



MEMORANDUM

EUGENE WATER & ELECTRIC BOARD

Rely on us.

TO: Commissioners Mital, Simpson, Helgeson, Manning and Brown
FROM: Erin Erben, Power and Strategic Planning Manager and
Sue Fahey, Finance Manager
DATE: July 21, 2015
SUBJECT: EWEB Rate Design Proposal for Review
OBJECTIVE: Provide Direction & Feedback on EWEB Rate Design Proposal

Introduction

Over the past few years EWEB has developed rate design principles and strategies aimed at better aligning rates with costs, in accordance with its current strategic plan. To date, this has generally entailed increasing fixed, basic charges for electric residential customers and correspondingly decreasing quantity based charges. Water customer basic charges have also been raised and elevation charges introduced. The 2016 rate design proposal continues this path and expands the strategy to other electric customer classes by increasing fixed cost recovery for fixed cost components and by better aligning rates between customer classes in order to send more equitable price signals based on who the costs were incurred to serve. This backgrounder also serves to provide an overview of the path forward for fulfillment of the current rate design strategy so that both the Board and customers can see what a cost-based rate design structure will ultimately look like. Management currently anticipates that it will take 2-3 years to fully adjust rates while managing bill impacts as cross-class subsidies are reduced and lower usage customers adjust to bearing the full cost of their fixed infrastructure.

Policy Framework and Background

In its strategic planning efforts, EWEB identified pricing as a key strategic response. There are many changes afoot in the industry. It was determined that EWEB can best prepare for this change by being fully transparent on the cost elements of the services we provide and allowing customers to make their own investment decisions accordingly. Pursuant to economic principles, this creates the most efficient allocation of resources for the community as a whole. The related business strategy from the strategic plan is as follows:

Redefine and price the products and services that today's customers value over the next three years, in order to help prepare EWEB and the community for the utility of the future.

Recent Board presentations have reaffirmed the strategy of redefining pricing structures.¹ The ratemaking principals that were identified in the 2013 policy memo included: 1) Sufficiency, 2) Affordability, 3) Efficiency, 4) Cost Basis, 5) Equity, and 6) Gradualism. These principals have been incorporated into EWEB's ratemaking proposals since they were adopted. A key recommendation in the March 2013 Board backgrounder was as follows:

Continue to refine analytical tools and efforts to increase fixed costs recovery and compare marginal and embedded costs of service.

This recommendation has been acted on over the past several years primary with changes to the basic charge in the residential customer class for both water and electric utilities. Management is recommending continuation of this path in residential rate design for both utilities while making additional changes to its other customer classes for electric. Once we are able to collect the requisite data to refine the cost allocation associated with elevation charges for the water utility, that path will also be assessed for completion thereof.

An industry paper from APPA on rate design trends across the U.S. industry is attached as an appendix for Board review.

Discussion

The rate design process relies on several different data sources. These include the revenue forecast, cost of service study, and any applicable policies or guiding principles. The rate making principles listed above guide practitioners in their approach toward more efficient product pricing. We employ the gradualism principle by considering bill impacts to customer groups.

The cost of service model groups costs into different 'functions' and 'allocations'. The different functions include production (generation), transmission, distribution, and customer costs. Within each function the costs are allocated by different allocation factors, including energy sales, class coincident peak demand, class non-coincident peak demand, and different weighted customer factors.

The costs are recovered in different manner from the respective customer classes due primarily to the fact that there are metering constraints. The table below illustrates the different costs and associated recovery categories from the respective classes.

¹ EWEB Board Meeting dated October 7, 2014, presentation titled "2015 Electric Rate Design Proposal";

EWEB Board Meeting dated September 24, 2013, presentation titled "Rate Design Proposal for Pricing Action"; and EWEB Board Meeting dated March 5, 2013, presentation titled "Backgrounder/White Paper on EWEB Ratemaking Principals."

