little if any real coordination between what the utility is doing and what the community is doing.

In several other states, energy efficiency programs are administered by more than one type of administrator as well, due to the presence of public and cooperative utilities or federal entities. For example, in Oregon, the independent administrator is the primary administrator statewide, but public and cooperative utilities in conjunction with Bonneville Power Administration administer programs in their territories, as does Idaho Power in the small portion of Oregon it serves. In Hawaii,

while the independent administrator serves most of the state, Kauai Island Utility Cooperative continues to administer programs in its territory.

Accountability and Oversight

For each side of the split, except in California, there is significant accountability and oversight. In California, communities do have to report results, but they are not accountable for performance in the same way the utility or the state agency is. Funding streams for the government side of the programs are secured by statute in Maryland and Illinois.

Administrative Effectiveness

For the Maryland, Illinois, Michigan, and New York systems, more time is needed to assess administrative effectiveness. Each entity of its type has the pros and cons discussed earlier in this report. In none of these does it appear that utility system issues are sorted out.

For California, the community allocation creates significant legal friction as hundreds of agreements are worked out periodically. The question this report is not

A New Idea – Private Sector Administration

A new form of energy efficiency administration has been offered. Funds would be collected from utility consumers in the usual manner. Objective priorities for energy efficiency programs would have to be established, as occurs in many states, but perhaps with more explicit rigor. Essential elements of what programs do would have to be decided centrally, probably by regulators. This work would be distilled in competitive RFPs. A central authority would issue these RFPs, probably the regulator, but it could be the utility. Bidders would compete for the right to deliver these program services while meeting state objectives and priorities.

Such an approach would allow anyone who has a good idea about how to turn consumer energy efficiency investments in energy efficiency savings to get support. Likely bidders would be retailers, ESCOs, or large building contractors, and they would use these funds to

sweeten deals with consumers to get them to make the energy efficiency decision. In an effort to reduce the cost of energy efficiency in utility rates, this system would rely on new avenues of financing energy efficiency so participants would pay more of the costs. RFPs to serve vulnerable market segments would presumably assure that these customers have energy efficiency opportunities available. Regulators should consider how measurement and verification will be performed under this new approach up front to ensure that bidders understand the scope of such requirements.

It remains to be seen if any state will try this method or some variant of it, whether this method will support or conflict with existing ESCO markets, whether the method will prove useful only in certain market niches, or how this method will succeed at meeting the tests outlined in this report.

trying to assess is whether the creativity from these locally-developed programs is adding new learning to how to get more from energy efficiency investments, or if the effort is more of a “feel good” exercise that adds little and may detract from the overall effort of the utility.

Transition Issues

For Maryland and Illinois, the issue is communication. This may seem trivial, but both sides of the hybrid system are incredibly busy with their own start-up concerns. As a result, a structural means for communication, like the collaboratives in Illinois and Maryland, is important to knit these efforts together.

For New York, the issues are more around the regulator clarifying the program roles of the utilities vis-à-vis NYSERDA as well as circumstances when these two might be competitive. New York will demonstrate the extent to which competition for regulated energy efficiency administration provides value to customers. For Michigan’s Efficiency United, transition appears to be smooth since existing organizations’ activities are being augmented, and the big challenge for all administrators is building infrastructure to sell energy efficiency.

In California, the community program has been in place for some time, but based on information RAP has gathered, it is still settling.

Conclusion

As in 2003, we find that the more robust ratepayer-funded efficiency programs are less the result of administrative structure per se, than the clear and consistent commitment of policy makers supported by consensus. The figure on the top of page 9 shows how decision-makers have adapted administration structures in place in 2003 to their own needs, creating hybrids and variations. The map on the following page shows a range of different conclusions.

It is our view that either utility administration or administration by a third-party non-governmental entity can work well. It is important to set up the system for success. A micro-managed third-party administrator might be an utter failure, and in any case, explicit attention to utility motivations to support or avoid energy efficiency is crucial. Equally crucial is commitment to a decision; frequent transitions are a bad sign.

There has not been an academic quality study to evaluate the causal relationships that would declare a clear winner between these two systems, and it seems likely that local priorities and concerns will be so important as to dominate. Relevant factors to consider when comparing utility administration to third-party administration are responsiveness to PUC direction, ability to focus on customers and markets, regulatory performance incentives that are properly constructed and implemented, staff competency, ability to support the market (intended to cover timely payment of incentives and flexibility for changing market conditions), sustainability of the

institution and its budget sources, and link to system planning and investment decisions. Regulators should be sensitive to chronic problems that limit effectiveness and should periodically consider improvements based on these lessons.

