Analysis of Costs and Benefits of DG Solar Must be Comprehensive

Benefits Typically Included in Value of Solar

<table>
<thead>
<tr>
<th>Avoided energy and fuel expenses, incl. reduced RPS compliance</th>
<th>Avoided conversion of greenspace and farmland</th>
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</thead>
<tbody>
<tr>
<td>Avoided generation capacity</td>
<td>Reduction in wholesale prices</td>
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<tr>
<td>Avoided transmission &amp; distribution</td>
<td>Energy price hedging effect</td>
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<tr>
<td>Air quality and health benefits</td>
<td>Avoided line losses</td>
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<tr>
<td>Avoided greenhouse gases</td>
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Benefits of DG Solar Can be Sizeable

• Transmission capacity
  • In 2018 CAISO canceled $2.6 billion of previously-approved projects, attributed to load reductions from efficiency and rooftop solar

• Generation capacity
  • 2013 E3 study estimated average benefit of $40/MWh generated by BTM solar

• Fuel price hedging
  • Clean Power Research calculated $250 million per year benefit statewide
Distribution Benefits Will Likely Grow in Future

- SMUD’s IRP projects increase of 350 MW of peak demand by 2030 and increased load of over 1,300 GWh for building and transportation electrification
- Customer-sited solar can potentially avoid or defer costly distribution network investments
- Increasing adoption of storage with solar enhances ability to provide grid value
- SMUD should consider tools to identify distribution deferral opportunities and pay DERs for performance
Preferred Approaches to Cost Recovery

• After accounting for all benefits, **if** an undercollection remains, should be evaluated in broader context
  • Is impact material?
  • Staff estimate of 2030 undercollection ($80 million, based on energy-only benefit) results in average rate increase of 0.6 cents/kWh

• Fair cost recovery should be effected through non-discriminatory means
  • Consistent rate design elements for all customers or adjustments to export credits