EXH. DRK-11
DOCKETS UE-22___/UG-22___
2022 PSE GENERAL RATE CASE
WITNESS: DAN'L R. KOCH

BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION, Complainant, v. PUGET SOUND ENERGY, Respondent.	Docket UE-22____ Docket UG-22____

TENTH EXHIBIT (NONCONFIDENTIAL) TO THE
PREFILED DIRECT TESTIMONY OF

DAN'L R. KOCH

ON BEHALF OF PUGET SOUND ENERGY

JANUARY 31, 2022

City of
Bellevue

DATE: 07/31/2015

TO: Energize Eastside EIS File – 14-139122-LE

FROM: David Pyle, Senior Environmental Planner – 425-452-2973

SUBJECT: Energize Eastside EIS Team Review of Project Need

PSE has represented that there is a need to construct a new 230 kV bulk electrical transmission corridor and associated electrical substations on the eastside of Lake Washington to supply future electrical capacity and improve eastside electrical grid reliability. Preliminary discussion between potentially affected jurisdictions and PSE indicated that the proposal is likely to have probable significant adverse environmental impacts, and issuance of a Washington State Environmental Policy Act (State Environmental Policy Act (SEPA) Threshold Determination of Significance was deemed appropriate as outlined in Chapter 197-11-360 WAC.

Following PSE's identification of this essential electrical infrastructure link, and to address the potential for significant environmental impacts, the utility submitted application for processing of an Environmental Impact Statement (EIS) with the City of Bellevue, who assumed the role of lead agency. Subsequent to this initiating action, several steps have been taken to begin processing the required EIS. The EIS is now underway and the EIS project team has been in review of information provided by PSE and collected during the process.

To better understand PSE's project proposal, the EIS project team has obtained clearance to access un-redacted sensitive (protected in accordance with industry security protocol) utility planning and operations information used by PSE in developing the Energize Eastside project proposal. The EIS project team, represented by Stantec (electrical system planning and engineering sub-consultant working in support of the Energize Eastside EIS effort), has reviewed this background information and studied the process used by PSE to establish a need for the proposed Energize Eastside project. A report from Stantec summarizing the findings is attached.

Although validation of the need for the proposed Energize Eastside project is not considered as a component of the EIS process under the requirements of SEPA, review of the need for the project is important in developing a thorough understanding of the project objectives and technical requirements to accurately identify feasible and reasonable project alternatives[1]. The EIS process is not to be used to reject or validate the need for a proposal. Rather, the EIS process is intended to identify and disclose potential significant adverse environmental impacts associated with a specific proposal.

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[1] WAC 197-11-786 - Reasonable alternative.
"Reasonable alternative" means an action that could feasibly attain or approximate a proposal's objectives, but at a lower environmental cost or decreased level of environmental degradation. Reasonable alternatives may be those over which an agency with jurisdiction has authority to control impacts, either directly, or indirectly through requirement of mitigation measures.

Stantec **Memo**

To:	Mark Johnson	From:	Keith DeClerck
	Program Manager ESA | NW Community Development Director		Tucson, ArizonaTucson, Arizona
File:	Energize Eastside	Date:	July 31, 2015

Reference: Energize Eastside Project

The purpose of this memorandum is to summarize my findings regarding Puget Sound Energy's (PSE) electrical system needs that support the purpose and need for PSE's proposed Energize Eastside project. It memorializes the issues we have discussed in depth with the principal jurisdictions reviewing the project (the Cities) as we examined PSE's project criteria and possible alternatives to the 230 kV transmission system improvements that PSE has proposed for consideration in the Phase 1 Draft Environmental Impact Statement (EIS). I have prepared this memo at ESA's request to support a plain-language description of the purpose and need for the Energize Eastside project that can be used in the EIS that ESA is preparing. I understand that ESA and the Cities also want to understand the purpose and need for the project and the constraints PSE is working with so that you can make informed choices about what alternatives to evaluate in the EIS.

<u>My Background</u>
As an electrical engineer with more than 25 years of experience in both Industrial and utility environments, I understand the concerns on both sides of the meter. Specific to this project I have over 14 years of experience in transmission and distribution power flow simulations and have conducted and published extensive power flow studies in several of the states included in the Western Electricity Coordinating Council (WECC) region. I have critical infrastructure security clearance for viewing FERC data, and have experience reviewing such data. In addition, I have conducted transmission adequacy studies and renewable generation interconnection studies in several other North American Electric Reliability Corporation (NERC) regions across the United States. My experience in load forecasting and transmission planning, coupled with the fact that I have never worked for or have been under contract to PSE, allows me to provide a knowledgeable, independent view of the project purpose and need.

