MEMORANDUM

EUGENE WATER & ELECTRIC BOARD

Rely on us.

TO: Commissioners Mital, Simpson, Helgeson, Manning and Brown

FROM: Erin Erben, Power & Strategic Planning Manager
Adam Rue, Senior Energy Resource Analyst
Cathy Gray, Energy Resource Analyst

DATE: September 29, 2015

SUBJECT: 2016 EWEB Pricing (Rate) Design Proposal

Objective

This memo lays out the details of the pricing design proposal Management is recommending to the Board for inclusion in the November Pricing Proposal. It also incorporates both recommended structural changes to the individual customer price plans[1] (rates), consistent with the Board's Strategic Plan objectives, as well as a preview of the overall average revenue requirement change that will be proposed to the Board next month in a separate proposal from the Finance Department. Including both herein is intended to give the Board a complete picture of the bill impact to customers from the proposed changes combined.

In addition, this memo seeks to provide clarity on the potential end state of the current pricing design initiative in the Strategic Plan, for which Management will be seeking guidance from the Board at the October Board Meeting on a number of topics. Specifically, Management will be seeking a Board decision on the following:

Electric Utility:

1. Approve Management recommendation to select Option A – which shifts $10 (vs. $5) to the basic charge, and makes an offsetting energy charge reduction, for inclusion in the formal residential pricing proposal scheduled to come to the Board in November.
2. Direct Management to also reflect the recommended commercial class price plan design changes in the November proposal.
3. Direct Management to adopt the end-state pricing objectives defined in this backgrounder and choose either a three-year or five-year implementation path to completion.
4. Direct Management to include the OATT update and the C-TOU pilot proposal in the formal November proposal, in order to leverage the public process already planned.

[1] You will see the migration of language in this document from "rates" or "tariffs" to "prices" and "price plans". Similarly, the utility values moving from "ratepayers" to "customers".

Water Utility:

1. Direct Management to include the proposed revenue requirement increase in the fixed bill component for the November proposal.
2. Direct Management to return next year with end-state pricing objectives that take into account the appropriate levels of fixed charge, conservation price signals, and elevation charges.

Introduction

In recent years, EWEB has made incremental changes to its pricing to progress toward the stated goal of improving fixed cost recovery and better reflecting marginal energy prices through energy tier price flattening, particularly in its residential price structure. EWEB has also commissioned consultant review of its Cost of Service models to help ensure appropriate cost allocation practices for both utilities. Having completed those for the electric utility, EWEB is now ready to propose design changes to commercial pricing as well.

The structural changes to pricing are intended to help EWEB, and its customers, transition to a more sustainable pricing paradigm which provides customers with accurate information about the cost of utility services, reduces cross subsidies among customers within classes, and improves price signals for customers making investment decisions that anticipate expected paybacks from utility bill savings.

Pricing Principles

When evaluating pricing proposals to bring before the Board, EWEB considers many factors, most prominently customer bill impacts and the six ratemaking principles that guide our pricing strategy: 1) Sufficiency, 2) Affordability, 3) Efficiency, 4) Cost-Basis, 5) Equity, and 6) Gradualism.

Since no two customer consumption patterns are exactly alike, making structural changes to pricing inevitably impacts individual accounts differently within a customer class. To help remove ambiguity and achieve the lowest costs overall, Efficiency is sought through minimizing subsidies by the use of Cost-Basis to enhance Equity. These principles are employed as the measure of best fit for cost allocation within a given customer class. Affordability and Sufficiency guide the revenue requirement overall and Gradualism governs the pace of change being proposed, generally assessed through bill impacts.

The remainder of this memo is laid out as follows:

I. ELECTRIC UTILITY - RETAIL PRICING DESIGN PROPOSAL
   A. Possible end states for current Pricing Strategy
   B. Recommended 2016 Electric Price Design[2]
   C. Electric Pilot Offering – Commercial TOU

[2] Note that while figures are provided in this backgrounder for illustrative purposes, the final price plans will be presented at the November Board meeting and the exact numbers may change. The associated bill impacts shown herein are representative of the final results.

II. ELECTRIC UTILITY - WHOLESALE TRANSMISSION PRICING PROPOSAL
   A. OATT proposal

III. WATER UTILITY - RETAIL PRICING DESIGN PROPOSAL
   A. Possible end states for current Pricing Strategy
   B. Recommended 2016 Water Price Design

I. ELECTRIC UTILITY - RETAIL PRICING DESIGN PROPOSAL

A. Possible end states for current Pricing Strategy

To prepare for a discussion on the best end state solution for EWEB's pricing design Business Strategy, the following offers a brief refresher on the basic cost components of a customer's bill.

Basic Cost Components:

1) *Customer-related charges*, include: meter reading, customer service, customer accounting and billing service. These costs are largely fixed on a per customer basis, independent of quantity or time consumed.

2) *Facilities-related charges*, include: customer specific facilities such as service drop installations, and metering infrastructure. These costs are largely fixed and are a function of the maximum amount of energy a customer is configured to consume.

3) *Demand-related charges*, include: transmission and distribution substations, and wires. The cost allocation to customers is best based on maximum amount of energy a customer consumes a particular point in time.

4) *Energy-related charges*, include: purchased power, fuel, and variable O&M costs. These costs vary with the total amount of generation a customer consumes.

Today, EWEB uses 1, 3 and 4 in its customer price plans.

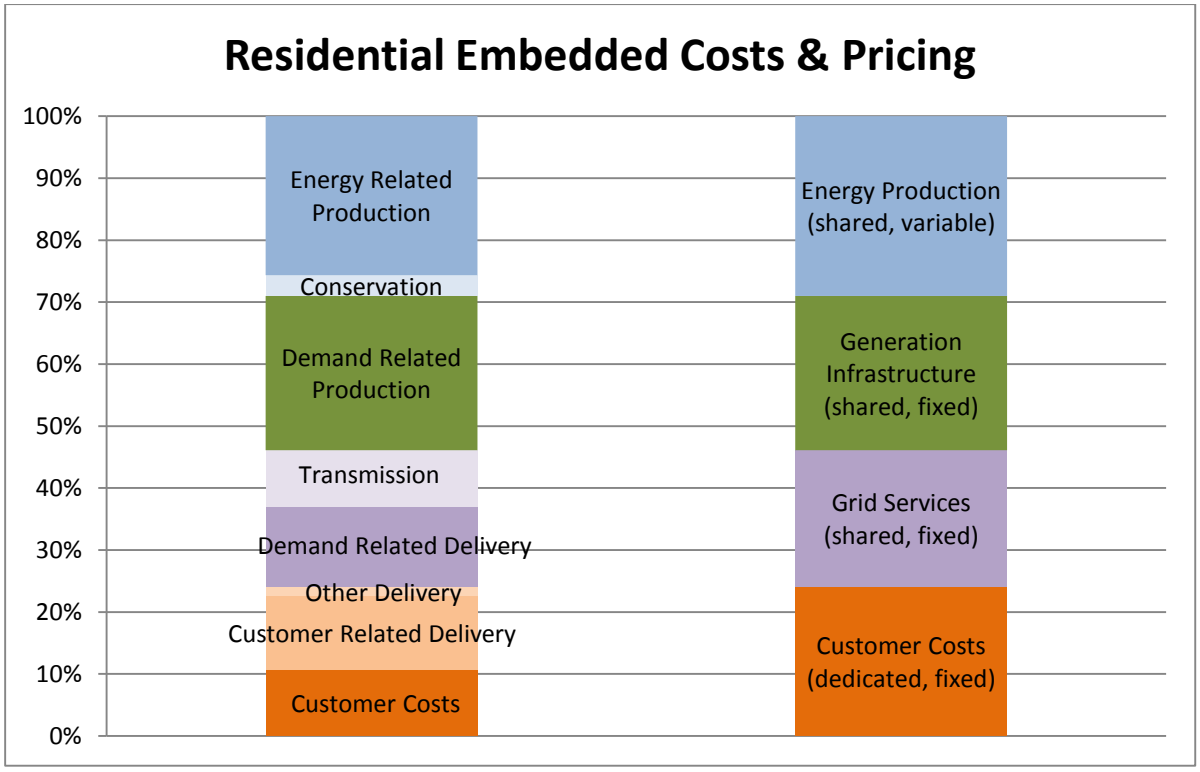
Cost-based "end state" for Pricing Strategy
As part of the exercise to respond to the Board Strategy Objective to:

"*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*",

Management has been working on categorizing and reassessing the cost components we track, and thinking about how we can communicate these to customers in a more intuitive way.

The chart below illustrate this work by comparing the current cost allocation components used in our Cost of Service Analysis (COSA) as compared to four high-level service categories that we would ultimately envision displaying on the customer bill.

Chart R-1. Residential Embedded Costs & Associated Pricing Categories



Two key objectives of this construct are to clearly separate:

1) The fixed cost components from the variable cost components, and
2) The generation related cost components from the grid and customer related cost components. (In the chart above, Energy Production and Generation Infrastructure both reflect the costs specific to Generation Services.)

When customers self-generate at their site, they offset the generation-related components of cost to the utility: energy production in the near term and new generation investments over the long run. To the extent customers still push or pull energy to or from the grid at any point in time, they still use Grid Services. This is consistent with the idea (previously introduced to the Board as "Partial Requirements" service) that in the long-run Generation Services may be optional but all customers connected to the grid, should pay for Grid Services and Customer Costs.

