Appendix D – Ask the Consultant – Table 1

Matz, Nicholas

From: Matz, Nicholas
Sent: Friday, February 06, 2015 4:29 PM
To: 'Jennifer Geer USE ' (jennifergeer@useconsulting.com); 'petermackin@useconsulting.com'; Gordon Comegys (gordoncomegys@useconsulting.com)
Subject: Submitted under Task 6 Ask the Consultant - Plummer
Attachments: Load Growth Forecast Bibliography.docx; Table Z66. PNUCC Load Forecast, 2014.xlsx; img552.jpg

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From: Plummer David F. [mailto:pdf3@comcast.net]
Sent: Tuesday, January 27, 2015 2:00 PM
To: Council
Cc: Matz, Nicholas
Subject: Energize Eastside

Hello Council Members!

I believe that the City's contractor (Utility Systems Efficiencies, Inc. - USE) is being unfairly criticized for the work they are performing under purchase order 1450350-000 ("Independent Technical Analysis for energize Eastside").

Although USE may not have all the technical capabilities that some members of the community believe are required to conduct the study, based on my participation in the 'video conference' with three of their staff and some members of the CENSE group on 23 January 2015, it appears to me that they are doing pretty much what their work statement requires. (The work statement, Attachment A to the purchase order, could certainly have been improved with some more explicit text, but you and the staff seem to accept such poorly written documents without much scrutiny or concern.)

I don't think that there are any widely-recognized 'industry standards' for preparing long-term electric load forecasts; you can verify this for yourselves with a little Google-searching. The attached short list provides some examples of the kind of information relating to load forecasting that can be obtained via the internet. However, some of the electric/utility industry technical groups (IEEE, NERC, etc.) may, indeed have some standards, but, as I'm not a member of such groups, searching and downloading information from them is quite restricted (and expensive!!). Perhaps the City or some staff members belong to such groups, so you might get some further help from those sources. PSE uses a proprietary AURORA model, and their own (I believe) Stochastic Model and Portfolio Screening Model for their ***IRP*** preparation, but these models do not yield load-growth projections directly.

RCW 19.280 sets forth certain State standards regarding electric utility integrated resource plans; WAC 480-100-238 establishes rules for preparation of such plans, and the UTC has not promulgated any other more detailed rules. Only the WAC provides any reasonably clear requirements directly related to long-range load forecasts. Also, the State Dept. of Commerce publishes a bi-yearly summary of Washington electric utilities' estimated resource (generating) needs; the current (2014) summary can be found at http://www.commerce.wa.gov/Documents/Electric-Utility-Resource-Planning-2014.pdf

I think it is important to be sure you are all 'on the same page' regarding long-term electric load forecasts; as you may be aware, they are typically portrayed with various tables and figures that distinguish between '***average*** yearly' loads in MW, and 'instantaneous peak' loads in MW during (usually)the summer and winter. They also usually include estimates of 'planning margins' (that account for forced outages of generation sources, operating reserves, etc.); and perhaps estimates of the impact on load reductions due to customer reductions in use (usually referred to as 'conservation' - don't know why, as no energy is being conserved); they may also distinguish between customer classes (residential, industrial, etc.). If I'm boring the choir, please forgive me, but it seemed to me from watching your discussions on this issue that there is some confusion about the complexities of long-range electric 'load forecasting.' In any event, I've attached a couple of illustrations that may be of interest; the SCL scan is from their ***2008*** IRP because it gives a couple of good illustrations of load-growth planning outcomes.

If you decide to seriously consider contracting for a truly independent load growth forecast to inform the preparation of the EIS for the transmission line project, I urge you to allow time for preparation of very thorough and detailed work statement for use in soliciting bids and performing any resultant work.

Cheers,

David Plummer

Matz, Nicholas

From: Don Marsh <don.m.marsh@hotmail.com>
Sent: Thursday, January 22, 2015 6:16 AM
To: Matz, Nicholas
Cc: Balducci, Claudia; Wallace, Kevin R; Chelminiak, John; Lee, Conrad; Robertson, Jennifer S.; Robinson, Lynne; Stokes, John
Subject: Questions for Independent Technical Consultant
Attachments: Questions for Independent Consultant.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Nicholas,

Our questions for USE are attached. We are looking forward to our meeting with you and the consultant tomorrow morning.

Sincerely,

Don Marsh, VP
CENSE.org

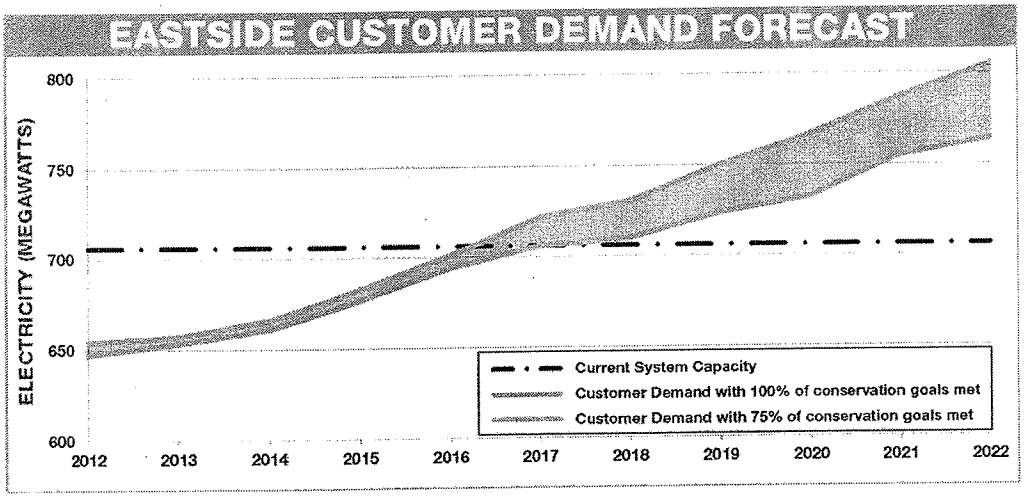
Questions for Independent Technical Consultant

Overview

The Coalition of Eastside Neighborhoods for Sensible Energy (CENSE) is an all-volunteer organization of Eastside residents with the common goal of finding energy solutions which:

- Reliably serve the needs of the Eastside based on sound data and realistic growth projections
- Recognize the momentous changes that are happening in technology and the electric utility industry which will reduce peak electricity loads in coming years
- Reflect the fact that the Eastside is a leader in high technology with strong support for the environment
- Respect each city's desire to protect the character of their neighborhoods

We are skeptical of the forecast that Puget Sound Energy (PSE) uses to explain the need for Energize Eastside:[1]



Our concerns are:

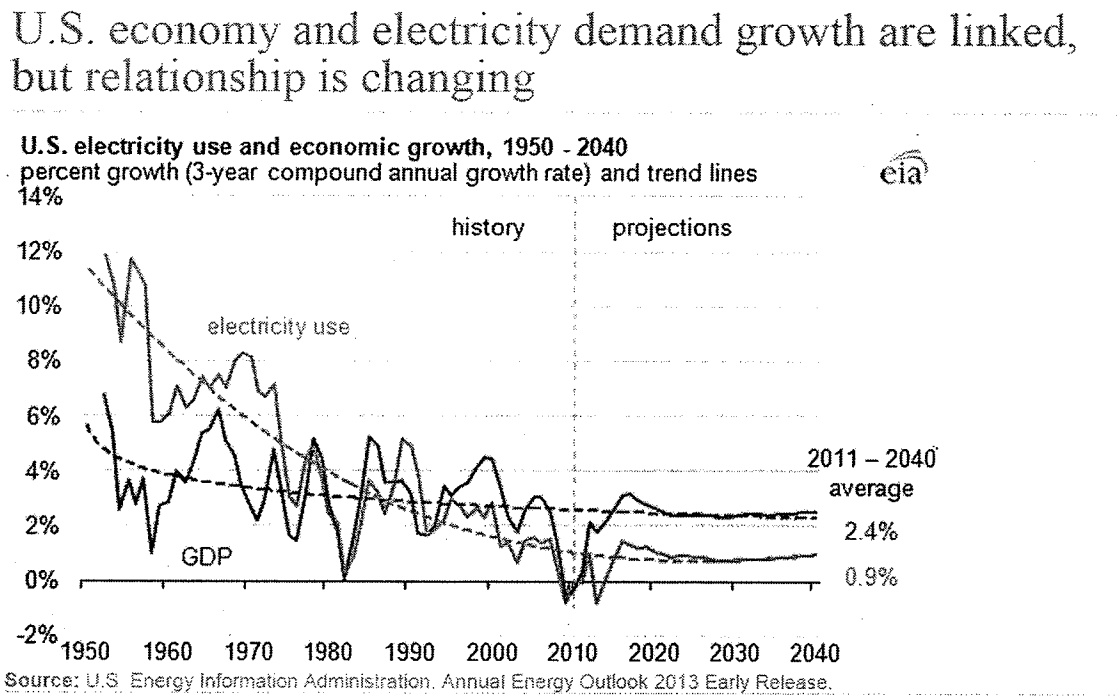
1. It's not clear to the public what this graph represents. Contrary to popular perception, this is not a graph of normal electricity use. It shows a hypothetical situation where the effects of two rare events are compounded: winter peak load demand on the Eastside which occurs only a few hours per year, and a rare equipment failure (an "N-1-1 outage" in industry parlance) on a nearby transmission line operated by a different utility. In this hypothetical situation, much of the power flowing north in the winter to Canada would be diverted from the failed line through the Eastside.

[1] http://www.energizeeastside.com/need

2. No historical data is provided to help us understand the theoretical trend. The data points shown for 2012, 2013 and 2014 are not actual measured values, but forecasts PSE made 4 years ago. There is evidence to suggest that the actual Eastside peak values in these years were lower.

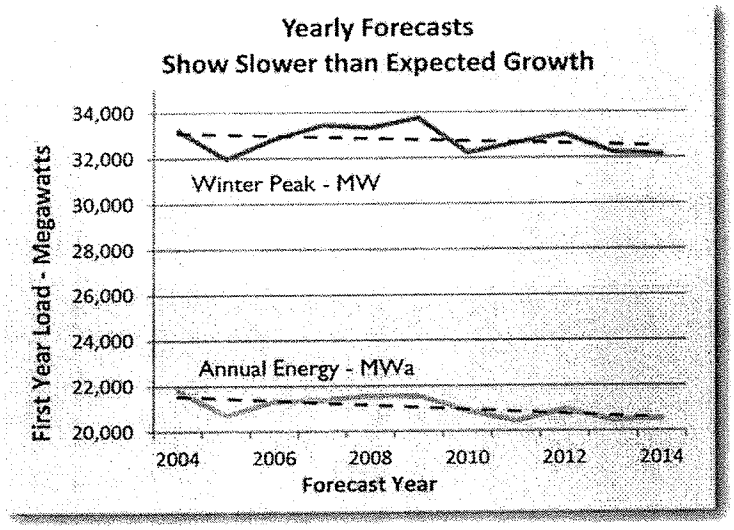
3. The forecast rates of growth, which average 1.7% or 2.2% per year, both seem unrealistically aggressive given that Bellevue and similar cities have experienced little consumption growth over the last decade. PSE has provided no explanation of why its projection is significantly higher than the expected rates of growth for population or the economy of the Eastside. PSE's projections are much higher than growth rates predicted for comparable cities such as Seattle and Portland, and for the Northwest region as a whole. Why is the Eastside so different?

