

Exh. ANH-4
Dockets UE-190529/UG-190530 and
UE-190274/UG-190275 (*consolidated*)
Witness: Aimee Higby

**BEFORE THE WASHINGTON
UTILITIES AND TRANSPORTATION COMMISSION**

**WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION,**

Complainant,

v.

PUGET SOUND ENERGY,

Respondent.

**DOCKETS UE-190529
and UG-190530 (*consolidated*)**

In the Matter of the Petition of

PUGET SOUND ENERGY

**For an Order Authorizing Deferral
Accounting and Ratemaking Treatment
for Short-life UT/Technology Investment**

**DOCKETS UE-190274 and
UG-190275 (*consolidated*)**

EXHIBIT TO TESTIMONY OF

Aimee Higby

**STAFF OF
WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION**

Customer Centricity: Lynchpin of Utility Strategy

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Customer Centricity

Lynchpin of Utility Strategy



By Ahmad Faruqui



he utility industry is faced with unprecedented change. A decade after the great recession ended, sales growth remains anemic. Yet the revenue model of utilities is premised on sales growth. The capital-intensive industry has to modernize its assets to ensure reliability, which is hard to do without growth in revenues. Additional pressure is coming from the need to change the resource mix to reduce and eventually eliminate carbon emissions.

The utilities continue to have an obligation to serve. But that's becoming increasingly difficult to do as new entrants have entered the picture, seeking to disintermediate the utility from its customers, vitiating its natural monopoly status.

How does a utility survive in such a disruptive business environment? Every CEO is seeking to create the utility of the future by getting ahead of change, but the strategy has been focused on cost cutting and changing the mix of generating plants. But the disruption is originating with the customer and the strategy has to be customer centric.

It's the customer who is engaging in organic conservation and using less electricity regardless of the price of electricity and regardless of whether or not there are utility programs, codes, and standards to promote energy efficiency. It's the customer whose voice is being echoed in legislatures.

Legislators, Governors, and regulators are reflecting the customer's preferences when they pass laws and regulations requiring utilities to become carbon free in the decades to come. That customer has attracted the attention of new entrants such as Amazon, Facebook, and Google. Customers want to shop at Big Box stores that are committed to procuring renewable energy.

Customer-centricity has to be the lynchpin of utility strategy.

Change is Being Forced on Utilities

Flat load growth is the new normal. Customer preferences are growing in diversity and complexity. Energy services technology and alternatives to utility service are dramatically more accessible to households. Residential customers are shopping and engaging in complicated decisions with two-way data transfer. Communities are seeking to enhance local economic development and promote grass-roots democracy by lowering energy costs and buying renewable power.

For decades self-generation was the exclusive preserve of commercial and industrial customers. Now residential consumers are becoming prosumers, driven by a desire to breathe clean air and have lower bills. This conversion is being encouraged by the federal income credit of thirty percent, additional rebates from state and local entities, and falling PV prices.

Some prosumers are also investing in battery storage, a trend driven in part by falling battery prices, in part by a desire to gain

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grid independence, and in part by lower electricity prices for exported electricity. In Hawaii, seventy percent of all solar installations are accompanied by battery storage.

Most homes are now equipped with Wi-Fi, many have smart thermostats, and an increasing number have digital appliances. While there is increasing interest in the electrification of the buildings and transportation sectors, it's not taking place at a pace fast enough to offset the forces that have arrested sales growth.

Customers will act in their self-interest. If they are not satisfied with either the rates or the service they are getting from their utility, they will defect. The probability rises if the utility has a poor public image. Outdated rate designs and net metering create opportunities even in states that don't have retail choice. Uneconomic bypass of the grid is a reality.

Corporate customers are shopping as well. In 2018, corporations signed renewable contracts amounting to 6.53 gigawatts, up from 1.20 gigawatts in 2014. Target wants to become a hundred percent renewable company by 2030. Walmart has subscribed to thirty-six community solar projects and is working its way toward becoming a hundred percent renewable company. Prior to 2013, just seven states had corporate renewable deals. That number now stands at twenty-five. This is a sign of revolutionary change in customer behavior.

Pathways to The Future

As they look at the future, utilities have to reinvent their business purpose. If they stick with their existing business model, they are going to enter what has been commonly dubbed the death spiral.

As noted by Ted Levitt in his 1960-piece, *Marketing Myopia*, every mature industry was once a growth industry. Railroads were once a vibrant industry. As time passed, alternative means of transportation emerged but railroads continued to focus on

rail services. They failed to expand their horizon to encompass transportation services and ended up with a huge amount of stranded assets.

Thus, the status quo is not an option. Utilities will need to decide what business they are in:

Become a simple wires utility (SWU) by exiting the generation and procurement business, since that's the area being hit the hardest by the forces of change; Become the smart integrator utility (SIU) by staying in their current business but partnering with the new entrants to improve their customer engagement; Become an energy services utility (ESU) premised on the notion that customers don't buy electricity for its own sake but to derive energy services from it, such as heating, cooling, lighting, cooking, refrigeration, process heating, and machine drive.