Management believes the most cost-reflective recovery mechanisms for each of these categories would be as follows:

Customer Costs	Fixed monthly charge
Grid Services	kW charge based on annual peak demand[3]
Generation Infrastructure	kW charge based on monthly peak demand
Energy Production	kWh charge based on monthly usage

Residential Customers

To date, demand charges have not be used for residential customers, primarily due to metering constraints, but also to enhance bill simplicity for customers. In the future, it may be warranted to include a demand charge component to the bill. A second best solution would be to move some or all of the demand-related costs into the fixed, customer charge. While EWEB's billing and metering technology is not currently capable of doing this, if including demand charges for residential customers is chosen as an end state strategy by the Board, there would be a couple of options:

- Modify current systems to accommodate as soon as feasible, or
- Wait 2-3 years for new technology upgrades to begin implementing

Should the Board not choose to employ demand charges for residential customers, Management recommends the following:

- Move Grid Services related costs into the fixed monthly charge over time.

Ultimately, the end state of this iteration of price design changes, particularly the level of residential fixed costs, will depend on perceptions of fairness as much as cost-causation. While it is true that the *current* pricing construct does result in cross-subsidies within customer classes (i.e. high usage customers subsidize the fixed costs of low usage customers), societal consideration such as limited income bill impacts from any change are real and must be addressed. Additional information regarding the make-up on EWEB's residential customer base and proposed mitigation options for limited income are provided in the sections below.

Choice for all Customers

Ultimately, all of this work is intended to lay the groundwork to offer EWEB customers more choice. Once our products and services are priced appropriately, (unwinding a long legacy of false price signals for electricity), and EWEB is able to make some key investments in new technology (namely meter and billing system upgrades), EWEB can be in a position to offer its customers many of the desirable service options they have come to expect from alternative electricity providers, in addition to implementing the end-state design changes shown above.

These include, but are not limited to services such as:

[3] A case can be made to include Grid Services in the fixed monthly charge component, but to allow customers more opportunity to release bill savings through alternative investment decisions, EWEB Management prefers an annual kW charge, which balances the fixed nature of these investments against customer use of the system.

- Partial Requirements pricing options
- Time-based pricing options for all customer classes
- Fixed bill pricing options
- Pre-pay pricing options
- Limited income price discounts on the bill
- Other customized billing and usage notification offerings

The end goal is to offer customers more options so they can have greater control over their bill as a result of their individual consumption choices and needs. This is important since there are really are no two customers that are exactly alike, and yet we all share and rely on the same basic infrastructure to provide this very important service – electricity – that is a foundational element of our economy and society.

It is Management's hope to continue to offer pilot programs that explore the nature of these new services, in addition to testing customer interest, as we overhaul our systems to enable the capability to provide new offerings to all customers.

Other Considerations

Timing of the ultimate availability of these options for customers, and the time it takes to achieve our price design objectives, is impacted by the following:

- The difference between costs and current pricing components for each of the classes (as defined by the costing models EWEB employs);
- The Board's feedback on its desired end state;
- How recent accounting changes ultimately trickle down to these cost models (how we group and track our cost components);
- When we are able to replace our Customer Information System (aka billing system) – currently slated for completion in three years' time;
- Ability to offer new metering options to customers, currently slated to be available in about two years' time); and
- Our ability to test programs in the pilot stage between now and then.

B. Recommended 2016 Electric Price Design

Residential Service

Residential customers are served under EWEB's Schedule R-6 Price Plan, which applies to both single-family and multi-family dwellings. There are approximately 80,000 customers in this class. Of those approximately 8 percent have been identified as limited income. In general, the consumption patterns of limited income customers[4] has been found to follow the general population overall.

[4] This includes EWEB's Customer Care (ECC) and the Job loss program (JOBL) that represented 3,466 and 405 total customers in 2014, respectively. Non-EWEB federal funds are also available to qualifying customers under the Low Income Home Energy Assistance Program (LIEP). In 2014, 2,641 customers qualified for LIEP.

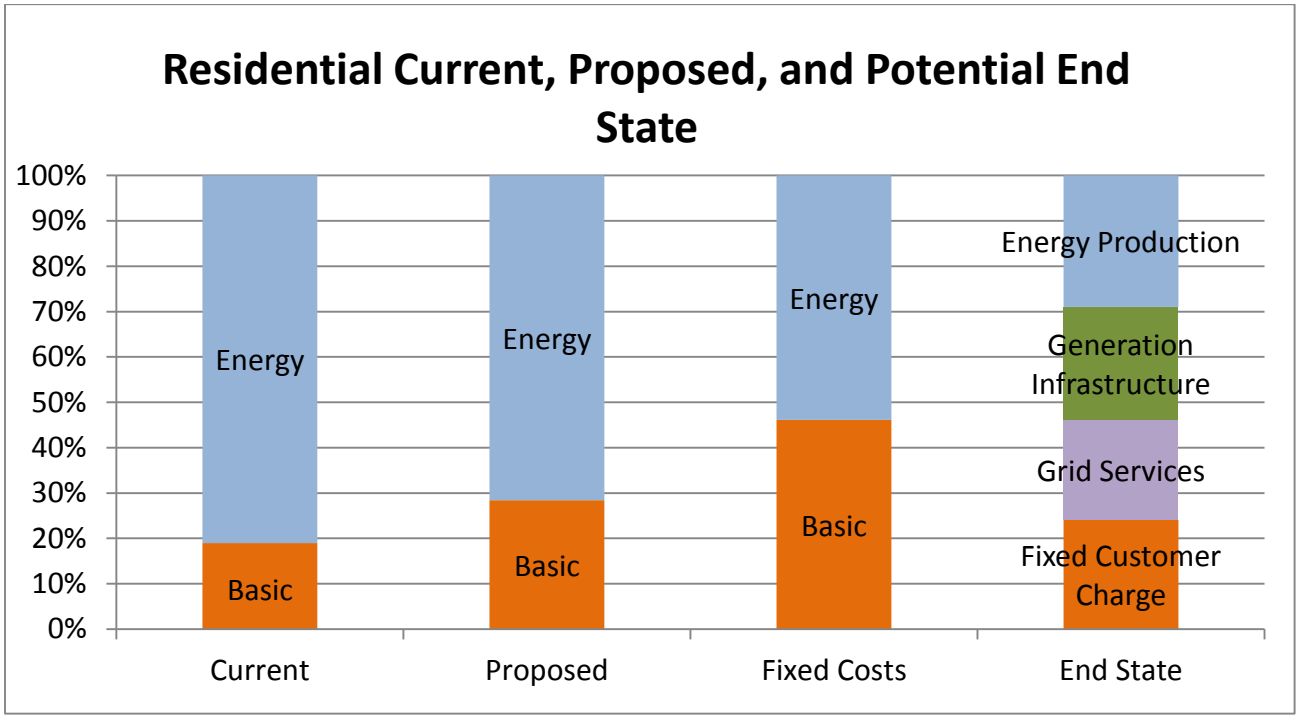
Table R-1. Comparison of Annual Average Consumption

Usage Range (kWh)	No. of Residential Customer Accounts	%	No. of Limited Income Accounts	%
0 - 101	2662	3%	27	0%
101 - 501	21303	27%	1717	26%
501 - 1001	29108	36%	2467	38%
1001 - 2001	20711	26%	1814	28%
2001 - 3001	4423	6%	375	6%
3001 - 4001	1122	1%	89	1%
4001 - 5001	333	0%	25	0%
over 5001	294	0%	9	0%
	79955		6521	

End State

The chart below compares current EWEB residential prices with price design proposal recommended for inclusion in the November Pricing Process, in addition to two views of the potential end state price design.

Chart R-2. Comparison of Pricing Design Options (*)



(*) All four options reflective of on an average residential customer bill of $106.

Proposed Pricing Design
Management is proposing that the Board approve design changes to the residential price plan that reflect a combination of improved fixed cost recovery and pricing simplification through: 1) an increase to the basic charge, 2) elimination of the second energy price tier, and 3) consolidation of the two volumetric charges (delivery and energy) into a single energy charge.

Table R-2. Representative Residential Pricing Design reflecting two pricing design options for fixed cost recovery

	Existing Prices		**Option A**	**Option B**	
Basic Charge:	$20.00		$30.00	$25.00	per month
Delivery Charge:	$0.02560		No Charge	No Charge	
Energy Charge:			$0.08187	$0.08696	per kWh
Tiered Prices					
First 800 kWh	$0.05803				
Over 800 kWh	$0.07254				

Based on the feedback received from the Board to date, Management is providing two Basic Charge options, but is recommending Option A. While increasing the basic charge to $30 improves fixed cost recovery, it still does not recover all fixed costs in the basic charge (as seen in Chart R-1). However, making incremental changes now will ease future bill impacts from subsequent design changes under either end state proposal. Notably, the end state solution being recommended suggests a monthly customer charge of $25; however since EWEB's billing and metering technology is not currently capable of billing demand charges for residential customers, Management proposes to hold some of the Grid Services related costs in the fixed monthly charge component until the technology is in place. This will ease bill impacts since a transition from a fixed charge to an annual demand charge is generally less disruptive than a shift from kWh charges to an annual kW charge.