TABLE 1: Electric Utility Cost Components and Associated Rate Design by Major Customer Class

Cost Allocation	Residential	Small Commercial	Medium Commercial	Large Commercial
Customer Costs	Customer charge	Customer charge	Customer charge	Customer charge
Delivery Costs (customer related)	Customer charge	Customer charge	Customer charge	Customer charge
Delivery Costs (demand related)	Energy charge or customer charge	Demand charge or Energy charge	Demand charge	Demand charge
Delivery Costs (other)	Customer charge	Customer charge	Customer charge	Customer charge
Conservation Costs	Energy charge	Energy charge	Energy charge	Energy charge
Transmission Costs – BPA Pass Through	Energy charge or customer charge	Demand charge or Energy charge	Demand charge	Demand charge
Transmission Costs – EWEB Owned	Energy charge or customer charge	Demand charge or Energy charge	Demand charge	Demand charge
Energy Costs	Energy charge	Energy charge	Energy charge	Energy charge

Planned Rate Design Changes for the Fall 2015 Proposal

Residential Electric Service (Schedule R-6)

The residential customer class was identified as having prices² (rates) with the most significant

² Some progressive utilities have moved from using the term “rates” to “prices” to better reflect the future relationship between customer and utilities, where customers have more choice regarding their service level options than they did in the past. This is something EWEB Commissioners may want to consider applying.

disconnect between the cost of serving them and the rate components charged to customers. Over the past several years, the basic charge has been increased to address the issue of fixed cost recovery in the variable rate component. This has been done by shifting cost recovery from volumetric charges to the fixed, basic charge and flattening the tiered rate structure, which served to further distort the cost assignment of fixed costs to higher usage customers.

The most recent change last year increased the fixed, basic charge from \$13.50 to \$20 per month and eliminating the third tier. This increase in the basic charge was implemented with a corresponding decrease in the volumetric based delivery charge.

For the current rate proposal, management will propose continuing to increase its fixed cost recovery and will look at the bill impacts of also removing the second energy price tier at this time. Preliminary analysis of the Cost-of-Service model suggests the end state of a full fixed cost recovery through the fixed charge would require it to be in the \$45-55 range. Fixed cost recovery is being accommodated by increasing the basic charge, since residential meters are unable to track demand charges. The higher end of this range represents roughly half of an average customer's monthly bill. The Board will need to consider how far and how fast it is willing to go to reach the strategic objective of being cost neutral to customer's supply choices.

Residential & Commercial Water Services

The water utility is also largely a fixed cost business that recovers a significant portion of its costs in the volumetric energy charges. Recent changes have improved fixed cost recovery and more closely align rates with costs, but there is more that eventually needs to be done. For the current rate proposal, management will suggest increase its fixed cost recovery relative to the quantity charges for both residential and commercial customers. Assessment of volumetric charge changes, such as increasing the elevation charge differential, will wait for the assessment of costs to various customer groups. The new WAM system should provide additional insight into this cost of service.

Small Commercial Customer Class Electric Service (Schedule G-1)

The proposed 2015 rate design proposal will extend improvements to fixed cost recovery for commercial classes. The Small Commercial Class is applicable to customers under 30 kilowatts of demand. These customers are billed through a Basic Charge (fixed monthly charge), Demand Charge (per kilowatt of demand over 10 kilowatts)³, Delivery Charge (per kilowatt hour) and Energy Charge (per kilowatt hour).

The recommendation for this class is to increase the Basic Charge to recover a higher proportion of EWEB's fixed costs. This is consistent with the past year's actions to recover an increased proportion of fixed costs using the method shown in Table 1. The increase in Basic Charge will be offset by corresponding decreases in Delivery Charge (which applies to the first 1,750 kilowatt hours) and Demand Charge (which applies to the demand over 10 kilowatts).

EWEB's Board-adopted Ratemaking Principles were used to generate these recommendations by considering the output of the Cost of Service Analysis (COSA), which indicated higher

³ Due to metering constraints within this class (i.e. lack of demand meters for some small commercial customers) demand charge is set at demand over 10 kilowatts. This is combined with a declining block delivery charge to more equitably recover these costs.

customer-specific fixed costs than are currently recovered; bill impacts throughout the ranges of billed demand and respective load factors; and consideration of bill impacts as customers transition from one rate class to another.

