BEFORE THE PUBLIC UTILITY COMMISSION

OF OREGON

PCN-2

In the Matter of the Petition of	)
	)
TILLAMOOK PEOPLE'S UTILITY	)
DISTRICT	)
	)
PETITION FOR CERTIFICATE OF	)
PUBLIC CONVENIENCE	)
AND NECESSITY	)
	)
_____	)

INTERVENOR REPLY TESTIMONY OF DAVID MAST

March 11, 2019

David Mast – Intervenor Reply Testimony

I. Introduction

Pursuant to the Prehearing Conference Memorandum issued by Public Utility Commission of Oregon ("Commission") Administrative Law ("ALJ") Judge Patrick Power dated February 5, 2019, David Mast submits this intervenor Post-Hearing Reply Testimony. David Mast respectfully requests that the Commission deny its Petition for a Certificate of Public Convenience and Necessity ("CPCN") for the construction of an 8.6-mile-long overhead transmission line from a breaker in the Tillamook Substation owned by the Bonneville Power Administration to the proposed new Oceanside Substation

II. Background

TPUD states that the *Transmission Line is needed to enhance system reliability for existing and new customers in large portions of TPUD's service territory, and the line is most critical for customers in and around the coastal communities of Netarts and Oceanside.*[1] From the very beginning the project has always been about putting in a transmission line. Other options were never explored. It was a full 15 months after the Citizens Advisory Group had selected a transmission line route before TPUD even showed other options. The other options were no more than window dressing in the workshop called TILLAMOOK TO OCEANSIDE TRANSMISSION LINE PROJECT OCTOBER 13, 2016 BOARD WORKSHOP[2] In Exhibit TPUD staff DR-21, TPUD outlined 4 options to improve the outage frequency; OPTION 1. Do nothing, OPTION 2. Construct a new 24.9kV circuit from Trask to Oceanside, OPTION 3. Same improvements as alternative 2 with replacement of WT1 with 24/34/44 transformer, OPTION 4. Construct 8.75 miles of transmission line[3].

The distribution line option 3 was considered GOOD for reliability but was summarily dismissed because of a major calculation error[4]. Even at the PUC hearing, Todd Simons, the TPUD manager admitted that no workshops had ever been conducted on any of the other options or even on repairing feeder 51.

Repairing feeder 51 was not even an option. 68% of the outages were because of car/poles and trees/winds and 12% was because of equipment failure.[5] Just by repairing the line and clearing the right of way, outages could be reduced by a minimum of 80%. TPUD has insisted that the transmission line and substation are necessary in order to repair the line. Stimson has already stated that they would provide TPUD with a wider right of way which would be used to build a replacement or temporary line either above ground or underground while the current line is still operational.

[1] Tommy Brooks Opening Post Hearing Brief page 2
[2] TPUD/205 Fagen 44
[3] Exhibit TPUD Staff DR-21 also TPUD 204 Fagen 2
[4] TPUD/204/Fagen 3
[5] Exhibit TPUD Staff DR-52

TPUD States *The existing 24.9 kV line is aging, has limited capacity and poor reliability, and has subjected TPUD customers to long outages of increased frequency. The Transmission Line will increase overall system reliability and ensure that TPUD can adequately serve its existing and future customers.*[6] This is not a capacity issue requiring a new transmission line and substation. Since 1972, sales have increased by 22 MW[7] while system capacity has increased by 106 MW[8] and that capacity increase has all been in the central valley with the Trask, Garibaldi, and Wilson River II coming on line, but is an aging conductor replacement project which does not require a new transmission line and substation to correct and the condemnation of farm and forest land.

III. Legal Standard

Division 25
REGULATIONS TO PREVENT DUPLICATION OF FACILITIES

860-025-0030
Petitions for Certificate of Public Convenience and Necessity for Construction of Overhead Transmission Lines

(C) Other transmission lines and substations of petitioner connecting or serving or capable of being adopted to connect or serve the areas covered by the proposed transmission line.