Bill Impacts
For the average customer, there would be no net bill impact from the proposed pricing design changes – they are considered "revenue neutral" in terms of total revenue collected by EWEB. However, most customers would see some bill impact due to differences in individual customer consumption from the average. Since the intent of the changes is to minimize the subsidies inherent in class-based pricing, customers facing bill decreases from the changes being proposed are generally those that have been subsidizing the ones facing bill increases up until this point; and those facing increases are generally the ones that have not paid their proportionate share of

the fixed costs heretofore.

When assessing acceptable bill impact ranges, it is important to look at overall dollar impacts as well as percentage changes since they sometimes tell a very different story about the magnitude of the proposed change. Below is a table showing the bill impacts for various usage brackets. As shown in Table R-1, the highlighted areas represent the usage categories within which the majority of our customers reside.

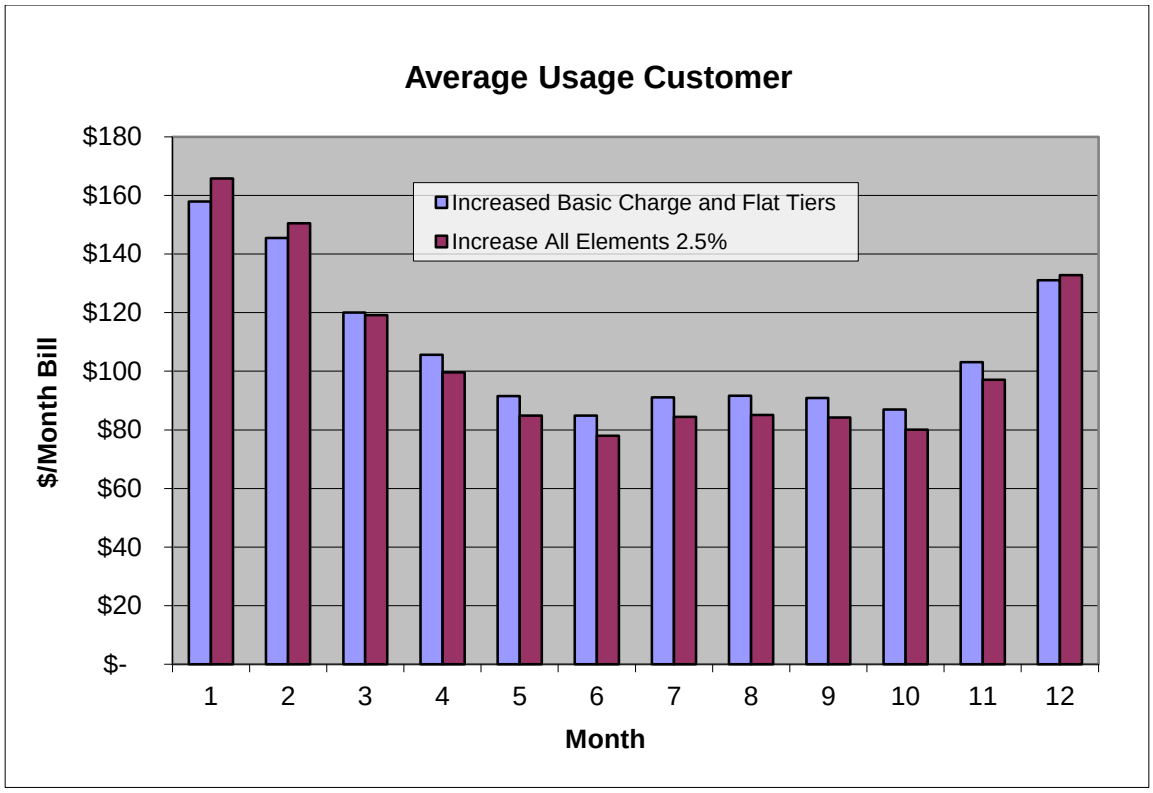
Table R-3. Residential Monthly Bill Comparison

kWh	Current Pricing	Option A Proposed Pricing	Bill Impact	% Impact	Option B Proposed Pricing	Bill Impact	% Impact
100	$28.36	$38.19	$9.82	34.6%	$33.70	$5.33	18.8%
500	61.82	70.94	9.12	14.8%	68.48	6.67	10.8%
1000	106.53	111.87	5.34	5.0%	111.96	5.43	5.1%
2000	204.67	193.74	(10.93)	-5.3%	198.92	(5.75)	-2.8%
3000	302.81	275.61	(27.20)	-9.0%	285.88	(16.93)	-5.6%
4000	400.95	357.48	(43.47)	-10.8%	372.85	(28.11)	-7.0%
5000	499.09	439.35	(59.74)	-12.0%	459.81	(39.28)	-7.9%

Bill Impacts to Limited Income Customers

Based on several years of assessment, Management is comfortable concluding that the usage patterns of the limited income customers EWEB can identify are generally representative of the overall population. This means that the bill impacts will be proportionate to both populations. In other words, for both the residential class overall and the limited income segment of the class, customers that tend to use more energy (and so have higher bills) in the winter will benefit from this pricing design change. For this reason, increasing fixed cost recovery helps levelize customer bills across the year (reduce bill volatility month-to-month).

Chart R-3a (Proposed Option A). Average Usage Customer - Monthly Consumption and Bill Impact for Proposed Change vs. a Flat 2.5% Increase to all Cost Components



You can see in the chart above that, for the average customer, bills in the highest usage months tend to decrease under the proposed changes while the summer bills and shoulder month bills increase. This benefits customers, particularly those on limited income, as it lowers the bill impact in the highest usage months. This benefit is more pronounced for higher consumption customers (see Chart R-3b). However, the lowest consumption customers see increases in every month (see Chart R-3c). The benefit of this approach to EWEB overall is better revenue stability since it better aligns revenues with underlying costs.

Chart R-3b (Proposed Option A). High Usage Customer - Monthly Consumption and Bill Impact for Proposed Change vs. a Flat 2.5% Increase to all Cost Components

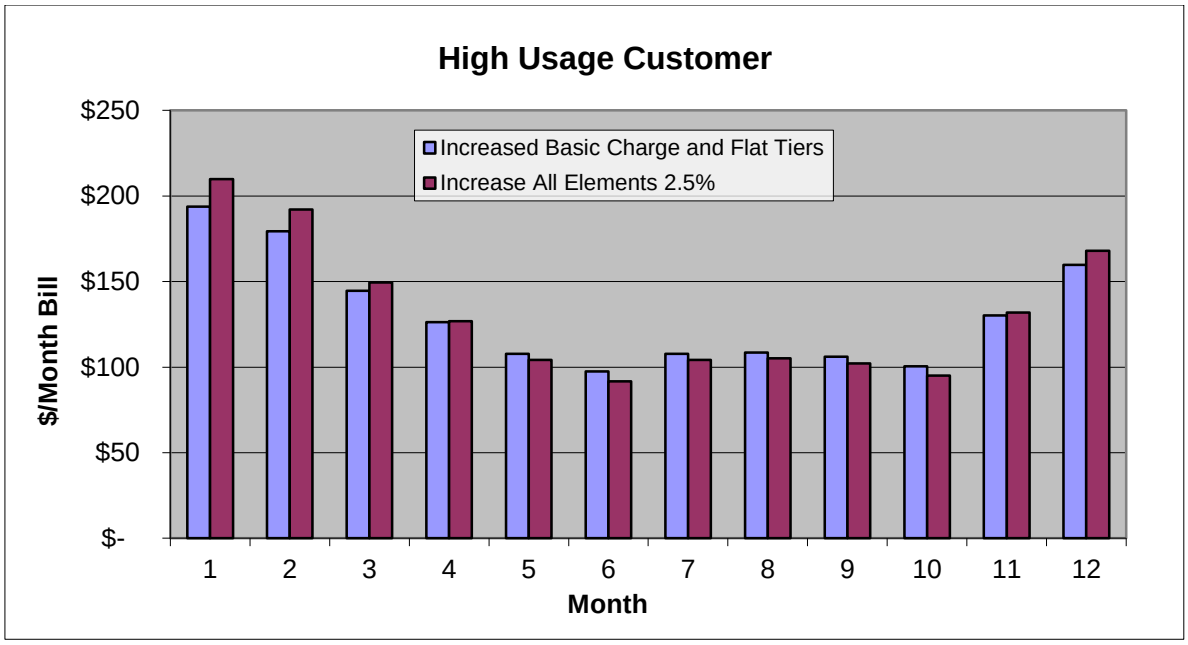
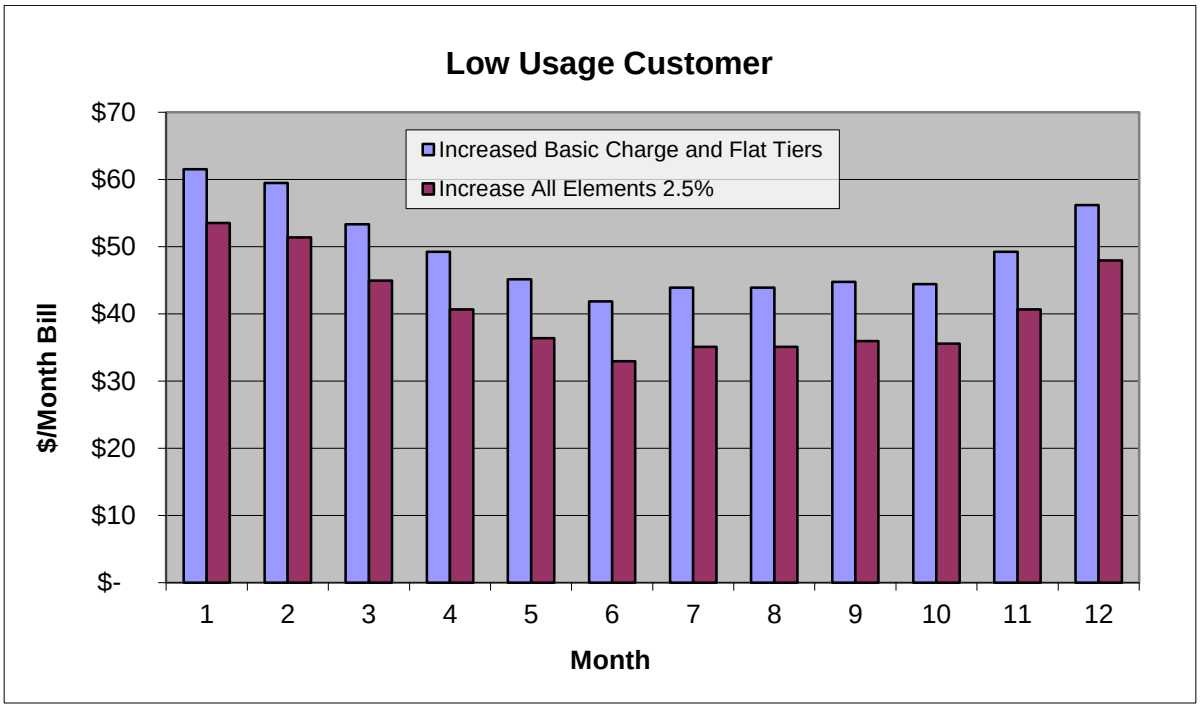


