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August 28, 2007

## MEMORANDUM

**TO:** Power Committee

**FROM:** Wally Gibson

**SUBJECT:** Review of Major Proposed Transmission Projects Affecting the Northwest

There are a number of major transmission projects that have been proposed recently, both in the Northwest and between the Northwest and other parts of the Western interconnection. The presentation to the Power Committee will highlight several of these, including those being reviewed under the auspices of ColumbiaGrid and Northern Tier Transmission Group (NTTG), as well as several others that have the potential to either supply resources to or export resources from the Northwest. Many of the new proposals are driven in large part by the expectation of need under the renewable portfolio standards that are becoming widespread in the West, as well as access to other remote resources.

The presentation presents a general overview of the WECC framework for regional review of transmission proposals. The WECC framework is designed to provide for full participation in project review and development, to ensure that the new lines meet NERC and WECC planning standards, and to give the new lines ratings, which determine how much power can be transferred over them.

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# Major Transmission Proposals Affecting the Northwest



Northwest Power and Conservation Council  
Power Committee  
September 11, 2007

# Overview

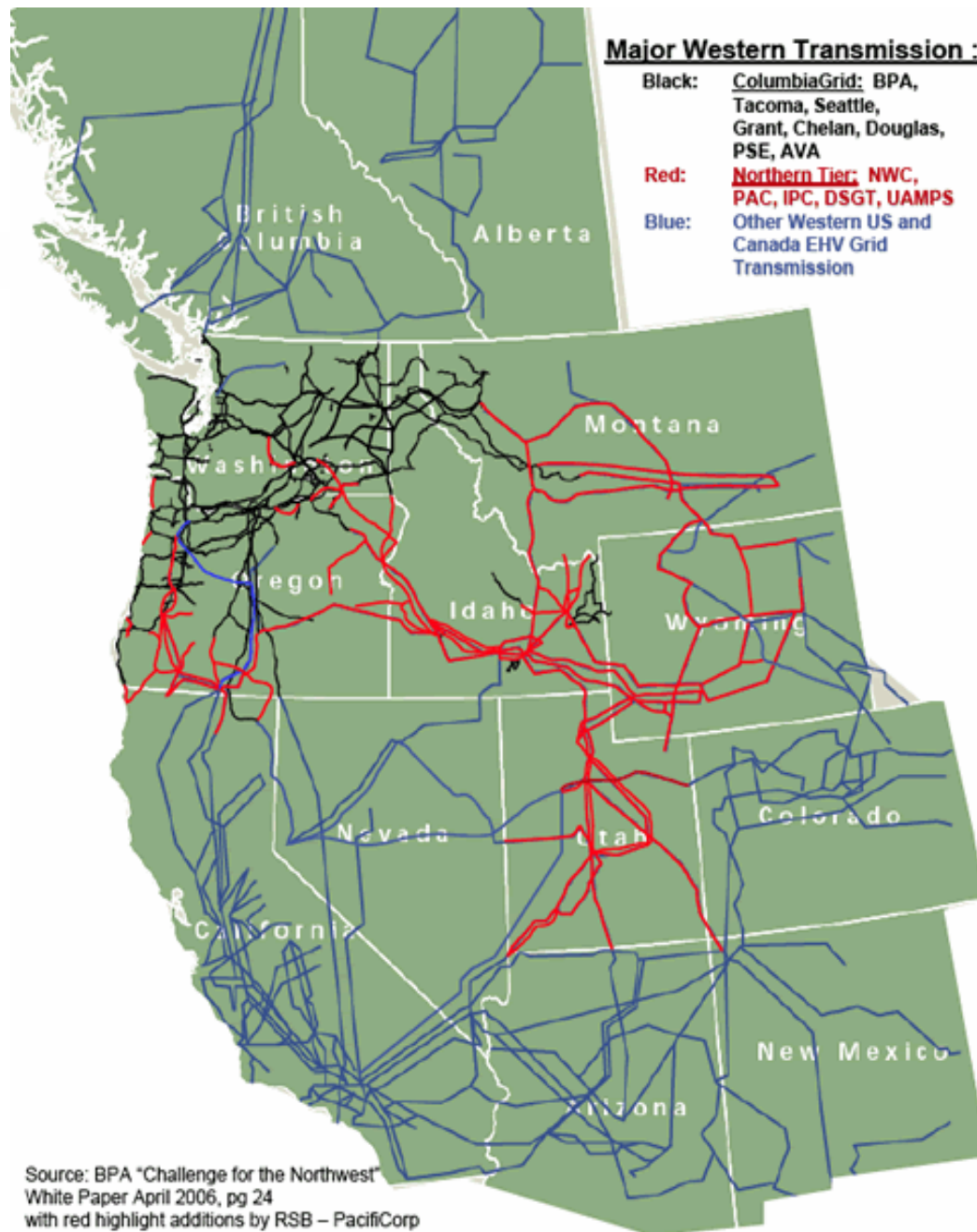
- WECC Regional Project Planning and Three-Phase Rating Processes
- ColumbiaGrid
  - West of McNary and I-5 Corridor – BPA system
  - Puget Sound Corridor – several systems
- Northern Tier Transmission Group (NTTG)
  - PacifiCorp, Northwestern, Idaho systems
- Other
  - Montana-Alberta Tie Line (MATL)
  - Sea Breeze – Juan de Fuca Project
  - BC to PG&E proposals
  - Northern Lights Celilo Project

