Northwest Electric Market

This map was created using Platts PowerMap.
Overview

Geography

States covered: All or most of Washington, Oregon, Idaho, Utah, Nevada, Montana, Wyoming and part of California.

Reliability region: Northwest Power Pool Area (NWPP) sub-region of the Western Electric Coordinating Council (WECC).

Balancing authorities: See page 5.

Hubs: California-Oregon Border (COB), Mid-Columbia (Mid-C)

RTO/ISO

None

Generation/Supply

Marginal fuel type: Hydro and natural gas

Generating capacity (winter 2005): 57,120 MW

Capacity reserve (winter 2005): 16,822 MW

Reserve margin (winter 2005): 42%

When taken together, hydro, fossil fuels, nuclear energy, and renewable resources, were adequate to provide electricity in excess of in-region needs.
Demand

All time peak demand (2005): 40,298 MW
Peak demand growth: 1.5% (2004–2005)

Prices

Index Annual Average of Daily Bilateral Day Ahead On-Peak Prices:

Platts California-Oregon Border (COB) Hub:


Platts Mid-Columbia (Mid-C) Hub:

2004: $44.50/MWh  2005: $62.95/MWh  2006: $50.18/MWh  2007: $56.57/MWh

Physical and financial electricity products are traded through brokers using the Mid-Columbia (Mid-C) and California-Oregon Border (COB) hubs as pricing points.

Interconnections/Seams

The region relies on hydroelectric production for approximately two thirds of its electricity needs. In most years, Northwest sells surplus power into California and the Southwest.
Balancing Authorities in the Northwest Electric Market

<table>
<thead>
<tr>
<th>Balancing Authority</th>
<th>NERC Acronym</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alberta Electric System Operator</td>
<td>AESO</td>
</tr>
<tr>
<td>Avista Corp.</td>
<td>AVA</td>
</tr>
<tr>
<td>Bonneville Power Administration</td>
<td>BPAT</td>
</tr>
<tr>
<td>British Columbia Transmission Corporation</td>
<td>BCHA</td>
</tr>
<tr>
<td>Idaho Power Company</td>
<td>IPCO</td>
</tr>
<tr>
<td>NorthWestern Energy</td>
<td>NWMT</td>
</tr>
<tr>
<td>PacifiCorp-East</td>
<td>PACE</td>
</tr>
<tr>
<td>PacifiCorp-West</td>
<td>PACW</td>
</tr>
<tr>
<td>Portland General Electric Company</td>
<td>PGE</td>
</tr>
<tr>
<td>PUD No. 1 of Chelan County</td>
<td>CHPD</td>
</tr>
<tr>
<td>PUD No. 1 of Douglas County</td>
<td>DOPD</td>
</tr>
<tr>
<td>PUD No. 2 of Grant County</td>
<td>GCPD</td>
</tr>
<tr>
<td>Puget Sound Energy</td>
<td>PSEI</td>
</tr>
<tr>
<td>Seattle Department of Lighting</td>
<td>SCL</td>
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<tr>
<td>Sierra Pacific Power Company</td>
<td>SPPC</td>
</tr>
<tr>
<td>Tacoma Power</td>
<td>TPWR</td>
</tr>
<tr>
<td>Western Area Power Administration - Upper Great Plains West</td>
<td>WAUW</td>
</tr>
</tbody>
</table>

Source: NERC (www.tsin.com)
## Northwest Annual Average Bilateral Prices

### Annual Average Day Ahead On Peak Prices ($/MWh)

<table>
<thead>
<tr>
<th></th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>5-Year Avg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mid-Columbia (Mid-C)</td>
<td>$56.57</td>
<td>$65.00</td>
<td>$35.66</td>
<td>$35.90</td>
<td>$29.11</td>
<td>$48.67</td>
</tr>
<tr>
<td>California-Oregon Border (COB)</td>
<td>$62.14</td>
<td>$73.86</td>
<td>$38.02</td>
<td>$38.84</td>
<td>$32.57</td>
<td>$53.70</td>
</tr>
</tbody>
</table>

Source: Derived from Platts data.

July 2012

Updated January 11, 2012
Northwestern Daily Index Day-Ahead On-Peak Prices

Price ($/MWh)

- $0
- $25
- $50
- $75
- $100
- $125

Monthly Average

- $0
- $20
- $40
- $60
- $80
- $120

Source: Derived from Platts data

Updated: July 10, 2012
Western Daily Index Day-Ahead On-Peak Prices

Source: Derived from Platt's data

Updated: July 10, 2012
Implied Heat Rates at Western Trading Points - Weekly Avgs.

Source: Derived from Platts on-peak electric and natural gas price data

Updated: July 10, 2012
Northwestern Daily Index Day-Ahead On-Peak Prices

Source: Derived from *Platts* data

Updated: July 10, 2012
Western Daily Index Day-Ahead On-Peak Prices

- **Mid-Columbia**
- **NP-15**
- **SP-15**
- **Palo Verde**

Source: Derived from Platts data

Updated: July 10, 2012
Weekly Generation Output - Pacific Northwest

Source: Derived from EEI data
July 2012

Updated: July 11, 2012
Weekly Generation Output - Rocky Mountains

Source: Derived from EEI data

July 2012

Updated: July 23, 2012
## Pacific/Northwest Hydro and Snowpack Levels

<table>
<thead>
<tr>
<th>Hydro Generation</th>
<th>Snow Water Equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>In-State Capacity (MW1)</td>
</tr>
<tr>
<td>Washington</td>
<td>21,500</td>
</tr>
<tr>
<td>Oregon</td>
<td>9,100</td>
</tr>
<tr>
<td>California</td>
<td>10,400</td>
</tr>
<tr>
<td>Idaho</td>
<td>2,700</td>
</tr>
<tr>
<td>Montana</td>
<td>2,700</td>
</tr>
<tr>
<td>British Columbia</td>
<td>10,000</td>
</tr>
</tbody>
</table>

1. Net summer capacity in megawatts by state (EIA).
2. Approximate electric capacity created by water flow through the downstream states (EIA and BPA). The capacity estimates reflect the water flow pattern of the series of hydro facilities on the Snake and Columbia Rivers.
3. Snow Water Equivalent, in percent of the historical average for the same date, is the ratio of current snow water daily data (collected by the Natural Resources Conservation Services’ Snowtel Telemetry sites) compared to the average snow water for the same day between 1961-1990. Total Hydro Capacity figures by state do not tie precisely to Snow Water Equivalent data due to such factors as snow basin terrain and complex distribution of run-off to neighboring state hydroelectric dams or shared facilities (e.g., Columbia River hydroelectric dams on the border of Washington and Oregon) (Bloomberg, California Dept. of Water Resource and Government of British Columbia Ministry of Environment).
Stream Flows at the Dalles Dam

Notes: Trend lines are 7-day moving averages
Source: Derived from USACE data
Updated: July 16, 2012
Notes: Data does not include weekends and holidays. Some data for 12/31/2008 – 1/9/2009 are not available from WECC
Source: Derived from WECC Daily Report data available at http://wecc.biz
Updated: July 12, 2012

July 2012