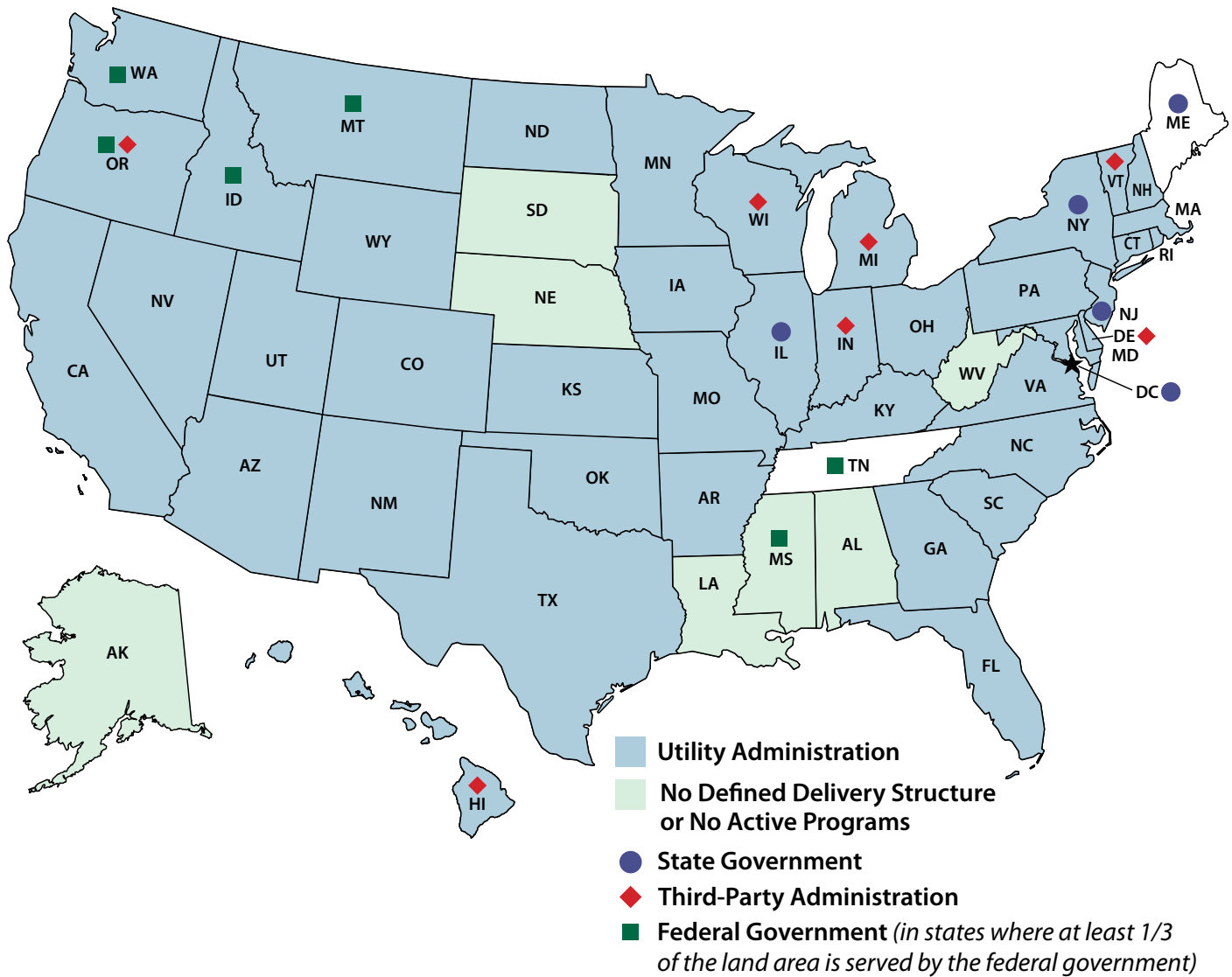
There are proven ways for municipal electric associations and generation and transmission cooperatives to support members interested in investing in energy efficiency.

State agency administration (with the exception of the unique quasi-independent character of NYSERDA) is a weaker third choice. State agencies are less likely to be able to maintain the required flexibility to be effective efficiency entrepreneurs, especially for market transformation programs. State agencies are also vulnerable to governmental and political events that are external to the energy efficiency efforts themselves. Finally, as mentioned earlier, one should be cautious about placing the state in what is viewed by other market participants as a competitive business, potentially compromising its traditional role as policy setter and industry overseer and regulator.

