

## Background

VT PSD engaged Navigant Consulting, Inc. (Navigant) to assess administrative efficiency and business process metrics for the two Vermont energy efficiency utilities (EEUs), Efficiency Vermont (EVT) and Burlington Electric Department (BED) in 2012. Phase I focused on evaluating two business processes identified to improve administrative efficiency by each of the two EEUs. Phase II of this project commenced in February, 2014, and included:

- Assessing three additional key business process improvements for both EVT and BED as part of the Phase II Administrative Efficiency Evaluation. Navigant’s assessment of the two EEU’s process improvements efforts are described in two separate memos: “Phase II assessment of EVT’s key business process improvements” and “Phase II assessment of BED’s key business process improvements”. Both memos describe the approach followed to assess the processes, identified improvement opportunities, and concluded that both EVT and BED had met the VT PSB order requirements.
- Benchmarking research and management interviews of peer organizations for both Vermont energy efficiency utilities, and providing recommendations for the Administrative Efficiency QPIs for the 2015-2017 performance period.

This memo describes the outcome of this benchmarking effort, and offers conclusions and recommendations based on both findings of this research, as well as Navigant’s industry and process improvement knowledge. An appendix to this memo lists the peer companies interviewed and their respective questions and answers.

VT PSD and Navigant identified a list of peer companies to be interviewed and benchmarked based on the following criteria:

- Serving comparable number of customers; and
- Focused on the design and delivery of energy efficiency programs.

Seven peer organization interviews were completed and summaries are included in an attached appendix, four of which are EVT peer organizations and three are BED peers:

**Efficiency Vermont Peers**  
 Energy Trust of Oregon  
 Efficiency Nova Scotia  
 Efficiency Maine  
 Hawaii Energy

**Burlington Electric Department Peers**  
 City of Palo Alto Utilities  
 Modesto Irrigation District  
 Rochester (MN) Public Utility

## Benchmarking Interviews – Key Findings

Key findings related to quantifiable performance metrics (QPI) and specifically to whether and how peer companies benchmarked (as part of this effort) measure administrative efficiency are (see Table 1):

1. **Span of Control is not tracked by six of the utilities** benchmarked; only Energy Trust of Oregon is tracking it as a process indicator and is currently considering dropping it.
2. **Key performance indicators** for 6 out of the 7 companies **include benefit to cost ratios or derivatives** such as societal cost test, total resource cost, “levelized” cost per kWh, etc.
3. **Six out of the seven utilities benchmarked do track administrative costs** and have budgetary targets; however, not necessarily as a key performance metric but either as part of their scorecards or internal metrics to ensure cost effectiveness. Examples of the most frequent indicators tracked are “Administrative costs as a percent of program costs”, and “targets or budgets for administrative costs”.
4. **Administrative costs are defined differently** for those that do track administrative costs based on their processes and implementation models (e.g. trade allies implementing programs vs. in-house staffing).
5. **Portfolio programs and overall objectives for these companies differ** (based on the maturity of their programs and PUC mandates).

**Table 1. Summary of Key Findings**

Administrative Costs	EVT Peers				BED Peers		
	Energy Trust of Oregon	Efficiency Nova Scotia	Efficiency Maine	Hawaii Energy	City of Palo Alto	Modesto Irrigation District	Rochester Public Utility
<b>Definition</b>	Non-program driven related expenses such as building expenses, costs for reporting requirements, executive management.	Expenses not associated with programs such as overhead or staff positions such as HR or procurement.	Non-program driven related expenses. Costs associated with programs are considered technical support or included in vendor's fees (tracked as delivery charges).	Tracks "delivery costs" which includes everything but direct incentives to the customer. Delivery costs include administrative costs, IT, and sub-contractors and are about 28%.	Not tracked or available. City uses implementation contractors. Administrative fees are hidden in contract fees.	Includes costs due to inspections, quality control, and administering the program. (Because they inspect most projects and installations, there is a high cost associated with administrative expenses.)	"Utility admin." includes labor costs and "minor costs related to administering the programs"- e.g. producing and processing rebate forms.
<b>% of Total Costs</b>	Approx. 4 %	Around 7 %	6.70%	4.5%	N/A	Close to 50%	Around 5%
<b>Key Performance Indicators</b>	<ul style="list-style-type: none"> <li>•Benefit/ Cost Ratio</li> <li>•Track expenses by 1. Incentives, 2. Program management, and 3. Administrative costs; "levelized costs" per kWh.</li> </ul>	<ul style="list-style-type: none"> <li>•Cost per kWh</li> <li>•Track admin. Costs compared to budget</li> </ul>	<ul style="list-style-type: none"> <li>•Benefits /cost ratio</li> <li>•Track actual cost (not to exceed budget) and energy savings achieved (to meet or exceed target).</li> </ul>	<ul style="list-style-type: none"> <li>•kWh goal</li> <li>•TRB</li> <li>•Demand goal</li> <li>•Island Equity</li> <li>•Track spending, % of budget on low income programs and renters.</li> </ul>	<ul style="list-style-type: none"> <li>•Levelized cost of EE</li> <li>•Goals for energy and resource savings, expressed as a percentage of overall usage</li> </ul>	<ul style="list-style-type: none"> <li>•TRC</li> <li>•Benefits/Cost</li> <li>•Track expenses compared to budgets</li> </ul>	<ul style="list-style-type: none"> <li>•EE savings goal</li> <li>•Costs tracked by Program Delivery, Utility Admin., Advertising, Eval., Rebates/Incentives, Training/ Education, and Research.</li> </ul>
<b>Comments</b>	Extensive reporting requirements for stakeholders. For budgeting purposes administrative costs, program management, and incentives are tracked. Planning and program management are part of the program support costs.	New organization, still building and developing. Internally, they have focused on administrative costs, but not a reported indicator. Focus is to meet or exceed energy savings target while meeting budget. Key metric has been levelized unit cost per achieved energy savings.	Relatively new centralized organization with main focus to offer programs that achieve energy savings and maximize cost effectiveness. Current focus is to lower technical support cost, delivery charges (vendors' fees), processing and some marketing costs.	Reportedly modeled after the Vermont bill that created Efficiency Vermont. Residential portfolio is mostly managed by vendor. Hotels and the military are treated as custom, staffed by mostly in-house engineers. Delivery/administrative costs are not to exceed 30% per contract, the rest goes to direct incentive payments.	Administrative costs are not tracked separately from incentives, or implementation costs. Especially for programs that use outside implementers which is most if not all of them. They stated administrative costs are hard to define.	Administrative costs are all inclusive and fully loaded. Generally run their programs with in-house staff, except Appliance Recycling and Small Business Direct Install. They have a large in-house staff compared to their peers, meaning higher cost, and less versatility as far as payroll is concerned. Customers like the personal touch.	Delivery costs (5%) include labor and transportation to meetings, outreach /recruitment of customers, etc. In-house staff offers rebates and tech. assistance; RPU shares program admin., promotion costs and staff with two other nearby municipal utilities, reducing admin. costs.