Chart R-3c (Proposed Option A). Low Usage Customer - Monthly Consumption and Bill Impact for Proposed Change vs. a Flat 2.5% Increase to all Cost Components



These charts also provide a look at the impact of this design proposal as compared to the typical approach of applying the proposed overall price increase "across the board" to all pricing components. What you can see, is that when the bills are highest for customers, especially for those with the highest usage overall, this approach actually tends to reduce bills. Since the "high bill season" is the time our customers are most sensitive to their bills, this can help reduce customer high-bill complaints.

Limited Income Customer Bill Impacts

Management has taken to heart the concerns raised by the Board about our most financially vulnerable customers, those on limited incomes. We share those concerns. While we believe this proposal actually helps many limited income customers, particularly those that spend a higher proportion of income on their electric bills (the higher usage customers), we would propose consideration of additional limited income funds to be applied to the annual allotment of aid (currently $200) for *low usage*, limited income customers that apply. While ideally we might offer a bill credit that offsets some of the fixed costs for these customers, our current systems limit our ability to do so and the administrative overhead of manual eligibility determination is onsidered too costly to implement at this time. However, a simple solution would be to augment the existing program of offering a one-time bill credit annually, for which the administrative overhead is already incurred. Management is recommending an offset equal to half of the proposed increase to the fixed monthly charge under the proposed residential price design of Option A so that the bill impact for these customers matches Option B.

Small General Service

The Small General Service (G-1) customer class serves accounts with monthly billing demand ranging from 0 to 30 kW. The customer eligibility for this schedule is based on having an average of the three highest peak demands over the prior 12 months falling below 30 kW. There are currently approximately 7,500 customers served under schedule G-1[5].

Table C.1 Small Commercial Demand Strata

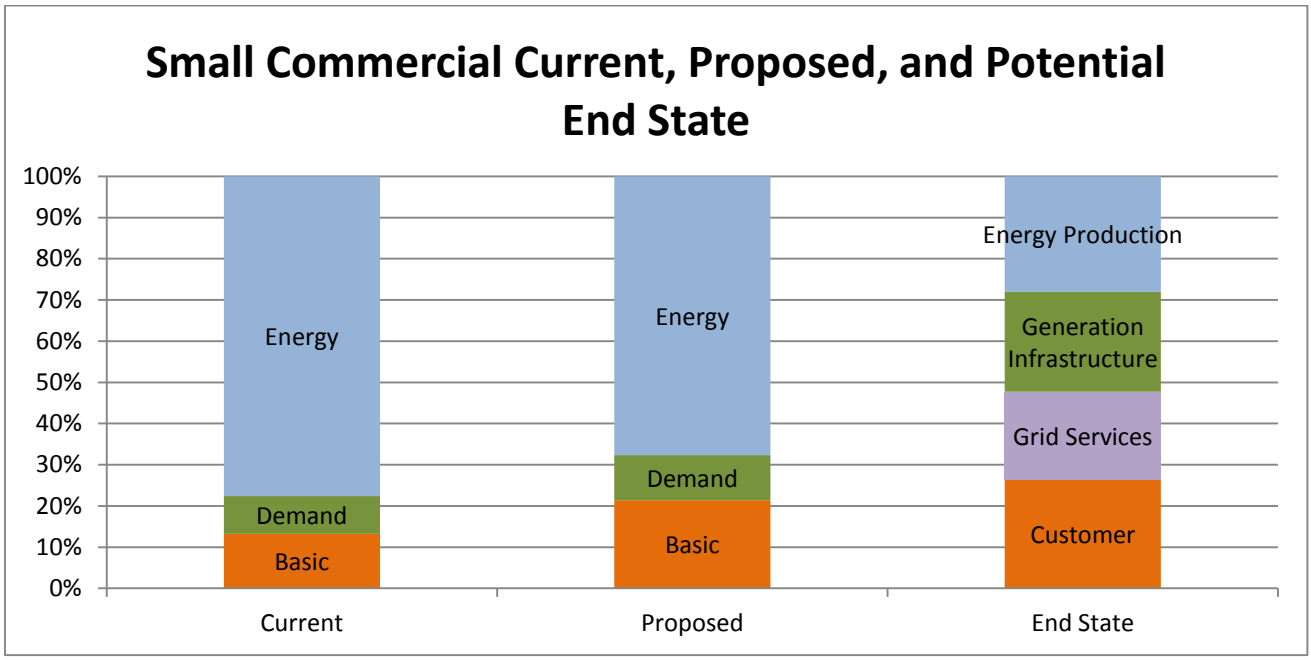
Demand Range (kW)	Small Commercial Accounts	%
0 - 2	1,763	24%
2 - 5	1,251	17%
5 - 8	1,090	15%
8 - 12	1,206	16%
12 - 15	638	9%
15 - 21	878	12%
21 - 31	449	6%
over 31	81	1%

[5] Small commercial business types include medical offices, professional business (e.g. legal, real estate, etc.), restaurants, retail stores, and special trade contractors (e.g. plumbing, electrical, heating, etc.)

End State

The chart below shows EWEB's *current* cost allocation in prices compared to the pricing design proposed and the fully cost-based pricing model - the proposed "end state". You can clearly see from this depiction the large disconnect between current pricing and the underlying cost basis. It will take several years to achieve the desired end state if the utility wants to manage bill impacts to customers (avoid "price shock") and mitigate the price cliffs as customers move to another commercial price plan (small to medium or medium to large).

Chart C-1. Comparison of Pricing Design Options



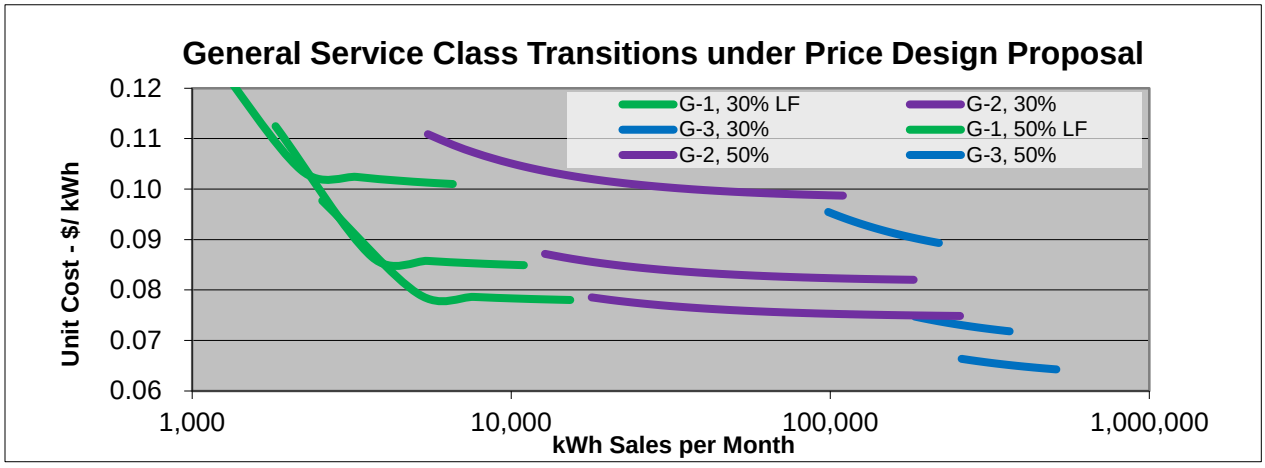
Price Cliffs Between Commercial Customer Price Plans

These proposed design changes make progress toward the end state price design, while taking into account billing impacts from the changes in addition to the impact customers may see if they move between commercial customer classes.