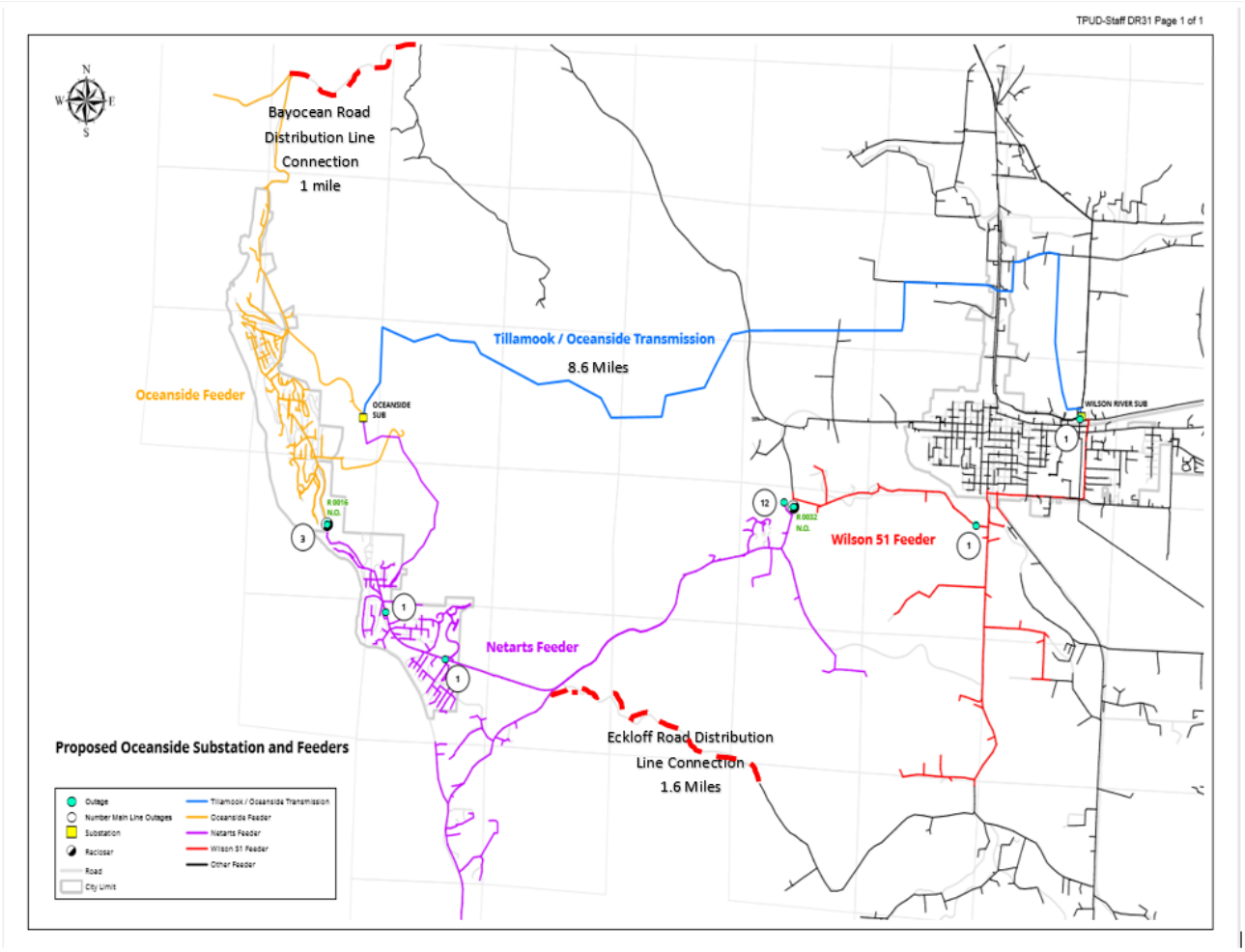
In Exhibit TPUD staff DR-21, TPUD outlined 4 options to improve the outage frequency; OPTION 1. Do nothing, OPTION 2. Construct a new 24.9kV circuit from Trask to Oceanside, OPTION 3. Same improvements as alternative 2 with replacement of WT1 with 24/34/44 transformer, OPTION 4. Construct 8.75 miles of transmission line[9]. The other options were no more than window dressing and even at the PUC hearing on November 1, 2019, under cross examination, Todd Simons, the TPUD manager admitted that no workshops had ever been conducted on any of the other options.