Finally, we urge commissions to consider carefully the value of stakeholder consensus and, if possible, the use of collaborative program design and oversight regardless of the administrative structure. A simple assessment of how a system of energy efficiency administration is going is that if there are good and improving results and few and fundamental complaints, then it is going well.

U.S. States with Defined Electric Energy Efficiency Delivery Structure

Effective December 2009



Source: RAP 2009 Policy Grid Update

Note: This map tracks whether a state's energy efficiency delivery structure has been formally established by statute, order or contract, or by effective state actions. If the energy efficiency delivery structure has been established, the map indicates the type of entity that administers the energy efficiency delivery structure. In some cases, multiple entities deliver energy efficiency programs.

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Appendix 1: State Electric Energy Efficiency Spending as a Percent of Utility Revenues

| State/Region | 1993 | 1996 | 2000 | 2009 |
|---------------------|------|------|------|------|
| New England | | | | |
| Connecticut | 1.79 | 1.08 | 2.33 | 1.36 |
| Maine | 1.27 | 1.43 | 1.07 | 1.30 |
| Massachusetts | 2.55 | 1.51 | 2.02 | 2.20 |
| New Hampshire | 0.33 | 0.47 | 0.04 | 0.95 |
| Rhode Island | 1.98 | 1.48 | 1.88 | 2.66 |
| Vermont | 2.48 | 0.81 | 1.08 | 4.40 |
| Mid-Atlantic | | | | |
| New Jersey | 0.29 | 0.59 | 1.68 | 1.18 |
| New York | 2.43 | 1.09 | 1.01 | 1.73 |
| Pennsylvania | 0.16 | 0.11 | 0.15 | 0.70 |
| E.N. Central | | | | |
| Illinois | 0.02 | 0.03 | 0.04 | 0.72 |
| Indiana | 0.67 | 0.44 | 0.04 | 0.18 |
| Michigan | 0.89 | 0.20 | 0.08 | 0.53 |
| Ohio | 0.38 | 0.22 | 0.04 | 0.14 |
| Wisconsin | 2.29 | 0.80 | 1.32 | 1.64 |
| W.N. Central | | | | |
| Iowa | 0.62 | 0.83 | 0.8 | 1.78 |
| Kansas | 0 | 0 | 0 | 0.12 |
| Minnesota | 1.13 | 1.76 | 0.93 | 2.19 |
| Missouri | 0 | 0.05 | 0.01 | 0.39 |
| Nebraska | 0.05 | 0.01 | 0.01 | 0.35 |
| North Dakota | 0.13 | 0.17 | 0.42 | 0.01 |
| South Dakota | 0.04 | 0.16 | 0.03 | 0.34 |
| S. Atlantic | | | | |
| Delaware | 0.18 | 0.39 | 0.22 | 0 |
| Dist. Of Columbia | 2.22 | 1.80 | 0.06 | 0.79 |
| Florida | 0.64 | 0.76 | 0.44 | 0.52 |
| Georgia | 0.70 | 0.03 | 0.01 | 0.19 |
| Maryland | 1.83 | 1.65 | 0.08 | 0.46 |
| North Carolina | 0.31 | 0.42 | 0 | 0.60 |
| South Carolina | 0.46 | 0.36 | 0.13 | 0.23 |
| Virginia | 0.19 | 0.07 | 0 | 0 |
| West Virginia | 0.09 | 0.05 | 0.05 | 0 |

