Western States Clean Power Plan Initiative

Convening state officials, utilities, and other stakeholders from 13 Western states since June 2014

CNEE’s goal is to support the development and implementation of approvable state plans.
Comparison of Growth Areas and Emissions, 1980-2015

- 153% increase in Gross Domestic Product
- 106% increase in Vehicle Miles Traveled
- 41% increase in Population
- 25% increase in Energy Consumption
- 18% increase in CO₂ Emissions
- 63% decrease in Aggregate Emissions (Six Common Pollutants)
Figure 4: Comparison of all-sector CO\textsubscript{2} emission projections through 2040
EGU Emissions in 2012

EGU 2012 CO2 Emissions by State and Tribe
(Total = 310 Million Tons)
Coal EGU Retirement Notices

Installed Capacity in MW

Coal EGU Retirement Notices by State and Retirement Year
(N = 40, Capacity = 11,331 MW)
Announced Retirements Represent:

- 31% of 2012 Coal Generating Capacity
- 65% of the Western 2030 emission reduction target
  (if replaced with zero-carbon generation)
Annual Energy Breakdown

Annual Generation Breakdown By Category - 2026 WECC V1.3

- Conventional Hydro: 23.6%
- Steam - Coal: 19.6%
- Energy Storage: 0.3%
- Combined Cycle: 26.7%
- Steam - Other: 0.2%
- Nuclear: 3.9%
- Combined Cycle: 26.7%
- Combustion Turbine: 3.6%
- IC: 0.1%
- Other: 0.0%
- DG/DR/EE - Incremental: 3.4%
- Biomass RPS: 2.1%
- Geothermal: 4.1%
- Solar: 4.6%
- Small Hydro RPS: 0.4%
- Wind: 7.4%
Erosion of market share of coal-fired generation

Clean Power Plan accelerates shift from coal to natural gas and renewables
(US - billion kilowatt hours)
Electric generation capacity additions by technology (1950-2015)

Figure IF1-1. CO2 emissions from the electric power sector in five cases, 2005–40

million metric tons

- History
- 2015
- Projections

- No CPP
- CPP Rate
- Reference
- CPP Extended
- CPP Interregional Trading


EIA
WECC 2026 Common Case

Data Set

WECC’s view of the most likely combination of loads, resources and transmission topology 10 years in the future

Model

- Production Cost Model (PCM)
- Security Constrained Economic Dispatch (SCED)
- Resource dispatch for each of the 8,760 hours in the study year
<table>
<thead>
<tr>
<th>State or Tribe</th>
<th>Cumulative Allowance Balance 2022-30</th>
<th>% of 2022-30 emissions covered by allowances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nevada</td>
<td>52,259,505</td>
<td>138.5%</td>
</tr>
<tr>
<td>Washington</td>
<td>40,910,737</td>
<td>137.4%</td>
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<tr>
<td>Utah</td>
<td>42,507,855</td>
<td>117.3%</td>
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<td>Idaho</td>
<td>1,853,484</td>
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<tr>
<td>New Mexico</td>
<td>13,286,892</td>
<td>110.4%</td>
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<tr>
<td>Oregon</td>
<td>8,163,045</td>
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<tr>
<td>Colorado</td>
<td>-22,721,000</td>
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<td>Montana</td>
<td>-9,374,602</td>
<td>92.0%</td>
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<td>Wyoming</td>
<td>-43,114,726</td>
<td>86.9%</td>
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<tr>
<td>Arizona</td>
<td>-44,689,684</td>
<td>85.5%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>39,081,507</td>
<td><strong>102.2%</strong></td>
</tr>
</tbody>
</table>

Balance lasts 10.6 years