The Trask substation is only loaded at 12% of capacity and the highest coincident peak at the Trask was only 47% of capacity.[10] Moving feeder 51 to the Trask would relieve 5 – 12 MW from the Wilson River T1 & T2 and it would put the Task at a more efficient level. The $16 M transmission line/substation is planned to take load off the Wilson Rivers. Total system capacity and central valley capacity is not an issue. Moving feeder 51 to the Trask accomplishes the same thing for significantly less cost. Moving feeder 51 and 5 – 12 MW to the Trask along with the additional 12 MW from the larger transformer for Wilson T1 provides similar reliability to that of the transmission line. The map below shows how the new distribution line construction would interface the current grid. Instead of 8.6 miles of new transmission line and substation, the same 3 feeder redundancy for Netarts-Oceanside from two different substations is accomplished with 2.6 miles of new distribution line. In addition, the citizens of Cape Meares now have redundancy.

[6] Tommy Brooks Opening Post Hearing Brief page 2
[7] Exhibit TPUD Staff DR-49 C
[8] Exhibit TPUD/204 Fagen/1
[9] Exhibit TPUD Staff DR-21 also TPUD 204 Fagen 2
[10] David Mast 300 page 7

The plan would be to rebuild Feeder 51 to increase reliability and provide for growth in Netarts-Oceanside area. Install a larger transformer at the Wilson River Substation—a project that TPUD has already completed. Add a redundant source of power by either connecting an existing distribution line from: (1) Trask substation to Tillamook River Road, then to Eckloff Road which connects to Hwy 131 where it would connect to Feeder 51 and/or (2) connecting a distribution line from Cape Meares to Netarts-Oceanside area along Bayocean Rd and Cape Meares Loop Road--a new distribution line and connection.

As a result, the existing distribution route/line from the Trask could carry half or all of the load needed for the Netarts-Oceanside area (upgrades where needed), which reduces loading on the Wilson River Substation and increases longevity.



Reliability on Feeder 51 will improve when the aged infrastructure that is causing many of the outages is rebuilt. The redundant source of power allows the outage site to be isolated with fewer customers being without power. TPUD reports that the vast majority of outages associated with Feeder 51 are tree and car/pole incidences. Improved pole placement, pole guarding and vegetation management will greatly

increase reliability. Stimson Lumber has indicated it will facilitate this effort. Additionally, undergrounding of problem areas is an option. While cost prohibitive on transmission lines, it is much more feasible on distribution lines and can be done.

At rebuilt Feeder 51, would not be used to provide service back to Tillamook, it would power to Oceanside. However, Tillamook can already receive service from Trask and Garibaldi, which can both be upgraded to better serve central Tillamook--an option which keeps power supplies in Tillamook close to where the large commercial users are. In contrast, Option 4 ties up all extra capacity from a new substation on what TPUD states is the most unreliable feeder in the system. The proposed scenario has a transmission line carrying the extra capacity Tillamook needs all the way to Oceanside, then back to Tillamook on rebuilt Feeder 51.

The Eckloff Route used in conjunction with the Bayocean/Cape Meares route would provide 3 feeders which is what the transmission line project is planned to provide. The Bayocean/Cape Meares route would provide redundancy to Cape Meares which has none now and the Bayocean/Cape Meares redundancy is not in the transmission line project.

Both the redundant Eckloff and Bayocean/Cape Meares Loop routes would provide for the upgrade on feeder 51 without extended outages in the Netarts-Oceanside and Whiskey Creek areas with minimal interruptions to customers. Additionally, if just Feeder 51 was replaced (without redundancy) this can be accomplished with the TPUD proposed plan of using a large generator to supply power to customers while construction is under way. Also, if the line was rebuilt farther off the road, as Stimson proposed, the line could be built out while existing Feeder 51 was still in use.

