



# MEMORANDUM

EUGENE WATER & ELECTRIC BOARD

*Rely on us.*

TO: Commissioners Simpson, Brown, Helgeson, Manning and Mital  
FROM: Erin Erben, Power Resources Manager; Monica Shovlin, Marketing and Creative Services Program Supervisor; Mark Tuffo, R-TOU Project Manager  
DATE: July 3, 2013  
SUBJECT: Residential Time of Use (R-TOU) Rate Pilot Update  
OBJECTIVE: Information Only

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## **Issue**

The purpose of this Board Memo is to provide a status update on the Residential Time of Use (R-TOU) Rate Pilot. The cross-sectional team working on this pilot includes staff members from Power Planning, Public Affairs, Meter Reading, Meter Shop, Customer Service, Information Technology, and Systems Engineering.

## **Background**

On September 4, 2012 the EWEB Board unanimously approved Resolution No. 1215 which authorized the General Manager to implement the proposed pilot (R-TOU) electric rate, defined in Exhibit A of the resolution. As outlined in Exhibit A, the rates are subject to annual rate adjustments and other applicable terms and conditions. The terms of the pilot were established to: 1) expire after three years and 2) be applicable for up to two hundred customer-accounts, consistent with management's request. At the time, the expectation was that this pilot would be conducted through a series of manual work-arounds, such as excel-based customer billing and a special meter reading route to download the data from the individual meters 6-12 times per year.

## **Discussion**

Given the potential for the TOU pilot and the AMI project to rely upon much of the same infrastructure, and the learning and efficiencies that could be achieved through a modest investment in automation, a decision was made early on to try and use meter technology that would be compatible with AMI and seek to align with standard meter reading and billing practices where possible. This was thought to minimize rework should the pilot become a regular customer rate offering and enhance our learning about operations in a post-AMI world. Due in part to the ongoing uncertainty around AMI and due in part to the added scope to minimize manual work-arounds for meter reading and billing, the launch of the pilot as a customer offering has taken longer than initially expected. The team, however, has been diligently working toward a summer recruitment period and a Fall 2013 launch (going into the heating season, the time of largest possible customer savings).

However, we were recently informed from our meter vendors, Sensus and Landis+Gyr (L+G), that there are now significant delays with meter acquisition, due in part to the rebuilding effort on the East Coast post Hurricane Sandy. According to our vendor, meter stock is on backorder across the nation. Because

we want to thoroughly test any technology before putting it in the field, and because the proposed automated solution for meter reading included cell-based data retrieval as a customer installation to the test meters, this reality has resulted in a several month delay to our official customer recruitment and launch. We now anticipate a Spring 2014 launch date.

What the added time has done is allowed for a significant amount of research, planning and learning, all of which we believe will ultimately result in a more successful pilot for our customers. As part of our membership with the Electric Power Research Institute (EPRI), we have entered into an agreement to work together to conduct robust pilot design and evaluation to substantiate actual versus expected savings and make projections about likely customer subscription rates under a mature TOU program within EWEB service territory. In addition, we have been able to leverage the data obtained from the first AMI pilot to refine our knowledge about our residential customer class consumption patterns hour by hour. This has resulted in some updates to previous assumptions about on-peak usage that fed into the pilot rate design. Since we have the time prior to program launch, staff will be proposing, at a future Board meeting, minor adjustments to the rate differentials and summer hours in order to enhance participating customers' ability to save on the rate, while still maintaining revenue neutrality for the average customer – a basic tenant of most rate design approaches. What this means is that the average customer would have to actually modify usage patterns to save on the rate, which is what we want to see happen.

While we have begun to engage the employee base about the program to ensure they can be conversant with customers on the topic, we have not yet begun to advertise the program to customers, such that the delay in anticipated launch date can be readily managed with little more than an internal inconvenience. However, staff will need to seek an extension to the sunset date on the rate in order to run the pilot for the full two years envisioned, which will be requested at the time the modified rate is proposed. In addition, we believe it may be prudent to put additional meters in the field in order to ensure we can gain the most insight from our pilot by creating a stratified load research sample from the control group in year one.

Load research is an area of study for the utility whereby it can define base usage profiles by customer classes for use in rate design and load forecasting efforts that feed into our revenue projections and resource plans. EWEB's data was last updated in the 1990s and there is currently no load research sample in the field. We are long overdue for refresh. Since the biggest cost of a load research sample refresh is installing the meters, we are able to leverage the TOU pilot for very low incremental cost in order to achieve both ends.

### R-TOU Efforts to Date

#### *Pilot Design*

EWEB's R-TOU pilot team has partnered with EPRI in developing a robust pilot design to establish credible estimates of how residential customers modify their electricity consumption patterns and levels under TOU pricing in order to quantify its effect on EWEB's system peak. In addition, the pilot is designed to help understand the effect of the rate on overall usage and customer bills, study the effects of different recruitment and engagement strategies on customer engagement, and identify the reasons why customers may choose not to participate. Since recruitment will be done through a random sample, required to extend conclusions to the wider customer base, the pilot will also serve to collect valuable data for load research in the process. After considering several experimental design options, EPRI recommends a "recruit and delay" approach; this design includes a control group which would remain

on the existing tiered rate for the first year of the pilot and treatment group which would begin on the TOU rate in year one. In year two, both groups would be on the TOU rate.

