



MEMORANDUM

EUGENE WATER & ELECTRIC BOARD

Rely on us.

TO: Commissioners Brown, Mital, Helgeson, Manning and Simpson
FROM: Erin Erben, Power & Strategic Planning Manager; Lisa Atkin, Power & Strategic Planning Supervisor
DATE: January 23, 2014
SUBJECT: R&D Pilot Programs Quarterly Reporting Summary (Q4 2013)
OBJECTIVE: Information Only

Issue

The purpose and intent of this memorandum is to provide a quarterly summary report of the research & development work on load management pilot programs being undertaken by a cross-functional team of EWEB staff. This quarterly reporting period ended December 31, 2013.

Background

Staff continues to research an array of energy efficiency and demand response programs designed to provide flexibility and adaptability in EWEB's business model, power supply options, and conservation strategies in response to the direction laid out in EWEB's IERP. The proposed programs are also intended to better position EWEB to assist customers with bill savings opportunities in the future. Within EWEB's service territory there are currently six pilot programs in existence at various stages of operation, from the planning & design phase through to completion. Appendix 1 summarizes current status by pilot program, offering additional insight and context to the pilots being undertaken.

Discussion

Many of the projects have been the result of collaborative efforts with other regional partners, often with shared funding provisions. For 2013 and into 2014, the design and implementation of a Residential TOU (R-TOU) program continues to be the flagship effort that EWEB staff has engaged upon for the residential sector as we believe a strong price signal is the platform needed to grow other offerings. In 2012, the primary focus was on water heater management technology to gain a better understanding of what type of response times and duration of response were possible. In addition, with the recent October 1, 2013 approval by the EWEB Board of Commissioners of Resolution No. 1322, Advanced Metering Infrastructure (AMI) Project, staff will reevaluate the R&D Pilot Programs roadmap and associated assumptions. This is in response to the need to update the AMI Business Case, expected to be completed around June of 2014, in light of a preferred customer opt-in strategic approach to AMI. Through early identification of synergies between existing pilot programs and AMI, such as Beyond The Meter program offerings, and through focusing resources on additional future pilots that enhance AMI effectiveness, opt in rates and accessibility to the customer, EWEB will be better positioned to provide more cost-conscious and effective options for those electing to opt into programs enabled by AMI technology.

Each potential pilot program under consideration is taken through a series of primary, secondary and general research questions prior to further exploration and scoping of the business requirements and associated impacts, which in essence provides a high level appraisal of the impacts anticipated from a TBL perspective. In Q2 of 2013, EWEB submitted a bid to work with BPA to engage in a regional DR commercialization demonstration project (incorporating around 10 EWEB commercial customer sites) aimed at addressing multiple issues including utility peaks and distribution system constraints, wholesale system peaks, within-hour balancing, over-generation and non-wires transmission, and distribution investment deferral opportunities. Our bid was received favorably by BPA, and efforts to explore operational feasibility with third party vendors continues with BPA through the release of an RFP in Q1 2014.







The Metro Waste Water pilot program successfully executed a total of nine of its ten summer pilot control events and ten winter control events very successfully. MWMC is in process to update its communication control systems with a view to future automated capability of what has been a manual control event process to date. Both sites have performed highly and the customers have indicated an interest in an ongoing price response program, such as DR or TOU. In addition, five Heat Pump Water Heater (HPWH) units have been installed in the EWEB service territory as part of a pilot program regionally with NEEA. NEEA will be conducting some regional analysis on their performance. EWEB just launched its own HPWH incentive program.

2014 work will focus on closing out the existing technology pilots, launching the residential TOU pilot, designing a commercial TOU rate pilot, begin scoping out a pre-pay pilot for residential, and working with EMS to roll-out a demand response offering for commercial and industrial customers.

Requested Board Action

No action is required from the Board at this time.

Appendix 1: Research & Development Pilot Programs Status

	RESIDENTIAL PROGRAMS			COMMERICAL & INDUSTRIAL PROGRAMS		
	Residential Time Of Use (TOU)	Carina Water Heater (Phase II)	Steffes Water Heater (Phase I)	EWEB Water Pumping & Storage	Metro Waste Water	SnoTemp Cold Storage
						
Current Stage	Design/development	Operational	Completed	Scoping	Operational & Planning (TOU)	Operational – on hold
Implementation	Meter-to-Bill development final bug fixes underway.L+G <i>First Article</i> meter procurement placed & configuration testing under development. Communications Plan in execution phase. Customer database design underway. Expect to launch in Fall 2014.	35 sites with load shift control schedules. Non-communicative sites decommissioned. Holiday season control strategies successful, even with extreme cold weather events. An additional 5 HPWH installed.	Pilot ended 9/12. Sites decommissioned.	Commercial TOU rate schedule required for cost/resource effective participation. Designing in 2014. Discussion ongoing with new Pumping & Storage Supervisor. Plan is to propose a commercial TOU rate pilot to the Board late in 2014.	Completed 9 summer and 10 winter DR events. Exploring vision for automated response system in future years.	On hold awaiting BPA C&I Aggregator project approval to reinstate Q1/Q2 of 2014.
Evaluation	Additional rate comparison and analysis undertaken in light of potential base rate changes over time.	Reviewing load data. EM&V report timeline anticipated for completion Q1 2014.	Final EM&V report completed.	SCADA in place. TOU meter change out under consideration.	Process and impact evaluation due for completion 6/30/2014.	Process and impact evaluation due for completion 6/30/2014.
External	No new activity to report regarding partnership with EPRI. Project delayed awaiting meters from vendor.	Staff working with NEEA to obtain raw HPWH load data for analysis	No activity to report.	EWEB would be willing to share results with wider utility partners.	Extended BPA contract 3 months to complete final report.	BPA Conceptual aggregator being explored for future.
Hypothesis & Findings	Determine how TOU participants can benefit from peak shifting strategies. Evaluation not yet commenced.	Determining the feasibility of using residential water heaters to respond to a peak load shifting and thermal storage control strategy. Testing complete; Evaluation commenced.	Determine the feasibility of using residential water heaters to respond to wind balancing signals, together with testing peak shifting and thermal storage capability.	Demonstrate the ability to use demand response to both increase load when extra capacity exists, and decrease load during capacity constraints	Demonstrate the ability to use demand response to both increase load when extra capacity exists, and decrease load during capacity constraints.	Demonstrate the ability to use demand response to both increase load when extra capacity exists, and decrease load during capacity constraints.

<p>Eligible Population and/or Unit Savings</p>	<p>100% of the 78,000 residential customers would be eligible for a residential TOU rate. Unit savings to be determined in Evaluation phase. Participation in the pilot will be voluntary.</p>	<p>Approx. 80% of residential customers would be eligible for a water heater control program. Unit savings determined in Evaluation phase.</p>	<p>Approx. 80% of residential customers would be eligible for a water heater control program.. Savings impact to be determined in Evaluation phase.</p>	<p>This would impact EWEB facilities only. Unit savings and cost effectiveness to be determined.</p>	<p>With a Commercial TOU in place, approx 10,000 C&I businesses would have accessibility to participate in peak load shifting initiatives.</p>
---	--	--	---	--	--