| State/Region | 1993 | 1996 | 2000 | 2009 |
|-----------------------|-------------|-------------|-------------|-------------|
| E.S. Central | | | | |
| Alabama | 0.13 | 0.02 | 0.01 | 0.12 |
| Kentucky | 0.06 | 0.12 | 0.04 | 0.30 |
| Mississippi | 0.01 | 0.01 | 0.01 | 0.23 |
| Tennessee | 0.14 | 0.04 | 0.13 | 0.29 |
| W.S. Central | | | | |
| Arkansas | 0.01 | 0.02 | 0.01 | 0.23 |
| Louisiana | 0.04 | 0.03 | 0 | 0.04 |
| Oklahoma | 0.04 | 0 | 0.01 | 0.10 |
| Texas | 0.26 | 0.23 | 0.11 | 0.29 |
| Mountain | | | | |
| Arizona | 0.24 | 0.24 | 0.08 | 0.70 |
| Colorado | 0.40 | 0.70 | 0.14 | 1.11 |
| Idaho | 2.78 | 0.77 | 0.52 | 2.13 |
| Montana | 1.61 | 0.69 | 0.65 | 1.16 |
| Nevada | 0.51 | 0.07 | 0.02 | 1.18 |
| New Mexico | 0.04 | 0.05 | 0.09 | 0.82 |
| Utah | 1.60 | 0.50 | 0.23 | 2.44 |
| Wyoming | 1.33 | 0.54 | 0.15 | 0.26 |
| Pacific | | | | |
| California | 1.40 | 1.00 | 1.24 | 2.86 |
| Oregon | 2.51 | 1.84 | 0.78 | 2.34 |
| Washington | 7.09 | 2.67 | 0.94 | 2.48 |
| Non-Contiguous | | | | |
| Alaska | 0.03 | 0.03 | 0.04 | 0 |
| Hawaii | 0.14 | 0.24 | 0.81 | 1.65 |
| US Total | 0.89 | 0.55 | 0.47 | 0.96 |

Note: 2009 numbers are budgeted data; other years' numbers are actual spending.

Sources: York, D. (December 2002). *State Scorecard on Utility and Public Benefits*. Washington, D.C.: American Council for an Energy-Efficient Economy; Molina, M. (October, 2010). *The 2010 State Energy Efficiency Scorecard*. Washington, D.C.: American Council for an Energy-Efficient Economy.

Appendix 2: Energy Efficiency Websites of Selected States

The websites of energy efficiency administrators are revealing. They show how the different entities plan to attract customers and how they plan to get commitments to projects.

Following are screenshots from several non-utility program administrators. Included here are:

| | |
|---|---|
| Hawaii Energy | http://www.hawaiienergy.com/4/about-us |
| Efficiency Maine Trust | http://www.efficiencymaine.com/about |
| Efficiency United | https://www.clearesultrebates.com/wp-effunicon/?page_id=7 |
| Energy Trust of Oregon | http://energytrust.org/about/ |
| Efficiency Vermont | http://www.efficiencyvermont.com/about_us.aspx |
| Wisconsin Focus on Energy | http://www.focusonenergy.com/About-Us/ |
| Great River Energy | http://www.greatriverenergy.com/savingelectricity/ |
| American Electric Cooperatives | http://www.takecontrolandsave.coop/ |
| American Municipal Power | http://ampppartners.org/consumers/conservation-sustainability/efficiency-smart/ |
| Minnesota Municipal Electric Association | http://www.mmua.org/energy/index.htm |
| New York Energy Smart | http://www.getenergysmart.org/default.aspx |
| DC Sustainable Energy Utility | http://dcseu.com/programs.aspx |

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Hawaii Energy is the state energy conservation and efficiency program implemented to help reduce Hawaii's dependence on foreign oil.

MISSION

To educate, encourage and incentivize the ratepayers of Hawaii to invest in conservation behaviors and efficiency measures to reduce Hawaii's dependence on imported fuels.

BACKGROUND

Utilizing ratepayer funds, Hawaii Energy offers cash rebates and other incentives to residents and businesses to help offset the cost of installing energy efficient equipment. In addition to rebates, the program conducts education and training to residents, businesses and trade allies (contractors) to encourage the adoption of energy conservation behaviors and efficiency measures. The program plays an important role in helping the state achieve the Hawaii Clean Energy Initiative (HCEI) goal of reducing total electric energy usage by 4.3 billion kWh by 2030.

This is a daunting task that will require a greatly expanded effort on many levels and will involve the proactive support of every citizen of Hawaii. Hawaii Energy will aggressively employ new initiatives in energy conservation and efficiency and also integrate these initiatives with renewable energy efforts to help meet all HCEI goals.

EMPLOYEES

Hawaii Energy employs approximately 35 employees in full and part-time roles with the knowledge, skill and passion to help individuals and businesses save energy. The Hawaii Energy team works together to assist residents and businesses with investing in energy efficiency measures to reduce the state's dependence on imported oil.

INCENTIVES

Residential – Solar water heating, high efficiency water heaters, heat pumps, compact fluorescent lights (CFLs), central air conditioning (AC) maintenance, ENERGY STAR® appliances, bounty program, whole house and solar attic fans.

Commercial – Lighting, air conditioners, pumps, motors, window film, energy studies, custom projects, submetering and central plant optimization.

