Project Description

Prototype modeling framework for integrated distributed resource planning and optimization, able to identify Distributed Energy Resources (DER) adoption patterns, microgrid sites, and evaluate DER impacts on the distribution and transmission grid.

Combines key capabilities from national labs to address gap in DER modeling tools by linking behind-the-meter DER modeling with Transmission & Distribution co-simulation and visualization. Provides first step towards detailed holistic system-wide modeling of DER impacts and benefits.

Expected Outcomes

- Mapping of most cost-effective DER sites
- Identify DER operational strategies
- Analyze value of DER as grid assets
- Evaluate impacts of DER on the bulk electric grid system
- California as starting point for wider application

<table>
<thead>
<tr>
<th>Significant Milestones</th>
<th>Date</th>
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<tbody>
<tr>
<td>Initial data collection; stakeholder engagement</td>
<td>06/30/16</td>
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<tr>
<td>Data collection &amp; conversion; Behind-the-meter model automation and development of integration components</td>
<td>09/30/16</td>
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<tr>
<td>Finalize development of core software components</td>
<td>12/31/16</td>
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<tr>
<td>Final delivery of software platform, project demonstration, and outreach</td>
<td>09/30/17</td>
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Many states are deploying DER aggressively, the challenge is lack of tools to understand most cost-effective locations and impact on overall-system reliability.

Progress to Date

End-to-end DER siting tool prototype:
- Transmission & Distribution co-simulation for California
- Distributed Energy Resources Customer Adoption Model (DER-CAM) enhancements & data
- Model integration and APIs
- Visualization front-end and database

Stakeholder engagements:
- California Public Utilities Commission (CPUC) engagement:
  - Contributions to Distribution Resources Plan working group meetings
  - Validation of Integration Capacity Analysis methods
- Technical advisory committee meeting including CPUC, California utilities, and third-party industry representatives