## Conclusions

Navigant reviewed the findings from the benchmarking efforts and found the findings to be representative of how other companies (not part of this benchmarking initiative) in the industry operate and measure administrative efficiencies. Based on the prior key findings listed, Navigant's conclusions are (following the same numerical denotation as in the findings):

1. **Measuring Span of Control is useful as an initial** performance improvement metric and an effective process indicator to drive operational efficiency, but does not capture impact to results.
2. **Including key performance indicators that drive cost effectiveness** in achieving benefits is a good practice and used by most utilities.
3. **Tracking administrative costs is a good practice** followed by most program administrators to ensure cost effectiveness as it could contribute significantly to overall cost.
4. **Defining administrative costs is a key requirement to** accurately benchmark and compare different companies to understand administrative cost effectiveness.
5. **Understanding the portfolio of programs and overall objectives** is also important to accurately compare administrative performance as differences could drive different levels of administrative costs (for example some include renewable energy, others are focused on just meeting the energy savings given the established budget).

## Recommendations

For the 2012-2014 performance periods, two QPI's related to Administrative Efficiency were in place:

- Management Span of Control (EVT only)
  - Maintaining a supervisor-to-staff FTE ratio of 8.5-to-1 or greater
  - Maintaining an appropriate supervisor-to-staff ratio allows EEU management to efficiently assess and evaluate departmental and individual performance.
- Key Process Improvements (both EVT and BED)
  - Meet all pre-determined milestones on schedule
  - To clearly identify, document, and measure key business processes associated with Efficiency Vermont's delivery of services under the Order of Appointment

Navigant's recommendations going forward into the 2015-2017 performance period are informed by the key findings and conclusions from the benchmarking effort and are also based on the following two process improvement guiding principles:

- A. Tracking a results-oriented metric that is aligned with the overall goal will
  - a. Deliver information and insights to better understand the impact of initiatives deployed,
  - b. Provide the opportunity to correct negative impacts,
  - c. Therefore, assist in measuring progress and achieve the desired outcome.
- B. Tracking and understanding the costs associated with each significant cost driver (e.g. administrative costs, incentive costs, program delivery costs, etc.) will facilitate
  - a. Future benchmarking analysis,
  - b. Identifying performance improvements or trends, and

- c. Understanding of how each of the cost drivers is impacted when new initiatives are undertaken.

Navigant's recommendations for the 2015-2017 performance periods are:

1. **Discontinue the "Management Span of Control" QPI** for EVT. This metric was useful in the initial performance period, but now that process improvement activities have been initiated for EVT, adopt a more results-oriented metric that is aligned with the Department's overall goal as a more effective means of achieving the desired outcome.
2. **Include as a performance indicator a cost per kWh saved, or some variation** of a benefit to cost metric to better understand and track the overall results.
3. **Adopt an overall, results-oriented metric to measure administrative efficiency** that is aligned with the Department's goal of achieving energy efficiency savings at minimal administrative costs. This metric could be defined as: Total Administrative Costs (\$) / Energy Savings (kWh), within each program year. Alternatively, measure the adherence of administrative costs throughout the year to the approved budget for administrative costs set at the beginning of the year.
4. **Define administrative costs** to clearly differentiate them from incentive costs, program delivery costs, and evaluation/measurement/verification (EM&V) costs in a manner that is aligned to EVT and BED processes and delivery models. Additional definition will be required to differentiate administrative costs from incentive costs, program delivery costs, and evaluation/measurement/verification (EM&V) costs. Once measured for a baseline period, a performance target can be set on this metric based on improvement from the baseline level.
5. **Continue** the requirement for EVT and BED **to perform ongoing process improvement** related to key business processes associated with their energy efficiency programs based on the Department's overall objectives and the portfolio of programs. This could involve initiation of additional process mapping activities for key business processes not yet mapped, continuing process improvement initiatives that have been identified from the process mapping conducted in the 2012-2014 performance period, and/or (in the case of improvement targets not being met) re-initiating process mapping for key business processes that were previously mapped after initial improvement activities have been completed.

