California Electric Regions

This map was created using Platts PowerMap.
California Electric Market: Overview and Focal Points

Overview

Geography

States covered: California (most of) and northern Baja California (Mexico)

Reliability region: California-Mexico Power Area (CAMX) sub-region of the Western Electric Coordinating Council (WECC)

Balancing authorities: California ISO (CAISO), Sacramento Municipal Utility District (SMUD), Turlock Irrigation District (TID), Los Angeles Department of Water and Power (LADWP), and Comision Federal de Electricidad (CFE).

Approximately 80% of demand in the CAMX subregion is within the area of the CAISO balancing authority. The portion of the CAMX area within Mexico is comparatively small. The remaining 20% of California's load is managed primarily by municipal utilities and irrigation districts such as the Los Angeles Department of Water and Power, the Sacramento Municipal Utility District, and the Imperial Irrigation District.

CAISO zones: NP-15, ZP-26, SP-15

RTO/ISO

California ISO (CAISO) (established 1998) operates the region's power grid and wholesale electric markets:

- Real-time imbalance energy,
- Ancillary services, and
- Transmission usage.

CAISO 2008 State of the Markets Report
Market Monitor: Keith Casey – Director, Department of Market Monitoring

Updated May 13, 2008
Generation/Supply

Marginal fuel type: natural gas

Generating capacity (summer 2006): 56,347 MW

Capacity reserve (summer 2006): 6,077 MW

Reserve margin (summer 2006): 12%

Demand

All time peak demand: 50,270 MW (set July 24, 2006)

System peak loads declined in 2008, due in large part to a generally mild summer

Peak demand change: -3.5% (2007-2008)

<table>
<thead>
<tr>
<th>Year</th>
<th>Summer Peak Demand (MW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>45,597</td>
</tr>
<tr>
<td>2005</td>
<td>45,562</td>
</tr>
<tr>
<td>2006</td>
<td>50,270</td>
</tr>
<tr>
<td>2007</td>
<td>48,615</td>
</tr>
<tr>
<td>2008</td>
<td>46,897</td>
</tr>
</tbody>
</table>

Source: Derived from CAISO data.

Load pockets: Humbolt, North Bay, Greater San Francisco Bay, Sierra, Stockton, Los Angeles Basin, and San Diego areas.
Prices (CAISO only)

Annual Average Price (ISO Real-time)

NP-15:
- 2004: $38.35/MWh
- 2005: $54.39/MWh
- 2006: $43.17/MWh
- 2007: $54.44/MWh

SP-15:
- 2004: $39.47/MWh
- 2005: $55.57/MWh
- 2006: $46.50/MWh
- 2007: $54.45/MWh

Interconnections/Seams

Load serving entities within CAISO rely on imports for approximately one-fourth of their annual energy needs.
# California 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>NP15</td>
<td>$66.59</td>
<td>$80.14</td>
<td>$39.29</td>
<td>$40.08</td>
<td>$35.83</td>
<td>$57.45</td>
</tr>
<tr>
<td>SP15</td>
<td>$66.48</td>
<td>$79.36</td>
<td>$38.31</td>
<td>$40.21</td>
<td>$36.90</td>
<td>$57.28</td>
</tr>
</tbody>
</table>

Source: Derived from Platt's data.

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

Price ($/MWh)

Source: Derived from Platt's data
April 2012

Updated: April 06, 2012
Southwestern Daily Index Day-Ahead On-Peak Prices

Source: Derived from Platt's data

April 2012

Updated: April 06, 2012
California Electric Market: Northwestern Index Prices

Northwestern Daily Index Day-Ahead On-Peak Prices

Source: Derived from Platt's data

Updated: April 06, 2012
Western Daily Index Day-Ahead On-Peak Prices

Price ($/MWh)

Monthly Average

Source: Derived from Platt's data
April 2012

Updated: April 06, 2012
Southwestern Daily Index Day-Ahead On-Peak Prices

Source: Derived from Platts data
April 2012

Updated: April 06, 2012
Northwestern Daily Index Day-Ahead On-Peak Prices

Source: Derived from Platt's data

April 2012

Updated: April 06, 2012
Implied Heat Rates at Western Trading Points - Weekly Avgs.

Note: ICE on-peak forward (physical) and swap (financial) volumes are for Mid-Columbia and include monthly, dual monthly, quarterly, and calendar year contracts traded for each month.

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

Updated: April 06, 2012
Weekly Generation Output - California

Source: Derived from EEI data
April 2012

Updated: April 19, 2012
Western Daily Actual Peak Demand

Notes: Data prior to 9/14/2010 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: April 06, 2012