ORGANIZATION

Hawaii Energy is a ratepayer-funded conservation and efficiency program administered by SAIC under contract with the Hawaii Public Utilities Commission serving the islands of Hawaii, Lanai, Maui, Molokai, and Oahu.





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About Efficiency Maine

Efficiency Maine was initially established in 2002 by the State Legislature's "Act to Strengthen Energy Conservation," with clear goals of saving energy, reducing energy costs, helping the environment and promoting sustainable economic development in our state. At that time, Efficiency Maine was managed by the Maine Public Utilities Commission.

Efficiency Maine is funded through the system benefit charge included in electricity rates, the regional greenhouse gas initiative and federal grants. Each year, Efficiency Maine carefully evaluates the cost-effectiveness of its programs individually and as a whole. The cumulative ratio of benefits to costs from 2004 through 2009 is 3:1, that is, every dollar spent has generated nearly \$3 in lifetime economic benefits.

To date, our programs have produced the following benefits:

- Total lifetime economic benefits of approximately \$400 million
- Savings of approximately four million megawatt hours of electricity—enough to power all Maine homes for a year
- Avoided emissions of two million metric tons of carbon dioxide (CO₂).


In 2009, The Efficiency Maine Trust – a nine person board of directors – was created to administer energy efficiency and alternative energy programs in the State of Maine under the banner of Efficiency Maine. On June 12, 2009, Governor Baldacci signed into law [LD 1485 – An Act Regarding Maine's Energy Future](#). And in July of 2010, The Trust assumed responsibility for administering all non-transportation related energy efficiency programs for the State of Maine.

Today, Efficiency Maine continues to help businesses and residents all over Maine use energy resources more efficiently, reduce energy costs, and lighten the impact on Maine's environment from the burning of fossil fuels. Efficiency Maine's energy savings programs reduce the use of natural gas, propane, oil and electricity through energy efficiency improvements and the use of renewal resources, such as wind, solar and bio fuels.


We offer a wide range of programs providing incentives, [training](#) and technical assistance to [residents](#), [businesses](#), [contractors](#), [schoolchildren](#) and others. We have special programs to help [low-income](#) Mainers and [small businesses](#) save energy and money. Some of our fastest-growing programs foster development of [renewable wind and solar power](#).

- Efficiency Maine's [Business Program](#) has trained hundreds of mechanical and electrical contracting businesses as "Efficiency Maine Qualified Partners," to provide efficient products, services, technical advice and assistance to commercial customers. Since 2003, Efficiency Maine has paid cash incentives to more than 3,130 businesses to help them purchase energy-saving equipment; saving these businesses more than 177 million kWh annually – worth more than \$234 million in avoided electricity costs.
- Our [Residential Program](#) partners with more than 300 retail stores to help promote high-efficiency CFLs and Energy Star appliances. Efficiency Maine also offers [Maine PACE Loans](#) a new financing program that allows eligible homeowners in participating municipalities attractive financing of up to \$15,000, at a fixed rate of 4.99% for 15 years, for energy efficiency upgrades that make your home more comfortable and help cut your energy bills month after month. Partners such as the Maine State Housing Authority and local Community Action Programs help serve low-income Mainers.

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Energy Trust of Oregon is an independent nonprofit organization dedicated to helping utility customers benefit from saving energy and generating renewable energy. Our services, cash incentives and solutions have helped participating customers of Portland General Electric, Pacific Power, NW Natural and Cascade Natural Gas save nearly \$800 million on their energy bills. Our work helps keep energy costs as low as possible and builds a sustainable energy future.

As a public purpose organization, we're committed to working for the greater good of all Oregonians. Learn more about us and what we do:

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Efficiency Vermont helps all Vermonters to reduce energy costs, strengthen the local economy, and protect the environment by making homes and businesses energy efficient.

Efficiency Vermont provides technical assistance, rebates, and other financial incentives to help Vermont households and businesses reduce their energy costs with energy-efficient equipment, lighting, and approaches to construction and major renovation. Additionally, we partner extensively with contractors, suppliers, and retailers of efficient products and services throughout the state.

We are operated by a private nonprofit organization, the [Vermont Energy Investment Corporation](#), under an appointment issued by the [Vermont Public Service Board](#). [Learn more.](#)

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Organizational Structure

Focus on Energy works with eligible Wisconsin residents and businesses to install cost effective energy efficiency and renewable energy projects. Focus information, resources and financial incentives help to implement projects that otherwise would not be completed, or to complete projects sooner than scheduled. Its efforts help Wisconsin residents and businesses manage rising energy costs, promote in-state economic development, protect our environment and control the state's growing demand for electricity and natural gas.

