From:	Kathi Pritchard
To:	UTC DL Records Center
Subject:	Public Comments for submission to Docket #160918 & 160919 PSE 2017 IRP
Date:	Thursday, February 22, 2018 11:41:06 AM
Attachments:	IRP Inaccurate Data Final.pdf

Please submit these comments to the Docket 160918 &160919, PSE Integrated Resource Plan 2017. I have attached a pdf.
Thank you in advance.

Kathi Pritchard

February 22, 2018

Utilities and Transportation Commission

David Danner, Chairman

Ann Rendahl, Commissioner

Jay Balasbas, Commissioner

Docket # 160918 & 160919

Submitted electronically at UTC.wa.gov

Dear Commissioners:

Thank you for the opportunity to submit the following comments in the review of PSE's Integrated Resource Plan 2017.

PSE's focus on expanding renewable energy through utility-scale projects is based on inaccurate data and assumptions. Reducing carbon emissions by adding utility-scale renewable projects is only one side of the equation when considering environmental impact and benefits. Leading environmental scientists are focusing on reducing carbon in the atmosphere by preserving soils in farmland, pastureland, and forests from energy sprawl.

Inaccurate data skews projections for solar development

According to the IRP Appendix, PSE's Wild Horse solar project near Ellensburg, Kittitas County, receives "300 days of sunshine per year, roughly the same as Houston, Tex."[1] This estimate is refuted by the state climatologist's 2017 report[2] which says Ellensburg receives only 200 days of sunlight annually.[3] Since this 33% inflation error is repeated on the PSE website it is unlikely to be a typo but indicates a reliance on inaccurate data.[4] The magnitude of this error is serious concern for the validity of the recommendations for renewable energy expansion as proposed in the IRP.

As points of comparison, Seattle, Bellevue, and Renton each receive over 150 days of sunshine annually at 154, 152, and 151 respectively.[5] Factoring in the cost of transmission and transmission energy loss (5% loss) efficient renewable expansion would favor less reliance on land-intensive utility-scale solar in eastern Washington in favor of distributive options such as rooftop solar or utility scale development on brownfields and other low value sites over the next 20 years.[6]

Best use for solar: buildings, brownfields and contaminated or low value lands

According to leading environmental scientists, the prime pressure on land resources over the next 20 years will not be housing, or agricultural pressures, but energy siting. "For example, in the United States alone, an area greater than the state of Texas is projected to be impacted by energy development and sprawl, making energy the greatest driver of LULCC (land use land cover change) at a pace double the historic rate of residential and agricultural development by 2040."[7]

Utility scale solar "can be a driver of land-use and land-cover change, which is a source of greenhouse gas emissions itself," said Rebecca R. Hernandez, UC Davis Arid Lab director.

"We see this happening if solar energy power plants are sited in natural habitats, in lieu of areas already impacted by humans—such as on commercial rooftops or over parking lots."[8] The University of California team that the equivalent of 183,000 football fields of nonagricultural land could be used for utility scale solar to ease competition between farmers, conservationists, and energy companies. Similar resources are available in the PSE service area where distributive-rooftop solar is already being adopted by businesses like IKEA, by residential customers and where EPA contaminated and brownfield sites exist on approximately 8,000 acres.[9]

"*PSE is a winter peaking utility, so solar provides virtually no capacity value*".[10]

A site with more solar viability during PSE's peak demand in December and January is Rosebud County, Montana, home to the Colstrip Electric Generating station.[11] Another option for resources dedicated to Colstrip, Montana, and its $10 million settlement would be to convert the facility to utility scale solar which would also expand PSE's renewable credits.

Energy sprawl and Soil- Carbon sequestration impact

It may benefit PSE to respond to urban demands for more renewables, however an overlooked factor in the equation to reduce carbon is land and soil preservation.

International research into the carbon emission dilemma focuses on the importance of soil to carbon sequestration; a critical factor in removing CO^2 from the atmosphere.[11]

According to a 2015 WA Department of Ecology report, eastern Washington soil is more efficient at sequestering carbon than native sagebrush ecosystem: "Irrigation increase C (carbon) input to soils through increasing plant residues and root systems" and "irrigation significantly increases SOC (soil organic carbon) stocks under different pasture and conservation tillage compare to native sagebrush ecosystem."[12,13]

PSE's focus on the cost effectiveness of solar vs. wind ignores the harmful impacts of covering irrigated farmland for the next 25-30 years. Washington will be a leader in energy when planning is based on accurate data and current environmental research.

Best regards,

Kathi Pritchard, Ellensburg, WA

Notes

1. 2017 IRP Appendix D: Electric Resources, page D-11.
2. "Is it always sunny in Yakima?", Yakima Herald Republic, Nov 14, 2017 http://www.yakimaherald.com/news/local/is-it-always-sunny-in-yakima/article_8b662be2-c9c0-11e7-9e9c-9ffa51590a12.html;
3. Email from Washington state climatologist; See Appendix

4. "Solar Power: PSE: A leader in Solar Power "Media Kit. https://pse.com/aboutpse/PseNewsroom/MediaKit/014_Solar_Power.pdf; Retrieved from website Feb. 22, 2018
5. Seattle, Bellevue days of sunshine: https://www.bestplaces.net/climate/city/washington/seattle
6. Land-Sparing Opportunities for Solar Energy Development in Agricultural Landscapes: A Case Study of the Great Central Valley, CA, United States https://pubs.acs.org/doi/10.1021/acs.est.7b05110
7. Ibid; Global land use change, economic globalization, and the looming land scarcity, Lambin, Eric F.; Meyfroidt, Patrick; Proceedings of the National Academy of Sciences of the United States of America (2011), 108 (9), 3465-3472, S3465/1-S3465/5CODEN: PNASA6; ISSN:0027-8424. (National Academy of Sciences)
8. "Study Urges Optimization of Solar Energy Development: UC Riverside-led study shows utility-scale solar energy development has detrimental environmental impact", https://ucrtoday.ucr.edu/32445
9. National Renewable Energy Lab, National Solar Resource Data Base viewer, query: EPA contaminated sites. https://maps.nrel.gov/nsrdb-viewer
10. PSE 2017 Overview presentation, Feb 21, 2018, UTC Docket #160918 -160919
11. "Harvest Carbon from the Air: Soil stewards can impact a changing climate by rebuilding soil to sequester carbon from the atmosphere"; http://www.regenerationinternational.org/2018/01/16/harvest-carbon-air/
12. "Soil Organic Carbon Storage (Sequestration) Principles and Management", January 2015, Pub. No. 15-07-005, WA Department of Ecology.
13. "Management of Irrigated Agriculture to Increase Organic Carbon Storage in Soils", James A. Entry, R.E. Sojka, and Glenn E. Shewmakerz I USDA Agricultural Research Service, Northwest Irrigation and Soils Research, https://eprints.nwisrl.ars.usda.gov/833/7/1232.pdf

Appendix

Exhibit A: Email: Office of the State Climatologist

From: owsc.uw@gmail.com <owsc.uw@gmail.com> on behalf of OWSC <climate@atmos.washington.edu>
Sent: Wednesday, December 6, 2017 2:10 PM
Thanks for your interest!

We actually don't have the numbers for Ellensburg (you need a certain type of weather station to measure clear vs. cloudy days) but the data for Wenatchee and Yakima both show about 200 days of sunshine per year, on average. I think it's safe to assume that those numbers are representative of the number of sunny days in Ellensburg as well.

Hope this helps!

Karin