**Appendix – Benchmarking Interview Summaries**

## Energy Trust of Oregon

Energy Trust of Oregon (ETO) is an independent nonprofit organization dedicated to helping utility customers invest and benefit from energy efficiency and generating clean renewable energy. ETO focuses on keeping energy costs as low as possible, and building a sustainable energy future. Created in 2002 in response to Oregon legislation, and overseen by Oregon Public Utility Commission, Energy Trust chief funding mechanism (a public purpose charge paid by utility customers) has been approved until 2026.

Participating customers of Oregon utilities have saved over \$1.3 billion on energy bills since ETOs inception; and include the following Oregon utilities and a small portion of Washington:

- Portland General Electric
- Pacific Power
- NW Natural (Washington)
- Cascade Natural Gas

### Qualitative Questions:

1. *What are your Energy Efficiency (EE) programs? And, objectives?*

Energy Trust offers Energy Efficiency and Renewable Energy programs. Energy Efficiency programs include Existing Homes (residential customers), New Homes and Products (energy-efficient new homes and new lighting products), Existing Building Programs (commercial sector), New Buildings (commercial sector -including data center construction), existing multi-family buildings (commercial sector), and Strategic Energy Management (industry and agriculture sector). The renewable energy programs are Solar Energy, Biopower, and Other Renewables. Energy Trust main objectives are to acquire cost effective savings. (Residential Sector measures include: Air Sealing, Duct Sealing and Insulation, Space Heating, Water Heating, Windows. Commercial sector measures include: Foodservice Equipment, Shell Insulation, Water Heating, Space Heating, Rooftop HVAC tune-up, and Custom.

2. *For how long have you been offering EE programs?*

Energy Trust of Oregon was created in 2002 and has approved funding until 2026 from public purpose charges paid by utility ratepayers.

3. *What parts of your programs are considered "best practices"?*

Energy Trust best practices are direct consumer contact; upstream with distributors and allies; identify/develop markets for future savings (focusing on regional work); strong evaluation and tracking of energy savings; transparency and accountability; collaboration with customers, utilities and governing bodies (this is a key strength – their approach is very integrative on how programs are adjusted to improve effectiveness and efficiency)' program cost efficiency; ability to start or stop or change direction with programs (since work is outsourced to contractors); and ability to continue to innovate standardized work with management systems, approaches and automation (examples are: forms on website, process to work with inter-department initiatives, programs for piloting new programs); and lastly, their culture and management problem solving approach.

4. *What are the challenges or opportunities for improvement?*

The high level of collaboration that exists with different stakeholders works against cost efficiency of programs. Also, achieving cost effectiveness of programs in areas with mild climate is a struggle for Energy Trust. Another challenge is collaborating with all four utilities - which often have diverse goals or are often competing with each other. And, lastly, a challenge is based on their mid-management position working with all the key stakeholders--the four utilities, the Public Utility Commission, consumer legislation, interest groups, and the press. Opportunities for improvement are identifying how to be more efficient in reporting to all the stakeholders (a significant task for them that requires high levels of time and resources to scrub data, validate, etc.); learning to work better in parts of the state further to their headquarters (through-put is highest in areas closer to Portland due to increased focus in these areas); figuring out if utilities should be doing more work related to their own consumer reporting and differentiating between "nice-to-have" from critical from the stakeholders' perspective; learning to say no to avoid being spread too thinly; balancing strategic goals to include more products to market and innovation with delivery and execution of existing programs (finding skilled contractors that can do both, usually they are stronger on one skill- innovation vs. execution); prioritizing tasks for programs that involve multi-functions, such as IT, finance, communications, program management, etc.

5. *Have there been any "lessons learned"?*

A lesson learned is to assign a lead/manager to the programs that involve multi-functions to facilitate prioritization and coordination. Another lesson learned for Energy Trust was that one year ETO under-budgeted, and it took six years before the trade allies knew there was money again to pay incentives (programs and savings are very driven by trade allies, flow is very important).

Quantitative Questions:

6. *What are your key performance indicators (KPIs) to track success?*

Cost / benefit ratio is the key indicator to track performance and to ensure ETO is delivering value.

7. *Are there processes or leading indicators to assess in-cycle performance?*

Quarterly dashboards track progress towards annual goals of energy savings, actual and forecasts. Energy savings forecast are calculated by taking the leads and commitments, and subtracting attrition. Since more than half the energy savings are achieved during the last quarter of the program year, tracking commitments and forecasted savings is a key initiative. Program costs and actual expenditures are also tracked--administrative costs, program management, and incentives are tracked (burn rate and progress towards forecast. ETO has overachieved in the cost indicators; the budgets were high and have underspent historically. However, the budget is tighter now.

8. *Is "Span of Control" tracked (or has it been tracked in the past) as a KPI?*

Energy Trust tracks the "Span of Control" metric not as a performance indicator but as a process metric; however, it is currently being reviewed -- ETO is debating what to track or manage. Historically, the ratio has been low, but the employees manage contractors also, and the projects are very cross-functional increasing the time requirement to coordinate and oversee progress.