All of TPUD's service objectives can be met with the use of distribution lines sited along existing public right of way and by adding capacity at the existing Wilson River substation. Choosing routes that do not require new easements on farm land make them a preferred alternative to the proposed transmission line. The TPUD service objectives can be met without a transmission line and substation in Oceanside and does not need to be located on farm land to meet the need.[11]

IV. Argument

Purpose

TPUD's purpose of the project to build a transmission and substation to Oceanside – Netarts is to adequately provide service to existing and new loads in a portion of Tillamook PUD's service territory, and to increase safety and reliability of TPUD's existing system.[12]

This is not a capacity issue requiring a new transmission line and substation. Since 1972, sales have increased by 22 MW[13] while system capacity has increased by 105 MW[14] and that capacity increase has all been in the central valley with the Trask, Garibaldi, and Wilson River II coming on line. TPUD already has system capacity to provide service to existing and new loads. TPUD's new system capacity with the new Wilson River I substation is 295.1 MW with sales of 55 MW and the maximum ever coincident peak

[11] David Mast 300 page 14
[12] TPUD Proposed Issues list
[13] Exhibit TPUD Staff DR-49 C
[14] Exhibit TPUD/204 Fagen/1

of 130.8 MW. TPUD's sales are only 20% of the new nameplate capacity and the all-time maximum peak is less than 50% of the new nameplate capacity of the system.[15] The latest information from TPUD based on their 2019 budget data[16] shows that the coincident peak in 2028 will be only 122 MW which is only 46.8% of capacity.

The total capacity of the 4 substations that feed the central valley and Oceanside – Netarts, with the new Wilson River 1 transformer, is 151.9 MW. The N -1 capacity is 106.7 MW. The maximum peak which occurred in 2009 is only 58% of the capacity of the 4 substations and only 83% of the substations' N -1 capacity. The average load on the substations was 37.83 MW. That is only 24.9% of the substations' total capacity and only 35.4% of their N -1 capacity.[17] Also TPUD can use other substations in an N -1 event. An article in the Ruralite points out that the new Beaver transformer will be an alternate power source for the Hebo and Trask service areas.[18] Also, in TPUD/205 Fagen 50 it is noted that 4 MVA of load was transferred to the South Fork and Mohler substations to reduce loads on Garibaldi and Wilson T1.

From the data, I see that TPUD is able to adequately provide service to existing and new loads without needing to build a transmission line and substation to Oceanside – Netarts.

Necessity

TPUD has based their argument for necessity on load growth, both in the total system and specifically on Wilson River T1 & T2. When PUC staff asked how TPUD got their load growth numbers for the total system (Staff DR 49), TPUD states "*The 1.1 percent load trend is based on historic load data and used the trending tool in MS Excel. See Exhibit TPUD-Staff-DR49-c worksheet Sheet1, cell L61. Two time periods were reviewed, 1972 to 2016 and 1999 to 2016*[19]*.*

TPUD's analysis is faulty because TPUD staff did not take into consideration that during the trended period of 1999 to 2016, in 2009, Tillamook County Creamery came on line with an electric boiler which took an average of 4.2 MW per hour of the 54.2 MW total of the system. That was 7.75% of the total load on the entire TPUD system[20]. The trend line falsely assumes that a 4.2 MW electric boiler is going to be added every 5 years. The TCCA boiler usage is so large that it is 80+% of the entire usage of the Oceanside-Netarts area.

In 2015 TPUD came on line with a propane boiler. To keep TCCA utilizing electricity TPUD reduced the rate it charges to TCCA[21] by 17% which is artificially keeping demand up. TCCA is paying 28% less than other industrial customers for electricity. The rate TCCA is paying is very close to the rate BPA is charging TPUD and when you add in TPUD's overhead to the overall cost, TPUD is selling electricity to TCCA as a significant loss. TPUD has created an artificial demand and because of this artificial demand, it wants to eminent domain farms and forests.

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[15] David Mast 300 page 1
[16] Exh TPUD-407 Revenue Requirements **Tab SalesSum Line 79**
[17] David Mast 300 page 2
[18] January 2019 Ruralite
[19] TPUD Response to Staff DR49
[20] David Mast 300 page 3
[21] Exh TPUD-407 Revenue Requirements **Tab SalesSum Line 46**

TPUD made a load forecast in 2012 and it is the most recent official load forecast. The 2012 forecast shows a growth rate of approximately 0.43 to 0.52 percent.[22] The 2019 budget forecast shows a growth rate of 0.5%.[23]