Since there are differences in the associated cost of service for different customer classes, "transition price cliffs" can occur when customers move across classes. Utilities work to minimize these impacts while taking into account other pricing objectives. Since customers with higher demand relative to their overall energy consumption (low "load factor" customers) are more expensive to service, their average prices tend to be higher, as seen in the charge below.

In future analysis and price design we will continue to consider the impact of the class transitions, and we will continue to monitor that the customers are correctly classified based on their demand to better allocate costs and ensure customers are billed in the appropriate pricing schedules.

Chart C-2. General Service Class Transition Price Cliffs



Proposed Pricing Design

Table C-2. Representative Small Commercial Pricing Design reflecting Proposed Design Option above and 2.5% Increase

	Existing Prices	Proposed Prices	
Basic Charge			
Single-Phase	$22.50	$40.00	per month
Three-Phase	$33.25	$51.00	per month
Demand Charge			
First 10 kW	No Charge	No Charge	per kW
Over 10 kW	$6.95	$8.50	per kW
Delivery Charge			
First 1,750 kWh	$0.03490	$0.03500	per kWh
Additional kWh	0.00129	$0.00400	per kWh
Energy Charge			
All kWh	$0.06732	$0.05680	per kWh

Bill Impacts

The representative bill impacts related to current prices as compared to proposed prices are reflected below in Table C-3.

Table C-3. Small Commercial Customer Monthly Bill Comparison

kW LEVEL	1 kW				5 kW			
kWh LEVEL	Existing Prices	Proposed Prices	Dollar Diff	Percent Diff	Existing Prices	Proposed Prices	Diff	Percent Diff
200	$42.94	$58.36	$15.42	35.9%	--	--		--
500	73.61	85.90	$12.29	16.7%	--	--		--
800	104.28	113.44	$9.16	8.8%	$104.28	$113.44	$9.16	8.8%
1,000	--	--	--	--	124.72	131.80	$7.08	5.7%
1,500	--	--	--	--	175.83	177.70	$1.87	1.1%
2,000	--	--	--	--	226.94	223.60	($3.34)	-1.5%
2,500	--	--	--	--	278.05	269.50	($8.55)	-3.1%
3,000	--	--	--	--	329.16	315.40	($13.76)	-4.2%
3,500	--	--	--	--	380.27	361.30	($18.97)	-5.0%
kW LEVEL	**10 kW**				**20 kW**			
KWH LEVEL	Existing Prices	Proposed Prices	Dollar Diff	Percent Diff	Existing Prices	Proposed Prices	Dollar Diff	Percent Diff
1,000	$124.72	$131.80	$7.08	5.7%	--	--		--
1,500	175.83	177.70	1.87	1.1%	--	--		--
2,000	226.94	223.60	(3.34)	-1.5%	$296.44	$308.60	$12.16	4.1%
2,500	278.05	269.50	(8.55)	-3.1%	347.55	354.50	$6.95	2.0%
3,000	329.16	315.40	(13.76)	-4.2%	398.66	400.40	$1.74	0.4%
3,500	380.27	361.30	(18.97)	-5.0%	449.77	446.30	($3.47)	-0.8%
4,000	431.38	407.20	(24.18)	-5.6%	500.88	492.20	($8.68)	-1.7%
6,000	635.82	590.80	(45.02)	-7.1%	705.32	675.80	($29.52)	-4.2%
8,000	--	--	--	--	909.76	859.40	($50.36)	-5.5%
10,000	--	--	--	--	1,114.20	1,043.00	($71.20)	-6.4%
12,000	--	--	--	--	1,318.64	1,226.60	($92.04)	-7.0%

Medium General Service

The Medium General Service (G-2) price schedule serves customer accounts with monthly billing demand ranging from 31 to 500 kW. The customer eligibility for this schedule is based on having an average of three highest peak demands over the prior 12 months falling between 31 and 500 kW. There are currently approximately 1,800 customers served under schedule G-2.

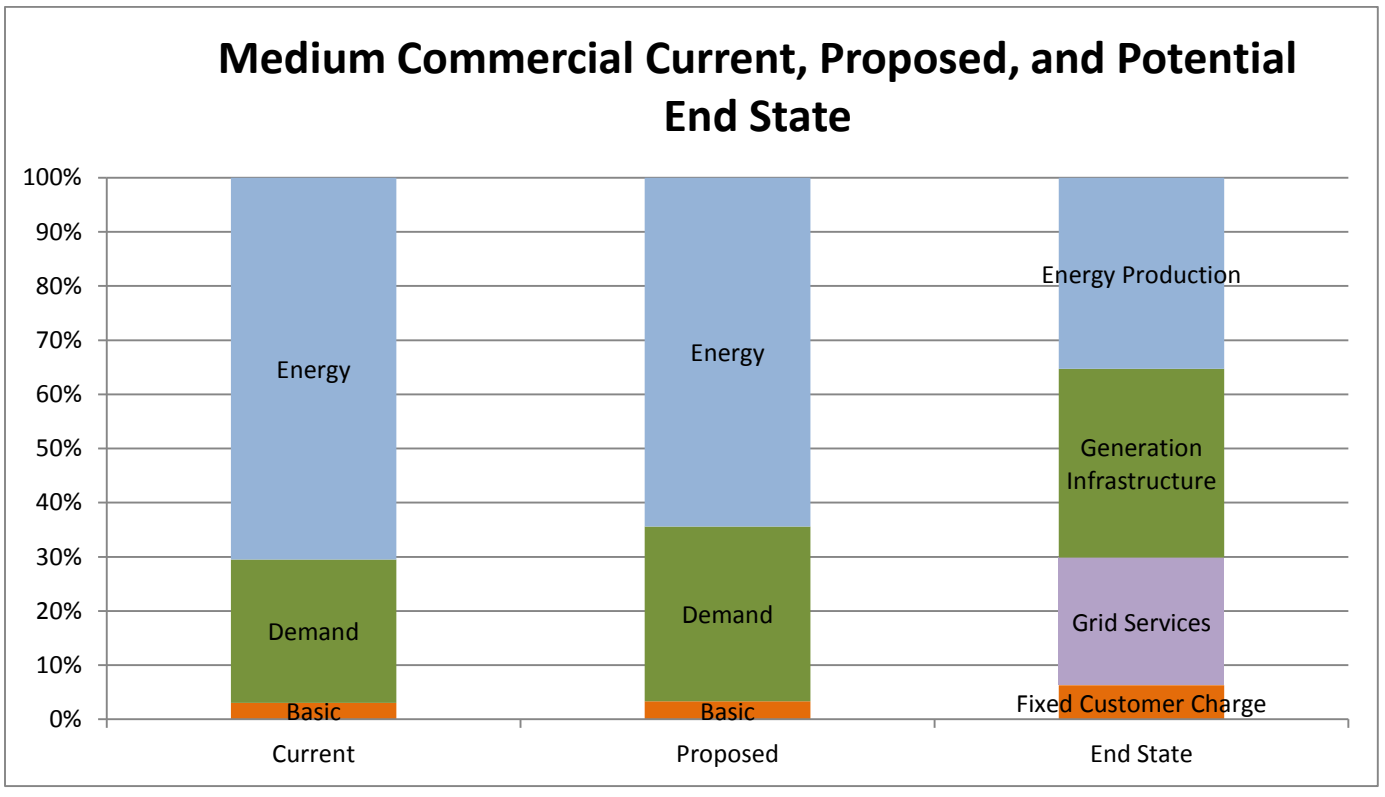
Table C-4. Medium Commercial (G-2) Demand Strata

Demand Range (kW)	Medium Commercial Accounts	%
0 - 21	211	12%
21 - 31	285	16%
31 - 51	543	30%
51 - 101	410	23%
101 - 151	141	8%
151 - 201	72	4%
201 - 301	76	4%
over 301	47	3%

End State

The chart below shows EWEB's current medium commercial prices, as compared to the proposed price design, and the potential end state. EWEB proposed increase moves towards the proposed end state price. Note there is no difference in the average customer bill under any of these options.

Chart C-3. Comparison of Pricing Design Options



Proposed Pricing Design

Table C-5. Representative Medium Commercial Pricing Design reflecting Proposed Design Option above and 2.5% Increase

	Existing Pricing			Proposed Pricing		
	Secondary	Primary		Secondary	Primary	
Basic Charge						
Single-Phase	$37.30	---		$50.00	---	per mo
Three-Phase	$57.85	$3,360		$70.00	$185	per mo
Demand Charge						
First 300 KW	$7.25	No Charge		$9.000	$8.850	per kW
Over 300 KW	$7.25	$7.10		$9.000	$8.850	per kW
Energy Charge						
All kWh	$0.06084	$0.05996		$0.05700	$0.05612	per kWh

Bill Impacts

The representative bill impacts related to current prices as compared to proposed prices are reflected below in Table C-6.