Program managers also perform technical work and interface with all stakeholders (relation management).

9. *What is your “administrative cost” as a percent of your overall program costs?*

ETO “administrative cost” is comprised of building expenses, costs for reporting requirements, and executive management – costs that are not program driven; program management and planning are included in the program budget. The target for administrative costs is 9% (established by PUC and 7% target driven by the board) of budget for 2013; actual administrative cost and program support for 2013 was 4% of annual revenues (or budgeted expenditures). In 2012, the actual was 5.3%. ETO tends to overachieve in this area.

10. *How do you measure program efficiency?*

The key factor in measuring program efficiency is that it must pass the “benefit / cost > 1” ratio. Since most of the benefits are not achieved until the end of the program year, this metric is not tracked until the end of the program. Then, the “levelized” cost is also tracked (2.7 cents per Mw – 8716 Mwh/year = Mw). Cost / benefit ratio is the key indicator to track performance and to ensure ETO is delivering value.

## Efficiency Nova Scotia

Efficiency Nova Scotia Corporation (ENSC) will cease to exist as the provider of DSM as of January 1, 2015. In its place, an Efficiency Nova Scotia (ENS) franchise will be created by Government and awarded by the Minister of Energy. The franchise, which “gives the franchise holder the exclusive right to supply Nova Scotia Power Incorporated with reasonably available, cost-effective electricity efficiency and conservation activities” will be awarded for a 9-year term from January 1, 2016 to December 31, 2024, with an initial one-year transition added to the term for 2015. This is the result of the Electricity Efficiency and Conservation Restructuring 12 (2014) Act, proclaimed on May 1, 2014. Efficiency Nova Scotia Corporation was created in October, 2010 when the responsibility and accountability of energy efficiency programs (and demand side management - DMS) was transferred from Nova Scotia Power Inc. Its first plan was submitted in 2011. ENSC is led by an independent Board of Directors and regulated by the Nova Scotia Utility and Review Board.

### Qualitative Questions:

1. *What are your Energy Efficiency (EE) programs? And, objectives?*

The energy efficiency programs include Existing Residential Program, Direct Install (low cost measures including lighting and shower heads), Home Audit Program (heating and solar systems), New Residential (new construction), Business Programs such as Custom Incentives and Efficient Product Rebates, and Enabling Strategies (education and outreach, development and research).

2. *For how long have you been offering EE programs?*

Efficiency Nova Scotia has been offering EE programs since 2011 (with legacy programs offered by utilities since mid-2008). Energy Nova Scotia was formed with the intent to be an

independent organization. Utilities were near capacity on grid, so there was a big push to create energy efficiency programs managed by an independent organization.

3. *What parts of your programs are considered "best practices"?*

Best practices include research and jurisdiction of other programs; also, how ENSC measures and evaluate energy savings (with emphasis on accuracy); free ridership is actually measured (not a proxy or estimates), and how ENSC has employed low cost measures to achieve energy savings.

4. *What are the challenges or opportunities for improvement?*

ENSC is a new organization, still building and developing.

5. *Have there been any "lessons learned"?*

Guaranteeing work for two years lowered contractors' costs.

Quantitative Questions:

6. *What are your key performance indicators (KPIs) to track success?*

Internally, ENSC has focused on administrative costs, but not as an external indicator (shared with others). ENSC key metric has been cost per kWh (levelized unit cost per achieved energy savings). Energy Nova Scotia tracks costs in three categories: direct program expenditures (rebates, delivery vendor costs), administrative costs (overhead, staff positions such as Human Resources, IT, finance or building expenses), and program support costs (such as marketing, regulatory costs from advisory groups- required tasks but not directly related to energy savings).

7. *Are there processes or leading indicators to assess in-cycle performance?*

ENSC tracks administrative costs, and budget vs. actual costs. A balanced scorecard is produced quarterly showing actual costs and achieved savings compared to budgets and targets.

8. *Is "Span of Control" tracked (or has it been tracked in the past) as a KPI?*

Span of Control is not tracked. ENSC has been cost effective coming in on budget and better than what the Integrated Resource plan has allowed.

9. *What is your "administrative cost" as a percent of your overall program costs?*

The administrative cost has been around 7% (below target of 10%). Administrative costs include overhead or staff positions such as HR or procurement (not associated with programs)

10. *How do you measure program efficiency?*

The focus has been on meeting or exceeding energy savings targets while meeting budget. Since ENSC is a new (and changing) organization, its primary goals have been to meet their goals. However, Energy Nova Scotia stated that part of the culture is to make sure the programs are run efficiently. This is part of the program manager's day-to-day responsibilities.

## Efficiency Maine

Efficiency Maine Trust (EMaine) is an independent instrumentality of the state of Maine to lower cost and environmental impact by promoting energy efficiency and alternative energy systems. It was created by state statute in 2009, and it is funded mainly by Maine's electricity customers through the System Benefit Charge (SBC) and the Regional Greenhouse Gas Initiative (RGGI). In 2013, another source of funding came from federal grants, including the American Recovery and Reinvestment Act (ARRA). Efficiency Maine expects that the 2013 programs will help customers avoid over 1.4 billion kWh of electricity consumption over the programs' lifetime and lower present and future costs in Maine by more than \$142 million.