# WECC Regional Project Planning Process

- Formal WECC process to engage interested parties in development and analysis of new project proposals
  - Some overlaps between this and TEPPC / Subregional Planning Group (e.g., NTAC) / Order 890 processes
  - Evolving relationship
- Regional project planning review
  - Informational, solicits interested parties' participation
  - Aim: avoid project duplication, integrate all needs
  - Formal reports to Planning Coordination Committee (PCC)
  - Sometimes called “Phase 0” of Three Phase Rating Process

# WECC Three Phase Rating Process

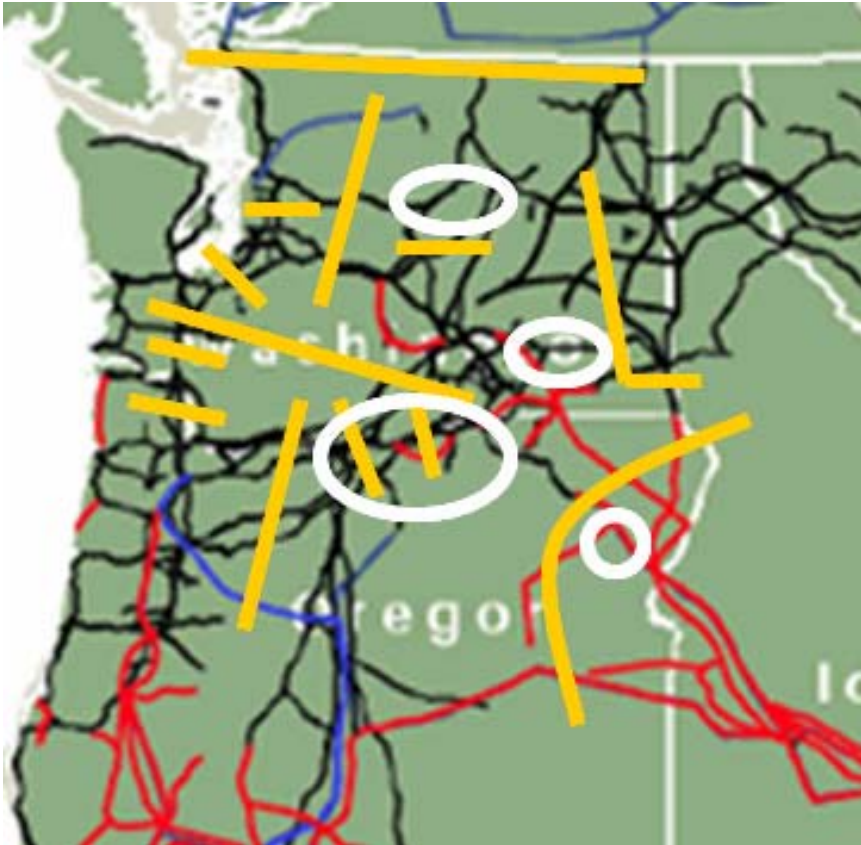
- Technical studies to:
  - Demonstrate compliance with NERC/WECC planning standards
  - Support proposed path rating while avoiding impacts on ratings of existing lines
- Formal reports to PCC
  - Specific demonstrations and acceptance by PCC required to move through the phases
- Does not ensure commercial viability or local siting approval



# Portions of the Grid in the Northwest



# BPA Constrained Paths with Oregon and Washington Wind Areas



- Wind areas identified in NW Wind Integration Plan (ovals)
- WIAP highlighted need for several transmission upgrades needed to get to west-side load areas



# ColumbiaGrid Proposals – Schematic Only



- West of McNary – problem highlighted in Wind Integration Action Plan
- I-5 Corridor is existing bottleneck
- Puget Sound corridor is long-standing problem

# NTTGG Proposals – Schematic Only



- PacifiCorp, Northwestern, Idaho
  - Also Arizona Public Service (APS), National Grid, Wyo. Infrastructure Authority
- Stakeholder discussions–WECC Regional Planning Process (Phase 0)
- Driven by native load demands, transmission requests, expected future demand
  - RPS requirements in several states