Electricity use does not appear to be growing at the national, regional, or city levels. For example, the following graph of national electricity use shows that the rate of electricity growth (0.9%) has fallen way below the rate of economic growth (2.4%):[2]

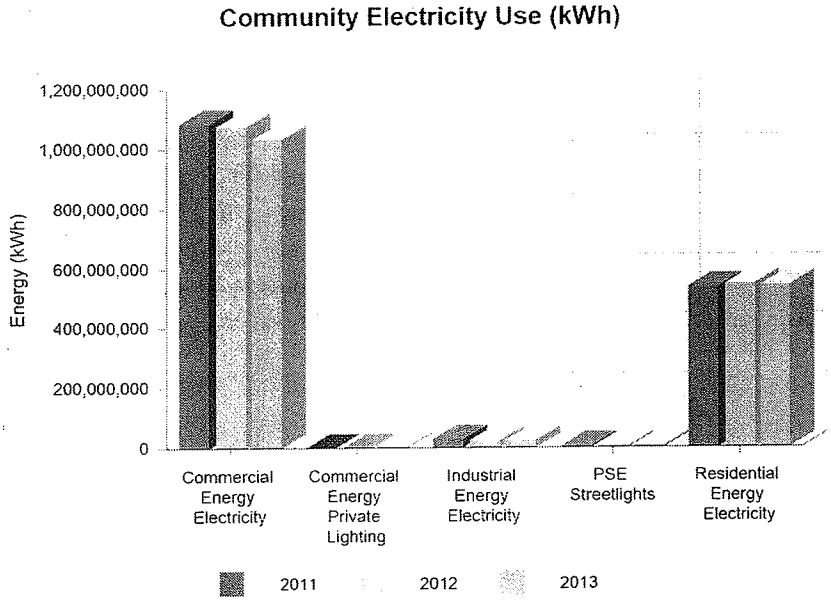


[2] http://www.eia.gov/todayinenergy/detail.cfm?id=10491

At the regional level, the Pacific Northwest Utilities Conference Committee observed declines in both annual use and peak demand, which they attribute to increased electrical efficiency and effective conservation efforts:[3]



At the city level, Bellevue's Environmental Stewardship web page shows overall declines in electricity use for the past few years.[4] Since Bellevue is one of the fastest-growing cities on the Eastside (whether one measures population or economic growth), it's difficult to believe that demand is growing on the Eastside as a whole:

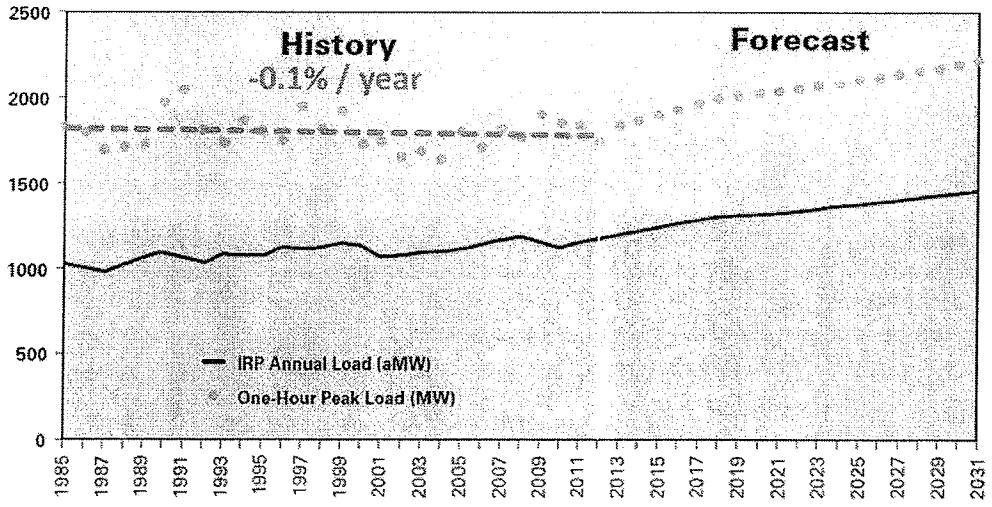


[3] http://www.pnucc.org/sites/default/files/file-uploads/2014%20Northwest%20Regional%20Forecast.pdf
[4] https://city-of-bellevue.scope5.com/public_dashboard

Q1: Understanding the real need

To better understand the need for Energize Eastside, we would like to see a graph similar to this one from Seattle City Light[5] (orange annotations by CENSE):

FIGURE 5: LOAD HISTORY AND 2012 IRP FORECAST (WITH NO NEW PROGRAMMATIC CONSERVATION)



We note that peak load (the same as "demand" in PSE's graph) has been gradually declining in Seattle for the past 27 years, despite significant economic and population growth during that period. Also, Seattle's forecast rate of growth is less than half of PSE's. Similar trends are occurring in Portland.

We ask the consultant to produce an analogous graph for the Eastside that shows the following data, with values independently determined by the consultant using unfiltered, raw data from PSE or other sources:

1. Time period from 2000 to 2030 (15 years of historical data, and a forecast for the next 15 years).
2. Values for "One-Hour Peak Load (MW)" with grid outage (N-1-1 state in Q3 below).
3. Values for "One-Hour Peak Load (MW)" with no grid outage (N-0 state).
4. Values for "Annual Average Load (aMW)" with grid outage (N-1-1 state in Q3 below).
5. Values for "Annual Average Load (aMW)" with no grid outage (N-0 state).
6. A line showing existing "System Capacity" (which PSE shows as approximately 710 MW on its Forecast) including any allowable increase for temporary loads. We would like the consultant to independently verify PSE's value.
7. A line showing the future "System Capacity" of Energize Eastside, including any allowable increase for temporary loads, which we would like the consultant to independently verify.
8. A line showing the Total Transfer Capacity of Energize Eastside.

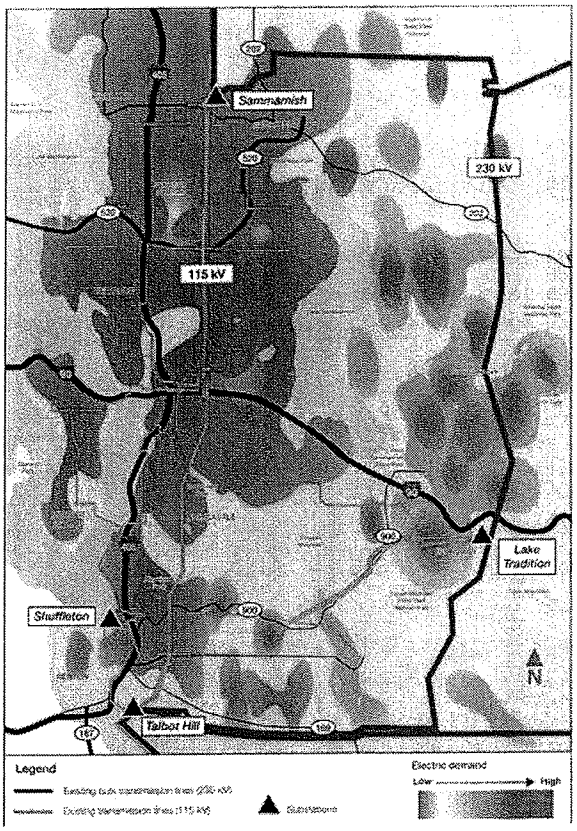
The graph should be accompanied by an explanation of the methodologies used and assumptions made to produce each value on the graph so we can understand how they were determined and to what extent they are independent of PSE's values.

[5] http://www.seattle.gov/light/news/issues/irp/docs/SCL_2012_IRP.pdf, p. 13

Q2: Distribution of peak use

PSE shows the following map that purports to demonstrate high electricity demand throughout the Eastside:[6]

The Eastside's electric demand



Unfortunately, the methodology used to create this map is unsound. We have been told by PSE that it combines peak use data from both summer and winter peaks which occurred over 5 years ago. The inclusion of summer peak data is not relevant to the winter peak problem Energize Eastside seeks to address and makes the problem look much worse.

Furthermore, the data was "scaled and smeared" to "protect consumers' privacy." The result of these manipulations suggests that Mercer Island is using electricity at the same intensity as downtown Bellevue, which is hard to believe.

We ask the consultant to create a more accurate map showing winter peak loads for the same area shown in PSE's map. The updated map should show data from a representative winter peak which occurred no more than 2 years ago. To provide adequate detail, data should come from measurements of peak loads at the level of individual distribution substations. An accurate map is important, because localized peaks might be addressed by localized solutions. Some may represent prime opportunities for conservation.

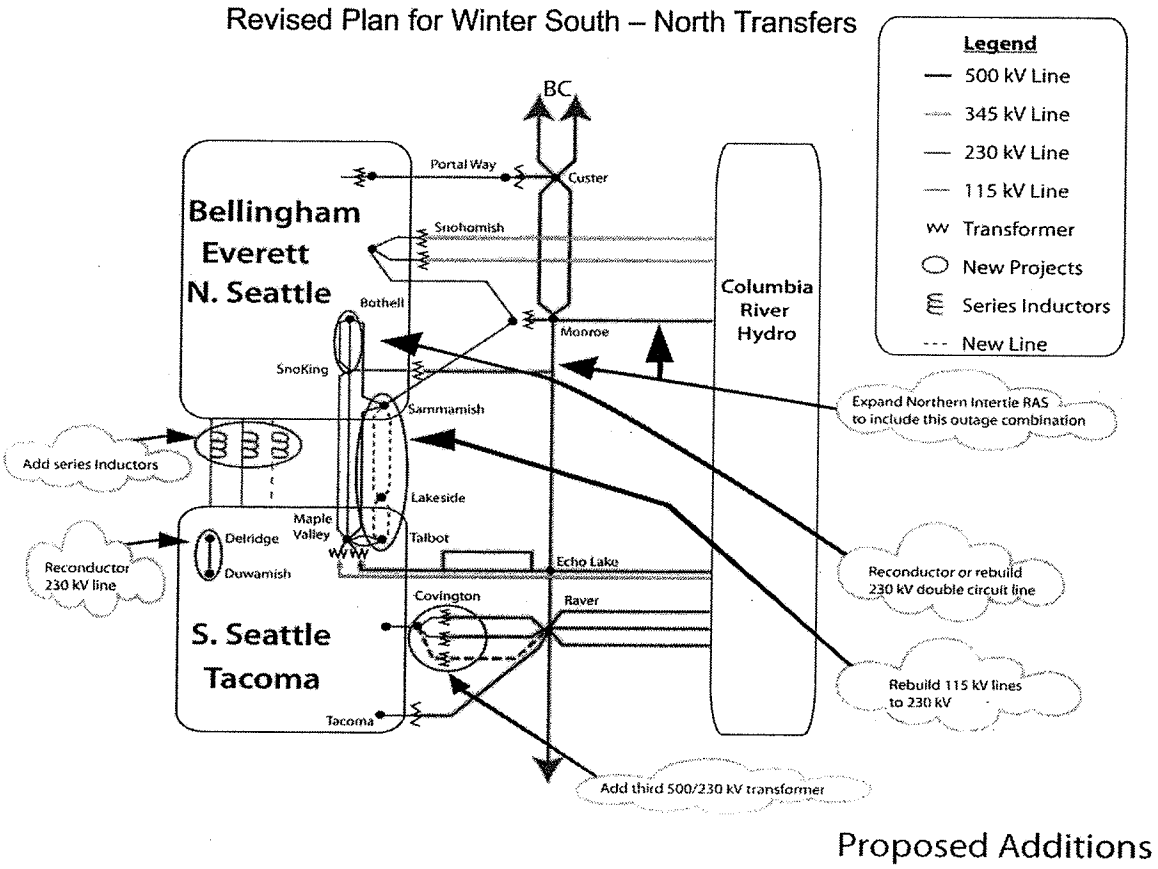
[6] http://www.energizeeastside.com/need

Q3: Eastside vs. regional needs

The VP of Transmission Planning for the Bonneville Power Administration (BPA) tells us that Energize Eastside is part of a regional transmission plan developed jointly by PSE, BPA, and Seattle City Light (SCL) to address three issues:

1. Load for the Eastside
2. Load for Seattle
3. Reliability of the Northwest Washington Electric Grid

This is confirmed in planning documents from the Columbia Grid consortium and agreements signed by PSE, SCL, and BPA.[7] The role of Columbia Grid and BPA is illustrated in this diagram, which shows how Energize Eastside (upgrades to the lines between Talbot and Sammamish) helps to address two outages on BPA lines indicated by arrows near the Monroe station:[8]



[7] http://www.bpa.gov/news/newsroom/releases/Documents/20120124-PR-5-12-Joint-transmission-system-projects-to-improve-system-reliability.pdf

[8] https://www.columbiagrid.org/download.cfm?DVID=2168, p. 5

We believe this diagram is relevant to PSE's Eastside Customer Demand Forecast, because PSE's Needs Assessment predicts no overload condition for Eastside infrastructure under extreme peak loads (13 degree winter weather) by 2022, even with very low conservation:[9]