### Qualitative Questions:

1. *What are your Energy Efficiency (EE) programs? And, objectives?*

Efficiency Maine electric programs are: Business Incentive Program, Large Customer Program, High Performance Schools (no longer active, but completing pre-existing agreements), Small Business Direct Install, Residential Lighting, Residential Appliances, Refrigerator Recycling, Low Income Multifamily Electric, Commercial New Construction and Cross-Cutting Strategies (mostly focusing on education and training, public information and outreach efforts, innovation and research and evaluation). Efficiency Maine Trust is still relatively new centralized organization and their main focus has been in offering programs that achieve energy savings and maximize cost effectiveness. Energy efficiency measures include lighting, lighting controls, refrigeration, HVAC units, and custom miscellaneous. Efficiency Maine also provides Alternative Energy Programs incentivizing Solar/Wind energy sources.

2. *For how long have you been offering EE programs?*

Efficiency Maine was created in 2009 to consolidating all energy efficiency funds for all fuel types (electric, natural gas, heating oil and wood), and centralizing the energy market for efficient one-stop shopping experience for customers. The organization and programs are relatively new and focusing on providing cost effective energy savings.

3. *What parts of your programs are considered "best practices"?*

A best practice is achieving big energy savings from very low cost. Focusing on achieving energy savings at a low cost, Efficiency Maine reduced its marketing budget for Lighting (their biggest program) and instead used the funds to increase its incentives (paying almost 100% of the difference between LED and CFLs and incandescent). As a result, the retailers positioned the products aggressively (dropping a pallet in the middle of the runway and decreasing manufacturing costs for better shelf space) and sales exceeded expectations. Another best practice is the new tracking database (called effRT) which enables contractors to expedite the processing of incentives, eliminating significant paperwork; basing most of the transactions on the on-line system vs. paper applications, thus reducing costs for the delivery contractors.

4. *What are the challenges or opportunities for improvement?*

EMaine's current focus is to lower the technical support cost, delivery charges (vendors' fees), processing and some marketing costs. Efficiency Maine is currently undergoing an effort to establish the next three years' budget and efficiency targets. Challenges are: each project must stand on its own (benefitcost ratio); vendor relationships; production concerns (can handle only so many projects at once); and capital and vendor constraints to address customer needs.

5. *Have there been any "lessons learned"?*

Efficiency Maine made several upgrades to its energy efficiency program tracking database to ensure consistent and accurate estimates of energy savings. It also improved program activity tracking and data integrity.

Quantitative Questions:

6. *What are your key performance indicators (KPIs) to track success?*

Benefit to cost ratio for each program and for the overall results.

7. *Are there processes or leading indicators to assess in-cycle performance?*

The programs and delivery costs, and achieved energy savings.

8. *Is "Span of Control" tracked (or has it been tracked in the past) as a KPI?*

Efficiency Maine is currently not tracking span of control. EMaine a quasi-governmental institution ran by a board of directors, funded with statutory caps, and their focus is on the program delivery cost. EMaine has 14 to 16 employees managing the delivery contracts and an executive director.

9. *What is your "administrative cost" as a percent of your overall program costs?*

For 2013, the administrative cost was 6.7% (percent of total costs). EMaine budgeted amount was 10%, and their main focus is not to exceed budget.

10. *How do you measure program efficiency?*

A key performance indicator for Efficiency Maine is benefit to cost ratio. For 2013, the asresult was 3.18 (the benefits considered are the lifetime benefit of the technology installed in 2013). It should be noted that the Residential Lighting Program yielded a benefit to cost ratio of 13.19 driving the overall ratio to 3.18. Other programs were in the range of 1.1 to 2.59 ratios with two programs resulting in ratios below 1. Other tracked performance indicators are actual cost (to not exceed budget) and energy savings achieved (to meet or exceed target).

## Hawaii Energy

Hawaii Energy is a project of the Hawaii Public Utilities Commission implemented under contract by Leidos Engineering Inc. (formerly SAIC). Until 2008 DSM programs were run by the individual electric utilities. The Hawaiian legislature decided in 2008 to have the Public Utilities Commission take over all DSM programs and pay for them using a ratepayer surcharge. The legislation was reportedly modeled

after the Vermont bill that created Efficiency Vermont. The contract to manage Hawaii Energy was awarded to Leidos Engineering and initially the utility DSM programs were continued as is to provide continuity for customers. Since then, the program offerings of Hawaii energy have been modified, standardized and expanded to include a full suite of residential and commercial programs as well as a community-based transformational program.

Qualitative Questions:

1. *For how long have you been offering EE programs?*

Hawaii Energy started in 2009. Like Vermont, HECO, MECO and the other utilities used to run their own DSM programs. In 2008 the Legislature established that programs had to be run by the Public Utilities Commission. The contract for Hawaii Energy (Hawaii PUC's brand) was put out to bid and SAIC (now Leidos Engineering) was awarded the contract in June of 2009. This is a ratepayer funded time and material contract. Initially, Hawaii Energy took over the utility DSM programs as is, and then started modifying them after about 6 months. It was mentioned that the Hawaii Energy contract was modeled after EVT.

2. *What are your Energy Efficiency (EE) programs? And, objectives?*

Residential rebates for DHW, appliances, HVAC, lighting, an Appliance Recycling program (called the "Refrigerator/Freezer Bounty Program") a VFD pool pumps program, and Solar water heating "direct install" program. Commercial programs include a Building Envelop Improvements program, Energy Star Appliances, Sub-metering, Water Cooler timers, water heating, lighting, HVAC, Custom projects, Small Business DI Lighting, and Water and Wastewater Solutions program. There is not much in the way of industry in Hawaii (the military and the hotel industry being the exceptions) so industrial projects are treated as custom, staffed by mostly in-house engineers.