In his follow up testimony, KC Fagen reports a growth of 0.9259% per year for Wilson 1 & 2[24]. KC Fagen's 0.9259% growth for Wilson T1 & T2 is based on the load trends of the Wilson River 1 &2 from 2006 – 2016. His analysis has the same major error and is also significantly distorted upward because it also ignores the fact that in 2009 the TCCA boiler came on line. The trend line for 2009 – 2016 based on TPUD's data shows that growth on Wilson River 1 & 2 was flat.[25] showing that all the growth KC Fagen is talking about, in fact, came from the TCCA's electric boiler going on line in 2009. Since 2015 when TCCA's propane boiler came on line there has been 0.00% load growth in the large industrial usage (including TCCA's boiler) and the 2019 forecast shows that 0.00% growth through to 2028[26]

The 2012 official forecast was for a total system growth of 0.45%. Actual growth from 2012 – 2017 in the total system was below 0.45%. Growth of the 4 substations that serve the central valley is only 0.20%.[27]

Wilson T1 & T2 show no growth in 2009 – 2016.[28] TPUD's Exh TPUD 407 Revenue Requirements is showing 0.00% growth in the industrials from 2015 – 2028 and most the large industrials are coming from Wilson I & II The growth in the 2012 forecast was 0.5%. All of Bonneville Power's forecasts from 2013 – 2018 are for 0.25% for the next 10 years. The 2018 The projected growth in the 2019 Budget is only 0.5%[29]. Nowhere do any of the growth numbers come close to the 0.9259% he is using to justify the need for the transmission line and substation.

This data is from TPUD Exhibit 403 W1-W2 which has recorded the substation load every hour of every day. The maximum load Wilson 1 & 2 is only 70% of capacity and average load is only 33% of capacity.[30]

KC Fagen states that with his growth factor and 2018 adjusted to the 2009 coincident peak, the 2018 peak demand would be 67 MW.[31] A weather adjusted system peak for 2018 at 67 MW divided by the 90 MW transformer capacity of Wilson T1 & T2 gives a loading of 74%. This does not bolster the argument that more capacity is needed at Wilson T1 & T2. A better solution would be to reconfigure feeders and enlarging conductors and utilizing transformer capacity at Garibaldi, Trask south Fork, Mohler or Beaver.

In TPUD/ 400 Fagen/8, he indicates if one were to trend out the 2009 peak at 1.06% to 2018 the 2018 peak would be 141 MW[32]. TPUD has stopped showing thermal capacity in the board reports. As of September 2018, only transformer nameplate capacity is shown. However, a system transformer

[22] TPUD Response to Staff DR49
[23] 2019 TPUD Budget Page 1
[24] TPUD/400 Fagen/10
[25] David Mast 300 Page 5
[26] Exh TPUD-407 Revenue Requirements **Tab SalesSum**
[27] David Mast 300 Page 2
[28] David Mast 300 Page 5
[29] 2019 TPUD Budget Page 1
[30] David Mast 300 page 6
[31] TPUD/400 Fagen/11
[32] TPUD/400 Fagen 8

nameplate capacity of 261.5 is only loaded at 54% with the 2018 system peak weather adjusted to 141 MW. Get wild and predict a new system peak of **200** MW. With current nameplate capacity of 261.5, this is still just a loading of76.6% of the nameplate capacity. It is not in the customers best interest to add unneeded capacity.

TPUD's own data that they have provided to the PUC as back up does not support their load growth or capacity claims.

TPUD has based their argument for necessity on load growth. Over the last 44 years the sales growth was only 22 MW. [33] During this period at least 3 new substations were added to the system, increasing the capacity by 106 MW's. [34]

In PCN-1, Umatilla Electric Cooperative has experienced a 70% growth in the last 5 years, with 17% occurring in the last year.[35] During the last 5 years, TPUD is showing a 1% decrease in average system purchases.[36] With the 105 MW TPUD has already added to the system, TPUD already has the capacity to adequately provide service to existing and new loads in a portion of Tillamook PUD's service territory without the need to build an additional substation and transmission line. We do not feel TPUD has made the case for a Certificate of Convenience and Necessity.

Safety

The transmission line goes through 36 acres of forest which are buffeted by high winds that routinely peak at over 70 mph. These winds are cross winds to the transmission line making it more vulnerable to being susceptible to being blown down and starting a fire as happened in California.[37]

The distribution line options will be safer because they are on road rights of ways and do not go through 36 acres of forest. In Option 3, TPUD would have better access during our frequent floods after our flood waters go down because Option 3 is all on county road right of way.[38]

Practicability

In PCN 2, TPUD's focus has always been on a transmission line and substation and there was never any discussion of need or other options that were more practicable. TPUD's proposed route is not a straight path along an existing corridor. It also goes through the center of farm and forest properties severely hampering the efficient use of the properties it crosses. Distribution line options, such as Option 3 along Ekloff, already have existing distribution lines for all but 1.6 miles and are along a road right of way.