EPRI will provide evaluation, measurement and verification (EM&V) support to EWEB throughout the duration of the TOU pilot. EPRI will conduct an impact analysis at the end of each season and at the end of the pilot. EWEB staff will conduct a process evaluation to better understand how the program worked for both customers and employees. These learnings will be exceptionally valuable in making the decision about whether to roll-out the R-TOU rate to the entire customer base as a voluntary, alternative residential rate schedule.

### *Pilot Communications Strategy*

Working in parallel with EPRI's pilot design process, the internal R-TOU pilot team completed a review of secondary research, including the results of TOU pilots and programs at other utilities, to gauge the potential applicability of their communication strategies to EWEB's pilot, and developed criteria for a statistically-valid EWEB customer sample for pilot recruitment. A communication plan has been drafted and materials are being developed for both internal and external audiences. Staff are very conscious of the significance of this first pilot in terms of organizational readiness for a more customer-focused business model, so internal communications and process evaluation are given special consideration in the plan.

Highlights of work to date include:

- Completed internal presentations to frontline staff in Customer Service and Energy Management, the Sustainability Action Team and Public Affairs;
- Published Daily News article that, like the internal presentations, explained the purpose of this pilot in context of AMI and full rate portfolio of the future;
- Developed a working brand name, tagline and seasonal engagement strategies for message testing purposes with the treatment group;
- Drafted recruitment script based on best practices and pilot design;
- Collected proposals from third-party research firms for recruiting and survey administration;
- Working on a value calculator for customers in the treatment group;
- Explored closed online community tools for customer engagement; and
- Engaged with several vendors to research available customer-facing and data acquisition and cleansing technologies.

Next steps include pilot participant survey development, recruiting, and communications for customers from meter installation through to the official program launch.

### *Other notable successes*

The R-TOU Project Team has made some notable progress on several key fronts, including:

- The development of a detailed functional performance specification for TOU metering and infrastructure requirements to achieve the pilot objectives;
- A successful update to existing bill calculation and presentment, which includes a break out of on-peak and off-peak consumption (in kWh and dollars); and
- This pilot is helping to engage various internal work groups, cross-functionally, to address some of the questions regarding the accessibility and usefulness of "big data" to our utility, an

inevitable reality of our future.

### *Next Steps*

Remaining work prior to program launch includes determining and testing the final metering solution; determining whether to insource or outsource the collection, storage and management of the meter interval data (aka “big data”); and fine-tuning what we consider the optimal customer engagement strategies and information feedback options.

In summary, due to additional analysis conducted and opportunities and delays that have come to pass since the original Board approval, there are some parameters of the pilot design that need to be adjusted prior to the Spring 2014 “go live” date for the R-TOU rate. At this time, the Project Team is not asking for approval for these changes, but rather is providing a preview of the changes it is likely to request at a later date. Here is a summary of the five anticipated changes:

1. Adjustments of the on-peak and off-peak rates to account for more accurate information on the typical residential customer’s percentage of usage on peak;
2. A possible increase in the number of customer participants, in order to provide a better statistical representation of the residential customer class and accommodate the dual purpose of creating a load research sample from the pilot;
3. Inclusion of standard NERC holidays as off-peak for our customers;
4. A possible reduction in the number of summer on-peak hours to reflect the lower ability to save money in those months; and
5. An extension of the pilot rate’s sunset date to accommodate the full two years of study post-launch.

### **TBL Assessment**

While a formal TBL assessment has not been written for the pilot project as a whole, TOU was considered in the AMI Business Case as part of the potential program offerings that could result from implementation. In addition, the Project Team is using TBL assessment tools throughout all phases of this pilot. One example of how this assessment is being incorporated into critical planning decisions is regarding the collection and management of the potentially large amounts of data being generated by the interval meters used in this pilot. Specifically, a manual data collection option would include at least one full-time employee and extensive vehicle usage in order to retrieve the data from each meter. The R-TOU Project Team is exploring automated options that would streamline the data collection process and avoid additional CO2 emissions.

### **Recommendation**

The R-TOU Project Team is continuing to work on the pilot design and anticipates beginning the pilot implementation phase in Q1 2014 (i.e. customer recruitment, meter installation, and “go live”). As a result of ongoing research, any remaining open questions will be answered by the Fall, when the Project Team anticipates coming back to Board for the additional considerations mentioned above.

### **Requested Board Action**

The R-TOU Project Team is requesting no action from the Board at this time.