<u>Documents Reviewed</u>
In preparing this memo, I reviewed the unredacted versions of the following documents prepared by PSE and Quanta Technology (Quanta):

- *Eastside Needs Assessment Report, Transmission System, King County,* dated October 2013;
- *Supplemental Eastside Needs Assessment Report, Transmission System, King County,* dated April 2015;
- *Eastside Transmission Solutions Report, King County Area,* dated October 2013; and
- *Supplemental Eastside Transmission Solutions Report, King County Area,* dated April 2015.

I also reviewed the *Independent Technical Analysis of Energize Eastside for the City of Bellevue, WA (Version 1.3)* dated April 28, 2015 by Utility System Efficiencies, Inc. (USE). Although PSE's findings are the focus of this assessment, I found the USE report to be helpful in exploring other facets of the proposed need and verifying my own conclusions.

Reference: Energize Eastside Project

In the process of reviewing these documents I also referred to many other documents prepared by federal and regional agencies and by PSE.

Findings

Based on my expertise, I found that the PSE needs assessment was overall very thorough and applied methods considered to be the industry standard for planning of this nature. Based on the information that the needs assessment contains, I concur with the conclusion that there is a transmission capacity deficiency in PSE's system on the Eastside that requires attention in the near future. For purposes of this memo, "Eastside" refers to the central portion of King County roughly located between the cities of Redmond to the north and Renton to the south.

The transmission capacity deficiency is complex. It arises from growing population and employment, changing consumption patterns, and a changing regulatory structure that requires a higher level of reliability than what was required in the past. PSE has concluded that the only effective and cost-efficient solution is to site a new 230 kV transformer in the center of the Eastside, fed by new 230 kV transmission lines from the north and south. While that conclusion seems simple and straightforward, it is the product of an analysis that considered dozens of options and thousands of potential scenarios that the power system could encounter.

The population of the Eastside is expected to grow at a rate of approximately 1.2% annually over the next decade, and employment is expected to grow at an annual rate of approximately 2.1%. Because of the nature of expected development, PSE projects that electrical demand will grow at a rate of 2.4% annually. Without adding at least 74 MW of transmission capacity or local peak period generation to the Eastside, a deficiency could develop as early as winter of 2017 - 2018 or summer of 2018, putting customers at risk of load shedding (power outages). It is impossible to place a single number on the projected deficiency because it varies by season (winter vs. summer) and by other assumptions that are made in the planning process. However, as the load continues to grow, the risk and extent of the load shedding required increases.

Four components must be understood in order to have a basic understanding of the nature of this expected capacity deficiency:

- Study Parameters
- Load Forecast
- Corrective Action Plans
- Regional Compliance

Study Parameters

PSE started with the WECC database model for load forecasting, distribution, and transmission. The model encompasses all utilities in the western United States, western Canada, and northern Mexico. This model is updated yearly by all entities in the WECC region and reflects the overall system configuration and load forecasts for each utility. This overall model does not always reflect the specific details of a utility's transmission and distribution system. Therefore, PSE added specific details about its system configuration on the Eastside to enhance the accuracy of the results. This includes PSE's 115 kV substations and transmission lines, and other equipment operating at lower voltage. In the model, forecasted electrical load is distributed by substation, based on historical load data for those locations. This model was used for most of the study results.

In addition, system sensitivity cases (i.e. scenarios) were conducted using various levels of energy conservation, extreme weather temperatures, power generation patterns, and expected "intertie" flows between PSE and its interconnected neighbors. These scenarios were used to evaluate stresses on the system that can reasonably be expected. The scenarios generally involve trying to operate the system during these extreme weather periods with one or two system components taken offline either because of planned maintenance, or because of an emergency such as damage caused by a storm or vandalism. Scenarios provide insight as to the strengths and weaknesses of the system. Because weaknesses represent vulnerable aspects of the system, specific information about them is not released to the general public.

This procedure is a typical method of study and consistent with standard accepted practice for the industry. Extreme weather conditions examined are relatively high likelihood events, that is, conditions expected in one out of every two years.

Results from both summer and winter conditions were reported. This is because although the Eastside has historically had its highest electrical demand during the winter, recent trends show that summer usage is growing rapidly and will eventually lead to similar or even greater levels of demand as peak winter days. This is discussed further under Load Forecast.