> ### *6.1.1 N-0 Thermal and Voltage Violation Summary*
>
> *For all cases, there are no thermal or voltage violations for the all lines in (N-0) state.*
>
> *2017-18 – Case 2-Winter Peak, Normal Weather: For all elements in service (N-0), there were no thermal or voltage violations for 2017-18 winter peak, normal weather, with all levels of conservation modeled (i.e. 100%, 75%, 50%, or 25%) conservation.*
>
> *2017-18 – Case 3-Winter Peak, Extreme Weather: For all elements in service (N-0), there were no thermal or voltage violations for 2017-18 winter peak, extreme weather, with all levels of conservation modeled (i.e. 100%, 75%, 50%, or 25%) conservation.*
>
> *2021-22 – Case 2-Winter Peak, Normal Weather: For all elements in service (N-0), there were no thermal or voltage violations for 2021-22 winter peak, normal weather, with all levels of conservation modeled (i.e. 100%, 75%, 50%, or 25%) conservation.*
>
> ***2021-22 – Case 3-Winter Peak, Extreme Weather: For all elements in service (N-0), there were no thermal or voltage violations for 2021-22 winter peak, extreme weather, with all levels of conservation modeled (i.e. 100%, 75%, 50%, or 25%) conservation.***

In order to better understand this issue, we ask the consultant to produce a series of simple one-line diagrams that illustrate the following:

1. Existing Eastside infrastructure and the direction and amounts of electricity flow during a normal winter peak load event with no nearby grid outages (N-0 in industry parlance).
2. Using the diagram and peak scenario created in 1. above, show the effects on and amounts of electricity flow during an N-1-1 outage of BPA's transmission lines as indicated in the "Revised Plan" diagram above.
3. Diagram Eastside infrastructure if Energize Eastside is built as proposed, with the direction and magnitude of electricity flow during a normal winter peak load event under N-0 conditions.
4. Using the diagram created in 3. above, show the effects on and amounts of electricity flow during the same N-1-1 outage specified in 2. above.

If it's not clear from these diagrams, we are especially interested to know what percentage of the electricity flowing on Eastside transmission lines is flowing to Canada or points north in the normal and N-1-1 scenarios.

We would like the consultant to verify that the values used in PSE's Eastside Customer Demand Forecast assume a scenario in which a winter peak demand event occurs on the Eastside at the same time a major transmission outage (an N-1-1 event) occurs nearby on the grid. We would also like the consultant to explain how likely it would be for these events to occur simultaneously. How many hours per year is this worst-case scenario likely to happen in 2015, 2020, 2025 and 2030, assuming Energize

[9] http://www.energizeeastside.com/Media/Default/Library/Reports/Eastside_Needs_Assessment_Final_Draft_10-31-2013v2REDACTEDR1.pdf, p. 45

Eastside were not built? How would these forecasts change if BPA constructed the "Echo Lake-Monroe 500 KV Transmission Project" currently listed as "ON HOLD" in BPA's 2014 Annual Progress Report to the Western Electricity Coordinating Council?[10]

Q4: Reliability

We are unsure that spending $200 million on Energize Eastside is the best way to improve the reliability of our power. To better understand this, we ask the consultant to characterize all power outages for the years 2000-2015 by their causes. We are especially interested to know how the incidence of outages caused by system overload on the equipment which Energize Eastside would replace compares to downstream outages caused by extreme weather, tree strikes, accidents, downstream equipment failure, etc.

We ask the consultant to forecast how many outages in the next five years (2016 – 2020) would be avoided by implementation of Energize Eastside.

[10] https://www.wecc.biz/Reliability/2014_BPA_APR.pdf, p. 8

Matz, Nicholas

From: Don Marsh <don.m.marsh@hotmail.com>
Sent: Wednesday, January 28, 2015 8:04 AM
To: Matz, Nicholas
Subject: Question for USE

Nicholas,

We have an additional question for USE that we would like you to forward to the consultant.

On page 43 of the Eastside Needs Assessment (http://www.energizeeastside.com/Media/Default/Library/Reports/Eastside_Needs_Assessment_Final_Draft_10-31-2013v2REDACTEDR1.pdf), the table shows a study case for "Extreme Winter" in 2021-2022:

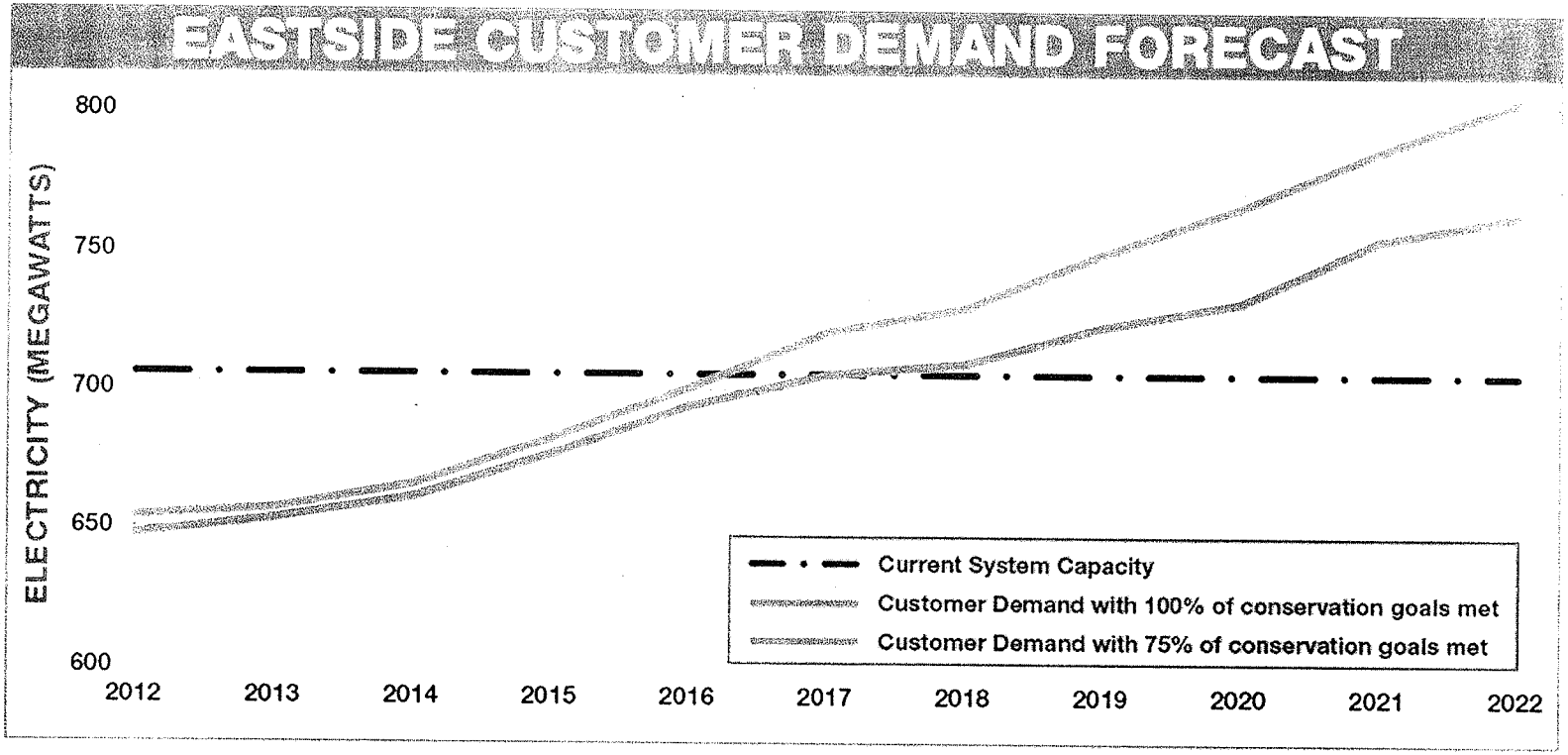
3d 100% Conservation 2021-22 Extreme Winter	100%	5772 MW	845 MW	1500 MW Export	0 MW	Block load allocated per King Co Dist. Planers; Planned improvements include 2013 adjustments + Alderton 230-115 kV transformer; Beverly Park 230-115 kV transformer; Raver 500-230 kV transformer; SCL series inductors

We have highlighted the 845 MW predicted load for the Eastside.

On page 45 of that same document, it is stated that there were no thermal or voltage violations for that scenario (or for even lower levels of conservation):

2021-22 – Case 3-Winter Peak, Extreme Weather: For all elements in service (N-0), there were no thermal or voltage violations for 2021-22 winter peak, extreme weather, with all levels of conservation modeled (i.e. 100%, 75%, 50%, or 25%) conservation.

These facts suggest that Eastside infrastructure can cope with at least 130 MW more than the ~710 MW "System Capacity" noted on PSE's Eastside Customer Demand Graph:



Can USE explain this apparent discrepancy to us? Has PSE already raised System Capacity with the improvements listed in the "Other Adjustments Modeled" in this scenario? What factors determine the System Capacity line on PSE's graph, and does this reflect current capacity, or capacity that existed in 2012 when the forecast was created?

Sincerely,
Don Marsh

Matz, Nicholas

From: jim sweet <julian52@comcast.net>
Sent: Friday, January 30, 2015 10:50 AM
To: Energizeeastside
Subject: "Ask the Consultant"

This information is intended for Utility Systems Efficiencies, Inc. as they perform their analysis for PSE regarding the need for Energize Eastside, Inc.

My comment, in a nutshell: "Power demand for computer facilities ("data centers") is dropping on the Eastside as these centers close and consolidate into larger, more efficient facilities elsewhere in Washington and the USA."

I spent 30 years in the data center industry, helping design and build these facilities on the Eastside. Our community is home to many large computer facilities (think Boeing, AT&T, Microsoft, etc).

These facilities use LOTS of power (100 – 500 watts/sq.ft., as compared to 30 w/sf for a typical commercial office.) I'd guess that total data center demand on the Eastside is 300 – 500 MW +/-.

However, there is a major consolidation effort underway in the industry that is resulting in many of these facilities shutting down and moving elsewhere. The main driver of this is the fairly recent phenomenon of "data center hosting companies", who build gigantic computer facilities in other parts of the state/country where power is cheaper and land even more so. This enables companies to drive their computing costs down by closing down their older data centers and moving them to these newer, less expensive facilities.

It is happening all over the Eastside. Unfortunately, I don't have any specific figures, which are hard to get from corporations. But I saw it all the time before I retired this Jan 1.

Hope this helps.....James Sweet, PE

Matz, Nicholas

From: Don Marsh <don.m.marsh@hotmail.com>
Sent: Monday, February 02, 2015 11:20 AM
To: Balducci, Claudia; Wallace, Kevin R; Chelminiak, John; Lee, Conrad; Robertson, Jennifer S.; Robinson, Lynne; Stokes, John
Cc: Matz, Nicholas; Miyake, Brad
Subject: Transcript of USE/CENSE meeting
Attachments: Transcript of CENSE-USE Skype call.docx

Dear Council Members,

Attached is a transcript of the Skype meeting between representatives of USE and CENSE that took place on January 22.

Please let me know if you have any questions. The transcription was difficult in several places due to the audio quality captured from the Skype call, but we believe it is an accurate transcription of what was said during the meeting.

As you can read in the transcript, we spent a long time trying to determine what methodology USE will use to accomplish their independent analysis of PSE's load forecast. Their plan seems to consist primarily of checking PSE's variables and calculations to make sure they conform to industry practice. This will be less insightful than what we were hoping for. We expected that the consultant would examine the initial assumptions, and clearly explain why the forecast produces results so much higher than population, economic, and efficiency trends would suggest.

Sincerely,

Don Marsh

Matz, Nicholas

From: Plummer David F. <pdf3@comcast.net>
Sent: Friday, February 06, 2015 10:56 AM
To: Energizeeastside
Subject: Bellevue Electrical System Reliability

(This message for "Ask The Consultant"/USE)

Hi there!

One of the rationales advanced by PSE for the new transmission lines was to increase the 'reliability' of PSE's transmission system and/or the reliability of PSE's "system" that supplies electricity to Bellevue and other east side communities.