[33] DR49-C
[34] TPUD/204 Fagen/1
[35] Page 5 – UEC's POST-HEARING BRIEF
[36] David Mast 300 page 9
[37] David Mast 300 page 10
[38] Don Aufdermauer/200 page 1

Justification

TPUD's states the "transmission Line will provide many benefits to Tillamook PUD and its customers and will allow Tillamook PUD to continue to meet its obligation to provide safe and reliable service to all of its existing members and future members."[39] TPUD uses the aging feeders as justification for the transmission line and substation. In their petition TPUD states "*The existing 24.9 kV line is aging, has limited capacity and poor reliability, and has subjected Tillamook PUD customers to long outages of increased frequency.*" [40] From TPUD Staff DR-52, In the 6 year study of feeder 51 (2011 – 2016), in 2011, there were 41 incidents with an average outage time of 4.3 hours which accounted for 45% of the total hours out in the study. In 2016, there were only 12 incidents with an average outage time of 2.8 hours which was only 11% of the total hours out in the study. With this data how can TPUD state "*long outages of increased frequency*"? From the first testimony when KC Fagen incorrectly calculated longevity of Option 3 to this latest testimony where the data clearly shows that the justification statement to be in error, we question the accuracy of TPUD's data and conclusions. A CPCN should not be granted based on manipulated and untrustworthy numbers.

The problem is not one of capacity but one of overloaded conductors. The system can handle a peak of 141 MW but can the conductors? There are other alternatives to solving the reliability issue such as rebuilding the 50 year old feeders with new more robust conductors. Option 3 adds capacity to the Wilson River by utilizing the lightly used Trask substation and more efficiently uses the capacity TPUD already has. Option 3 increases reliability for coastal communities without increasing outage to Tillamook as the transmission line does. Since Option 3 provides similar benefits at a lower cost, the transmission line cannot be justified.

Spatial Information

TPUD has never provided information on feeders as to where they go, could they and how can they be switched from one substation to another. Would it not be better to switch feeder 51 from the Wilson to the Trask or provide redundant service to Oceanside – Netarts from another feeder from the Trask. KC Fagen states "The way TPUD's system was constructed, there is no direct connection between the central Tillamook valley or the Oceanside/Netarts areas and the Neskowin or other areas if the Districts service territory.[41] KC Fagen has limited his N -1 calculations to the 4 substations in the Tillamook Valley; Garibaldi, Trask, Wilson 1, and Wilson 2.[42] Even at that, the highest peak ever in the TPUD system was only 83% of the 4 substations' N -1 capacity. However, publications show that TPUD is planning to use Beaver (Capacity of 9.5 MW) as an alternate for the Trask and that Mohler (Capacity 22 MW) and South Fork (Capacity 6 MW) can be used to reduce loads on the Garibaldi and Wilson T1 substations.[43] In TPUD/205 Fagen/50, Fagen points out that other transformers are available but the conductors are overloaded. The weak areas are the conductors not the substation capacity. It would be

[39] Proposed Issues List
[40] Page 3 – TILLAMOOK PEOPLE'S UTILITY DISTRICT PETITION FOR CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY
[41] TPUD/400 Fagen/2
[42] TPUD/400 Fagen/16
[43] David Mast/300 page 11

more effective to upgrade the conductors and more effectively link them to other substations with lower loading.

Cost Information

From TPUD/417 Fagen/5, the cost of the transmission line is $1,050,000 per mile. For 8.6 miles of new construction that is $9,000,000. The substation is another $3,000,000. Therefore, the basic cost of the transmission line option is at least $12,000,000. From TPUD/417 Fagen/4, the cost of the distribution line is $200,000 per mile. Option 3 adds 2.6 miles of new construction which is a basic cost of only $520,000. Option 3 provides similar benefits at a fraction of the cost; therefore, the transmission line cannot be justified based on cost.