<u>Load Forecast</u>
The load forecast is central to determining the need for the project. The primary contributing factors to the growth in load are as follows:

- Local residential consumption due to population growth; and
- Local growth in commercial and industrial electrical consumption due to both the quantity and types of local businesses that are growing.

PSE prepared a Needs Assessment in 2013 and a Supplemental Needs Assessment in 2015. The methodology used in the Supplemental Needs Assessment increased the accuracy of the results by breaking down the systemwide forecast into county-by-county forecasts and a sub-county area forecast for the Eastside. Both the 2013 and the 2015 reports show that Eastside growth is expected to be relatively strong, with peak loads projected to grow by approximately 2.4% per year over the next 10 years (2014 - 2024) driven mainly by new development in the commercial and high-density residential sectors.

Table 2-2 in the Supplemental Needs Assessment compares the load growth forecast from the 2013 assessment and the 2015 assessment. The 2015 supplemental forecast showed a slight reduction in PSE's overall peak load projections for winter 2017 - 2018 of 46 MW (0.9% of total) as compared to the 2013 projections, which is due to a slower than expected recovery in the housing sector. Similarly, Eastside load projections for winter 2017 - 2018 decreased by 11 MW (1.6% of total) as compared to the previous forecast. Although the new forecast slightly extends the time before system components on the Eastside will have reached capacity, the conclusion regarding the need in the long run has not changed.

PSE has traditionally been a winter-peaking utility, meaning that the highest demand periods typically have occurred in winter when cold weather drives the demand for heating. Both Needs Assessment reports indicate that, in addition to growing winter peak load demand, summer loads on the Eastside are growing even more rapidly, to a point where they also pose transmission capacity deficiency issues.

In the 2015 Supplemental Needs Assessment report, the 2018 summer load projections for the Eastside were 12 MW (2.2% of total) lower than the previous forecast. However, by 2018 the supplemental assessment shows that approximately 74 MW of customer load is at risk of load shedding (shutting off or limiting power to customers) in order to maintain a reliable and secure transmission system. Ultimately, the result of having both a winter and summer peak deficiency leads to more hours of the year when the system is vulnerable to excess loading.

As with the previous forecast, PSE's supplemental forecast was based on historical data that were modified for such variables as energy conservation programs, economic data, population growth trends, and population and employment growth forecasts from the Puget Sound Regional Council (PSRC). Also included into the final shape of the forecast were any expected community development increases in load that have been identified by PSE customer relations and/or PSE local area distribution planning staff as being of significant size. These would be considered block loads and their addition is a typical practice in utility forecasting. In the model, block loads were added to the forecast for the substation that would serve those loads at 100% for the first three years, 50% for the next three years, and 0% after six years. Even though there are no standards for adding block loads of this type, this staged approach allows the forecast to capture any immediate sizable increases while tapering off and allowing the data available on employment and population provided by the other forecasting agencies to shape the outer years. This approach is a reasonable way to capture any significant near-term load increases without skewing the entire forecast.

In my opinion, the one area where PSE used an approach to load growth that was not typical of most utilities was in looking at the effect of its conservation programs. PSE used a conservation level of 100% in its load forecast, which assumes PSE will be able to achieve all of its planned conservation goals. Although PSE has a highly successful conservation program at present, this is more optimistic than most utilities are when making load forecasts, since conservation programs are typically voluntary. Using this as an expectation, anything short of that level of conservation would increase load levels and accelerate the timeframe for the deficiency to develop. The demand-side reduction program is described in PSE's *Integrated Resource Plan* (2013) including the methods used in determining the achievable levels of conservation. My review did not include a review of the methodology or results used in that analysis, although it appears to consider a wide range of factors that should be considered when establishing conservation goals.

In summary, PSE's load forecasting analysis applied methods and assumptions that are standard practice for the utility industry. My only concern is that the approach taken on conservation could result in understating the potential capacity deficiency if PSE were to fall short of its conservation goals.

<u>Corrective Action Plans (CAPs)</u>

An unwanted side effect from transforming power or transmitting power across power lines is the effect of thermal heating. Similar to water encountering friction in a hose, electrons face resistance in the conductor or transformer. Many individuals have felt this phenomenon when attempting to change a light bulb after it has been on for a period of time. Electrical transformation and delivery can cause extreme heat. As electrical system components heat up due to these thermal stresses, they reach a point where physical damage can occur if the temperatures are too high.