Task 8 of USE's 'scope of services' states that USE will develop a formal, written evaluation of the need for PSE's Energize Eastside (EE) project, including an assessment of the " … impacts to electrical system reliability …" Please describe (or provide in the report) a schematic/line-diagram of the "electrical system" that USE evaluated to assess the "reliability" of the "electrical system"; and describe the ***quantitative*** reliability measures/metrics that were used in performing the evaluation of the impact of PSE's EE project on the "electrical system" reliability.

David F. Plummer

Bellevue, WA

Matz, Nicholas

From: Matz, Nicholas
Sent: Thursday, February 12, 2015 9:57 AM
To: Sioux Lander
Subject: RE: The choice of "USE" for the EE consultation

From: Sioux Lander [mailto:wacheewe30@yahoo.com]
Sent: Monday, February 09, 2015 11:15 AM
To: Energizeeastside
Subject: The choice of "USE" for the EE consultation

As a member of the south Bellevue community who is directly impacted by Energize Eastside; I wish to convey to my City Officials that I am disappointed in the City of Bellevue's lack of public engagement prior to the selection of "USE" as their Independent Contractor. There have been "no" public meetings involving the neighborhoods to first answer their questions about how this independent study will be conducted. Or, even what methods "USE" would employ to collect data or whether or not new data will even be produced in order to render a true side by side analysis in efforts to answer the ultimate "true needs" question for the EE project. The public does not know if a full study will be conducted by this firm vs. a review of PSE data for the EE project criteria, which may then render a "Rubber Stamp" on the EE project as an essential public facility that is truly needed at the proposed super sized plan for the Eastside. Residents have not been given the chance to find out any details of the work USE proposes to do and therefor have had no way to approve or reject the choice of this firm prior to the work being performed for the City of Bellevue. Will our online comments be filed away and will the City again move forward on schedule without really moving to the next level of a public forum to answer questions before our tax dollars are spent on a firm that others believe are unqualified to be doing this study?

Residents have seen the portrayal of the City as a "Closed" process for the most part on the EE project roll out in 2014. In 2015, will the City just move through the motions towards permitting with very narrow and limiting and mostly non existent public comment avenues for such a wide and impacting residential project not seen in decades. To date, for residents have not had a true open forum of two way discussions regarding EE where the Mayor and Council sat present (just one forum with a couple staffers June 2014~ the residents who attended were very disappointed our decision makers were "absent"). The absence of verbal 2 way communication essentially just fosters mistrust and suspicion by Residents since Residents have been asking for community engagement set aside outside of regular Council meetings with their Mayor, Council and City Staff members this past year. 3 minute comment sessions times only 3 total speakers on the same subject rule provided as the only face to face engagement with the EIS lead City of Bellevue is completely UNACCEPTABLE. The City of Bellevue should have had at least 1 forum meeting with the full council and Mayor present where residents can speak freely to their City Officials in 2 way dialogue about the EE project. There has been no such engagement to date, so how can the selection of "USE" be seen by the Residents as a credible company to be entrusted to do such an important job when the City of Bellevue won't even engage their residents to hear them unless they submit to an a one way method of online communication? " Use" cannot be seen as the credible choice for the job until and unless residents have had an opportunity to really evaluate what this company can or cannot achieve with regard to the eastsides future energy needs. Bring forward a public meeting with the principles of "USE" to answer direct questions from the residents in order to engage the community on this important matter.

Signed,

South Bellevue Resident
(with growing concerns of the Cities "communication methods" and "transparency" towaed the Residents/Voters they serve).

January 18th, 2015

RECEIVED

JAN 21 2015

CITY COUNCIL

Bellevue Councilmember Lynne Robinson
450 110th Ave. NE
PO Box 90012
Bellevue, WA. 98009

Dear Ms. Robinson,

Does PSE continue to experience declining electricity demand year-over-year? Is this primarily due to continued energy efficiency improvements? Many utilities recognize the same trends and are adapting their business models to incorporate-rate win-win cost-sharing solutions in order to survive (e.g. additional renewable energy and Demand Response incentives). A significant study by **The Cadmus Group** (buried deep within PSE's Integrated Resource Plan, Appendix 12), and a separate study by **E3**, both hold hidden gems. Did E3 and The Cadmus Group provide recommendations (peak Megawatt reductions) that delay/negate the need for "Energize Eastside"? Is PSE trying to prop-up declining electricity revenue by charging excessive Return on Equity on "Energize Eastside" - billing customers for an oversized "Blended Project"?

On another note, I am not against progress. Technology is forging ahead and improving our lives every day mostly in a positive way – smart thermostats, incandescent light bulbs. Using the internet, a Google search of "reducing electricity usage" found 32,500,000 articles! Have many of these suggestions have been explored? How about ***reducing*** the rate for those customers who reach individual targets?

Also, the PSE's project interferes with our quality of good neighborhoods. There are already too many lines piggybacking for power, Comcast, telephone. However, I do not want to exclude our daily considerations. Have you ever tried to take a picture excluding a power line? There is also a question of how much pollution will be added to our environment? Do these user satisfaction items matter to PSE?

What if PSE's plans/projections do not meet their objectives to cover their advertised power need, (which is declining) or bring in the revenue to cover their costs (really ours)? We are all thinking of our families today and our families of tomorrow. One more important thing, there are no guarantees of safety during or after this project. There is no going back!

Please RE-START a transparent process to evaluate the Eastside's electricity needs.

Sincerely, Kayla Laughlin

Address _____

Ms. Kayla N. Laughlin
8316 127th Pl. S.E.
Newcastle, WA 98056-9156

10435 NE 15th St.
Bellevue, WA 98004
January 15, 2015

RECEIVED
JAN 20 2015
CITY COUNCIL

Mayor Claudia Balducci
Members of the Bellevue City Council
450 110th Ave NE
P.O. Box 90012
Bellevue, WA 98009

Dear Mayor Balducci and Council Members:

DID YOU KNOW?

Puget Sound Energy recently reported poor quarterly performance (11/2/2014). While this may be news to us, PSE has known this day was coming for quite some time. Should we feel sorry for PSE? PSE has alternative solutions they have chosen not to implement (identified by The Cadmus Group and E3).

* http://seattletimes.com/html/businesstechnology/[illegible]_sundaybuzz02xml.html
* www.energizeeastside.com/Media/Default/Library/Reports/PSEScreeningStudyFebruary2014.pdf
* https://pse.com/aboutpse/EnergySupply/Documents/IRP_2013_AppN.pdf

PSE continues to experience declining electricity revenue year-over-year "...primarily due to continued energy efficiency improvements..." Many utilities recognize the same trends and are adapting their business models to incorporate win-win cost-sharing solutions in order to survive (e.g. additional renewable energy and Demand Response incentives). A significant study by **The Cadmus Group** (buried deep within PSE's Integrated Resource Plan, Appendix 12), and a separate study by **E3**, both hold hidden gems. Did E3 and The Cadmus Group provide recommendations (peak MegaWatt reductions) that delay/negate the need for "Energize Eastside"? Is PSE trying to prop-up declining electricity revenue by charging excessive Return on Equity on "Energize Eastside" – billing customers for an oversized "Blended Project"? **Bellevue City Council, please RE-START a transparent process to determine the Eastside's future electricity needs.**

"Energize Eastside" is NOT a Done Deal.

Sincerely,

Ann Schroeder Osterberg

Matz, Nicholas

From: Russell Borgmann <rborgmann@hotmail.com>
Sent: Tuesday, February 03, 2015 11:35 AM
To: Energizeeastside
Cc: Matz, Nicholas; Brennan, Mike; Miyake, Brad; david.postman@gov.wa.gov; rborgmann@hotmail.com
Subject: Energize Eastside NEED questions for USE, Inc.

Dear Mr. Matz, City Staff, King County Staff, State Agencies, and Federal Agencies involved in the Independent Technical Evaluation of Puget Sound Energy's proposed "Energize Eastside" project:
Below are my questions for Utility Systems Efficiencies, Inc. (USE) regarding the need for "Energize Eastside":

1. On Puget Sound Energy's "Customer Demand Forecast" graph, what are the ACTUAL numbers for 2012, 2013, and 2014? Data shown are forecasts, NOT actuals.
2. On PSE's "Customer Demand Forecast" graph, please provide justification/rational for the "System Capacity" line.
3. How does PSE justify an eastside growth rate of 1.7% to 2%? The Puget Sound Regional Council projects a growth rate of about 1%, in keeping with studies for Seattle, Portland, and other fast-growing Pacific Northwest regions. PSE growth projections are nearly double the PSRC projections. Please explain the rational.
4. Is PSE doing everything possible with respect to Demand Response initiatives? Have they implemented the suggestions by their own consultants, E3 and The Cadmus Group, to possibly delay/negate the need for Energize Eastside? Are there opportunities that have not been taken advantage of yet? Please examine PSE's IRP and appendices (specifically Appendix 13) and provide rational why PSE has avoided taking action on Demand Response initiatives that other utilities are finding effective.
5. What is the connection between the need for Energize Eastside and ColumbiaGrid technical objectives? How are the technical needs of ColumbiaGrid prioritized and what criteria is used for evaluation and prioritization? BACKGROUND: BPA has stated that if Energize Eastside is NOT built, **BPA will proceed with the Monroe-Echo Lake #2 project**. The Monroe-Echo Lake #2 project was shown to be the most reliable and BEST technical solution: the lowest TRCM and highest TTC (April 2011 PSAST Report). Yet ColumbiaGrid decided to proceed with an inferior solution (Energize Eastside), based on cost (PSAST Report page 16). The costs of the projects were NOT evaluated against the size of the affected customer base. The Monroe-Echo Lake #2 project costs far less per capita when spread across tens of millions of ratepayers in BPA's territory. The cost of Energize Eastside per capita (spread across 1.1 million PSE ratepayers) is unduly expensive to PSE ratepayers. PSE ratepayers are paying for a BLENDED PROJECT yet only deriving a fraction of the benefit of this project. Assuming BPA were to build the Monroe-Echo Lake #2 project, what smaller, scalable, less expensive solutions can be implemented by PSE to meet the local needs to support eastside growth? Who has regulatory oversight of ColumbiaGrid? What is the connection between the need for Energize Eastside and ColumbiaGrid financial objectives?
6. PSE has also stated the need for Energize Eastside is due to reliability. According to the EXPONENT Report on Bellevue Electrical Reliability, Bellevue and the eastside are more than 3X better than the WUTC stated reliability goals (frequency of outages, as well as duration of outages). How are Energize Eastside "need" and "reliability" related? How many outages in the next 10 years (2017 – 2027) are anticipated to be avoided by implementation of Energize Eastside, due to transformer limitations or

otherwise stressing system capacity due to local eastside GROWTH (excluding unpredictable weather events)?

7. Is Energize Eastside an "OPEN ACCESS" project? Who are the beneficiaries? For whom is it USED and USEFUL? Is Energize Eastside need a PRUDENT project for PSE ratepayers? Is Energize Eastside a "BLENDED PROJECT" to satisfy the needs of ColumbiaGrid, BPA grid reinforcement (Monroe-Echo Lake bottleneck), Columbia River Treaty "Canadian Entitlement" curtailments, Seattle City Light load needs, as well as PSE load growth? How are the merits of each need evaluated independently, and which need takes priority? BACKGROUND: The "Blended Project" objectives have been verified by examining Memoranda of Agreement between BPA, Seattle City Light, and PSE.
8. What percentage of North-South flow-through load (to Canada/California) will be carried on Energize Eastside during a N-1-1 event (failure of BPA bulk main PLUS a second transmission line failure)? What is the probability of a N-1-1 event?
9. Is PSE exploring alternatives that satisfy LONG-TERM needs - solutions with longevity? PSE has stated the usable life of Energize Eastside may only be 15 years. To satisfy long-term needs what REALLY needs to be done beyond transmission lines? More transformers? Where are the REAL bottlenecks to satisfy eastside needs? "A hammer tends to see every problem as a nail". Is this a case of a utility company seeing the ONLY WAY to solve this need with transmission lines? (Reference: PSE's Op-Ed article titled, "Energize Eastside, the only way")
10. How is the need for Energize Eastside linked to the continuation/suspension of coal-generated power at PSE's Colstrip Generating Facility?
11. Please describe the connection between the NEED for Energize Eastside and PSE's financial objectives for Energize Eastside? Is the NEED for Energize Eastside driven by a need to achieve a specified rate of Return on Equity? Will PSE be applying for an additional FERC rate of return on projects related to grid reinforcement, and if so, how does this factor into the need for Energize Eastside?
12. Please describe how the need for Energize Eastside and Power Wheeling are connected? What are PSE's power wheeling objectives for Energize Eastside, and how much of the Energize Eastside need is based on the ability to participate in additional power wheeling?