Table C-6 Medium Commercial Customer Bill Comparison

kW LEVEL	**30 kW**				**50 kW**			
kWh LEVEL	**Monthly Bill Existing Prices**	**Monthly Bill Proposed Prices**	**Dollar Diff**	**Percent Diff**	**Monthly Bill Existing Prices**	**Monthly Bill Proposed Prices**	**Dollar Diff**	**Percent Diff**
2,000	$376	$434	$58	15.3%	--	--	--	--
3,000	437	491	54	12.3%	--	--	--	--
4,000	498	548	50	10.0%	--	--	--	--
6,000	620	662	42	6.8%	--	--	--	--
8,000	742	776	34	4.6%	$887	$956	$69	7.8%
10,000	863	890	27	3.1%	1,008	1,070	62	6.1%
15,000	1,167	1,175	8	0.7%	1,312	1,355	43	3.2%
20,000	1,472	1,460	(12)	-0.8%	1,617	1,640	23	1.4%
25,000	1,776	1,745	(31)	-1.7%	1,921	1,925	4	0.2%
30,000	2,080	2,030	(50)	-2.4%	2,225	2,210	(15)	-0.7%
35,000	--	--	--	--	2,529	2,495	(34)	-1.4%
40,000	--	--	--	--	2,833	2,780	(53)	-1.9%
60,000	--	--	--	--	4,050	3,920	(130)	-3.2%

kW LEVEL	100 kW				200 kW			
KWH LEVEL	Monthly Bill Existing Prices	Monthly Bill Proposed Prices	Dollar Diff	Percent Diff	Monthly Bill Existing Prices	Monthly Bill Proposed Prices	Dollar Diff	Percent Diff
2,000	$884	$1,064	$180	20.4%	--	--	--	--
4,000	1,006	1,178	172	17.1%	--	--	--	--
6,000	1,127	1,292	165	14.6%	--	--	--	--
8,000	1,249	1,406	157	12.6%	$1,974	$2,306	$332	16.8%
10,000	1,371	1,520	149	10.9%	2,096	2,420	324	15.5%
15,000	1,675	1,805	130	7.8%	2,400	2,705	305	12.7%
20,000	1,979	2,090	111	5.6%	2,704	2,990	286	10.6%
25,000	2,283	2,375	92	4.0%	3,008	3,275	267	8.9%
30,000	2,588	2,660	73	2.8%	3,313	3,560	248	7.5%
35,000	--	--	--	--	3,617	3,845	228	6.3%
40,000	--	--	--	--	3,921	4,130	209	5.3%
60,000	--	--	--	--	5,138	5,270	132	2.6%

Large General Service

The Large General Service price schedule serves customer accounts with monthly billing demand ranging from 501 to 10,000 kW. The customer eligibility for this schedule is based on having an average of three highest peak demands over the prior 12 months falling between 501 and 10,000 kW. There are currently approximately 50 customers served under schedule G-3.

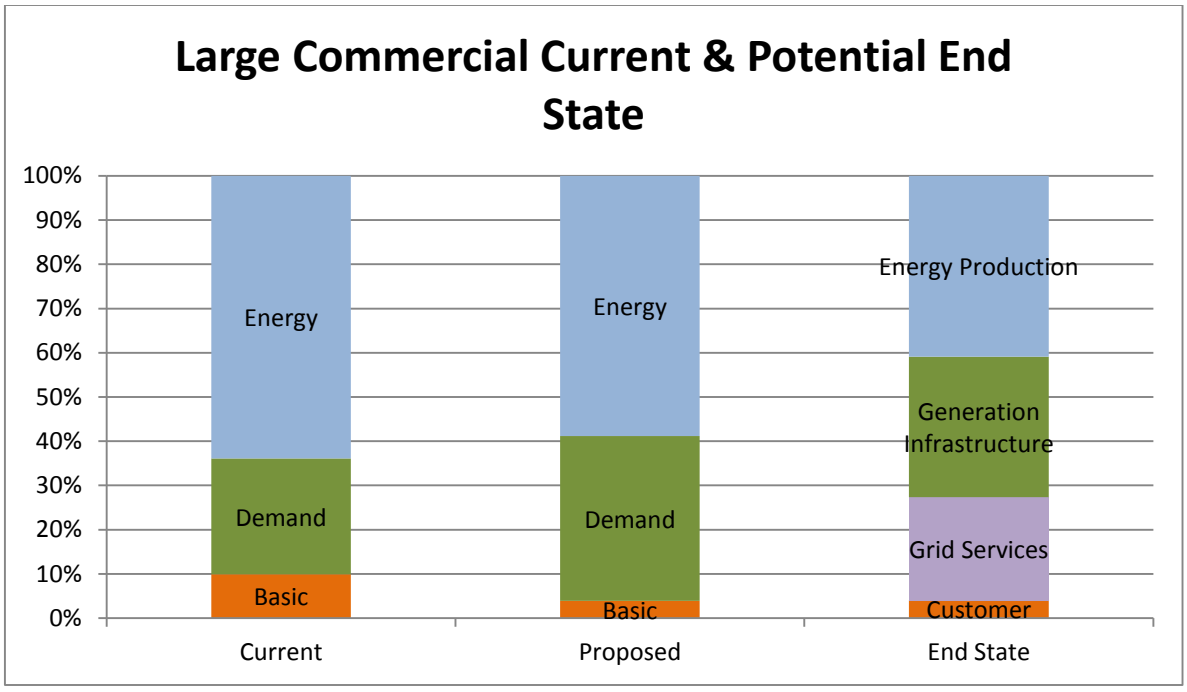
Table C-7. Large Commercial (G-2) Demand Strata

Demand Range (kw)	Large Commercial Accounts	%
0 - 501	13	24%
501 - 1001	26	48%
1001 - 1501	11	20%
1501 - 2001	2	3%
2001 - 3001	2	3%
3001 - 4001	1	1%
over 4001	0	1%

End State

The chart below shows EWEB current large commercial prices, as compared to the proposed price design, and the potential end state. As you can see, the pattern of insufficient demand-related cost recovery persists throughout the commercial customer classes.

Chart C-4. Comparison of Pricing Design Options



Proposed Pricing Design

Table C-8. Representative Large Customer Commercial Pricing Design reflecting Proposed Design Option above and 2.5% Increase

	Existing Prices			Proposed Prices		
	Secondary	Primary		Secondary	Primary	
Basic Charge	$2,690	$2,615		$1,100	$1,050	per month
Demand Charge						
First 300 kW	No Charge	No Charge		$8.50	$8.30	per kW
Over 300 kW	$7.50	$7.30		$8.50	$8.30	per kW
Energy Charge						
All kWh	$0.04823	$0.04730		$0.04550	$0.04457	per kWh

Bill Impacts

The representative bill impacts related to the current prices as compared to the proposed prices are represented in C-9.

Table C-9. Large Commercial Customer Monthly Bill Comparison

kWh LEVEL	500 kW				1000 kW			
	Monthly Bill Existing Prices	Monthly Bill Proposed Prices	Dollar Diff	Percent Diff	Monthly Bill Existing Prices	Monthly Bill Proposed Prices	Dollar Diff	Percent Diff
60,000	$7,084	$8,080	$996	14.1%	--	--		--
80,000	8,048	8,990	942	11.7%	--	--		--
100,000	9,013	9,900	887	9.8%	$12,763	$14,150	$1,387	10.9%
150,000	11,425	12,175	751	6.6%	15,175	16,425	1,251	8.2%
200,000	13,836	14,450	614	4.4%	17,586	18,700	1,114	6.3%
250,000	16,248	16,725	478	2.9%	19,998	20,975	978	4.9%
300,000	18,659	19,000	341	1.8%	22,409	23,250	841	3.8%
350,000	21,071	21,275	205	1.0%	24,821	25,525	705	2.8%
500,000	--	--		--	32,055	32,350	295	0.9%
600,000	--	--		--	36,878	36,900	22	0.1%
700,000	--	--		--	41,701	41,450	(251)	-0.6%
800,000	--	--		--	46,524	46,000	(524)	-1.1%
1,000,000	--	--		--	56,170	55,100	(1,070)	-1.9%
1,500,000	--	--		--	80,285	77,850	(2,435)	-3.0%
2,000,000	--	--		--	104,400	100,600	(3,800)	-3.6%

Street Lighting

Management will be bringing proposed price schedules for both public and private street lighting to the November 2015 Board meeting. The revised schedules will reflect updates to the cost of service models as well as a new schedule for LED street lighting. The LED price will be based on multiple wattage ranges each with an assigned price for its respective range.

C. Electric Pilot Offering – Commercial TOU

Commercial Time of Use

EWEB is proposing a limited time of use pilot for commercial customers. The time of use pilot allows customer to benefit from shifting load to off-peak hours. The intent of the pilot is to allow customers to receive the benefit of load shifting while EWEB works through metering issues, billing, and customer accounting issues with a small group of customers. The pilot price is limited due to billing constraints, but it is structured to be revenue neutral. Customers would not be guaranteed bill savings under this pilot.

The design is constructed to pass along savings from EWEB's BPA network transmission bill and on- and off-peak price differentials. The BPA network transmission bill is determined by EWEB's peak kilowatt demand at the time of the BPA's transmission system peak. We reviewed the historical data to confirm the on-peak demand period coincided with the BPA transmission system peak. Therefore, a shift in demand from on-peak to off-peak hours will have a corresponding reduction in BPA NT bills every two years when BPA resets their prices.

The on- and off-peak energy pricing differential was based on the wholesale market price differential. If the customer shifts from on peak to off peak hours, EWEB is able to arbitrage the difference in market prices to realize the on- and off- peak price differential. Both the demand and energy off-peak pricing represents real cost savings to EWEB that can be being passed along to customers who can consume proportionately more in the off-peak periods.

