

Northwest Wind Integration Action Plan: Status of Mesoscale Modeling and First-cut Analysis

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Topics

- Mesoscale Wind Modeling
- Utility data for first-cut analysis

Mesoscale Wind Modeling

- Three components
 - BPA's internal modeling with 3Tier
 - NREL's modeling contract with 3Tier
 - Additional requirements

BPA Contract with 3Tier

- In place since late September
- Modeling is underway
- Expected completion Jan 2007
- 3700 MW wind capacity modeled
 - 10-minute average
 - 2004-2005
- Covers Columbia Gorge
- Can be used to help inform modeling of other areas

NREL Contracting w/3Tier

- \$100K effort to “seed” the data set
- 5km grid
 - Not sufficient for NWIAP needs but provides a good first look
 - Will be part of the overall meso modeling plan
 - Statement of work and initial contracting paperwork is complete
 - Next steps:
 - Determine detailed modeling area consistent with budget
 - 3Tier begin detailed mesoscale simulations
 - Apply relevant wind farm power curves and determine locations from the detailed mesh

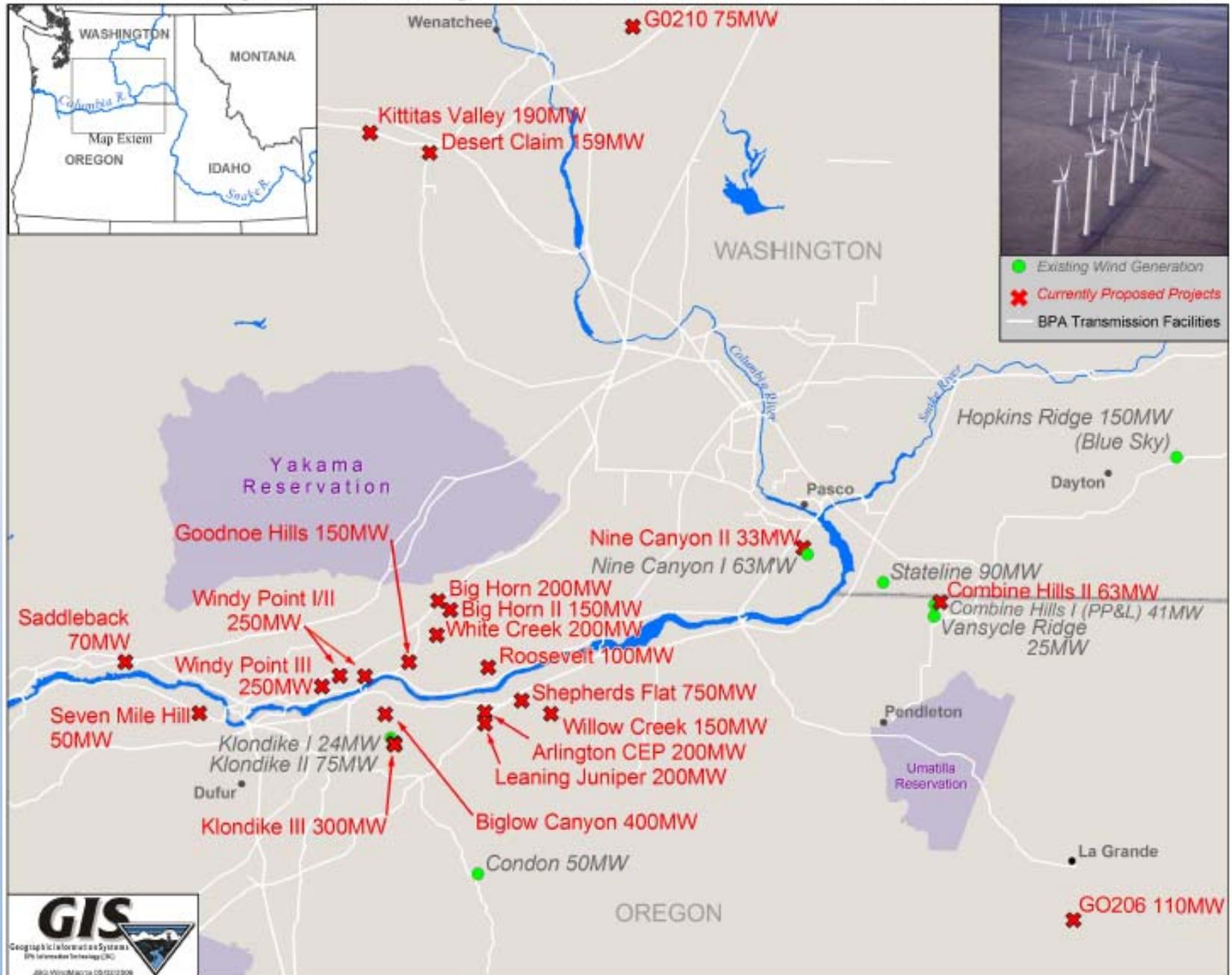
Northwest Wind Integration Action Plan: Data Proposal

- Higher-resolution than NREL's wind data set is required for NWIAP analysis
- Utilities/other entities' funding to supplement NREL's \$100K to provide smaller grid (~1.5km) resolution
- Must be time-synchronized with load data
- Proposal: Engage a firm with meso-modeling capability to create data set
- Build on BPA and NREL collaborations with 3Tier

Meso Data Requirements (outputs)

- Adequately represent geographic diversity of a range of wind build-out scenarios (6+ GW with choices of location)
- Minimum grid resolution of $\sim 1.5 \text{ km}^2$
- Modeled region should cover NW footprint and relevant nearby locations
- NREL as funding participant; utilities in NW would also contribute
- NREL would archive data and do some preliminary analysis

Current and Proposed Wind Project Interconnections to BPA Transmission Facilities



BPA's Current Map Link

- http://www.transmission.bpa.gov/PlanProj/Wind/documents/Wind_Map_05_02_2006.pdf

Utility Data for First-Cut Analysis

- Discussions in process with utilities who have indicated interest in pooled data analysis (load, wind)
- NDA's will need to be signed before data transfer can occur
- Next steps:
 - Negotiating NDA between parties
 - Data transfer
 - Analysis