3. *What are the challenges or opportunities for improvement?*

Hawaii Electric subs out a big chunk of their Residential Portfolio to Honeywell, so there's not much of a challenge there. However, Hawaii stated their solar hot water direct install program can be challenging. Installation Contractors are approved through the program, and Hawaii Energy offers a \$1,000 rebate, not full cost. People like having a direct relationship with the Contractor, but it can be a QC and management struggle. The same holds true with the Small Business Lighting DI program - challenging in terms of management and oversight, according to Hawaii Energy. It is more expensive to run, too. "Island equity" is also a big challenge. (See question #6, below.) Because this is a time and material contract, Hawaii is able to make changes on the fly.

4. *What parts of your programs are considered "best practices"?*

Hawaii Electric feels that it *should* be recognized for best practices for water/wastewater. (Hawaii is researching whether to claim kWh savings from residential water conservation.) Hawaii also claims to have a lot of engineering capability from our experience in Wisconsin. The Solar hot water DI program is innovative and popular, and Hawaii gets big savings from it too, since a lot of their residents use electric DHW. There is some natural gas DHW and LP outside of gas service area. A new on bill financing program will be launched in August for solar hot water only. Later Hawaii is planning to expand to on bill repayment for PV installations. Another

innovation is the requirement that any financing project has to include demand response. There is savings claimed from domestic water and wastewater savings.

5. *Have there been any "lessons learned"?*

Mostly the lessons learned have been regarding their DI programs, specifically the resources it takes for the management of contractors, beginning with the design of their contracts. Hawaii has also started a "transformational program," working with community groups. Marketing and outreach through community groups is key here. There is a lot of animosity between Native Hawaiians and others that has to be dealt with.

Quantitative Questions:

6. *What are your key performance indicators (KPIs) to track success?*

Hawaii Electric has a few of them, both goals and performance thresholds. There are performance goals for kWh, demand and TRB, as well as "Island equity" meaning each island should get as much in services as it contributes to the funding of Hawaii Energy. Hawaii also has spending targets, a percentage of budget on low income programs and hard to reach customers (renters). On-bill financing is targeted to that sector. Hawaii is restricted by contract to 30% delivery or administrative. The rest is direct incentives. The budget for this year for delivery costs, including admin, IT and subs, is 28%. Admin is 16% of that number, or 4.5%.

7. *Are there processes or leading indicators to assess in-cycle performance?*

All of the spending and savings metrics above are tracked through the year. Island equity requirement has always been difficult to meet but "we nailed it this year."

8. *Is "Span of Control" tracked (or has it been tracked in the past) as a KPI?*

Span of control is not a KPI. Currently the ratio is 28 staff to 6 supervisors. Most of the staff is based on Oahu.

9. *What is your "administrative cost" as a percent of your overall program costs?*

Hawaii Energy is restricted by contract to no more than 30% delivery/administrative costs. The rest goes to direct incentive payments. The plan for this coming program year (which starts July 1) is 28% delivery cost, including administration, IT and subcontractors, which is about what Hawaii did for the current program year. Administration as Hawaii defines it is about 16% of that 28% or 4.5% of the total budget.

10. *How do you measure program efficiency?*

Hawaii Electric tracks progress toward kW and kWh savings goals and cost/kWh, cost/kW for the PUC. Hawaii Energy also tracks the metrics above throughout the year. Company tracks profitability but that calculation is not complicated for a time and materials contract.

## City of Palo Alto (CA) Utilities

City of Palo Alto Utilities (CPAU) established in 1896, is a public municipal utility serving the City of Palo Alto, California with a population of around 66,000 residents. It is the only municipal utility in California that operates city-owned utility services that include electric, fiber optic, natural gas, water and wastewater services. In 1996 the City Council approved a policy to fund electric, gas and water efficiency programs at around one percent of revenues per year. In 1998, in response to California's landmark energy legislation (AB 1890), CPAU established the Electric Public Benefits (PB) Program and increased the Electric Fund PB program budget to 2.85 percent of projected annual revenue, supplemented by a one-time infusion from the Electric Supply purchasing budget during the 2001 energy crisis. The state of California has mandated that publicly owned electric utilities, in procuring energy, shall first acquire all available energy efficiency and demand reduction resources that are cost effective, reliable, and feasible. CPAU's spending on energy efficiency in FY2013 was \$3.16 million for electric programs, and \$0.63 million for natural gas programs with a savings goal of 0.7% of total electricity sales.

### Qualitative Questions:

1. *For how long have you been offering EE programs?*  
CPAU has been offering EE programs since the 1980s.
2. *What are your Energy Efficiency (EE) programs? And, objectives?*

Referred to website pages:

[Commercial Advantage program](#),  
[Rebated Equipment catalog](#),  
[Residential rebates](#)

Also listed in the CMUA annual report are the following Commercial programs:

Commercial and Industrial Energy Efficiency Program (CIEEP)  
Laboratory Energy Efficiency Program (LEEP)  
RightLights+  
Hospitality Program  
Keep Your Cool  
Energy & Resource Solutions (ERS)  
Demand Response Program (voluntary)

And the following Residential programs:

Smart Energy Program  
Residential Low-Income Assistance Program (REAP):  
Home Energy Report:  
New Residential Construction program

As well as the following two "Community Programs":

Online Audits and Education  
Public School Program

3. *What are the challenges or opportunities for improvement?*

CA has mandatory building and appliance standards, adopted by CEC. This raises the baseline, making their energy efficiency programs less cost-effective, and an ongoing problem. Cost-effectiveness has been going down over time. Technology has changed the way CPAU designs and runs programs, e.g. trickle / vampire loads. Future focus will need to be with behavior-based programs. CPAU is currently piloting a smart meters feedback program.

