Montana vs. Pacific Northwest Wind Cost Comparison

- Prepared by Pascoe Energy with assistance from NPCC staff
  - Completed December 2016

- Resource costs from 7th Power Plan and PowerFin

- Levelized energy costs delivered to utilities in Washington and Oregon
Montana vs. Pacific Northwest Wind Cost Comparison

• Wind Capacity Factors
  • WA/OR: 34%
  • MT: 40% and 45%

• Wind Capacity Values
  • WA/OR: 0% and 10%
  • MT: 0%, 10%, 30% and 50%
Montana vs. Pacific Northwest Wind Cost Comparison

• Transmission Costs
  • WA/OR: one wheel on BPA
  • MT Opt 1: wheels on NWE and BPA
  • MT Opt 2: gen tie plus wheels on PSE CTS, BPA MT Intertie and BPA
  • MT Opt 3: gen tie plus upgrades to CTS/BPA MT Int and BPA (M2W)

• Integration Costs
  • WA/OR and MT: BPA integration charges
MT vs WA/OR Wind Cost Comparison
Capacity Credit: WA/OR - None, MT – None
Full PTC
MT vs WA/OR Wind Cost Comparison
Capacity Credit: WA/OR - 10%, MT – 30%
Full PTC
Colstrip 1& 2 Replacement Analysis

• Prepared by E3 Consulting for Absaroka Energy, developer of the Gordon Butte Pumped Storage Hydro (PSH) Project
  • Completed December 2016
• Two alternatives to replace PSE’s share of Colstrip 1&2 energy (250 aMW) and capacity (300 MW)
  • PNW Alternative
    • 736 MW PNW Wind for energy and some capacity (5% capacity value)
    • 263 MW Aero CT for remaining capacity
  • MT Alternative
    • 548 MW MT Wind for energy and some capacity (25% capacity value)
    • 163 MW Gordon Butte PSH for remaining capacity and shaping
Colstrip 1& 2 Replacement Analysis

MT Alternative provides substantial benefits to PSE customers:

- **$300 million** reduction in CapEx
- **$53 million** reduction in annual levelized costs
  - **$481 million** NPV over 25 years
- **$24/MWh** reduction in levelized energy costs (250 aMW)