**RESOLUTION NO. 1215**  
**September 2012**

**EUGENE WATER & ELECTRIC BOARD**  
**Residential Time of Use (TOU) Pilot Rates**

WHEREAS, the Eugene Water & Electric Board (EWEB) has exclusive jurisdiction to establish electric rates;

WHEREAS, a pilot time of use rate program will provide EWEB the opportunity to gain insight into customer responsiveness and acceptance of TOU rates, test internal systems, and integrate TOU rates with other programs;

WHEREAS, the proposed TOU rates are derived from the detailed cost of service analysis was performed for calendar year 2012;

THEREFORE, BE IT RESOLVED that the Eugene Water & Electric Board hereby authorizes the General Manager to adjust residential electric rates for the TOU pilot as recommended in Exhibit A.

Dated this 4<sup>th</sup> day of September 2012.

THE CITY OF EUGENE, OREGON Acting by  
and through the  
Eugene Water & Electric Board

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President

I, DEBRA J. SMITH, the duly appointed, qualified, and acting Assistant Secretary of the Eugene Water & Electric Board, do hereby certify that the above is a true and exact copy of the Resolution adopted by the Board at its September 4, 2012 Regular Board Meeting.

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Assistant Secretary



**V. ELECTRIC SERVICE CHARGES AND RATES**

For charges specific to Water; see Water Service Charges and Rates. For all other charges; see All Utilities Charges and Rates

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**N. Residential Service – Schedule Pilot Time of Use**  
Resolution No. 1215

1. Applicability

The pilot rate is available for up to 200 customers. Participation is at the sole discretion of EWEB and may be applied to either sub-metered customer load, such as EV or water heater end use devices, or to whole house loads. This rate will sunset as of September 20, 2015 without further Board action. Customers will be allowed to return to the standard Residential Service – Schedule R-6 rate at any time, but EWEB will not allow customers to return to the Pilot Time of Use rate once opted out of the rate.

To underground or overhead electric services for separately metered single-family residences, duplexes, triplexes, quads, townhouses, multifamily structures with less than four living units, and mobile homes, except as may be otherwise specified by prior contract. Boarding, lodging, rooming houses, or group care facilities shall also be considered residential services if not more than five private sleeping rooms are used by members of the customer's family.

When a major portion of a dwelling is regularly used for the conduct of business, the customer may separate the wiring so that the residential portion may be metered separately and billed on the Residential Schedule, otherwise the entire dwelling shall be billed on a General Service Schedule.

Rate schedules apply to the sale of electrical energy for the sole and exclusive use of the customer. The customer shall not resell electrical energy supplied by EWEB.

2. Character of Service

Single-phase, 60-cycle, nominal 120, 208Y/120 or 240/120 volts, subject to voltage classification available and compatibility with geographic area.



3. Monthly Rate  
(Resolution No. 1223)

**Basic Charge**.....\$10.85 per month

**On-Peak Energy Charge** .....\$0.15760 per kWh

**Off-Peak Energy Charge**.....\$0.06845 per kWh

**On and Off Peak Hours**

Winter (beginning November 1st of each year)

On-Peak	7:00 a.m. to 11:00 a.m.	Monday - Friday
	5:00 p.m. to 9:00 p.m.	Monday - Friday
Off-Peak	9:00 p.m. to 7:00 a.m.	Monday - Friday
	11:00 a.m. to 5:00 p.m.	Monday - Friday
	All hours	Saturday - Sunday

Summer (beginning May 1<sup>st</sup> of each year)

On-Peak	12:00 p.m. to 8:00 p.m.	Monday - Friday
Off-Peak	8:00 p.m. to 12:00 p.m.	Monday - Friday
	All hours	Saturday - Sunday

4. Minimum Charge

The minimum charge per month shall be the applicable basic charge.

5. Annual Rate Adjustments

As established in Board Policy SD9, the EWEB Board has exclusive jurisdiction to approve annual operating budgets and establish rates for electric service. The rates established under this schedule (Schedule Pilot TOU R) will be adjusted annually to reflect the overall change for the Residential Service – Schedule R-6 rates.

6. Power Cost Recovery Adjustment

At the discretion of the Board, the rate may be adjusted for 12 months beginning with April bills to reflect the variance between budgeted and actual power cost for the previous calendar year. The adjustment is determined by dividing the amount to be rebated or recovered by the projected annual kilowatt-hour sales in that calendar year, and then decreasing or increasing the energy or power component of the rate accordingly.





7. BPA Power Cost Adjustment

At the discretion of the Board, the rate may be adjusted for 6 months beginning in either April and/or October to reflect the variance in projected power costs due to changes in Bonneville Power Administration (BPA) wholesale rates. The adjustment is determined by dividing the amount to be rebated or recovered by the projected kilowatt-hour sales in the six-month period, and then decreasing or increasing the energy or power component of the rate accordingly.

8. Special Provisions

Individual single-phase motors larger than 7.5 horsepower may be connected only with the written permission of EWEB.

9. General Terms and Conditions

Service under this schedule is subject to the policies and procedures of EWEB.