4. *What parts of your programs are considered "best practices"?*

CPAU measures cost-effectiveness across water, gas and electric savings since it provides all three. Another innovation is offering renewables certificates, where the customer pays extra to buy renewable certificates, or "offsets" with the goal of a 100% carbon neutral portfolio. Palo Alto has won Customer Satisfaction awards, and the renewable certificates are part of that success. The program is hugely popular.

5. *Have there been any "lessons learned"?*

Not discussed due to time constraints.

#### Quantitative Questions:

6. *What are your key performance indicators (KPIs) to track success?*

"Levelized" cost of energy efficiency across electric, natural gas, water, and waste water. California requires that it does all cost-effective measures. CPAU tracks cost/ccf saved, cost/kWh saved, etc. To pass the cost effectiveness test, these must be lower cost than purchasing new supply. CPAU has goals for energy and resource savings, expressed as a percentage of overall usage.

7. *Are there process or leading indicators to assess in-cycle performance?*

CPAU doesn't really track the costs of running a program on a project basis. The implementers are reimbursed on a contract level. CPAU leaves it to the Evaluators to make process (and impact) recommendations.

8. *Is "Span of Control" tracked (or has it been tracked in the past) as a KPI?*

Span of control is 9 to 1. This was calculated on the fly during the interview. This metric is not tracked.

9. *What is your "administrative cost" as a percent of your overall program costs?*

CPAU doesn't track administrative costs separately from incentives, or implementation costs. Especially for programs that use outside implementers which is most if not all of them. Administrative costs are hidden in contracted fees. Also administrative costs are hard to define.

10. *How do you measure program efficiency?*

Not discussed due to time constraints.

## Modesto Irrigation District

The Modesto (CA) Irrigation District (MID) is a community owned, not-for-profit organization controlled by a locally elected Board of Directors. Located in California's Central Valley, MID provides electric service, irrigation water and treats surface water for drinking. MID was established in 1887 and electric service began in 1923, currently serving 116,000 active customers. MID's retail MWh electric sales are: 35% residential, 29% commercial, 31% industrial, 4% agricultural and pumping and 1% other. MID's Energy Efficiency (EE) programs are funded by a combination of public benefits allocation and resource procurement. Unused EE funds are not reallocated to other Public Benefits programs, but instead returned to the reserve fund.

An emerging trend in the MID service area is a significant increase in leased solar systems, which require little or no out-of-pocket cost for the homeowner. The motivations for installing these systems include high utility rates and the perceived certainty of reduced future electric bills. Installation of these systems may dampen customer interest in pursuing EE projects going forward.

### Qualitative Questions:

1. *What are your Energy Efficiency (EE) programs? And, objectives?*

MID is surrounded by PG&E so it offers a similar portfolio, but with lower rebates since MID has lower electric rates. One benefit is that PG&E sets the standards and MID does not have to do that work themselves. The only direct collaboration with PG&E is on low income program. For New Construction standards MID has a lot of collaboration with other utilities especially large IOUs. This is regulatory driven. New construction standards apply statewide. According to them, they have incredibly large goals. New Construction meets 15% of goal.

2. *For how long have you been offering EE programs?*

MID energy efficiency programs began shortly after 1974 energy crisis, but the commitment comes and goes. The full spectrum of programs began around the late '80s.

3. *What parts of your programs are considered "best practices"?*

"Best practices" in their territory is their industrial program. The problem MID is trying to address is the difficulty in determining costs and savings for ROI or payback calculations. MID invested in a tool library (power meters, loggers, infrared cameras, ultrasound compressed air leak detection, etc.) for customers. MID sponsors targeted audits and loans out tools. This gets customers excited and participating in improvements that MID identifies and helps them decide where to spend their dollars. MID also loans out watt meters for residential customers. MID offers co-funding for an energy study/audit--up to \$10,000-- for more complex processes or buildings, rather than just offering a rebate on tail end. This increases the conversion rate to projects, and helps to accurately quantify the targeted opportunity using a third party expert opinion.

4. *What are the challenges or opportunities for improvement?*

The biggest challenge is the lack of low hanging fruit combined with the trend of rising baselines. MID still has steep savings targets to meet. By necessity, MID is moving away from rebates toward behavior programs and education programs. For the small commercial sector,

MID is using a direct install program rather than rebates just to make it happen – i.e. turnkey projects. California’s 2006 legislation established a triennial cycle, but now they recalculate our goals every 4 years. The longer cycle made sense because data they use doesn't refresh that often. MID uses commercial end use studies, DEER database, etc., and apply them to the particular demographics of our service territory. To come up with savings targets, public utilities banded together, created a model that estimates technical potential, economic potential and market potential. The targets are based on market potential from this tool. The local board then approves these targets.

