

**Jennifer Anders**  
Chair  
Montana

**Tim Baker**  
Montana

**Guy Norman**  
Washington

**Tom Karier**  
Washington



## Northwest Power and Conservation Council

**Richard Devlin**  
Vice Chair  
Oregon

**Ted Ferrioli**  
Oregon

**Jim Yost**  
Idaho

**Jeffery C. Allen**  
Idaho

March 5, 2019

### MEMORANDUM

**TO: Power Committee Members**

**FROM: Tina Jayaweera, Mike Starrett, John Ollis**

**SUBJECT: Updated Transmission & Distribution Deferral Value for the 2021 Power Plan**

### **BACKGROUND:**

**Presenter:** Tina Jayaweera

**Summary:** Energy efficiency, demand response, and certain generation resources could defer the build out of transmission and distribution (T&D) system infrastructure (e.g. transformers) by keeping loads below threshold levels. To improve the estimate of the value used, Council staff with support from PNUCC staff, convened a group of T&D planners from the regional utilities in August 2017. The goal of this workshop was to understand the methodologies used to estimate this deferral value and develop one for the Council to use for regional planning. After more discussion with various participants, staff proposed a regional methodology for the group. With their consent, Council staff then sent out a data request to collect the data to calculate the deferred T&D values. Five utilities provided data, which were then weighted by load share to estimate a regional value. These values will be used in the 2021 Power Plan (though may change slightly if additional utilities provide information).

**Relevance:** This work is to address Seventh Plan Action Item COUN-12 "Improve estimates of deferred transmission and distribution amounts".

**Workplan:** Prepare for 2021 Power Plan

**Background:** For the Seventh Plan, the values for deferred transmission and distribution were \$26/kW-year and \$31/kW-year (levelized 2012\$), respectively.

# Updating Transmission & Distribution Deferral Values

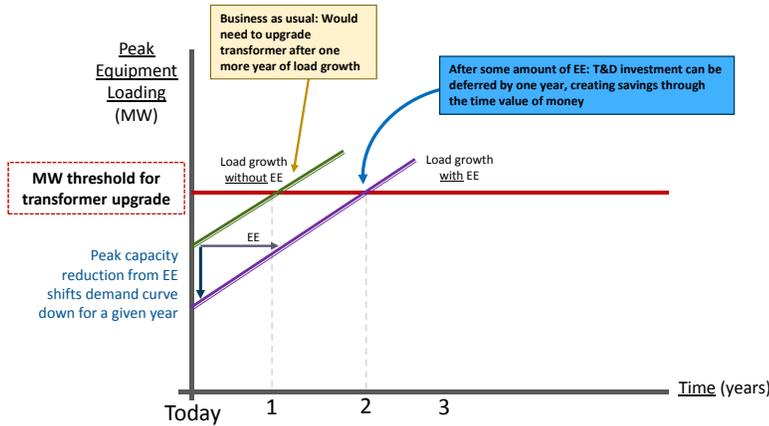
Power Committee

March 12, 2019

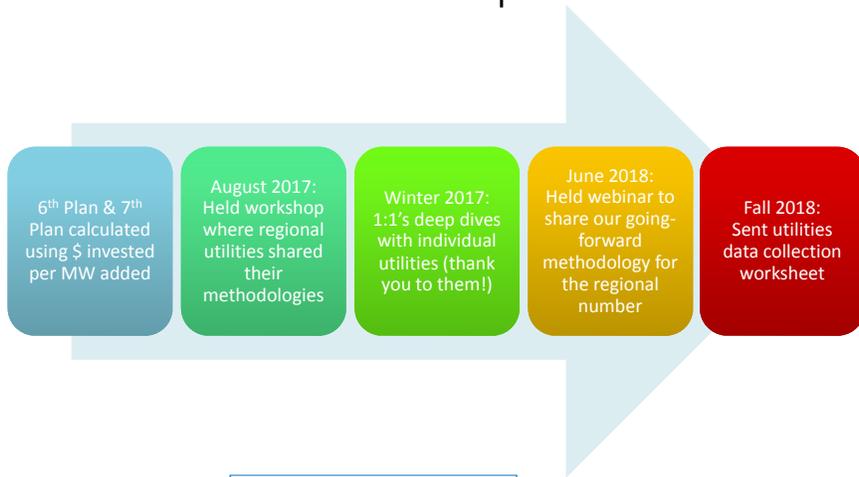
## Purpose of T&D Deferral Values

- Resources which reduce T&D load coincident with asset, branch, or system peak can help defer growth-related upgrades
  - Council's 7<sup>th</sup> Plan used this for EE, DR, west-side gas generation valuation on system peak only
  - T: \$31/kW-yr, D: \$26/kW-yr
  - Data used were incomplete
- These values are currently included in EE levelized cost calculations for RTF

## Example of T&D Deferral with EE



## Process to Update

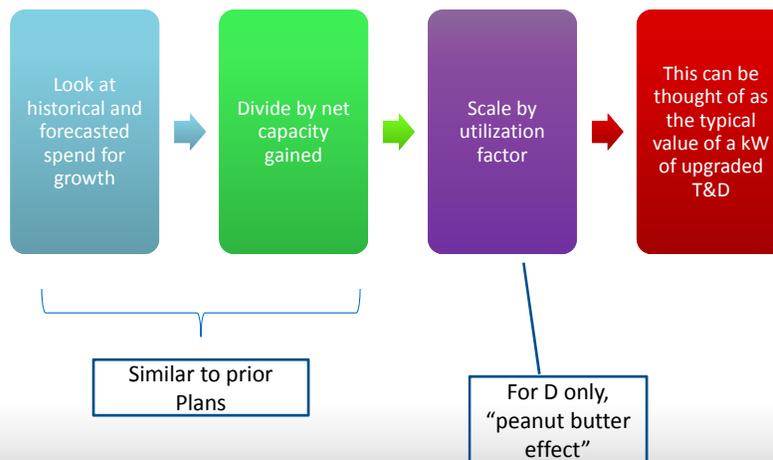


Thanks to PNUCC for help throughout this process!

## Methodology Review

- Staff reviewed many methodologies, none were perfect, all have pros and cons
- Methodology staff is moving forward with is adapted from the approach PacifiCorp uses and similar to 6<sup>th</sup> & 7<sup>th</sup> Plans
- Meant to represent a *planning* estimate, not necessarily an *implementation* cost

## Methodology for 2021 Plan



## Data Received

- Received data from Avista, PacifiCorp, BPA, Snohomish PUD, Idaho Power (*thanks!*)
- Weighted average values are (2016\$ levelized)
  - Transmission: \$3.08/kW-yr
  - Distribution: \$6.85/kW-yr
- If more utilities provide data, will add them in

**ADDITIONAL SLIDE**

## Example Calculation

- Invested \$5M to gain 15 MW of capacity (10 MW -> 25 MW transformer upgrade)
  - $\$5\text{M}/15\text{MW} = \$330/\text{kW}$  for new incremental T&D capacity
- T&D utilization factor of 60%
  - $\$330/\text{kW} * 60\% = \$200/\text{kW}$
- Annualize based on discount rate and average asset life, or 6% per year
  - $\$200/\text{kW} * 6\%/\text{yr} = \$12/\text{kW-yr}$