Financial Feasibility

The initial project cost was $10 million on a revenue stream of $40 million. The current project costs are $16 million with a revenue stream of $38 million. The rate payers will need to pay principal and interest for something that will not be used for 38 – 50 years. Some will be paying out of social security checks like me. TPUD's revenues are down because sales are down[44] so the revenues to pay for the project are not there. In addition, in August 2018, the TPUD board approved incurring a bond debt of $46 million.[45] The 2018 Construction Work Plan includes projects totaling $63.9 million.[46] TPUD is projected to go from a rate of return of 3.42% and an equity level of 49.2% in 2017 to a rate of return of 1.39% and an equity level 35.9% in 2027.[47]

Consent of landowners

TPUD has not listened to the public demand from organizations, landowners, and consumers even though it has received many letters in opposition the transmission line and substation.

Tillamook PUD has been arrogant and has not had any public meetings to discuss other alternatives. In fact, Ed Jenkins a TPUD board member summed TPUD's attitude well when he replied to the Oregon Farm Bureau & The Oregon Dairy Farmers Association that the intervenors should be tarred and feathered and run out of the county. [48]

Upon approval from the PUC, TPUD will try to bulldoze all opposition into submission even though the transmission line and substation are not necessary to adequately provide service to existing and new loads in a portion of Tillamook PUD's service territory.

Alternatives

1. The Trask substation is only loaded at 12% of capacity and the highest coincident peak at the Trask was only 47% of capacity.[49] Moving feeder 51 to the Trask would relieve 5 – 12 MW from the Wilson River T1 & T2 and it would put the Task at a more efficient level

[44] Doris Mast/306 Mast/1
[45] TPUD August 2018 Board Minutes published in the September 2018 Board Report
[46] TPUD 2018 Construction Work Plan Table 2-1-1
[47] Exh TPUD-407 Revenue Requirements **Tab RevReqmt**
[48] David Mast 300 page 14
[49] David Mast 300 page 7

2. Repairing feeder 51 - Just by repairing the line and clearing the right of way, outages could be reduced by a minimum of 80%. Stimson has already stated that they would provide TPUD with a wider right of way which would be used to build a replacement or temporary line either above ground or underground while the current line is still operational. TPUD already has experience with underground distribution lines.
3. Also, TPUD/205 Fagen/50 points out that other transformers are available but the conductors are overloaded. The weak areas are the conductors not the substation capacity. It would be more effective to upgrade the conductors and more effectively link them to other substations with lower loading

Additional Information

In 2007, when this project was started, TPUD forecasted sales to grow 2.0%.[50]. In 2012, the last official TPUD forecast, sales were projected to grow 0.45%. Actual sales have been below 0.45% and growth on the Wilson River 1 & 2 substations is flat. In spite of the drop in sales and TPUD's excess capacity, TPUD continues to pursue this project.

The Bonneville Power Administration has canceled a costly and controversial transmission line that would have run 80 miles from Troutdale through southwest Washington. . . . As it turns out, after seven years of study, capped by an independent review panel, experts decided the project would have increased the reliability of electricity but would have added far more capacity than the region needed.[51]. TPUD's project will also add far more capacity than is needed and less costly alternative projects can improve the reliability. This project should be cancelled. Why eminent domain farms and forest lands for a project that cannot be justified.

In PCN 1, the entire proposed route – with the exception of a single road crossing – utilizes existing transmission corridors. The alternative routes considered are less feasible, as they each require several miles of corridor that are not in existing transmission corridors.[52]

In PCN 2, TPUD's transmission line option requires several miles of corridor that are not in existing transmission corridors. In fact, over 3 miles goes through the center of a forest seriously effecting Stimson's ability to harvest. The Eckloff option 3 corridor that is already in existing transmission corridors and is in a road right of way.

Land Use Information

The route in PCN1 is a direct route through non-EFU land and along an area already utilized as a transmission line

In PCN2, TPUD's proposed route develops a new corridor through more Farm Zone F-1, Forest Zone F, Estuary Natural Zone EN, Estuary Conversation Zone EC – 1, Rural Commercial Zone RC, and Rural

[50] David Mast Testimony page 1 and Exhibit David 1 on 1/12/2018
[51] The Oregonian – Oregon Business News BPA nixes costly and controversial I-5 power line proposal Posted May 18, 2017 Updated May 23, 2017
[52] Page 9 – UEC's POST-HEARING BRIEF

Residential 2 Acre Zone RR-2 than any of the alternatives and disrupts the scenic area of the bay more than any of the alternatives.