The [primary organizations](#) that make up the Focus on Energy program include:

- [Public Service Commission of Wisconsin](#): Independent state agency that regulates Wisconsin's public utilities and oversees Focus on Energy.
- [Statewide Energy Efficiency and Renewable Administration \(SEERA\)](#): Formed by the energy utilities to fulfill their obligations under Act 141, this organization creates, funds and contracts for the administration of statewide energy efficiency and renewable energy programs.
- [Shaw Environmental & Infrastructure, Inc.](#): Administrator of the program's residential, business and renewable energy services.
- [Energy Center of Wisconsin](#): Promotes economic and environmental sustainability through environmental research, education and training programs.
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Saving energy can be easy!

Have you ever looked at your energy bill and wondered, "Why is my bill so high?" You then think of all the appliances and gadgets you use every day to provide the modern-day conveniences you enjoy, the comfort of a warm home and a hot shower; and realize they all increase your energy costs. But just as every little thing adds up to increase your energy use, every small energy-saving measure you take can add up to big savings. Use the tips on these pages to learn how you can **Take Control & Save** today!

Why should I use energy wisely?

Using energy wisely helps you lower your energy costs, and helps your cooperative provide stable rates and reliable energy now and into the future. By using energy wisely we can optimize our generating capacity in order to postpone building costly new power plants. So everything you do to reduce your energy use not only helps us manage growth, it also helps you manage your energy budget.

Success Stories


Residential

The Johnston family got an energy efficiency makeover and are now saving more than \$430 a year!

[Find out how...](#)



American Municipal Power


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Efficiency Smart®

In June 2010, AMP signed a contract with the Vermont Energy Investment Corporation (VEIC) to provide a wide range of energy-efficiency and implementation services for subscribing AMP members under the Efficiency Smart moniker. Founded in 1986, VEIC is a non-profit agency that operates Efficiency Vermont – the nation's first statewide energy efficiency utility.



[Efficiency Smart Website](#)
[List of Participating Communities](#)
[Map of Participating Communities](#)
[Efficiency Smart Brochure](#)

Efficiency Smart is a comprehensive energy efficiency program administered for American Municipal Power, Inc. (AMP) by the Vermont Energy Investment Corporation (VEIC). Efficiency Smart provides a wide range of energy efficiency and implementation services for subscribing AMP member utilities (see link to participating communities). Launched in January 2011, the new venture is to encourage residential, business and industrial customers to adopt cost-effective energy efficiency services and systems that provide reliable and verifiable energy savings. In addition to lowering customers' energy bills through efficiency, the Efficiency Smart program will provide technical resources to participating utilities, stimulate local economies, and establish a platform for sustainable growth.

Efficiency Smart services include rebates for energy-efficient appliances and lighting, financial rebates and free removal of old, inefficient refrigerators and freezers from homes, and rebates for over 70 energy efficient products and services for businesses. Efficiency Smart also offers account management services and customized incentives for large commercial and industrial customers.


The 3-year performance-based contract between VEIC and AMP, valued at approximately \$21 million, has the potential to cumulatively save participating member utilities 70,000 MWh of energy. All savings will be independently verified and guaranteed – if the goals are not met, municipalities will be refunded for the savings not delivered.

For more information, and to find out how AMP members can enroll in Efficiency Smart, contact Randy Corbin, assistant vice president for energy policy and sustainability 614-540-0844, rcorbin@amppartners.org.

Learn More About ENERGY STAR®

ENERGY STAR®: A government-backed program helping businesses and individuals protect the environment through superior energy efficiency.

| ABOUT AMP | MEMBERS | SERVICES | GENERATION ASSETS | FOR CONSUMERS | AFFILIATES & SUBSIDIARIES | NEWS & PUBLICATIONS | INVESTOR RELATIONS |
|-----------------------------|------------------------------------|--|-------------------|-------------------------------------|---------------------------|---------------------|--------------------|
| Overview / History / Vision | Member Benefits List of Members | Power Supply / AMP Energy Control Center | Hydro | Benefits of Public Power | OMEA | Newsroom | Annual Reports |
| Executive Leadership | Member Spotlight | Aggregation | Wind | Conservation and Sustainability | AMPO, Inc. | Publications | Financial Reports |
| Board of Trustees | Interactive Membership Map | Clean Energy & Conservation | Fossil Fuels | Efficiency Smart® | | Annual Reports | |
| Municipal Electric Partners | Annual Conference | Safety Programs | Landfill Gas | EcoSmart Choice® | | | |
| Economic Development | Member Extranet | Technical Services | Joint Ventures | Reforestation/Carbon Offset Program | | | |
| | | Legislative, Regulatory & Legal | | What Is Public Power | | | |
| | | Financial | | Scholarship Programs | | | |
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| | | Community Outreach | | | | | |
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Minnesota Municipal Electric Association