Medium Commercial Class Electric Service (Schedule G-2)

The Medium Commercial Customer Class is applicable to customers consuming more than 30 kilowatts of demand per month, but less than 500 kilowatts. These customer are billed through a Basic Charge (fixed monthly charge), Demand Charge (per kilowatt of demand), and Energy Charge (per kilowatt hour). The recommendation for this class will be to increase the Basic Charge to recover a higher proportion of the fixed costs associated with service, with a corresponding decrease in the other charges as appropriate.

Large Commercial Class Electric (Schedule G-3)

The Large Commercial Customer Class rate is applicable to customers over 500 kilowatts of demand and under 10,000 kilowatts of demand. These customer are billed through a Basic Charge (fixed monthly charge), Demand Charge (per kilowatt of demand), and Energy Charge (per kilowatt hour). The recommendation for this class is to a) increase the Basic Charge to recover a higher proportion of EWEB's fixed costs in a fixed charge, with a similar decrease in the Demand Charge; b) to apply the demand charge to all kilowatts of demand for primary service customers (rather than demand over 300 kilowatts), with a corresponding decrease in the Basic Charge; and c) to increase the energy charge to make the other changes revenue neutral and to align with other customer classes.

Consideration of a Commercial Time of Use Pilot Rate

On September 4, 2012 the Board adopted a pilot rate for residential customers.⁴ 420 meters have been installed this year and that pilot is currently underway. The aim of a commercial pilot would be to test our expected load shift between periods and the associated cost savings to EWEB. Management and staff have been anxious to offer commercials a TOU rate to help them save money if they can shift their load. Unfortunately, we are limited by the current functionality of our CIS system. The system is slated to be replaced within the next three years.

Meanwhile, we are looking at the possibility of offering a limited pilot to test assumed customer response. The proposed rate strategy for Commercial Time of Use (TOU) Pilot Rate would most likely be applicable only to water utilities within EWEB's service territory because we believe that water pumping is an end use that is deemed to be flexible enough to easily modify operations to respond to time-based prices and it limits EWEB's possible exposure to customer billing errors as billing system work-arounds and business process changes are explored. The rates defined in the commercial time of use pilot rate would be designed to align with the medium commercial class (i.e. same basic charge, on- peak demand charge that aligns with the standard demand charge). The first differences in the commercial time of use rate is lower demand in the off- peak hours reflecting lower marginal cost due to BPA billing factor for BPA network transmission (NT) service. Because EWEB is billed for NT service at its peak demand (in kilowatts) at BPA's transmission system peak, EWEB is using the time of use demand charge as a tool to pass along the benefit to customers who are able to shift load from the expected BPA transmission system peak. Therefore, the customers will receive the direct benefit from shift load

⁴ Resolution No. 1215 Board approved 5-0.

off- peak and will not be creating a potential subsidy, as the benefits are a direct pass- through from BPA's existing rate structure.

The second difference in the time of use pilot rate and the standard offer Medium General Service rate is an on- and off- peak energy price. The energy price differential is a modest differential (less than 1.0 cent per kilowatt hour) which reflects wholesale price differentials.

The strategy used to generate the commercial time of use pilot plan recommendation is based on passing through only identifiable cost savings directly to customers to prevent any cost subsidies. This is based on analysis of EWEB marginal cost, which applies to demand (BPA NT as the short-term marginal cost) and energy (on- and off- peak price differential). By identifying the short-term marginal costs this recommendation intends to fully isolate the remaining customers from the program. The only potential cost impact to existing customers would be program related administrative costs.

Consideration of Large Commercial Critical Peak Pricing (CPP) or Peak Time Rebate (PBR) Pilot Rate

Another pricing strategy being explored is an alternative time-based offering for the Large Commercial Class (Schedule G-3). Both CPP and PBR programs are common in the industry and provide a time-based price signal to customers that is triggered only for either very high price events or reliability events. Since this generally happens infrequently, it can be attractive to customers that cannot shift their load every day, but can do so on occasion with enough advanced notice.

In its last IERP annual update process⁵, resource adequacy was analyzed under various climate and load conditions. The sustained winter (three-day) peak was identified as the most constrained supply period. In order to effectively deal with periods of insufficient resources, it appears we would need to find customers that could shed a large load during such an event. For many decades, large commercial rate design options have provided an effect tool to pass along price risk associated with high market prices or supply shortage.