I look forward to these questions being answered in the USE Report. I ask that these questions be included, verbatim, in an attachment to the final USE Report, as part of the public record and the City of Bellevue's transparent process to evaluate the eastside's future electricity needs. These questions are also applicable to the Programmatic EIS and SEPA review. Additionally, these questions apply to a NEPA review as part of the "Blended Project" needs to address trans-national grid reliability, as referenced in numerous BPA Memoranda of Agreement and BPA Reports.

Sincerely,

Russell Borgmann
Bellevue, WA 98005
rborgmann@hotmail.com
425.445.4298

Matz, Nicholas

From: Jane Kim <janekimrealty@gmail.com>
Sent: Monday, February 09, 2015 9:17 PM
To: Energizeeastside
Subject: ASK THE CONSULTANT

To Whom It May Concern:

(1) While I appreciate the council authorizing an independent study, I am very concerned about the stated focus of this study. I, along with other residents of the Eastside, request the technical analysis of this study to be a comprehensive and complete audit -- not simply a peer review -- of the specific needs. This should be a quantitative analysis of load growth and reliability for Bellevue and the Eastside as I presented this evening at Tonight's Council Meeting.

(2) I am very concerned that no one -- not even PSE -- will/can explain PSE's "Eastside Customer Demand Forecast" chart. This has been widely used in the CAG process and at public forums as the basis for telling us Eastside residents are running out of electricity. After significant research, I seriously question this. I would like to see detailed quantitative analysis for the years on this chart. I think it's also important to see forecast models based upon this chart and various assumptions/'conditions. Also, solar energy has been increasing on the Eastside. With the increased incentives on tax breaks, I know of 2 neighbors on my street that have installed panels and I am also seriously considering adding these to my home. If even 10% of Eastside residents participated in putting energy back into the grid, this would make a difference in our energy need and consumption. Times are changing and people want to be more environmentally conscious. Erecting larger poles, wires, and electrical line will be detrimental for our future generations and for many years to come.

(3) CENSE have found several credible articles stating electrical usage is not growing but is flat and even declining in the United States. This trend is apparent over several years and is due to conservation and technological changes in production, usage and storage. However, PSE is saying we are really growing and running out of electricity. How does Energize Eastside explain this disparity?

(4) I am concerned that the need is not just for Bellevue and the Eastside but more for Bonneville Power, Snohomish Power, Seattle City Light -- the Columbia Grid.

Could you please ask the Consultants and Experts to provide a simple quantitative and pie chart breakout of the need that each stakeholder has in "Energize Eastside"?

This is a monumental time in the history of Bellevue and the Eastside. I hope that you also ask these questions and demand data-based answers (TRUTH) from the Consultants and from PSE. Without that, I would question whether the need is apparent as PSE has portrayed.

Thank you,
--
Jane Kim
Coldwell Banker Danforth
Phone: 206-293-5263
Fax: 206-493-2770
www.janekimrealty.com

Matz, Nicholas

From: Sally McCray <sally@fap.cc>
Sent: Tuesday, February 10, 2015 10:29 PM
To: Energizeeastside
Subject: Questions for USE

Regarding the electrical utility independent review. I hope USE can answer these questions:

- Is PSE's load projection reasonable?
  - For example, are those loads really the needs of the Eastside, or the needs of BPA, etc.? Are the load's PSE is projecting based on a farfetched combination of circumstances that are unlikely to actually happen. Do PSE's load projections build out for reliability in the transmission system that exceeds the reliability of the distribution system to such an extent as to make it meaningless?
  - Is the data PSE is using really good data, independently verified? PSE has a history of overcharging customers, falsifying safety records and misleading the public and their customers. It is not a company which can be trusted; all of the data should be independently verified.
- Are there other options?
  - Are ugly overhead transmission lines that ruin the visual environment truly the only answer?
  - If they are the only answer, USE should explain how Seattle City Light find it cost effective to put in a new 230kv line underground, and our much more expensive private utility only knows enough to advise that an ugly overhead line system is the only solution? How is it that a public utility, which doesn't afford themselves a 4 million dollar a year CEO and a former TV anchorman as a Public Relations specialist can come up with a solution that doesn't degrade their neighborhoods?
- Why does PSE project load growth, when their public documents, such as the 10k reports that they have been selling less electricity every year for the past 6 years? If the trend line has been going down, why is going to suddenly start moving so dramatically upward starting next year?
- A credible electrical engineer, CV Chang proposed a re-conductoring and rebuilding of the existing 115kv corridor with poles 5 ft. higher than the existing poles. What is wrong with that proposal? (Mr. Chang worked for SCL and PSE during his 25+ year time in the electrical industry.)

Many thanks to the farsighted Bellevue City Council for insuring that this monstrous project is truly necessary. It would be a shame for Bellevue, as the lead agency, to permit a project of this magnitude just because the folks working PR at PSE are nice and contribute to worthwhile causes in Bellevue (with a fraction of the profit they make from selling electricity in Bellevue). This project will destroy much value in Bellevue and its neighborhoods, it should only be considered as a last resort, when all other options have been exhausted. Who would want approving this project to be the lasting legacy of their service to the city?

Sally McCray

11004 NE 11th Street

Suite 110

Bellevue, 98004

Matz, Nicholas

From: Don Marsh <don.m.marsh@hotmail.com>
Sent: Tuesday, February 10, 2015 10:32 AM
To: Energizeeastside
Subject: Ask the consultant

Follow Up Flag: Follow up
Flag Status: Flagged

Dear consultant,

PSE tells us that their all-time record peak electricity usage occurred in the winter of 2009.

We would like to know:

1. What were the conditions under which this peak occurred?
2. Were there any equipment outages anywhere on the regional grid at the time?
3. How close was PSE's infrastructure to overload?
4. What corrective actions did PSE take?
5. How many customers were at risk of outage?
6. If an outage had occurred, how long would it have lasted?
7. How likely is it that a similar problem could occur in the future?
8. If it's not clear from your answers above, please explain why no greater peak has occurred for the past 5 years, even though our economy has grown significantly since that recession year, and population has also increased.

Sincerely,
Don Marsh

Matz, Nicholas

From: Don Marsh <don.m.marsh@hotmail.com>
Sent: Tuesday, February 10, 2015 8:08 AM
To: Energizeeastside
Subject: Ask the consultant

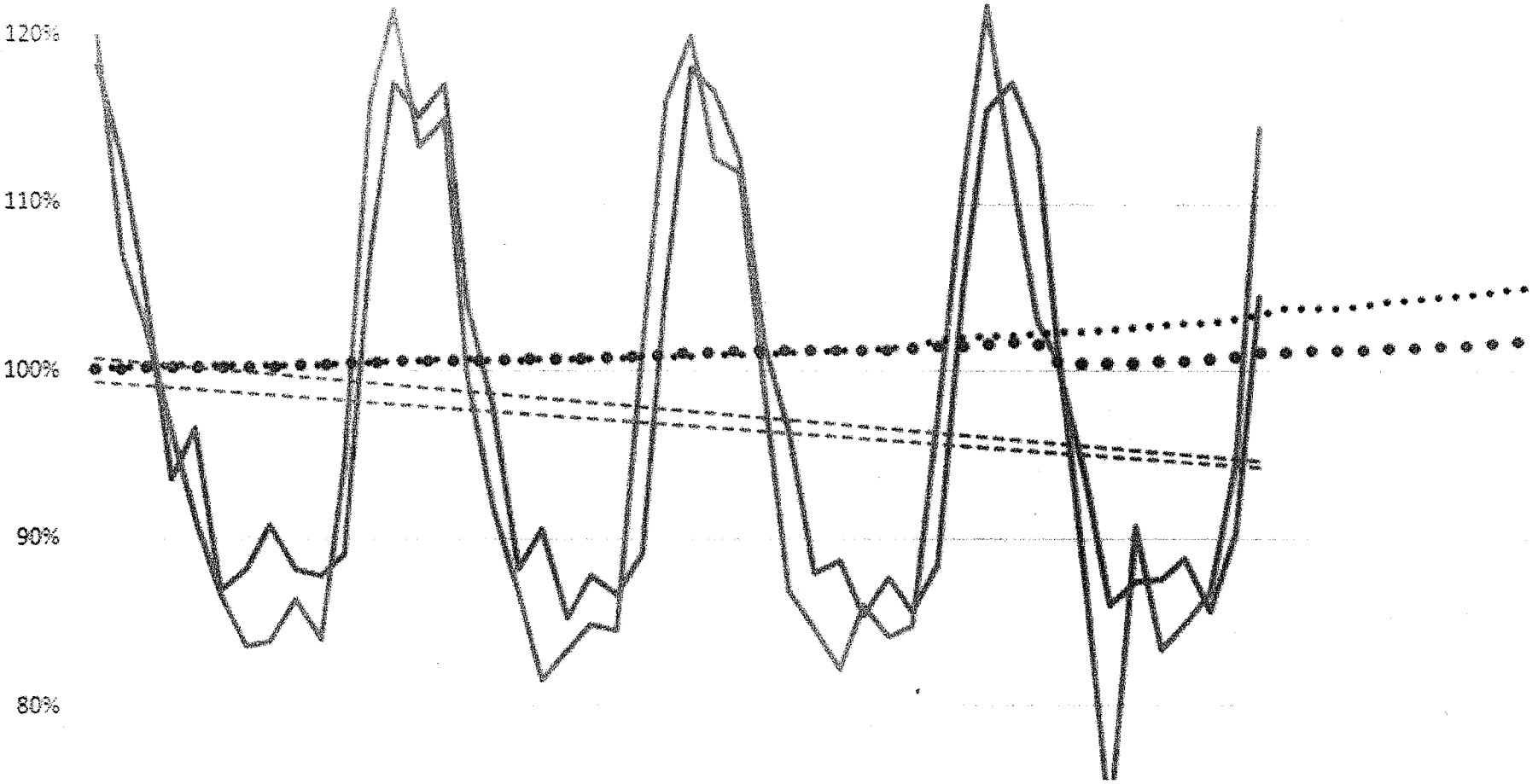
Follow Up Flag: Follow up
Flag Status: Flagged

Dear consultant,

We have been studying how electricity trends compare between PSE and Seattle City Light. Using data available from the U.S. Energy Information Administration, we produced this graph, which shows month-by-month electricity use relative to the average monthly use for each utility in 2009. We chose 2009 as the baseline year, because it was close to average in terms of heating days, and it was during the recession. We expected subsequent economic recovery would result in increased electricity use, as there was a substantial dip during the economic downturn.

Here's the graph:

Energy use relative to 2009



Here are our observations, which we would like you to verify or explain:

1. The graphs are remarkably similar. We don't find this surprising, because of the close geographic proximity of the two utilities, and the same weather.
2. PSE's graph swings a little more than SCL's from winter to summer. We think this is because Seattle has a higher ratio of commercial to residential users. Residential users use more electricity in winter, on a relative basis, because heating is a higher percentage of their electricity use. Residential users use less electricity in summer, because they use less air conditioning than commercial users.
3. Something odd happened to PSE's electricity graph in 2013. We think the graph of customer growth explains the issue. Jefferson County customers began to be served by their own PUD at that time, and their use was no longer included in PSE's numbers.
4. The drop in 2013 use due to the departure of Jefferson County makes PSE's linear trend line a little lower than it should be. If 2013 data is excluded, PSE and SCL have very similar trends.
5. Nothing in this chart shows that electricity use has been growing for PSE or SCL during the past 6 years. It's a valid question whether this is due to lingering effects of the recession, or whether electrical efficiency and conservation are effectively countering population and economic growth.
6. There is partial data available for 2014 which doesn't change the trends we've noted here, but when we included the partial year in the graph, it made the trend lines fall faster, because we didn't have data for the high use months at the end of the year. It also is biased by the departure of Jefferson County.
7. Given the similarity of these graphs, what explains the stark difference between PSE's projection of a 1.7% annual growth rate in electricity demand, compared to SCL's projection of 0.8%? (We realize that the graph above is for total electricity consumption, rather than hourly peak load, but multiple sources show that trends for these two measurements are strongly correlated in our region.)