System operators monitor the load, which is in direct correlation to the heating of equipment. If the load gets too high, operators must reduce (shed) load, either automatically or manually, from the equipment. This reduces the loading and allows the destructive temperatures to decrease to a safe level. This heating can occur in any system component (transformers, conductors, generators etc.). If the operator does not shed load the equipment will eventually fail due to the excess heat, and no load will be able to be served by that system component until it is replaced. For some components this could take weeks or months to accomplish due to equipment availability, shipment requirements and the time it takes to install and test the component.

Corrective action plans (CAPs) are instructions to PSE transmission operators to take particular actions during certain events to prevent destruction of system components and maintain appropriate voltage levels to all customers. Equipment overheating mainly triggers those actions. Overheating is typically due to high “steady state” load levels during peak load times (i.e., running the system near full capacity for several hours or days, such as during a cold snap or hot spell), or increases in load on a particular piece of equipment due to an outage of another transmission system component. Outages can occur due to unforeseen events such as storms, or during routine maintenance, when pieces of equipment need to be isolated from the system for personnel safety. CAPs are used by all electrical utilities as temporary fixes that can be implemented for short periods in lieu of increasing the capacity of the system.

The electrical transmission system is basically a link between generation (supply of electrical power) and load (demand for electricity). Unless the load is turned off or generation is unavailable, the transmission system will continue to try to deliver electricity to the load even if certain parts of the system are overheating. Operators must be constantly aware of system loading parameters to prevent components of the system from being destroyed by overheating. Once destroyed, the component may be out of service for weeks or months while being repaired, and customers may be adversely affected for the duration. CAPs are sometimes administered manually by the operator, or automatically by control systems in more critical cases where immediate action is deemed appropriate.

CAPs limit the adverse effects to equipment, but during the period that a CAP is being implemented, the electrical supply system is left in a more vulnerable state with fewer components to carry the load. Regardless of whether a CAP has been initiated by normal load levels, an unexpected outage, or a maintenance outage, there is a higher probability during a CAP that any further system upset could leave large areas of the Eastside and thousands of customers without power. As the load for the Eastside increases, and as the problem becomes not only a winter but summer peak issue, the number of hours per year when CAPs must be implemented will increase, meaning the length of time that the system is vulnerable also increases. Therefore, from a functional standpoint the system becomes less reliable in regard to normal load and unexpected system outages. From a maintenance standpoint the system becomes harder to operate and maintain its components in good condition. For example, PSE currently uses CAPs at the Talbot Hill substation to avoid load shedding in winter months.

PSE considered CAPs in its Needs Assessment for the Energize Eastside project, recognizing that with growing demand CAPs alone would not be a sustainable solution. CAPs allow PSE transmission operators to temporarily mitigate system problems on the Eastside in order to keep the system operational during certain outages and maintenance procedures. However, each CAP increases the exposure to more widespread customer power outages if any further system upset occurs while the CAP is implemented. As load increases over time, more CAPs are needed for more hours of the year and system reliability decreases. Therefore, CAPs should not be regarded as a long-term solution.

Regional Compliance

Like all major electrical utilities, PSE's electrical supply system does not operate independently of other power providers in the region. The interconnected power system, or bulk electric system (BES) as it is commonly referred to, is intended to be cost and resource effective by allowing excess power generation in one part of the region to supply load in another. In addition, because of the characteristics of electricity, increased system reliability, voltage stability, and performance are achieved by employing an interconnected system.

Several regional agencies in the Northwest oversee the operation of the BES to ensure that it is capable of delivering electricity. These regional agencies are ultimately responsible on a national level to the Federal Energy Regulatory Commission (FERC) and NERC. Among other duties, these regional entities identify additions to the transmission system needed to ensure service to load and meet firm transmission service commitments into the future, while complying with national reliability standards. In order to participate in the benefits of the regional grid, PSE must adhere to these transmission reliability standards.

These standards have become more stringent in recent years, after lessons learned in the cascading blackout that struck the northeastern portion of North America in 2003. Particularly relevant to planning for the Energize Eastside project, the current standards require that the system must be capable of operating safely and reliably with two components being disabled (referred to as N-2 and N-1-1 scenarios), whereas past standards only required that the system operate reliably with one component disabled (referred to as N-1 scenarios).