Street Lighting Class (Schedules J-3, J-4, L-3, and L-4)

The proposed strategy for the street lighting rates is to recalculate the differential between the costs per lamp for the different wattages. In the past several years the overall street lighting class increases have been applied to all the wattages. For this year's rate action we are proposing to re-evaluate the costs for each of the different wattages. In response to LED street lighting projects we are proposing to broaden the applicable wattages (or watt equivalents) to include a range rather than a specific wattage bulb. This would provide pricing for non-standard, or changing technology, with respect to watt or watt equivalents.

Feedback from Board

⁵ EWEB April 7, 2014 Board Meeting
http://www.eweb.org/public/commissioners/meetings/2015/150407/M8_IERPUpdate_2015.pdf

Residential Rate Design

The proposed strategy makes two recommendations. First, Management is proposing to increase the basic charge to better align fixed costs with fixed price components. The impact of this change would be to increase bills for lower usage customers and decrease bills for higher usage customers. Notably, EWEB can phase-in such a change to limit the total bill impact to customers during the transition period. Detailed rate impact information will be provided in the Fall rate proposal, but a rough estimate of the possible impacts can be seen in the table below. One perspective is that this is an unfair increase on low usage customers. Another more factual perspective is that it is an elimination of an historical cross subsidy from higher usage customers to lower usage customers.

TABLE 2: Estimated monthly bill impact of \$10 increase to the basic residential electric charge and decrease in energy or volumetric rates

kwh	Current Tariff	Proposed Tariff	Bill Impact	% Impact
100	\$ 28.36	\$ 37.34	\$ 8.98	32%
500	61.82	66.72	4.90	8%
1000	106.53	106.33	(0.20)	0%
2000	204.67	194.27	(10.40)	-5%
3000	302.81	282.21	(20.60)	-7%
4000	400.95	370.15	(30.80)	-8%
5000	499.09	458.09	(41.00)	-8%
10000	989.79	897.79	(92.00)	-9%

Second, the tiered rate structure that was reduced from three to two tiers last year may be proposed to move to a single quantity-based charge. The impact of this change would also be to increase bills for lower usage customers and decrease bills for higher usage customers. The timing of this change will depend on the transition strategy. Detailed rate impact information will be provided in the Fall rate proposal, if applicable, but a rough estimate of anticipated bill impacts can be seen in the table below.

TABLE 3: Estimated residential electric customer monthly bill impact of eliminating energy tier price differential

kwh	Current Tariff	Proposed Tariff	Bill Impact	% Impact
100	\$ 28.36	\$ 28.93	\$ 0.57	2%
500	61.82	64.64	2.83	5%
1000	106.53	109.29	2.76	3%
2000	204.67	198.58	(6.09)	-3%
3000	302.81	287.87	(14.95)	-5%
4000	400.95	377.16	(23.80)	-6%
5000	499.09	466.44	(32.65)	-7%
10000	989.79	912.89	(76.90)	-8%

As we move forward with a final Fall rate design proposal, we are asking for Board direction on these the priorities.

Medical / Low Income Rider

EWEB currently has low income programs for income eligible customers who are having trouble paying their utility bills. These programs include the Customer Care program, which is funded by EWEB and its customers, and the City of Eugene. The program is administered under a contract with the Lane County Human Services Division. EWEB also provides up to \$200 in one-time annual bill-payment assistance for active duty military and jobless customers who are receiving unemployment compensation. While it has been confirmed that on average low-income customers are not necessarily low usage customers, if the Board were interested in providing additional bill support to mitigate bill impacts for the fixed cost recovery strategy presented above, one option would be the creation of a fixed bill credit that offsets the requisite bill impact. Such a solution would also require billing changes and so timing would need to consider EWEB's planned Customer Information System replacement project. Management is looking for the Board's feedback on whether this is something to explore for EWEB.

Public Purpose Charges

EWEB currently rolls public purpose costs into its overall revenue requirement. Many utilities show these on a separate line item to raise customer awareness of what is spent for social good programs. Costs often included in the public purpose charges are low income and medical support subsidies, renewable policy standards compliance and other renewable acquisitions (where above market), decommissioning costs, and sometimes conservation related expenses. Management is looking for the Board's feedback on whether this is something to explore for EWEB.