Proposed Pricing Design

Table C-10. Medium Commercial - Time of Use Price Plan Proposal

	Existing Prices			Proposed Prices		
	Secondary	**Primary**		**Secondary**	**Primary**	
Basic Charge						
Single-Phase	$37.30	---		$50.00	---	per month
Three-Phase	$57.85	$3,360		$70.00	$185.00	per month
Demand Charge						
First 300 KW	$7.25	-				per kW
Over 300 KW	$7.25	$7.10				per kW
On- Peak				$9.00	$8.85	per kW
Off- Peak				$6.96	$6.81	per kW
Energy Charge						
All kWh	$0.06084	$0.05996				per kWh
On- Peak				$0.06260	$0.06172	per kWh
Off- Peak				$0.05519	$0.05431	per kWh

Table C-11. Large Commercial – Time of Use Price Plan Proposal

	Existing Prices			Proposed Prices		
	Secondary	**Primary**		**Secondary**	**Primary**	
Basic Charge	$2,690	$2,615		$1,100	$1,050	per month
Demand Charge						
First 300 kW	---	---				per kW
Over 300 kW	$7.50	$7.30				per kW
On- Peak				$8.50	$8.30	per kW
Off- Peak				$6.46	$6.26	per kW
Energy Charge						
All kWh	$0.04823	$0.04730				per kWh
On- Peak				$0.05110	$0.05017	per kWh
Off- Peak				$0.04469	$0.04276	per kWh

Due to its billing limitations and the fact that these bills will need to be manually processed, if approved, EWEB would reserve the right to limit the number of customer accounts on either price to no more than four.

II. Open Access Transmission Tariff (OATT) proposal

While this item is typically not bundled with the retail price proposal for Board, the timing matched on this occasion and so we are addressing review of the retail price and wholesale price changes together.

Background

A price increase in EWEB's transmission tariff is being proposed. The primary price would increase from $1.13 per kW-month to $1.51 per kW month, effective with January 2016 bills. The most recent change to the price was in January 2011.

EWEB offers electric transmission service at the wholesale level. User prices for this service are contained in EWEB's Open Access Transmission Tariff (OATT). This tariff is patterned after OATT tariffs required of FERC-jurisdiction utilities. Though EWEB is not a FERC-jurisdiction utility, it has voluntary chosen this type of price and price schedule to provide transmission on a non-discriminatory basis and to provide consistency with other transmission serving entities. Currently EWEB provides transmission service to the Springfield Utility Board and the University of Oregon.

Discussion

EWEB's OATT tariff is periodically updated and was most recently updated in January 2011. The proposed increase is due to higher transmission plant investment and decreasing peak load forecast. Both of these factors result in a higher price.

The peak load forecast decrease reflects lower peak demand.

Under this proposal, the primary price for the transmission system would increase from $1.13 per kilowatt month to $1.51 per kilowatt month.

Table OATT-1. Open Access Transmission Tariff Price Plan Proposal

Existing Transmission Prices	**per kW-Year**	**per kW-Month**
a. McKenzie Substation Common	$ 5.69	$ 0.47
b. Transmission System	$13.53	$ 1.13
Proposed 2016 Transmission Prices		
a. McKenzie Substation Common	$ 5.36	$ 0.45
b. Transmission System	$ 18.11	$ 1.51

III. WATER RETAIL PRICING UTILITY PROPOSAL

A. Possible end states for current Pricing Strategy

To prepare for a discussion around the best end state solution for EWEB's pricing strategy, here is a refresher on the basic cost components of a customer's bill.

Basic Cost Components:

1) *Customer-related charges,* include: meter reading, billing and customer service. These costs are based on meter size and cover the cost of services that must be provided regardless of how much water is used per month.

2) *Consumption-related charges,* include: water extraction, processing and delivery. These costs apply to the amount of water consumed per month and are expressed in thousands of gallons, or "kgals."

3) *Elevation-related charges,* include: the cost of pumping water to higher-elevation customers, where applicable.

Here are some of the changes Management is interested in pursuing:

- Increasing fixed costs
- Assessing tier pricing
- Assessing elevation charges

Water price design will be undergoing a more comprehensive assessment next year. Prior to the implementation of our new asset management system, we were unable to trace costs to the specific assets needed to deliver water to higher elevations. With the implementation of WAM, we have an opportunity to accumulate costs such that we can assign them to the appropriate elevation zones. In developing a water "end state" proposal, we will also revisit the assumptions in the water COSA.

The water utility faces unique challenges in its water price design. The costs of providing water are primarily fixed (costs that do not vary with consumption). In its effort to improve fixed cost recovery, EWEB will need to balance water supply pricing objectives with regulatory requirements around conservation, as detailed below.

In accordance with Oregon Water Resources Department administrative rules for Water Management and Conservation Plans, OAR 690-086-0150 required that for an EWEB groundwater permit, the applicable price elements require inclusion of the following:

- A price structure under which customer bills are based, at least in part, on the quantity of water metered at the service connections; and
- Adoption of price structures, billing schedules, and other associated programs that support and encourage water conservation.

In 2012, EWEB's Water Management and Conservation Plan (WMCP) was approved by the State of Oregon Water Resources Department (OWRD) to meet this OAR requirement. OWRD determined that EWEB's inclining, tiered pricing (established in 2000) was a benchmark that EWEB is required to meet as a condition of certain water permits. EWEB water pricing to date continues to be consistent with the most commonly applied conservation approach, as defined by the Alliance for Water Efficiency. In addition, according to the California Urban Water Conservation Council (CUWCC) BMP-11[6], the generally accepted definition of a conservation water price has two criteria:

- Collect no more than 30% of revenue from fixed charges so that increases in water consumption directly impact the water bill.
- The goal of BMP-11 is to recover the maximum amount of water sales revenue from conservation pricing which may include:
  - *uniform volumetric prices* (considered to be a conservation pricing compared to flat fee for all the water you can use),
  - *seasonal prices* (an increased block effective during the outdoor watering season),
  - *tiered prices* (also called increasing block prices), and/or
  - *allocation-based prices* (also called water budget prices).

B. Recommended 2016 Water Price Design

Currently, EWEB serves 51,090 water customers, of which the majority are residential retail accounts.

Table W-1. Customer Count and Usage by Class

Customer Class	Count	Kgal Sales (1,000 Gallons)	% of Sales
Residential - Inside City	44,600	3,759,191	49.4%
Residential - Outside City	486	48,634	0.6%
General Service - Inside City	4,791	2,958,849	38.9%
General Service - Outside City	199	137,322	1.8%
Water Districts	2	604,184	7.9%
Willamette Water District	1	27,392	0.4%
City of Veneta	1	72,000	0.9%
Private Fire Lines **	1,010	N/A	N/A
Total	**51,090**	**7,607,572**	**100.0%**

***Elevation number of customers and consumption sales are included in the above customer classes*

As shown below, the vast majority of residential customers take service at the 5/8" service

[6] Link to CUWCC BMP: https://www.cuwcc.org/Resources/Memorandum-of-Understanding/Exhibit-1-BMP-Definitions-Schedules-and-Requirements/BMP-1-Utility-Operations-Programs

entrance size, and so this category is used to assess customer bill impacts.

Table W-2. Residential (Inside City) Customers by Meter Size

Meter	Inside City Customer Count	%
5/8"	41082	92%
1"	218	0%
1-1/2"	3200	7%
2"	94	0%
3"	6	0%
	Total 44600	

As with the electric prices, the current water prices reflect high volumetric pricing as compared to the largely fixed costs. Accordingly, Management is proposing the entire price increase of 3.62% to go into the fixed basic charge.

The table below shows the bill impact of the price increase being proposed for the fixed monthly charge.

Table W-3.Residential (Inside City) Current and Proposed Pricing Design

	Existing	Proposal
Basic Charge (per month)		
5/8"	$19.20	$20.37
3/4"	$19.98	$21.20
1"	$25.92	$27.50
1-1/2"	$39.66	$42.08
2"	$71.06	$75.39
3"	$145.80	$150.17
Volume Charge (per kgal)		
First 8 kgal	$1.601	$1.601
Next 22 kgal	$2.703	$2.703
over 30 kgal	$4.378	$4.378

Bill Impacts

The bill impacts from the proposed prices are in the table below.

Table W-4. Residential (Inside City) Bill Comparison

Meter Size	Monthly Kgal Level	Monthly Bill Existing Prices	Monthly Bill Proposed Prices	Dollar Difference	Percent Difference
5/8 inch					
	0	$19.20	$20.37	$1.17	6.1%
	5	$27.21	$28.38	1.17	4.3%
	10	$37.41	$38.58	1.17	3.1%
	15	$50.93	$52.10	1.17	2.3%
	20	$64.44	$65.61	1.17	1.8%
	25	$77.96	$79.13	1.17	1.5%
	30	$91.47	$92.64	1.17	1.3%
	35	$113.36	$114.53	1.17	1.0%
	40	$135.25	$136.42	1.17	0.9%
	45	$157.14	$158.31	1.17	0.7%

The table below shows the impact of the price increase being allocated to the basic charge for the commercial customers.

Table W-5. Commercial (Inside City) Current and Proposed Pricing Design

Meter Size	Projected Active Services	Projected Annual Consumption	Existing	Proposal
Basic Charge				
5/8"	1,595	19,140	$19.49	$22.09
3/4"	40	480	$20.28	$22.99
1"	1,373	16,476	$26.31	$29.82
1 - 1/2"	903	10,836	$40.24	$45.61
2"	555	6,660	$72.11	$81.74
3"	101	1,212	$162.45	$184.14
4"	55	660	$277.37	$314.40
6"	99	1,188	$416.20	$471.76
8"	67	804	$602.46	$682.89
10"	3	36	$850.89	$964.48
Total	**4,791**	**57,492**		
Volume Charge				
All KGAL (1,000 gallons)		2,958,849	$2.745	$2.745

Bill Impacts

The proposed bill impacts are on the table below.