The Eastside Needs Assessment Report and the Supplemental Eastside Needs Assessment Report mention several other reports prepared by regional agencies, or that PSE prepared in order to comply with these agencies' standards. Each of these reports investigated a range of solutions to meet a particular regional electric system need. Being regional, these studies often encompass several utilities in order to address a particular issue or range of issues.

The Energize Eastside project was discussed as one of the possible solutions in some reports, and it was found to help address regional transmission issues. This should not lead to the conclusion that Energize Eastside was conceived as a means to address these regional needs. It only means that PSE's proposed Energize Eastside 230 kV transmission line would benefit the reliability of the regional grid in addition to addressing the local capacity deficiency on the Eastside. Conversely, other regional solutions these reports investigated would address the regional issue but would not be effective for solving the local transmission capacity deficiency on the Eastside. This is because they were designed only to address the regional issue. Providing support for the electrical needs of the region should not be equated with support for the need identified for the Energize Eastside project.

For instance, in the past PSE has utilized various CAPs as mentioned above to meet some of its regional compliance issues for reliability. Yet, as was also indicated above, the enforcement of a CAP is a temporary solution that puts large numbers of Eastside customers at higher risk of a power failure, and the hours of exposure per year continue to increase.

Regional compliance is part of operating an electric utility. There is a tension between what is best for the region and what is best for the local utility.

Summary

Due to increasing load demand, the Eastside is quickly approaching a transmission capacity deficiency. If and when this deficiency develops, PSE's electrical supply system will reach a point where it cannot ensure the level of reliability that it is mandated to provide. Assuming projected growth occurs, the Supplemental Needs Assessment indicates this capacity will be reached as early as winter 2017 - 2018. This is not a prediction that weather conditions and load demand will converge in this time period and require load shedding. Rather, it is a projection that load demand will increase to a point where, if adverse weather conditions occur and one or more components of the system is not operating for any reason, load shedding would be required. Once the threshold is crossed, the physical limitations of the system are such that even the slightest overload will produce overheating that can damage equipment, and larger overloads will produce overheating more quickly. Once equipment is in an overload condition, the options are to let it fail or take it out of service. Both conditions leave the Eastside in a vulnerable state where the system is incapable of reliably serving customer load. At that point further actions may be needed such as load shedding in order to keep the system intact. By the end of the 10-year forecast period, a large number of customers would be at risk, and the load shedding requirement could be as high as 133 MW.

The deficiency is caused by load growth, which is a byproduct of economic growth and population increases in the Eastside area. Addressing the deficiency is difficult because the needed generation to supply this load growth is outside the service area and the available existing pathways to bring that power to the load have reached capacity. The load area in question is situated between two sources: Sammamish substation on the north end (Redmond/Kirkland area) and Talbot Hill substation on the south end (Renton area). These are the only two sites that effectively support this geographical area. Increases or decreases in load that are not directly supplied by these two substations, or power flow to other parts of the system outside the service area, have minimal effect on the ability of these substations to supply load. Only a direct interruption of supply power to or power fed from these two substations will affect the Eastside area. Once the higher voltage (230 kV) is transformed down to a lower voltage (115 kV) at these two substations, the system is limited by the physical capacity of the conductors and transformers that connect those two sources to the load and feed the area.

A simple analogy for the transmission problem on the Eastside would be the water pressure at a residence with a vegetable garden located at the back of the property. In the summer months the vegetable garden needs more water but there isn't enough pressure to deliver an adequate supply. Even if the homeowner increases the size of the hoses or adds more sprinklers, the pressure is divided among them and the flow at each sprinkler reduces to a trickle. To solve the problem the homeowner must either increase the pressure at the main, or develop another water source (such as a well) near the garden.

For the Eastside the highest load densities are north of I-90 and west of Lake Sammamish. In electrical systems, voltage is the pressure. As with the hoses and sprinklers, the physical limitations of the transformers and conductors dictate that the transformation sites closest to the load center will have best performance. Bringing a higher voltage source into the area and making the transformation to a lower voltage closer to the load increases the pressure at the source (comparable to the analogy of bringing a larger water main with plenty of pressure) and adequate power can flow to all parts of the area. The other solution is to produce a new source of power close to the load center. This would be some type of electrical generation (similar to adding a new well in the garden hose analogy). Other solutions would be less effective.