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Now online:

[September Resource
newsletter](#)
(4.2 MB)

MMUA Online Survey:
See Members Only section

Welcome to MMUA



The **Minnesota Municipal Utilities Association (MMUA)** represents the interests of Minnesota's municipal electric, gas, and water utilities. There are 125 municipal electric and 31 municipal gas utilities in Minnesota. MMUA was formed in 1931. MMUA's mission is to unify and serve as a common voice for municipal utilities, and to provide them with the support they need to be able to improve service to their customers and community.



Members of the MMUA
OQ Program, [click here](#) to
visit the EnergyU website.

[Get Adobe Acrobat Reader](#)

Many files on our website
are in pdf format. Click the
above link to get the free
download of Adobe Acrobat
Reader.

Online Training!

Access the [MMUA Online
Training Portal](#). This
MMUA pilot project is
open only to select
members at this time.

Minnesota Municipal Utilities Association
3025 Harbor Lane North, Suite 400 - Plymouth, MN 55447-5142
Tel: 763-551-1230 - Fax: 763-551-0459

New York Energy \$mart

New York State

State Agencies

Search all of NY.gov

Andrew M. Cuomo, Governor

- Single Family Homes (1-4 Units)
- Multifamily (5+ Units)
- Energy Efficient Products
- Advanced Technologies
- Energy Education
- Community Outreach
- Low Income
- Clean Energy Training
- Green Building Stakeholders
- Resources
 - Energy Saving Tips
 - Events
 - Find a Partner
 - CFL Recycling Centers
 - ENERGY STAR® Builders
 - ENERGY STAR® Retailers
 - Home Energy Raters
 - Home Performance Contractors
 - Multifamily Existing Buildings Program
 - Multifamily New Construction Program
 - Local Program Representative
 - PV Installers
 - Solar Thermal Installers
 - Green Residential Buildings Technicians
 - HVAC Business Partners
 - Press Releases
 - Training
 - TV and Radio

Residential Programs

NYSApplianceRebates.com

NYSERDA's residential programs are programs that work - programs that help homeowners and renters reduce their energy costs; programs that help multifamily building owners provide energy-efficient apartments for their tenants; programs that reduce the impact homes have on the environment; and programs that provide training to contractors on how to provide quality energy efficiency services to their neighbors.

Working with a select group of contractors, builders, multifamily partners, retailers, and manufacturers, we have created a statewide network of partners who offer energy efficiency solutions that can help reduce your energy usage and costs.

Programs

Find the program that can help you become more energy efficient:

- Owners of Existing Homes
- Buyers of New Homes
- Low and Moderate Income Homeowners and Renters
- Builders
- Owners and Managers of Existing Multifamily Buildings
- Developers and Owners of Multifamily Buildings
- Teachers & Students
- Shoppers Interested in Energy Efficient Products

More savings. More comfort. Learn more here.

SEARCH

Search

EVENTS

[FREE Workshop Sessions on Residential Energy Reduction & Savings](#)

[Madison County Planning and Zoning Training Workshop](#)

[Free Energy Workshop - Sanborn](#)

SWITCH AND SAVE

Make the **Switch & Save.**

Switch from incandescent to CFL

Still have to make the switch?

nyserda

ENERGY SAVING TIPS

Save on your bills with these energy saving tips!

TAKE THE PLEDGE

ENERGY STAR

CHANGE THE WORLD, START WITH ENERGY STAR

Take the ENERGY STAR Pledge **68%**

HEALTH AND SAFETY INFORMATION

[Learn More About the Dangers of Carbon Monoxide](#)

TAX CREDITS

[Click here for information on the 2010 Federal Tax Credits](#)

LOS PROGRAMAS DE NYSEERDA

Para más información en los programas de NYSEERDA comuníquese con nosotros al número 1-877-697-6276.