5. *Have there been any “lessons learned”?*

MID manager interviewed worked at several utilities. He would like to have a diversity of staff, meaning in-house and contractors, trade allies, consultants. “If I could start from scratch, I would use more outside consultants” to increase flexibility. Another MID manager said: “Beware of grant money!” There *are* strings, or more accurately, ropes attached.

Quantitative Questions:

6. *What are your key performance indicators (KPIs) to track success?*

Nothing more than that the Benefit/Cost ratio (TRC) has to be greater than 1. The only exception is that we will do 'loss leader' programs at B/C = 1. Modesto is a fairly depressed area. MID gears its programs differently depending on who can afford what. PG&E serves gas customers in their territory, as well as surrounding electric customers. MID has a 700MW summer peak. To track their performance, they set budgets higher than B/C ratio targets. Use tool developed by a consultant to do TRC test. MID also runs other tests like RIM. Their peers sometimes have TRCs above 10, but MID’s is usually much lower. This is probably because MID includes all costs while others may not report peripheral costs to make their TRC look better. There is no standardized way of counting costs so other munis may take advantage of that to boost their TRC.

7. *Are there processes or leading indicators to assess in-cycle performance?*

MID generally runs its programs with in-house staff, but Appliance Recycling and Small Business Direct Install are implemented by subcontractors. MID has a large in-house staff compared to its peers. This means higher cost, and less versatility as far as payroll is concerned. (See #5. Lessons Learned) However, customers like the personal touch. It's sort of like the Midwest the way they treat their customers.

8. *Is “Span of Control” tracked (or has it been tracked in the past) as a KPI?*

MID doesn't track it, but currently it is about 12/1 for the energy efficiency group.

9. *What is your “administrative cost” as a percent of your overall program costs?*

See annual report (includes all CMUA utilities). It could be 50% administrative costs, all inclusive and fully loaded. [From annual report: \$1,452,364 admin/\$2,884,168 "total utility costs" = 50% administrative costs.]

10. *How do you measure program efficiency?*

TRC is their primary metric. MID sees a much better TRC in the Industrial sector than Residential, but MID also has a mission toward social programs. MID has an internal policy to inspect most of our projects and installations (85% of them is a rough estimate). MID is technically not a municipal utility, but it runs like a public utility. A third party evaluator does EM&V at MID expense, and reports back with a realization rate. The high rate of inspections helps to keep their RR up. MID uses their inspections as QC and 'pre-M&V'. This is all included in "administrative" or program costs. So MID doesn't look good by that measure.

## Rochester (MN) Public Utility

Rochester Public Utility, a division of the City of Rochester, MN, is the largest municipal utility in the state of Minnesota. RPU serves 50,000 electric customers and 38,000 water customers. RPU is governed by a Board appointed by the Mayor of Rochester.

### Qualitative Questions:

1. *For how long have you been offering EE programs?*

RPU started with CFL rebates in about 2000.

2. *What are your Energy Efficiency (EE) programs? And, objectives?*

RPU has 45 programs for residential, commercial, and industrial customers. (Listed compressed air, dishwashers, clothes washers, appliances, GSHP, ASHPs and others) RPU also has large industrial-scale customers like Mayo clinic, IBM, Seneca Foods.

3. *What are the challenges or opportunities for improvement?*

RPU needs much better internal software and tools to manage their programs. They maintain five different databases. RPU often has to use manual data aggregation from multiple databases. The system is not automated.

4. *What parts of your programs are considered "best practices"?*

RPU was recognized for its communications plan by NEEA.

5. *Have there been any "lessons learned"?*

Five different databases is not the way to go. RPU needs to track every aspect of each program and make that process as automated as possible. Right now it is not automated.

### Quantitative Questions:

6. *What are your key performance indicators (KPIs) to track success?*

RPU reports to state of MN. RPU submits a budget which is broken out into Program delivery, utility administration, advertising, evaluation, rebates & incentives, training and education, and research for each program. Each budget point is tracked. "Unspoken" guidelines (which used to be explicit) are: no more than 5% of budget spent on advertising and marketing, and the

majority of the budget should be spent on incentives. Municipal utilities are not regulated as closely as IOUs in Minnesota but RPU follows the same guidelines. Requirements are 1.5% reduction in energy use, spending of 1.5% of General Operating Revenue on demand side management, as well as spending on low income programs. RPU submits plan to the state annually.

7. *Are there processes or leading indicators to assess in-cycle performance?*

All of RPU's DSM programs are run by trade allies & subcontractors, so there are no indicators on project cycle costs. RPU offers rebates and technical assistance with in-house staff. RPU shares program administration, promotion costs and staff with two other nearby municipal utilities. This reduces administration costs.

8. *Is "Span of Control" tracked (or has it been tracked in the past) as a KPI?*

Span of Control is not a KPI for RPU. Currently the span of control is 6 to 1: 3 RPU employees, (1 for each sector: commercial, residential and key accounts), plus 3 contract employees (2 key accounts people and 1 processing support person), a total of 6 people report to the manager.

9. *What is your "administrative cost" as a percent of your overall program costs?*

RPU doesn't have an explicit limit or goal anymore for administrative costs. The budget contains around 5 -10% administrative costs, but this depends entirely on how you define 'admin.'

10. *How do you measure program efficiency?*

Through budget and savings metrics ( kw savings, kWh savings, goals, commercial, residential and key accounts, awareness, number of rebates/month, number of customers served, cost per kWh, cost per kW).