Energy conservation, technological advancements, and system operational improvements can and will slow the need for these infrastructure improvements. In its planning for Energize Eastside, PSE has assumed that a relatively high level of voluntary energy efficiency measures will be adopted within the Eastside over the coming decade, approximately 110 MW by 2024. The analysis PSE provided shows that even with these measures, the economic and population growth expected by planning agencies and businesses on the Eastside equates to the need for either more energy infrastructure, or at least 163 MW of additional conservation, over and above conservation already planned for the Eastside.

Energy conservation is one way of reducing load. But when increasing load has eclipsed increases in energy conservation and the electrical system is reaching capacity, the only other method is to open transmission lines. That is the purpose of CAPs: to reduce load, and therefore heating, by opening transmission lines. CAPs are temporary measures to help the system supply load. However, CAPs do not solve the long-term capacity issue, and when implemented they leave the system vulnerable to increased outages.

To understand this, the garden example can again be used. The homeowner has two sources of water to the garden, one from a faucet on the north side and one from the south much as Sammamish and Talbot Hill substations feed the Eastside load. It is a particularly hot mid-summer day, and the garden needs extra water. The homeowner connects more hoses to each faucet but realizes that even with the additional hoses and the faucets wide open, there is not enough water pressure to effectively water the garden. The only option is to disconnect a hose or two so that the others will have enough pressure to operate the sprinklers. Only now some of the garden is going without water (similar to load shedding in an electrical system). Also, depending on what is disconnected, large portions of the garden would be vulnerable to losing their water supply if the remaining hoses were damaged. In a garden, it may be possible to keep plants alive by rotating areas where the water is turned off, but in an electrical system, instead of plants it is people who will not have the electricity they need for a period of the day.

This is a simple analogy, but the situation with the Eastside power system is similar, except that instead of sprinklers that won't operate, an overloaded electrical system overheats. During peak load periods, operators use CAPs to turn off (referred to as opening) lines from either Sammamish or Talbot Hill substation to reduce heating on certain system transformers and lines so that they will not be destroyed. They may be able to keep the Eastside area supplied with electricity, but in doing so large areas of the Eastside may only be fed from one source. If something happens to that source, such as a tree falling into a line, or a car accidentally taking out a pole, or a piece of equipment fails due to fatigue, at that moment the last viable connection to a power source is gone and the lights go out. Even worse, as load continues to grow, or the area hits the coldest winter or hottest summer on record, the operator will be left with a decision: who will have power and who will not. Until the peak period is over, in order to reduce overloads to an acceptable level, large portions of the Eastside area could be left without power. A further possible consequence would be that hospitals, nursing homes, fire departments, police stations and other critical support services must run on emergency power or are without power. In this situation the event has become not just an inconvenience but a hazard.

There are a lot of questions surrounding the probability of these events occurring on the Eastside. Most people are likely unaware of how many times an outage is imminent or narrowly avoided. Attempting to specifically predict these events is nearly impossible because of the number of potential scenarios and permutations. Is it an extreme peak? Are 100% conservation levels being met? Is there a system component out for repair? Has an accident removed a piece of equipment from service? Has a natural or man-made disaster occurred that no one thought would ever happen? Was the forecast wrong and loads grew faster than expected? The permutations are endless.

Regional electrical reliability is important to local communities. Without a reliable regional backbone, energy generated by a wide variety of sources could not be efficiently delivered to the population areas that need it. All the utilities in the Northwest bear some responsibility to keep the transmission system in working order. However, a local utility's main role is its customers and each has a legal duty to provide electricity to customers in its service area.

The local utility has two roles to play. On the community level, it needs to provide an adequate infrastructure of facilities and equipment that can reliably deliver energy to its local customers. As a regional player, the utility provides its customers access to the larger interconnected system while making sure its system is as reliable as its regional neighbors' systems and not a detriment to the whole.

The Energize Eastside project is designed to bring the needed infrastructure to supply the local need. Any regional benefits that it provides would be added benefits of a stronger regional source, but these are not the primary reasons why the project has been proposed. The transmission capacity deficiency is driven primarily by local rather than regional growth. If the entire region surrounding the Eastside was eliminated or disconnected from Sammamish and Talbot Hill substations, and replaced with an independent 230 kV source of power at both ends, the result would be the same. The Eastside 230 -115 kV system as it exists cannot supply the projected load under all circumstances, with the required levels of reliability that the community and neighboring utilities expect.

STANTEC CONSULTING SERVICES INC.STANTEC CONSULTING SERVICES INC.

Stantec

Reference: Energize Eastside Project

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