BUSINESS/PROGRAM PARTNER LOGIN

User Name:

Password:

☐ Remember me on this computer.

NYSEERDA

To learn more about NYSEERDA's commercial/industrial, renewable, research and development, and Saratoga Technology + Energy Park (STEP) programs visit www.nyserda.org

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Programs

Introducing the first of several energy efficiency programs offered by the DC SEU:

- **Low-Income Multifamily Program**
Designed specifically for low-income residents, this direct-installation program provides low-cost energy retrofits in income-qualified multifamily rental properties throughout the District.
- **Single-Family Home Retrofit Program**
Designed specifically for single-family homeowners in selected neighborhoods throughout the District, this limited-time program provides significant opportunities for motivated homeowners to begin making their homes more energy efficient and achieve immediate energy savings.
- **Small Business Direct Installation Program**
Available for a limited-time, this program provides energy assessments and energy efficiency retrofits to small businesses in selected neighborhoods throughout the District.
- **Solar PV and Hot Water Programs**
Pilot programs designed to support the District's growing market for distributed renewable energy systems and collect market intelligence and hands-on project experience needed to deliver valuable programs to customers in the future.

DC Sustainable Energy Utility
80 M Street SE, Suite 310
Washington, DC 20003
Phone: 202-479-2222
Toll-Free: 855-MY-DCSEU (855-693-2738)
Fax: 202-683-6748
info@dcseu.com



The Regulatory Assistance Project (RAP) is a global, non-profit team of experts focused on the long-term economic and environmental sustainability of the power and natural gas sectors. We provide technical and policy assistance on regulatory and market policies that promote economic efficiency, environmental protection, system reliability and the fair allocation of system benefits among consumers. We have worked extensively in the US since 1992 and in China since 1999. We added programs and offices in the European Union in 2009 and plan to offer similar services in India in the near future. Visit our website at www.raponline.org to learn more about our work.



HOME OFFICE

50 State Street, Suite 3
Montpelier, Vermont 05602
802-223-8199

www.raponline.org

Exhibit DES-1

| | | | | | | | |
|----|--|---------------------------|---|------------------------|---|---|--|
| 1 | A | B | C | D | E | | |
| 2 | | | | B/D | | | |
| 3 | | | Cumulative Incremental Annual EE Projected | | Cumulative incremental annual target | | |
| | Utility | Net benefits (TRC) | (GWhs) | Net benefit/GWh | (GWh) | notes | source |
| 4 | AEP | \$258,410,447 | 1591.1 | 162409.9346 | 1270 | Excludes Self-direct, demand response | B4: AEP 2012-2014 EE/PDR Action Plan, Case No. 11-5568-EL-POR, Page 15, Table 12 |
| 5 | FE | \$139,945,717 | 1097.4 | 127524.8018 | 1592.8 | Excludes mercantile program, direct load control program, T&D program | C4: AEP 2012-2014 EE/PDR Action Plan, Case No. 11-5568-EL-POR, Page 7, Table 4 |
| 6 | | | | | | | B5: Application Attachments A, B, and C, Case No. 12-2190-EL-POR, Tables 7 |
| 7 | | | | | | | C5: Id. |
| 8 | | | | | | | E4: Ibid B4 at Page 2, Table 1 |
| 9 | If FirstEnergy got the same proportion of its benchmarks from non-mercantile, non-T&D savings, it would save E9 GWh: | | | | 1995.515024 | | E5: Exhibit BDE-1 |
| 10 | producing net benefits of: | | | | \$324,091,465 | | |
| 11 | an extra: | | | | \$184,145,747 | | |

NRDC Set 2
Witness: Edward Miller

Case No. 12-2190-EL-POR

In the Matter of the Application of Ohio Edison Company, The Cleveland Electric
Illuminating Company, and The Toledo Edison Company For Approval of Their
Energy Efficiency and Peak Demand
Reduction Program Portfolio Plans for 2013 through 2015.

RESPONSES TO REQUEST

NRDC Set 2–
INT-21

Is any portion of, and in what way is, FirstEnergy Account Representative compensation tied to customer participation in energy efficiency programs?

Response: FirstEnergy Account Representative compensation is not tied to customer participation in energy efficiency programs.

This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

10/5/2012 12:00:54 AM

in

Case No(s). 12-2191-EL-POR, 12-2190-EL-POR, 12-2192-EL-POR

Summary: Testimony of Dylan Sullivan electronically filed by Mr. Christopher J Allwein on behalf of Natural Resources Defense Council