Briefing on western energy imbalance market and benefits

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General Session
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$68.86 million gross economic benefits in Q4 2020

Gross benefits from EIM since November 2014

$1.18 billion

Individual Entity Benefits by year - millions

- 2014
- 2015
- 2016
- 2017
- 2018
- 2019
- 2020

Individual Entity Benefits for 4th Quarter - millions

- APS
- BANC
- IPCO
- ISO
- NVE
- PAC
- PGE
- PSE
- PWX
- SCL
- SRP

California ISO

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## Q4 2020 Flexible ramping diversity savings

<table>
<thead>
<tr>
<th></th>
<th>October</th>
<th>November</th>
<th>December</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Direction</strong></td>
<td>Up</td>
<td>Down</td>
<td>Up</td>
</tr>
<tr>
<td><strong>Average MW saving (MW)</strong></td>
<td>831</td>
<td>882</td>
<td>828</td>
</tr>
<tr>
<td><strong>Sum of BAA requirements (MW)</strong></td>
<td>2,116</td>
<td>1,698</td>
<td>1,871</td>
</tr>
<tr>
<td><strong>Diversity Benefit</strong></td>
<td>39%</td>
<td>52%</td>
<td>44%</td>
</tr>
<tr>
<td><strong>Estimated Savings</strong></td>
<td>$266,649</td>
<td>$0</td>
<td>$81,203</td>
</tr>
</tbody>
</table>
Weekly average prices in EIM areas
Weekly average prices in EIM areas
Weekly average prices in EIM areas

- PWRX
- SCL
- SRP

Price ($/MWh)


Estimated Proxy
RTD ELAP
FMM ELAP
Estimated wheel-through transfers in Q4 2020

[Bar chart showing energy (MWh) for different entities with categories of Net Export, Net Import, and Wheel Through]
Western EIM helps avoid curtailments
Robust energy transfers in Q4 2020

Transfer Axis: (+) Import  (-) Export

10th to 90th percentile

Tails are max and min

Simple averages
Robust energy transfers in Q4 2020

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Robust energy transfers in Q4 2020

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