# Montana-Alberta Tie – Schematic Only



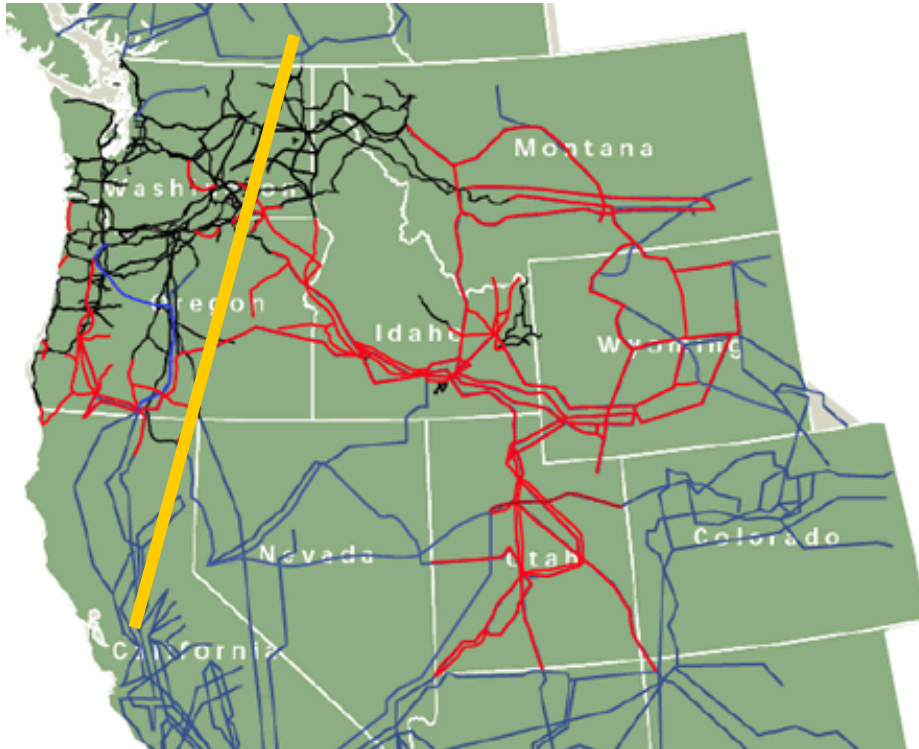
- Connect Alberta to U.S.
- Merchant line – 300 MW bidirectional capacity (sold)
- In Phase 3 and in local siting processes

# Sea Breeze Juan de Fuca – Schematic Only



- Cable proposal part of larger Canada – U.S. connection
- Additional project: DC undersea cable from Portland area to San Francisco area – PG&E considering supporting
- In Phase 2

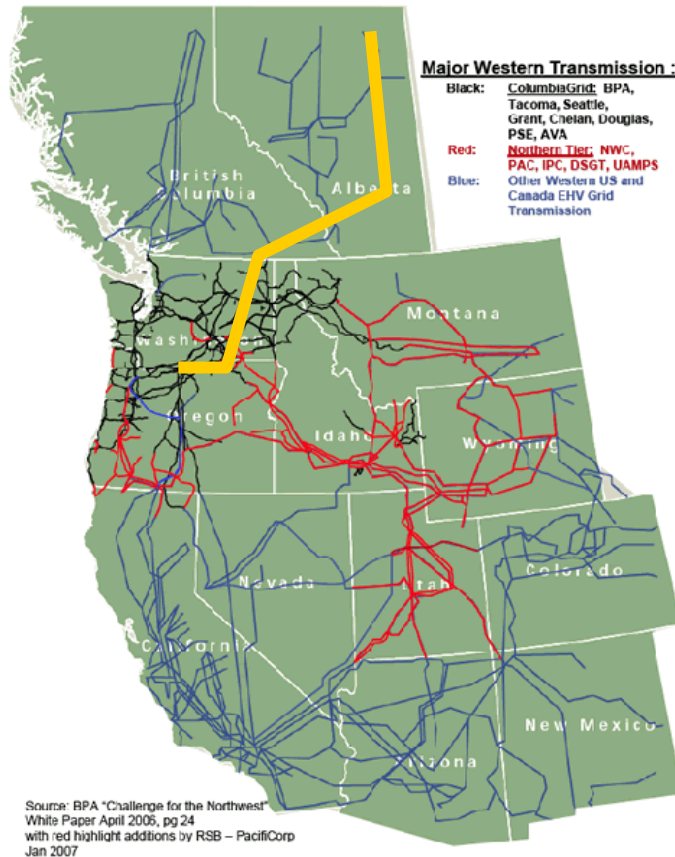
# BC/NW to Northern California (PG&E) – Schematic Only



- California RPS requirement
  - 20% by 2010
  - Potential 33% by 2020
  - Going outside California needed to meet 33%
- Potential interconnections within NW as well as to BC
- In WECC Regional Planning Process (Phase 0)
- Target 2013 operation



# Northern Lights Celilo Project – Schematic Only



- Aims to connect southern markets to oil sands cogeneration
- In WECC Regional Planning Process (Phase 0)
  - Seeking customers
- High-Voltage DC (HVDC) proposal with several potential connections to AC grid
- Up to 3000 MW, target 2012