Each of these transformations will require a different core competency which, if not existing today, will either have to be grown organically within the utility or acquired. The SWU owns and manages the wires, passes on information and costs via bills to the customers, and leaves supply and all other meaningful customer engagement to third parties.

If it remains dependent on volumetric recovery of revenues, it will be hit hard as consumers turn into prosumers. It will find that the grid has become increasingly difficult to operate. Reliability issues will arise since the grid operator will have limited visibility of major changes taking place on the customer's end.

The SIU invests in, and enables, the high functionality of the smart grid but stops short of providing power supply and related services to customers. It provides the right platforms for customers, third-party suppliers, and service providers to interact with each other. It also creates and improves automation, granular two-way communications and data transfers, two-way power flows, transactive energy markets, and integration of a range of supply resources.

The ESU is a one-stop-shop for meeting all customer energy-related needs. The ESU will combine the functions of the SIU

with sustainable power supply functions. It will understand customers' changing energy needs and buy all the equipment needed to meet all customer energy needs. It will sell energy services, not electricity. Clearly, creating the ESU out of today's utilities will require the most significant reworking of traditional utility practices but might also be the most rewarding.

The ESU will still function as a regulated utility but with an entirely different revenue model. It will meet all customer needs and work as needed with third parties to best meet them with the most advanced and cost-effective technologies.

It would be difficult for anyone else to disintermediate it from its customers. It will build on what customers want and has high customer satisfaction ratings, minimizing the risk of customer defection and uneconomic bypass.

If customers want renewable energy, it will procure renewable energy for them. If they want to lock in a guaranteed bill, it will offer them that product. In many ways, the ESU is superior to the SWU. The latter simply passes through to the customer renewable energy at cost. The ESU may be able to mark up the costs to reflect the higher value customers derive from renewable energy.

How Do Companies Reinvent?

They rebrand their image when trouble strikes. Uber rehabilitated itself after bad CEO press. It reached out to new markets. Apple was a fringe computer manufacturer until it made

the iPhone. Amazon pivoted from being an online bookstore to an online store, which sells a wide and growing range of products. Today, it also lets buyers shop for service providers.

Companies form alliances with other parties to expand their reach. Big Box stores install solar panels, both to reduce electric bills and to enhance their competitive appeal to customers who are increasingly displaying a preference for green energy. Data centers are contracting with utilities and IPPs for green power. Companies from GM to Goldman to Google have pledged to use a hundred percent renewable energy by 2050 or sooner.

They introduce new products and services. Sunrun and Solar City lease solar panels to homeowners. Halifax American Energy Company and Gridify are examples of companies that charge fixed monthly fees, then pass through the wholesale price of electricity to customers.

ChargePoint provides rapid EV charging stations. Yoshi provides gasoline filling (at near cost plus a subscription), and partners with ExxonMobil in doing so. Community choice aggregators offer various levels of green power, local empowerment, and lower prices.

Can today's electric utility, a staid company that has been protected for decades from competition by regulation, be reinvented in time before the death spiral strikes? Yes, and of the three choices discussed above, the ESU seems to be the best poised for success.

Creating the ESU

The ESU will be grounded in a customer-driven and tech-forward business. Once it succeeds, it will have loyal and satisfied customers who are offered choices. They won't be eager to shop. The ESU will form innovative partnerships to stay ahead of change.

It will gain regulatory support by being ahead of the curve in terms of understanding customer needs and fulfilling them, by fostering innovation and by engaging in a continuous test and learn process to devise new products and services that enhance the value customers get from engaging with the ESU.

It will share the traits that make companies exceptionally high ranked in customer eyes:

Never tell customers no, always listen to what customers want, communicate frequently with customers about their wants, create products and services that customers value, and plant a lot of seeds rather than pursue one opportunity.

Customer centricity is going to be the lynchpin of ESU strategy. This will require changing the mindset and focusing on the following issues: Don't let regulators define what products and services to provide, offer customers what they want, don't just provide an undifferentiated commodity but a custom-tailored service.

Ask its employees to: Understand customer needs on an ongoing basis, solicit feedback on existing and potential new service offerings, and stay engaged to detect any problems before they become widespread.

What Do Customers Want?

There are several ways of listening to customers. Observe customer postings on social media. They can be mined through Big Data analytics for insights. Analyze and disaggregate customer load data from smart meters to understand how customers interact with energy.

Create a longitudinal panel of customers as they go about the business of life. Engage with them to understand how they decide whether or not to replace an appliance. What do they look for in terms of products and features?

How much are some customers willing to pay to buy a zero-energy home? As the economy changes, how do customers respond? Behavioral experiments can be conducted to test new ways of pricing existing products and services and developing new ones.

Such investigations might show that a third of customers are willing to pay more for green energy. It may show that half of commercial and industrial customers have some type of

self-generation at their facilities driven by a desire to lower bills, enhance resiliency and to meet their self-state sustainability goals.

It should consider using a technique widely used in competitive business. Conduct a carefully structured survey with customers and subject the data to conjoint analysis. At a high level, it involves the following steps.