Energy Conservation

The route in PCN1 "from a construction standpoint, conserves energy. It does so by utilizing a straight path along an existing corridor, thereby limiting the amount of line that has to be constructed. The route also avoids the significant parcelization of land thereby retaining the efficient use of the properties it crosses. [53]

PCN 2 TPUD - TPUD's proposed route is not a straight path along an existing corridor and goes through the center of farmer and forest properties severely hampering the efficient use of the properties it crosses.

Agricultural Lands

PCN 1 UEC - The route in PCN1 is a direct route through non-EFU land and along an area already utilized as a transmission line[54]

PCN 2 TPUD - The transmission line route requires several miles of corridor that are not in existing transmission corridors. The transmission line also goes through Farm Zone F-1, Forest Zone F, Estuary Natural Zone EN, Estuary Conversation Zone EC – 1, Rural Commercial Zone RC, and Rural Residential 2 Acre Zone RR-2. The proposed transmission crosses through county overlay zones: flood hazard shoreline and fresh water wetlands.

Summary

Contrary to the applicants claim, TPUD does not have a substation capacity issue. The amount of capacity added since 1972 is 5 times the sales increase during that period. The all-time maximum system peak was only 44% of the system capacity. TPUD does not mention the fact that they are selling power to TCCA at TPUD's cost from BPA to keep the load up. TPUD is selling electricity at cost to keep load up, then they want to eminent domain farms and forest because of their artificially created demand. KC Fagen points out that other transformers are available but the conductors are overloaded. The weak areas are the conductors not the substation capacity. It would be more effective to upgrade the conductors and more effectively link them to lightly loaded substations such as the Trask.

The project is stated to increase electrical system capacity in the central Tillamook Valley to support ongoing growth in the area. The maximum peak which occurred in 2009 was only 58% of the capacity of the 4 substations and only 83% of the substations' N -1 capacity. The average load on the substations is only 24.9% of the substations' total capacity and only 35.4% of their N -1 capacity. In addition, TPUD can pull in capacity from Beaver, Mohler and Southfork. These same substations that TPUD is complaining about capacity are the ones providing power to TCCA at cost just to keep the load up.

The Transmission Line and the Oceanside substation is not the only solution. It was the only option that TPUD has ever looked at. Other options were never explored. It was a full 15 months after the Citizens

[53] Page 19 – UEC's POST-HEARING BRIEF
[54] Page 17 – UEC's POST-HEARING BRIEF

Advisory Group had selected a transmission line route before TPUD even showed other options. The other options were no more than window dressing. The same TPUD that is selling power to the TCCA at cost to keep the load up is asking you to enable them to eminent domain farms and forests because of load growth.

The construction cost of the transmission line is 5 times the cost of the distribution line and the transmission line is 8.6 miles of new construction while Option 3 adds 2.6 miles of new construction. Option 3 provides similar benefits at a fraction of the cost; therefore, the transmission line cannot be justified based on cost. The rate payers will need to pay principal and interest now for something that will not be used for 38 - 50 years.

TPUD's proposed 8.6 mile route develops a new corridor through more Farm Zone F-1, Forest Zone F, Estuary Natural Zone EN, Estuary Conversation Zone EC – 1, Rural Commercial Zone RC, and Rural Residential 2 Acre Zone RR-2 than any of the alternatives and disrupts the scenic area of the bay more than any of the alternatives. It significantly parcelizes both farm and forest land and requires several miles of corridor that are not in existing transmission corridors. Option 3 is only 2.6 miles of new route and it is all along road right of way.

Based on the evidence in the record in this proceeding, TPUD has not met the legal requirements under ORS 758.015 for granting a CPCN. David Mast Intervenor respectfully requests that the commission deny TPUD's Petition for a CPCN and not authorize the construction of an 8.6-mile-long overhead transmission line from a breaker in the Tillamook Substation owned by BPA to the proposed new Oceanside Substation.

Dated this 11th day of March 2019

/s David Mast