Sincerely,
Don Marsh

Matz, Nicholas

From: Michael Alford <tammyandmichael@comcast.net>
Sent: Wednesday, February 11, 2015 3:01 PM
To: Energizeeastside
Subject: Ask the Consultant

I appreciate the council authorizing an independent study, but I'm VERY concerned about the stated focus of this study. We request the technical analysis involves a complete audit -- not simply peer review -- of the specific needs. This should be a quantitative analysis of load growth and reliability for Bellevue and the Eastside. I am concerned that no one -- even PSE -- will/can explain PSE's "Eastside Customer Demand Forecast" chart. This has been widely used in the CAG process and at public forums as the basis for telling us we are running out of electricity. After significant research, I seriously question this. A detailed quantitative analysis for the years is needed on this chart. There should also be modeling of the forecasts based upon this chart and various assumptions/'conditions. There have been several credible articles stating electrical usage is not growing but is flat even declining in the United States. This trend is apparent over several years and is due to conservation and technological changes in production, usage and storage. However, PSE is saying we are really growing and running out of electricity. How does Energize Eastside explain this disparity? I am concerned that the need is not just for Bellevue and the Eastside but more for Bonneville Power, Snohomish Power, Seattle City Light -- the Columbia Grid. I would ask the consultants to provide a simple quantitative and pie chart breakout of the need that each stakeholder has in "Energize Eastside".

Thank you,
Tammy Alford

Matz, Nicholas

From: Hal Mozer <halmo1927@gmail.com>
Sent: Wednesday, February 11, 2015 11:46 PM
To: Energizeeastside
Subject: Ask the Consultant

The comments here are focused on Utility Systems Efficiencies (USE) technical analysis of the Energize Eastside Project. However, to make this a standalone document, I am repeating some parts of my comments to the Council in an attachment to an email on June 6, 2014.
A review of my background and qualifications is appropriate. I moved to Eastgate from Portland, OR, in 1955, well before Eastgate was part of Bellevue. I moved to Monthaven in 1965 to the home where my wife and I still live. I am in what some of us call "lower Monthaven" where were have essentially no views. The Energize Eastside project, as now proposed by PSE, will have no visual effect on me. My major interest here is being sure to continue to have a reliable electric supply and to be sure the issues are presented accurately. I jumped into this discussion when I saw too many misstatements, misrepresentation of issues, too much hyperbole and emotional arguments with little foundation. I am not a member of CENSE and I have not expressed either support or objection to EE.

I am a retired electrical engineer with over 50 years of experience in the electric utility field. I retired from full time work in 1993 and continued to do part time consulting for about 10 more years. This experience included 7 years as an engineer at BPA in Portland and the rest of the time as a consultant in Seattle and Bellevue with major consulting firms. My clients included both public and private electric utilities. At times I had consulting assignments as an adversary to the interests of Puget Sound Energy (PSE) and at times PSE was a client. Before I dropped all my registrations after retirement, I was a registered professional engineer in Washington, Oregon, Idaho, California and several other states. Over those many years my assignments included power supply studies, transmission and distribution system planning and design, and engineering aspects of economic feasibility studies of new power generation, including some of the major hydroelectric plants on the Columbia River.
In Bellevue's RFP #14133, under which USE was retained, the City's objective was stated as follows:

> How the purpose, need and timing of the proposed electric
> specifically documented for Bellevue, evaluating the need f
> assessment of forecast growth and demand and timing for
> meet forecast growth.

This is a good objective. Consistent with this objective, I am concerned with three major issues regarding the USE study of the Energize Eastside (EE) project. They are:

1. What is the magnitude and timing of the need for EE? This should be resolved with an updated peak load forecast to resolve serious questions about the load forecast used by PSE to justify the project as now proposed. **I believe resolution of this issue is absolutely critical, the threshold issue, to how to go forward with the EE project.**
2. When the magnitude and timing of need for EE is resolved, is EE as now proposed the best facility to build, or are there one or more better alternatives?
3. Any proposed EE project will, by its nature, be an integral part of the interconnected Northwest Washington electric grid. Power on this grid at various times, primarily seasonally, flows to or from Western Canada. Any EE project will have to be either beneficial to the grid, including support of required power flows to and from Canada, or be neutral, i.e., not create problems on the grid. The study must as clearly, but non-technically as possible, define will happens regarding power flow to and from Canada under any alternative EE project. I believe this issue has been seriously misrepresented and distorted by opponents of the presently proposed EE project.

Immediately after USE was selected for the technical analysis, in my email of 12/12/2014 to Mr. Matz, I expressed concern about USE's lack of qualifications to make the all important load forecast that I consider so critical to the justification for EE. Neither the firm nor any of its staff show such qualifications on USE's web site, nor in USE's proposal to perform the study. As far I have been able to determine to date, USE has not proposed using an outside consultant to perform the load forecast. Without a credible load forecast, I believe the rest of the "independent technical analysis" will be of little value. Yes, any report likely will be challenged by either side in this contentious project, no matter how good is the report. An electric load forecast is a prediction about future events and several sources have been credited with a widely used quote "there are no facts about the future." That said, **my main issue here simply is that USE must present as credible as possible a peak load forecast for EE.** USE must explain the basis for the forecast including but not limited to, economic factors, population and business growth projections, weather-related factors, and conservation considerations. A breakdown of the Eastside load projection by relatively small geographic areas, such as distribution substation loads, should be included in the study to illustrate the characteristics of the projected load growth.

As to my issues #2 and #3, USE does appear to be well qualified to address these issues. The study should clearly address the issue, for any proposed EE project, as to how the EE project supports PSE Eastside system needs and how it supports electric grid needs, if it does.

Thank you for the opportunity to present these comments.

Hal Mozer
Monthaven Neighborhood
4247 135 PL SE
Bellevue, WA 98006-1319
425-746-1028
halmo1927@gmail.com

One City
Committed to Excellence

From: Todd Andersen [mailto:todd@matadortech.com]
Sent: Thursday, February 12, 2015 4:50 PM
To: Energizeeastside
Cc: Janis Medley; Larry Johnson; Council; sdofour@aol.com; WHalvrsn1@frontier.com; norm Hansenn; Matz, Nicholas; Brennan, Mike; Miyake, Brad; pr@cense.org; Cv; Philip C Malte; Don Marsh; mark Hancock; Lisa Taylor; Russell Borgmann; KC; pamagnani@gmail.com; Christina Aron-Sycz
Subject: Questions on need for EnergizeEastside consultant from Todd Andersen Re: "Ask the Consultant" email link on Engagement page Update

Dear City of Bellevue,

In responds your request and lone email to the citizens with regard to "Energize Eastside" since June 2014 when the City supposedly created a distribution list to inform citizens. Regardless, please find my questions attached. There are four documents which together compile my list of questions. Please confirm receipt and ability to read Word docs.

Attached to this email:
1. *Questions to Add ToddA ListForFeb12Deadline.doc* Please start with *Questions to Add ToddA ListForFeb12Deadline.doc* As they have refinements to the questions to the master 36 question doc the City of Bellevue have been in possession of since June 30 2014 with no response
2. *Additional_questions_to_PSE_via_WUTC_2014-8-14-Toddrev4.doc*
3. Main list of 36 Questions on Need, *Questions&Commentsfor June25-2014rev0.9.1w.o.TrackChg.doc*
4. And for background on real energy production trends *Tech & financial issues with PSE Energize Eastside1.4w.o.affil.doc*

Sorry for not taking the additional time to consolidate, all my time is spent researching PSE, WUTC, Columbia Grid and Bonneville Power Authority. Amazing to note that PSE has the highest energy rates in the state of Washington 28% higher than all other WA utilities, per NEEA.org which is 19% funded by PSE. See page 5 of 21 of http://neea.org/docs/default-source/rbsa/washington-state-report-final.pdf ? So much for the for-profit organization being lower costs other utilities ran government workers. And so much for the ability to government organizations like WUTC, and City of Bellevue staff to look out for Bellevue Citizens interests.

Thankfully, the arrogance of Bonneville Power Authority's vice president of Transmission Planning and Asset Management Hardev Juj in proposing Energize Eastside contrary to previous leading solutions that Columbia Grid documents have stated, have laid many thing bare. Without his arrogance and that of PSE's, Eastside citizens of would not have the deep understanding of how well Bellevue and other Eastside City governments work. No doubt that will have long term effects, hopefully for the positive.

Best Regards
Todd Andersen

From bellevuewa@public.govdelivery.combellevuewa@public.govdelivery.com
At 08:28 AM 1/29/2015, City of Bellevue wrote:

You are subscribed to Electrical Facilities Planning web page alerts. This information has recently been updated, and is now available.

http://www.bellevuewa.gov/electrical-facilities-engagement.htm

The city has added an email link for stakeholders to submit your questions, comments and materials at "Ask the Consultant" on the Engagement page.

Utility Systems Efficiencies, Inc. is documenting stakeholder questions and issues around the purpose, need, and timing of the proposed Energize Eastside electrical system improvement can be specifically documented for Bellevue, evaluating the need for the project including assessment of forecast growth and timing for delivery of improvements to meet forecast growth, and evaluating impacts to electrical system reliability.

Update your subscriptions, modify your password or e-mail address, or stop subscriptions at any time on your Subscriber Preferences Page. You will need to use your email address to log in. If you have questions or problems with the subscription service, please visit subscriberhelp.govdelivery.com.

This service is provided to you at no charge by the City of Bellevue.

This email was sent to todd@matadortech.com using GovDelivery, on behalf of: City of Bellevue · 450 110th Ave NE · Bellevue, WA 98009 · 425-452-6800

To: City of Bellevue
From: Todd Andersen Bellevue home owner and resident
425-449-8889 todd@matadortech.com
Date Feb 12,2015
Subject: Questions for Need review by consultant(s) hired by City of Bellevue and additions to previously sent question list sent by Bellevue home owner and resident Todd Andersen entitled *"Questions for Puget Sound Energy Submitted to City of Bellevue June 5th, 2014 & to PSE on June 30th 2014"* file name Tech & financial issues with PSE Energize Eastside1.4.doc

Attached:
1. The doc making up this page *Questions to Add ToddA ListForFeb12Deadline.doc*
2. *Additional_questions_to_PSE_via_WUTC_2014-8-14-Toddrev4.doc*
3. Main list of 36 Questions on Need, *Questions&Commentsfor June25-2014rev0.9.1w.o.TrackChg.doc*
4. And for background on real energy production trends *Tech & financial issues with PSE Energize Eastside1.4w.o.affil.doc*

New Question1 What are the current power loads capacity from Seattle City Light circuits running parallel to the PSE proposed Eastside expansion (parallel to interstate 405 Renton-Bellevue-Kirkland and what would it be if it was rewired with higher capacity lines with existing towers and new towers with capacity to support even heavier lines. Also see Question 7c of above attached doc *Additional_questions_to_PSE_via_WUTC_2014-8-14-Toddrev4.doc*

Add 1 Q4 Add this additional information asked in question 4 of above reference document. Similar to question list by other veteran power engineers from Seattle City Lights/PSE and other local utilities, including but not limited to question 6 of that list. SEE attached doc *Additional_questions_to_PSE_via_WUTC_2014-8-14-Toddrev4.doc*

a) Please include peak load information of 2014/15 winter to date as the peak has likely already occur for this winter season.

b) What are the power flow capabilities over each of the two 115KV circuits PSE is requesting to replace? Detail the type of wire currently installed and specifications when new and any degradation(s) of capacity currently assumed. Please provide amperage / wattage / temperature capability of the wire(s) when new and detail each knockdown factor(s)? Also detail when those circuits are over loading what percentage of power is assumed to Eastside power needs specifically, wattage needs that PSE customers consuming power within the Washington state and power needs shipped out of state and to/from Canadian. What portion of power is from each failover condition(s) for Bonneville Power Authority?

c) Please detail the relevant transformers that PSE is claiming are overloading and under what wattage/amp/temperature each specific transformer is overloading, including "Lakeside" and "Talbot Hill" but not limited to those is PSE is claiming overload condition. Please provide make model and relevant performance technical details of each transformer that is overloading. Please breaking out

wattage needs for each overload condition that are Eastside power needs specifically, needs that PSE customers consuming power within the Washington state and power needs shipped out of state and to/from Canadian. What portion of power is from each failover condition(s) for Bonneville Power Authority?

d) if transformers are overloading this please explain what additional capacity in power could be gained by adding a 3rd transformer to Lakeside and Talbot Hill?