Design and carry out a customer survey. This typically consists of twenty questions, each presenting the customer with a menu of options and designed to infer the customer's decision-making process. The survey is usually done online which allows a large customer sample to be drawn.

The analysis can yield customer decision-making points and can be useful in determining how customers are likely

Become an energy services utility (ESU) premised on the notion that customers don't buy electricity for its own sake but to derive energy services from it.

to behave, as opposed to simply saying how they will behave (which is a weakness of surveys that simply ask the question whether they like a particular product or service).

Such techniques can be used to provide meaningful pricing designs to customers. Using such methods, OGE found that only twenty percent of its residential customers wanted to stick with the standard

retail tariff. Of the others, thirty-six percent were willing to sign on to some type of time-varying rate to lower their bill while another forty-four percent wanted bill stability. So OGE developed time-varying rates, got twenty percent of customers to adopt them, and enhanced its customer satisfaction.

APS provides time-varying rates, demand charges, and flat rates to its customers. More than half take service on time-varying rates and a large fraction of those customers are also on demand charges.

Green Mountain Power offers customers free, discounted, or utility-financed equipment for space conditioning, water heating, EV chargers, and home battery storage. The equipment is part of the rate base, installed by local contractors, and defaults to participating in DR programs.

Participating customers lower their electric bills because the equipment is highly energy efficient and because the customer is also able to participate in demand response programs. Financing payments from participants are allocated to return a net benefit to nonparticipating customers. System costs are lower, and the rate base is larger, representing a win-win for the utility and the customers.

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Prepare, Protect, Respond

(Cont. from p. 47)

Brien Sheahan: Regarding NERC CIP, which applies to the transmission assets but doesn't necessarily apply to distribution assets, how do you think about applying something like NERC CIP or some kind of best practices or standards to distribution utilities?

Ray Rothrock: I think you should because they're all connected. A supply chain is only as good as the weakest link. Because if somebody gets attacked and there's malware inside, even a vendor, two or three organizations away from you, that malware can find you. [PDF](#)

Michigan's Clean Energy Plan

(Cont. from p. 71)

measurements. Individual workgroups will have specific plans with milestones and schedules identified.

MPSC Staff will submit a report on September 30, 2020, regarding actions to date, the status of workgroups, and initial recommendations. A final MPSC Staff report is expected in middle to late 2021.

Who Will be Involved?

MI Power Grid will include utilities, customers, energy technology companies, consumer advocates, state agencies, and others. Stakeholder groups will be led by MPSC Staff. Stakeholders and MPSC Staff will work together to provide analyses and recommendations to the Commission.

Where Can I Learn More?

MI Power Grid has a dedicated website at www.michigan.gov/mipowergrid. It will inform stakeholders and the public and include information about public events, participation opportunities and Commission actions. You'll also be able to sign up to receive updates by email. [PDF](#)

More Efficient Electricity Use

(Cont. from p. 94)

U.S. when making tea, electric water boilers are popular in Japan. They heat just enough water for a cup of tea, coffee, or even instant noodles.

Dishwashers and garbage disposals are rare in Japan, as they tend to take up more room in a small kitchen.

Customer Centricity

(Cont. from p. 79)

Puget Sound Energy proposed leasing energy equipment to its customers to remove market barriers such as lack of time, lack of knowledge, lack of financing, lack of capital, and maintenance. While the Washington Commission did not approve the application, it left the door open to revisiting the topic once concerns by the private contractor industry were addressed.

The ESU speaks the language of tech companies, a language which customers understand and hold in high regard. The ESU collaborates with tech companies allowing it to innovate where it matters most. Many startups focused on energy services see themselves as being pure tech companies. They are happy to partner with utilities and are indifferent to serving customers directly or through utilities.

Evolve Energy, largely a software company, offers price to device, tailored with customer preferences for greenness and comfort. Opower (Oracle) develops both software and hardware to help utilities deliver a "modern digital customer experience" and also helps utilities analyze customer data and identify EE/DR opportunities.

ESUs will need a supportive regulatory environment. Most important, in order to enhance its offerings of products and services, regulators will provide the ESU with appropriate investment incentives such as rate basing, decoupling, performance incentive mechanisms, and an appropriate return on equity.

The ESU would price its services in a cost-reflective fashion to avoid creating unsustainable cross-subsidies among customers which will lead to defections, burdening other customers with higher prices, and causing more customers to defect.

The regulatory paradigm would be driven by a deep understanding of customer needs and an acceptance that rapid changes may need to be made in the products and services being offered, as well as in the delivery channels and the pricing constructs. Rate cases would not be required for every change that the ESU needs to be made, and when rate cases are called for, they would not drag on as they often do today. [PDF](#)

These are just some of the unique ways that electricity is used by the average person in Japan. Electricity is used efficiently to solve specific problems such as only using heating or cooling for where you are located in the home at that moment, or not having central heating in favor of a kotatsu and heated floors or putting a priority on combating humidity above all else.

A lot can be learned from this idea of strategic energy use in the home. This can increase efficiency even in households in North America. [PDF](#)