Partial Requirements or Non-Firm Rate Options

A Partial Requirements service offering would apply to customers who self-supply all or a portion of their generation needs from a source other than EWEB, but are still connected to the electric grid. Such a rate would allow them to avoid the variable costs associated with generation provision, while ensuring they continue to pay their share of the fixed infrastructure costs associated with using the delivery services connection to the grid provides, such as black-start capability, selling onsite generation back into the grid, or even standby service for when onsite generation is not available. A non-firm rate could be offered to those that want access to the grid when capacity is available, but are willing to be disconnected when there are constraints. The aim is to identify what loads EWEB should size its system to supply going forward.

Phase-In Strategy – 2016 (and beyond)

There are several rate design changes that staff intends to bring back to the Board in subsequent years. These fall into two categories: a) changes that we intend to phase-in to employ the principle of Gradualism with respect to customer bill impacts, and b) changes we plan to implement, but need additional data, further analysis, or require system upgrades or changes to offer. These items are described below in more detail.

Electric Utility Rate Components

It may be time for the electric utilities to rethink how they define customer services to customers. Break-outs such as customer charge, delivery charge, demand charge and energy charges don't give many customers a readily understandable description of the services they receive from the utility. Things like access to the electric grid, emergency and restoration service, or renewable energy supply could be more descriptive itemizations of the benefits customers actually receive from our service. This is something we hope to have a proposal on next year.

Elevation Charges (water utility)

Recently, the Board approved increases to the elevation charges to reflect the higher fixed costs of servicing higher elevations. Management intends to continue this change in further increase the fixed cost recovery of servicing water at higher elevations. This requires additional analysis and study of the true cost of servicing higher elevation customers.

Residential Tiers & Fixed Charges (electric)

The 2015 rate action for rates to be effective February 1, 2016 proposes to increase the fixed cost recovery and continued tiered collapse. To the extent the bill impacts prevent full implementation of these two changes the intent is to continue to phase in the changes over subsequent years.

Service Panel Component (electric)

EWEB currently provides water service to customers for different capacities based on the size of the service (i.e. 5/8 inch, 3/4 inch, 1 inch, two inch, etc.). Management is exploring differentiating residential electric fixed charges in a similar manner, particularly as the residential class moves to increasing fixed cost recovery and lower quantity charges. Increased fixed cost recovery better reflects EWEB's cost basis and provides more efficient price signals, but it becomes increasingly important to differentiate high usage customers from low usage customers in their fixed costs recovery. For example, a customer who uses an electric vehicles, operates residential grow operations, operates welding equipment or engages in other energy intensive activities requires more infrastructure to serve.

When EWEB recovered costs in the volumetric charges higher usage customer paid a higher proportion of fixed costs. As we transition to higher fixed cost recovery EWEB will be evaluating its fixed infrastructure costs for potential differentiation of fixed costs within the class. This is similar to the water basic charges or the differentiation of fixed costs for the respective commercial classes.

Prepaid Service (possibly both utilities)

There are significant potential customer and utility benefits related to a prepaid program. The utility is potentially able to reduce costs related to service these customers by lower customer contracts. The customers benefit by receive information on usage in a better way to manage bills and cash flow as well as avoiding deposits. We plan to develop a program to provide a prepaid option once the appropriate billing system is in place.

Residential Time of Use Standard Offer / Electric Vehicle Rate

The introduction of electric vehicles presents a unique opportunity to EWEB, but also presents potential risks. If we effectively price power for this new load we will be able to achieve the opportunity of new incremental load that displaces emissions related to traditional vehicle fuels with a low carbon alternative. It is possible this will be able to be achieved within the traditional, standard offer rate structures of a time of use rate; however, it is possible EWEB could alternatively propose a rate directed specifically toward electric vehicles. We are currently piloting a time of use rate, but full implementation requires additional systems and equipment.

Recommendation

Management recommends the Board provide direction and feedback on the rate design proposals presented in this backgrounder.