



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: April 24, 2014
SUBJECT: Quarterly R&D Programs Reporting Summary Q 1 2014
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 March 31, 2014.

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 updated 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. Currently, a further BPA commercial & industrial demand response pilot initiative is also being explored.

Discussion

Many of the projects have been the result of collaborative efforts with other regional partners, often with shared funding provisions. For 2014, the implementation of the 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. With the October 1, 2013 approval by the EWEB Board of Commissioners of Resolution No. 1322, of the Advanced Metering Infrastructure (AMI) Project, staff are engaged in reviewing the R&D Pilot Programs roadmap, associated business assumptions, and prioritization of the delivery of future program offerings to support the defined AMI Project objectives 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 customer at all income levels who elect 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. EWEB staff is exploring the opportunity to participate in BPA's Commercial & Industrial Demand Response (DR) Aggregation Demonstration Project to determine that a regional pool of controlled customers loads can act in aggregate as a Grid level demand response resource to decrease load during peak periods, capacity constraints, grid emergencies or during periods when renewable resources experience intermittency. Efforts to explore operational feasibility with EWEB's commercial customers and negotiation of terms with a third party vendor are underway following BPA's contract award to Energy Northwest through completion of its RFP process in Q1 2014.

The Carina Water Heater Pilot Program sites have now been fully decommissioned during April following the successful completion of this water heater management study. The evaluation of the impact of using residential water heaters to respond to a peak load shifting and thermal storage control strategy is slated for an end of Q2 2014 completion.

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	Initial pilot complete and in Evaluation stage	Pilot Complete	Scoping	Initial pilot complete and in Evaluation stage. Phase II underway	Initial pilot complete and in Evaluation stage. Phase II on hold
Implementation	L+G <i>First Article</i> meter configuration testing completed – to be deployed early Q2 for field testing. 450 meters ordered. Bill presentment bugs being fixed. Revised R-TOU rate approved by Board 3/5/14. Communications Plan in execution phase. Customer database development underway. Expect to launch in Fall 2014. Labor resource planning ongoing.	All pilot sites will be decommissioned by end of April 2014.	Pilot ended 9/12. Sites decommissioned.	Commercial TOU rate schedule required for cost/resource effective participation. Plan to design rate in 2014.	Interest shown in potential BPA commercial DR aggregator pilot program. Meeting to discuss further 4/28/2014.	Unlikely to participate in potential BPA commercial DR aggregator pilot program at this time. Facility expansion under progress and will reconsider after completion.
Evaluation	EM&V plan finalized – work sessions scheduled.	Process evaluation in final review; impact evaluation underway. Completion Q2 2014.	Final EM&V report completed Q1.	No change	Process and impact evaluation due for completion 6/30/2014.	Process and impact evaluation due for completion 6/30/2014.
External	Continued ongoing collaboration with EPRI on pilot design and evaluation.	Ongoing discussion with NEEA with regard to analysis.	No new activity to report.	No new activity to report.	Final report sent to BPA. Informational video in progress at BPA request.	No new activity to report.
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 in	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 price signals and/or DR incentives to both increase load when extra capacity exists, and decrease load	Demonstrate the ability to use DR to both increase load when extra capacity exists and decrease load during capacity	Demonstrate the ability to use DR to both increase load when extra capacity exists and decrease load during capacity constraints.

		progress.		during capacity constraints.	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>	