Community Solar Programs: Overview

Craig Schultz, ICF International
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Strong Benefits of Community Solar Programs

- Economies of Scale
- Improved Siting: Production & Land Use
- Contract Flexibility & Portability
- Vastly Greater Access
- Grid Integration & Locational Value
- Utility Ownership & Engagement
Growth of Community/Shared Solar Programs

Program Count by Year

Capital Costs: Scale Matters Greatly

CSI Capital Costs by Project Size: 2014 and YTD 2015

Source: California Solar Statistics, Cost by System Size (data download) for systems in Program Year 2014 and YTD 2015, as of October 14, 2015.
Some Key Market Factors Affecting Community Solar Over the Next 1-5 Years

- ITC Reduction Pressure on Solar Economics
- Net Metering Caps Being Reached
- Growing Utility Role in Solar Market, Integration, Locational Value of DERs
- Effect of Improving Cost, Performance, & Market Participation of Battery Storage on Community Solar?
System Value: Maximizing Solar Production at Time of Utility Peak Loads in Late Afternoon

Annual kWh by hour

<table>
<thead>
<tr>
<th>Hour Ending</th>
<th>10am</th>
<th>11am</th>
<th>12pm</th>
<th>1pm</th>
<th>2pm</th>
<th>3pm</th>
<th>4pm</th>
<th>5pm</th>
<th>6pm</th>
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Deficiency in Distribution Feeder Capacity can be Addressed by Effective Distributed Energy Resource (DER) Portfolios, including Solar

Planned capacity upgrades including replacement of aging infrastructure

DER portfolio sourced to address capacity needs (at a cost no greater than the avoided cost – this is a locational value of DER)
Where DERs (including Solar) will have the most Distribution System Value Varies with Different Feeder Characteristics

Feeders with no capacity deficiency

Feeders at several locations benefit from an effective DER portfolio to address capacity deficiency
Summary

- Confluence of factors may accelerate community solar growth in programs, participants, and installed capacity in the coming years.

- Do not under-estimate grid integration net costs & benefits, as well as distribution locational value, as increasingly important issues for community solar development.

- Economic uncertainties around federal investment tax credit (ITC) reduction, net metering caps, and solar + storage will likely affect community solar.
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