Add 2 For Question 7 please provide both the unadjusted and adjusted temperature actual historical peak, and typical weekday and weekend for the winter and summer in spreadsheet form. PSE has demonstrated unreasonable temperature adjustments in other projects and thus the request. Please provide adjusted temperature as by PSE's methodology and the methodology USE would use and explain any deltas. Please detail or reference publically available documentation for basis of that adjustment methodologies. Please provide this peak power information for the Eastside and PSE's broader area as asked in question 7 but also for the specific 18 mile circuits that PSE requesting to upgrade.

Add 3 For Question 15. As referenced in question 15 PSE's Screening Study states that "*includes all remaining cost-effective EE and DR in King County, as well as all remaining achievable DG in the area*" Please detail those cost levels for each sources of EE, DR and DG and how those cost numbers are more expensive than PSE's proposed grid expansion "EnergizeEastside" in terms of both present costs and life cycle costs.

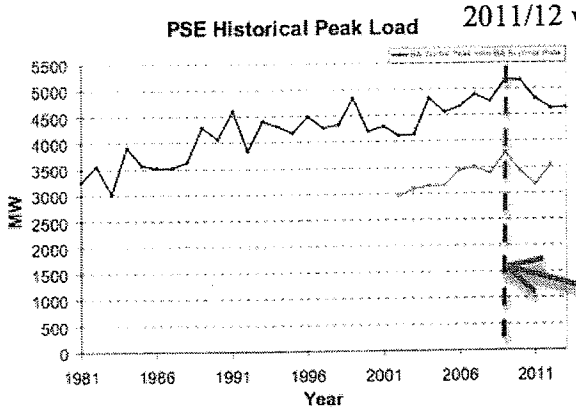
Add 4 For Question 19. Please compare the cost of peaking turbine to handle further power growth projections and much extra peak capacity this solution would add. PSE claims that such a peaker would not get permitted by environmental authorizes yet PSE never submitted a request. Given PSE's continued rate increases and "good will" the likely long term demand scenario is that alternative energy solutions is going to continued the long term decline in energy needs from the grid and not increase it. Thus a stop gap peaker would to be the low cost solution assuming real need is proven.

Some relevant graphs from PacNW utilities

PSE Load Growth

- 2012/13 Winter Peak: 4632 MW @ 29°F
- All-time Winter Peak: 5166 MW @ 25°F in 2008/09
- 2012 Summer Peak: 3541 MW @ 74°F
- All-time Summer Peak: 3774 MW @ 100°F in 2009

2011/12 winter was 4631MW @ 27 F ¶



PSE's Electric Customer Count: More than 1 million

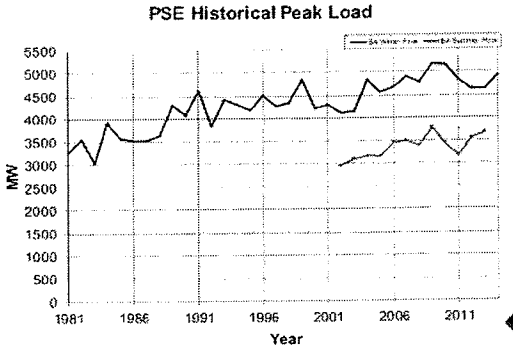
I-937 passed in Nov 2006 ¶
Code RCW19.285 goes into effect 2008 requiring cost effective conservation. ¶

22 ¶

and the latest per PSE even colder that 2008/09 peak but yet still a reduction in peak

PSE Load Growth

- 2013/14 Winter Peak: 4922 MW @ 22°F
- All-time Winter Peak: 5166 MW @ 25°F in 2008/09
- 2013 Summer Peak: 3675 MW @ 79°F
- All-time Summer Peak: 3774 MW @ 100°F in 2009



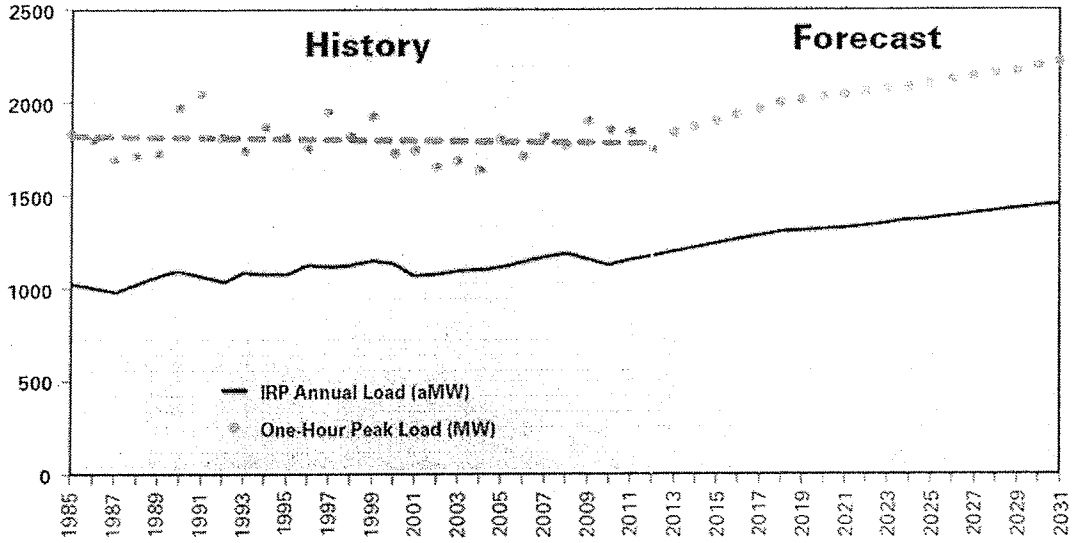
PSE's Electric Customer Count: More than 1 million

34

PUGET SOUND ENERGY

Seattle City Light:

FIGURE 5: LOAD HISTORY AND 2012 IRP FORECAST (WITH NO NEW PROGRAMMATIC CONSERVATION)

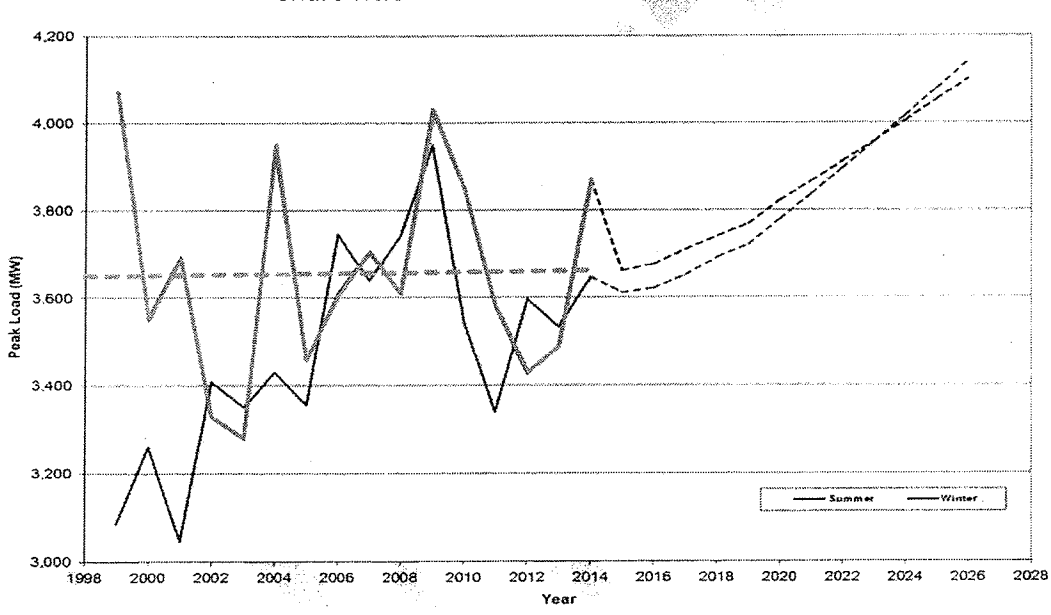


Seattle City Light's peak loads have been gradually decreasing during the 26-year history shown here. Their forecast is somewhat aggressive in comparison, but less than half of PSE's predicted growth rate. Keep clicking those heals together Dorothy you may get back to those monopoly utility years growth rates!

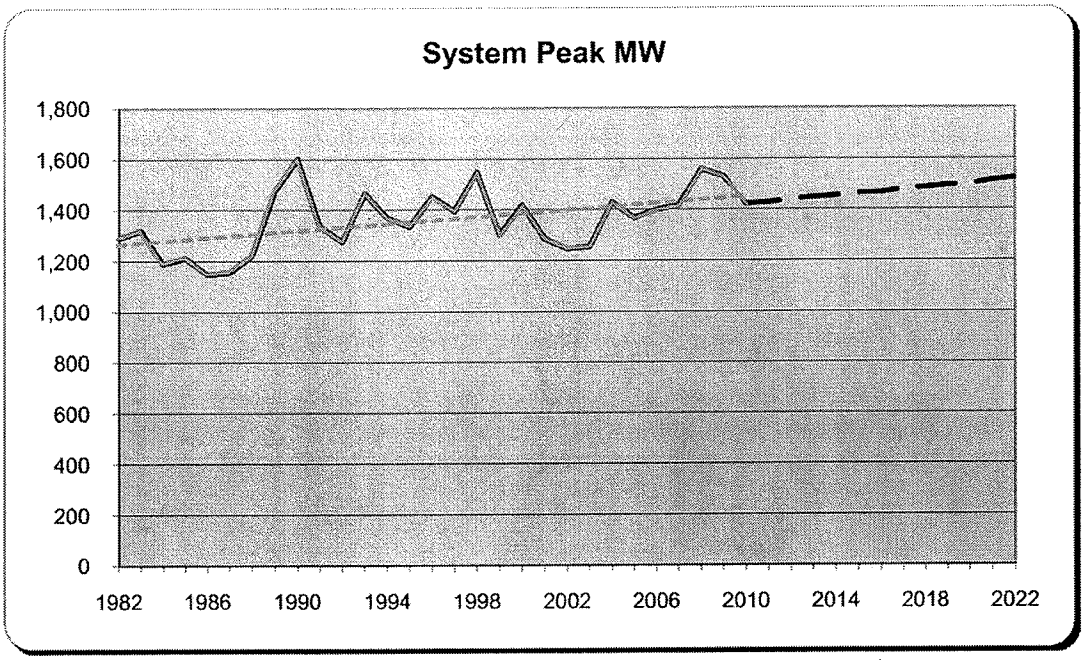
Portland Gas and Electric Portland's graph looks amazingly flat over 16 years including growth and a 45% first-year-failure-rate for Compact florescent light bulbs per the US Dept of Energy. LEDs should accelerate the energy and peak power load decline. Those dashed lines are wishful thinking, even with the WA bill to continue to allow incandescent bulbs to be sold in WA IF they are made in WA.

Figure 7: Portland General Electric's Historic & Projected Seasonal Peak Load

(Projection is for a 1-in-3 Loading Condition)

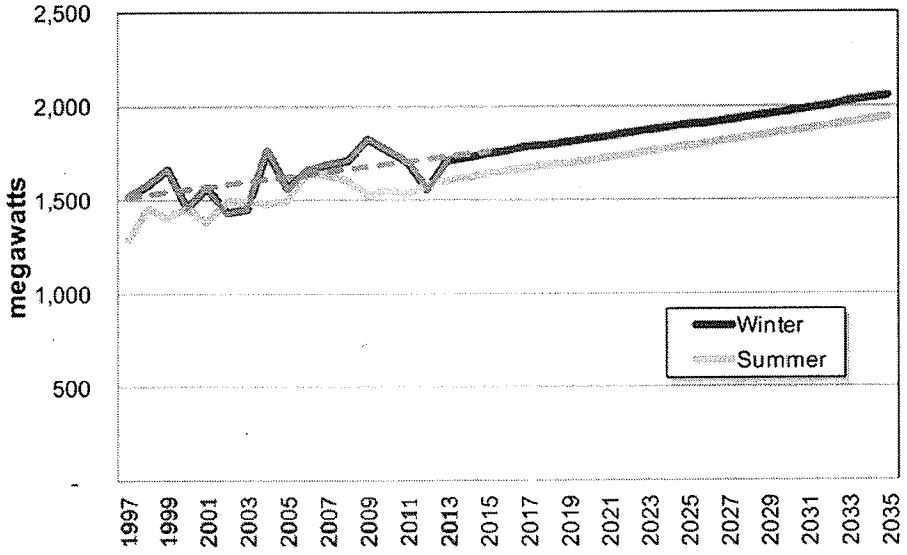


Snohomish PUDLoad= need to see winter and summer peaks



Spokane (Avista)-: Similar to Snohomish PUD, the forecast follows the same trend as the history.