Table W-6. Commercial (Inside City) Current and Proposed Bill Impact

	5/8" SERVICE			1" SERVICE			2" SERVICE		
Monthly Usage Level (KGAL)	**Monthly Bill Existing Price**	**Monthly Bill Proposed Price**	**Percent Diff.**	**Monthly Bill Existing Price**	**Monthly Bill Proposed Price**	**Percent Diff.**	**Monthly Bill Present Price**	**Monthly Bill Proposed Price**	**Percent Diff.**
0	$19.49	$22.09	13.3%						
5	33.22	35.82	7.8%						
10	46.94	49.54	5.5%	$53.76	$57.27	6.5%			
15	60.67	63.27	4.3%	67.49	71.00	5.2%			
20	74.39	76.99	3.5%	81.21	84.72	4.3%	$127.01	$136.64	7.6%
25	88.12	90.72	3.0%	94.94	98.45	3.7%	140.74	150.37	6.8%
30	101.84	104.44	2.6%	108.66	112.17	3.2%	154.46	164.09	6.2%
40	129.29	131.89	2.0%	136.11	139.62	2.6%	181.91	191.54	5.3%
50	156.74	159.34	1.7%	163.56	167.07	2.1%	209.36	218.99	4.6%
75				232.19	235.70	1.5%	277.99	287.62	3.5%
100				300.81	304.32	1.2%	346.61	356.24	2.8%
200				575.31	578.82	0.6%	621.11	630.74	1.6%
250				712.56	716.07	0.5%	758.36	767.99	1.3%
500							1,444.61	1,454.24	0.7%

	4" SERVICE			6" SERVICE		
Monthly Usage Level (KGAL)	**Monthly Bill Existing Price**	**Monthly Bill Proposed Price**	**Percent Diff**	**Monthly Bill Existing Price**	**Monthly Bill Proposed Price**	**Percent Diff.**
50	$414.62	$451.65	8.9%			
75	483.25	520.28	7.7%			
100	551.87	588.90	6.7%	$690.70	$746.26	8.0%
200	826.37	863.40	4.5%	965.20	1,020.76	5.8%
250	963.62	1,000.65	3.8%	1,102.45	1,158.01	5.0%
500	1,649.87	1,686.90	2.2%	1,788.70	1,844.26	3.1%
750	2,336.12	2,373.15	1.6%	2,474.95	2,530.51	2.2%
1,000	3,022.37	3,059.40	1.2%	3,161.20	3,216.76	1.8%
1,500				4,533.70	4,589.26	1.2%
2,000				5,906.20	5,961.76	0.9%
2,500				7,278.70	7,334.26	0.8%

Recommendations

Management will be making the following recommendations to the Board at the October 6 Board meeting:

Electric Utility:

1. Approve Management recommendation to select Option A – which shifts $10 (vs. $5) to the basic charge, and makes an offsetting energy charge reduction, for inclusion in the formal residential pricing proposal scheduled to come to the Board in November.
2. Direct Management to also reflect the recommended commercial class price plan design changes in the November proposal.
3. Direct Management to adopt the end-state pricing objectives defined in this backgrounder and choose either a three-year or five-year implementation path to completion.
4. Direct Management to include the OATT update and the C-TOU pilot proposal in the formal November proposal, in order to leverage the public process already planned.

Water Utility:

1. Direct Management to include the price increase in the fixed bill component for the November proposal and public process.
2. Direct Management to return next year with end-state pricing objectives that take into account the appropriate levels of fixed charge, conservation price signals and elevation charges.

APPENDIX 1. OPTIONAL READING

What's a Watt Worth?

THE BEGINNING OF RATE REFORM

Published In: EnergyBiz Magazine Summer 2015

Richard Schlesinger

TUCSON ELECTRIC POWER, the Arizona-based investor-owned utility, and Sacramento Municipal Utility District, or SMUD, the community-owned utility that serves the capital area of California, are planning changes to their rate structures to more accurately reflect the current state of the utility industry. It's a process that is being addressed with increasing urgency across the country.

But although it's clear that old rate structures, designed to account for predictable costs of production and infrastructure requirements, no longer reflect the reality of today's systems, just how to better align rates with actual costs --- and to do so in an equitable manner --- is far from obvious.

Just who pays for what in today's disruptive environment may be less sexy than understanding the structural changes and technological opportunities and risks facing the industry, but it's no less crucial.

Technology is rapidly changing both the structure and the function of the grid, and as the grid becomes increasingly data-driven, security issues become all the more critical and costly.

At the same time, distributed generation, solar panels in particular, complicate the relationship between generation and distribution. Because the customer base is now diverse and because not every residential or commercial customer uses energy in the same way or at the same time, it is essential to unbundle rates so that the cost of a customer's use of the infrastructure is clear. It also is essential to adjust energy rates to reflect those costs, including time-of-day differentials, and specific services.

Distributed generation, particularly rooftop solar, offers the most obvious challenge to traditional utility rates, which were essentially volumetric. Using a

volumetric model, utilities recovered costs based on the amount of energy used. When customers generate their own power, however, the volume they take from the grid goes down and so does the revenue that utility companies receive, part of which goes to maintaining the grid and the rest of the power infrastructure. With net metering, when customers sell excess power back to the utility, the problem is exacerbated.

Rate clarity is essential if people are to make informed decisions about adopting rooftop solar for their homes. Under the traditional rate system, which bundles infrastructure and power costs, customers who draw less power from the system, including those whose usage is significantly decreased by solar arrays, pay less than their fair share for operating and maintaining the system. Essentially, that means those who choose not to adopt solar, often because they can't afford it, are subsidizing those customers who can afford it. At the same time, customers who decide to adopt solar on the assumption that they will be able to sell back excess power at an unrealistically high rate will be in for a rude awakening when rates are unbundled and net metering is priced realistically.

Tucson Electric's sister company, Unisource Energy Services, in its May application for new electric rates, specifically addresses these issues. TEP withdrew a similar application earlier this year, but plans to resubmit it as part of a rate request.

It proposes purchasing excess power from home rooftop installations at the current market price for power from large solar arrays. Current residential installations and requests for installations submitted by June 1 will be grandfathered under the old rates.

Phil Dion, former senior vice president for Public Policy and Customer Solutions at TEP, emphasizes that rate transparency is essential to ensure that all customers pay their fair share of the costs of maintaining the system and so that customers can make informed decisions.

"We need to send proper price signals to customers so they can decide if adding a rooftop array, for instance, is worth the cost of installation," he said.

Jim Tracy, chief financial officer, Finance and Enterprise Planning for SMUD, echoes Dion's concern about realistic pricing.

"If the utility changes the rate structure so that different services are unbundled, all of a sudden early adopters of solar will face a new rate structure that may not pay them as much as they assumed they'd get. The last thing we want to do is pull the rug out from under them or drastically slow the adoption of renewable sources. So, for us, one of the issues is to get ahead of this and make these decisions before we have a large number of our residential and commercial customers making long-term investment decisions based on an unrealistic rate structure, Tracy said."

At the same time, SMUD wants to avoid making the rate structure unnecessarily complex. "I think that if you try to do too much too quickly, you'll just confuse the customer. The board wants to phase in rate restructuring so that people will have a sense of how the new rates will affect them so that they have a chance to react. We don't want them to be hit with a big change in their bill all at once," he said.

Tracy noted that while the changes may not always be significant in absolute terms, a change of even $5 per month could be significant for some customers.

SMUD's board decided a few years ago to begin unbundling rates gradually, so that most of the changes will be in place by 2018, which is when the utility expects to convert to a time-of-use rate for residential customers.

SMUD has used a tiered system for billing, in which the first block of power is billed at a lower rate, with additional blocks costing more. This system, of course, fails to reflect the actual cost of power, which fluctuates with system demand. With the deployment of digital meters just about complete, SMUD is prepared to eliminate tiered pricing and expects to complete the move to time-of-day pricing by 2018.

"Digital meters are really a tipping point for rate reform," SMUD's Tracy noted. "These meters permit two-way communication with the customer, which gives them real-time pricing information so they can intelligently manage their load. We see load management as becoming more and more prevalent. With the advent of new smart appliances and apps to remotely control them, residential customers will be able to cut their costs, and we'll see a shift away from peak demand times."

Tracy also expects commercial customers to take increasing advantage of load management. "We expect load management to become especially important to commercial customers, who may rely on third-party vendors to help manage load across a number of locations. For example, Safeway, the supermarket chain, is using a third party to help manage load in their California stores. We see that as a very common model going forward," he said.

With the grid quickly evolving into a highly complex, bidirectional, data-driven system that demands increasing levels of investment and the utility customer base becoming ever more diverse in its use of power, and with the deployment of distributed generation and the need to maintain reliability and quality standards in the face of sophisticated security threats, the traditional way that utilities charge for their power and their services is obviously inadequate.

But however obvious the need for change, the details and the process of implementation are not. In other words, while rate reform is inevitable, it won't come without a certain amount of disruption, both for utilities and their customers.