Figure 2.14: Winter and Summer Peak Demand, 1997-2035



Matz, Nicholas

From: John Merrill <john@merrillimages.com>
Sent: Thursday, February 12, 2015 4:46 PM
To: Energizeeastside; Council
Cc: Miyake, Brad; David Danner (ddanner@utc.wa.gov); Deborah Reynolds (dreynold@utc.wa.gov); Juliana Williams (jwilliam@utc.wa.gov); John Merrill
Subject: Questions for Utilities System Efficiencies, Inc. Regarding Energize Eastside

Dear Bellevue City Council and Staff:

First, I'd like to commend the City for making great strides in electricity conservation. Programs like the City's LED streetlight replacement project save taxpayer dollars, improve safety and reduce our carbon footprint. While no one conservation program makes a big dent, the thousands of conservation programs, big and small, being implemented in both the public and private sectors are together making a huge difference. The fact is that aggregate electricity use is not going up, because conservation is working! While this does not obviate the need for new electrical infrastructure, it absolutely does impact a rational discussion of how big new infrastructure should be and when it should be built.

Unfortunately, the Utilities Systems Efficiencies, Inc. (USE) contract has devolved into a meaningless discussion of whether or not PSE has used industry standard practices to forecast future electricity demand, rather than an informed, independent review of the need. Of course PSE has used an industry standard methodology. The important question is whether or not PSE's conclusions are reasonable, regardless of how they reached them.

The City still has time to have USE actually perform the original intent of hiring an independent consultant and take a rational look at PSE's forecast and the other elements of the need for Energize Eastside. If USE thinks PSE's forecast is accurate then USE should explain why it makes sense, why electricity use in Bellevue is so very different from electricity use in similar fast-growing cities like Seattle and Portland, and all across America for that matter.

To learn the facts about the need for Energize Eastside, here are some questions, among many others I'm sure, USE should answer:

1. Is it true that PSE's "Eastside Customer Demand Forecast" graph is based on a hypothetical "grid-flow modelling scenario" in which a rare winter peak electricity demand event occurs on the Eastside at exactly the same time that there are two major and simultaneous equipment outages (an N-1-1 or N-2 event in industry lingo) on nearby transmission lines (which would divert large amounts of power flowing north on the grid through our Eastside system)? If so:

- what is the probability of these three events occurring simultaneously?
- what would PSE's demand forecast line look like on the graph if it was assumed there would be no outages on the grid during forecast peak winter demand events (the N-0 scenario)?
- What would the graph look like if BPA built its own new transmission line?

2. What have been the highest actual (not forecast or modelled) aggregate winter peak loads on Eastside feeders and distribution lines (i.e., not including theoretical flows to Canada if BPA lines were down) in each of the past 15 years (2000 -2014)? How would they look plotted on PSE's "Eastside Customer Demand Forecast" graph? How do these values relate to PSE's forecast of future loads?

3. Why is the rate of peak demand growth on PSE's "Eastside Customer Demand Forecast":

- higher than population and economic growth forecasts on the Eastside?
- higher than forecasts for similarly fast-growing cities like Seattle and Portland?
- higher than the 1% per year forecast by the City of Bellevue's Reliability Study consultant?

- inconsistent with historical data which show that electricity use has declined slightly across the City of Bellevue, the region and the U.S.?

  In short, why is Bellevue and the Eastside so different than everywhere else?

4. Is it possible that the industry-standard methodology which PSE uses to forecast load growth has not evolved to reflect the realities of the current electricity marketplace? Are there any newer methodologies, or modifications to existing methodologies, which better reflect the realities of the modern electricity marketplace?

5. What factors determine the peak load capacity of the existing system (of 710 MW) as shown by PSE on its Eastside Customer Demand Forecast graph? At what value would the analogous peak load capacity for Energize Eastside be plotted on this graph if built as proposed by PSE? What assumptions go into these estimates?

6. How reliable has our existing system, which Energize Eastside would replace, been compared to equipment downstream of it (feeders and distribution lines) or upstream (transmission lines and equipment which bring power to it)? Have there been outages caused by equipment failures on our existing system (which Energize Eastside would replace) during peak load events in the past? If so, when and where did they occur, how long did they last and what caused them?

7. How many outages in the next five years (2016 – 2020) would be avoided by implementation of Energize Eastside? What assumptions did USE make in this analysis?

I want to know the facts about the need for Energize Eastside and believe the City does too. Making a decision in the absence of these and other important facts about the need for Energize Eastside would be reckless at best. When we all have the facts, we can decide what the real need for new infrastructure is and when we will need it.
Despite demand having not grown for the last 6 or so years on the Eastside, I do not dispute the prudence of assuming it will rise, however, it is ludicrous to assume it will go up at more than twice the rate of nearby, similar jurisdictions. PSE's exaggerated forecast is clearly motivated by the fact that building the biggest infrastructure it possibly can, and sooner than later, is the only way it makes a profit for its shareholders. PSE does not profit by selling electricity or operating its existing systems. This is business as usual for a for-profit corporation, but is it the best decision for Bellevue? Should the City of Bellevue let a monopoly trample the best interests of its citizens in pursuit of profit?
There are better, less expensive, ways to provide reliable electric service to Bellevue. Thank you for representing the interests of your constituents.
John Merrill
Bellevue Resident and Taxpayer

Matz, Nicholas

From: Matz, Nicholas
Sent: Thursday, February 12, 2015 1:06 PM
To: 'Jennifer Geer USE ' (jennifergeer@useconsulting.com); 'petermackin@useconsulting.com'; Gordon Comegys (gordoncomegys@useconsulting.com)
Subject: Submitted under Task 6 Ask the Consultant - Hansen

From: Hansennp@aol.com [mailto:Hansennp@aol.com]
Sent: Thursday, February 12, 2015 12:21 PM
To: Energizeeastside; MVasconti@utc.wa.gov
Cc: sdofour@aol.com; don.m.marsh@gmail.com; whalvrsn1@frontier.com; DuseM@aol.com; dragonheart9@comcast.net; jamesbinder@att.net; Afprince42@aol.com; BridleTrails@gmail.com; bugsyk1@hotmail.com; heidibenz@frontier.com; marianneheywood@gmail.com; Patriciajanes@frontier.com; pamjjo@msn.com; Zhanbing.Wu@gmail.com; Waron@u.washington.edu; loretta@mstarlabs.com
Subject: Ask the Consultant Questions - Energizeeastside

Questions for Utilities System Efficiencies (USE) regarding the need and purpose for Energizeeastside

1/ Please advise the electrical power used in the Bridle Trails Sub area since 2008 by year and by month would also be most meaningful.

Discussion: Bridle Trails believes that the need for more power is not generated by our neighborhood. We are also interested is using this information to encourage residents to take advantage of PSE Conservation and Rebate Programs. It is noted that ratepayers currently pay a conservation charge on each bill to support these programs.

2/ How will a 230,000 Volt power line improve the reliability in the Bridle Trails Subarea?

Discussion: PSE's Bellevue Reliability Report indicates that the reliability in Bridle Trails over many years is substandard when compared to other areas in Bellevue. The current distribution design and substation design is incompatible with the wooded nature of our area. When the wind blows trees disrupt power and restoration has a low priority resulting in extended duration outages..

The Bridle Trails Subarea is mostly residential and includes the area north of 520 and south of NE 60th between 116th Ave NE and 148 Ave. NE. Total population is estimated at around 10,000 residents with 2000 single family and 3000 multifamily. This area is also mostly built out and future growth will be small.

Please contact me if you need further information or clarification about our request.

Norm Hansen, Bellevue Bridle Trails Community Club, 425-861-7333

Matz, Nicholas

From: suzanne halverson <sahalverson@hotmail.com>
Sent: Thursday, February 12, 2015 4:43 PM
To: Energizeeastside
Cc: whalvrsn@gte.net
Subject: Consultant Questions

Q: I ask the consultant to statistically verify, audit and model (based upon alternative scenarios) PSE's "Eastside Customer Demand Foecast" chart for Belleuve. If "Eastside Customer Demand" is for peak demand, alternative charts should be made for peak demand and customer demand for Bellevue. In addition these charts should clearly show retail sales to customers, off-system sales and electrity delivered to transmission only customers.

Discussion: I am concerned that no one - even PSE- will/can explain PSEs "Eastside Customer Deman Forecast" chart. This has been widely used in the CAG process and at public forums as the basis for telling us we are running out of electricity. Recently, there have been many articles stating electrical usage is not growing but is flat, even declining, in the United States. The trend has been apparent over several years. It is due to conservation, regulatory requirements and technological changes in production, usage and storage. Conversly, PSE is saying we are growing and running out of electricity at a significant clip. Additionally, there is no explanation for off-system sales or flow through. Show in quantitative and graphic form an explanation of these elements.

Q: My second request is that the consultant provide a quantitative analysis and pie charts (both historical and futuristic) showing a breakout of the need (demand and reliability) for each of the members of the Columbia Grid.

PSE has asserted that Energize Eastside and their solution is the only alternative to Bellevue's electrical needs. However, in testimony before the Bellevue City Council, the Washington Utilities and Transportation Commission testified that the Energize Eastside project originated from studies and in conjunction with the Columbia Grid and meets the members needs. Regardless, show in quantitative and graphic form an explanation of this need being met for each member of the Columbia Grid.

Warren E. Halverson
13701 NE 32nd Place - Bridle Trails
(425) 883-0568

Matz, Nicholas

From: Don Marsh <don.m.marsh@hotmail.com>
Sent: Thursday, February 12, 2015 1:45 PM
To: Energizeeastside
Subject: Ask the consultant

Dear consultant,

As you may have gathered from our January 22 Skype conversation, CENSE members are somewhat disappointed that USE analysis of the Eastside load forecast will be limited to reviewing PSE's parameters and formulas, and verifying that they applied industry-accepted practices. We were hoping for a deeper look at the assumptions, and particularly how trends in electrical efficiency, population growth, economic development, and land use plans affect the Eastside's load forecast. You stated that you don't have time to create a load forecast at that level.

Even if you only have time to do a less thorough audit of PSE's work, we would like you to explain the top assumptions and parameters that produce the load forecast. Here are some of the questions your report should answer:

- Is PSE using population growth as a parameter? If so, at what granularity are the growth projections made? In other words, are growth projections used for individual cities, or is the Eastside treated as a whole, with one forecast governing the whole area?
- We would like to understand economic projections as well. Is economic growth projected for each city, or only for the whole Eastside? What numbers were used?
- Is development like Bellevue's Spring District factored in? Are there numbers that account for the impact of individual projects in downtown Bellevue? What numbers are used to predict the load impact for these projects?
- Do the growth projections account for increased electrical efficiency? What assumptions are made, and do these represent the low, high, or average model outputs?
- Does the load forecast take into account local government actions, such as Bellevue's street light and traffic light initiatives?
- Does the load forecast anticipate changes in regional transmission flow, such as south-north transmissions to Canada?
- What other factors governing the regional grid is the load forecast taking into account?

We will be satisfied if reasonably well-informed CENSE engineers can read your report and understand how PSE and USE came to their conclusions. We don't need every detail, but we would like to fully understand the most important factors driving the load forecast. That way we can discuss the elements that are the biggest drivers of this project, and we can decide whether realistic alternatives exist for those determinative factors.

Sincerely,
Don Marsh