



CALIFORNIA ENERGY COMMISSION

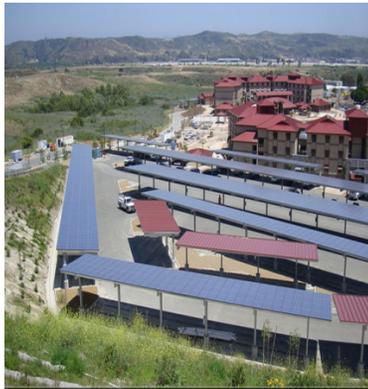
A Roadmap for Commercializing Microgrids in California

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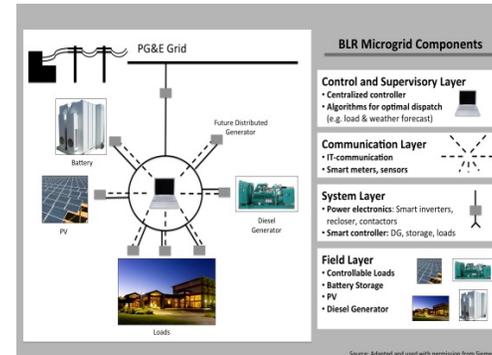
Energy Commission Microgrid Experience



Pendleton MCAS



Borrego Springs



Blue Lake Rancheria



Bosch DC Microgrid



Las Positas Campus



City of Fremont Fire Station



Energy Commission Microgrid Experience



UC San Diego



Santa Rita Jail



SMUD

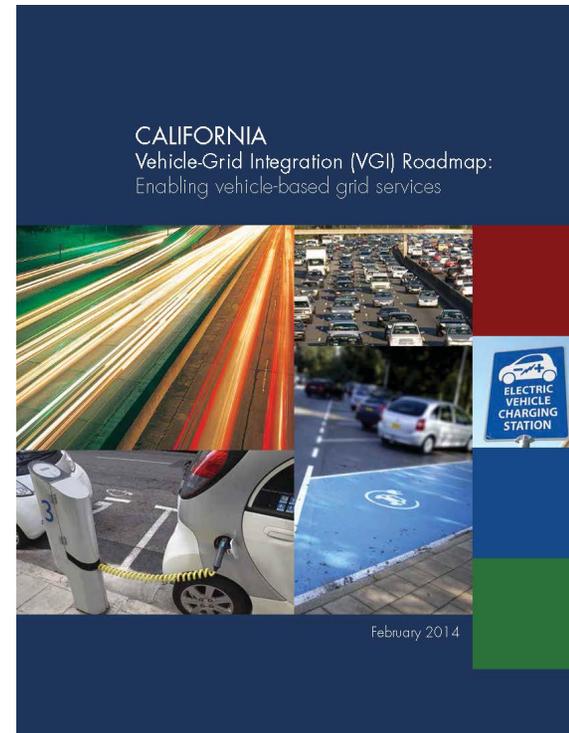
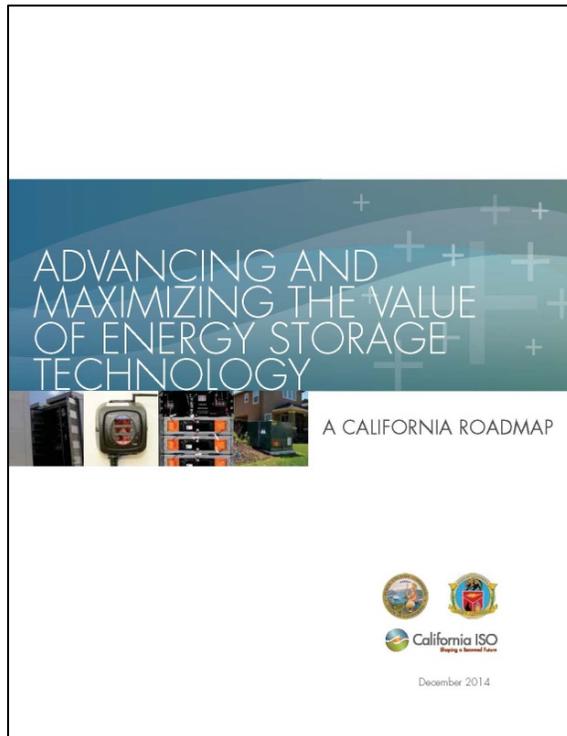


Purpose of the Microgrid Roadmap

- Identify the barriers and describe the actions necessary to facilitate commercialization of microgrids in California.
- Assess the regulatory, market, and technical barriers that may impede the widespread development of microgrids.
- Gather lessons learned from operational microgrids.
- Identify common use cases and a business case for microgrids.
- Identify the actions that the Energy Commission, CPUC, California ISO and others can take to enable greater development of microgrids.



Microgrid Roadmap will Build Upon the Lessons Learned in Developing and Publishing the Energy Storage and VGI Roadmaps





Starting Point will be the Results and Recommendations from the Energy Commission Funded Microgrid Study

Energy Research and Development Division
FINAL PROJECT REPORT

MICROGRID ASSESSMENT AND
RECOMMENDATION(S) TO GUIDE
FUTURE INVESTMENTS

Prepared for: California Energy Commission
Prepared by: DNV GL

JULY 2015
CEC-500-2015-071





Today's Workshop

- Introduce Management Team
- Set Expectations
- Review Relevant Previous Work by CA Agencies
- Reach Out to Industry for Technical Advisory Committee Members
- Establish Roadmap Schedule and Process
- Hold Open Discussions
 - Key Solutions Microgrids Offer
 - Key Obstacles and Barriers
 - Top Opportunities for Commercial Success
 - Definition of a Microgrid
 - Key Future Funding Opportunities



Activities Between Workshops

- Establish the Technical Advisory Committee
- Award CEC Technical Support Contract
- Organize and Schedule Second Microgrid Workshop
 - Identify three Sub-Groups for Second Microgrid Workshop
 - Location in Southern California
 - Workshop will also be Web Cast
- Expand the email list of Interested Parties



Second Microgrid Workshop

- Develop Definition of Microgrid for Roadmap
- Review Several Operating and New Microgrids with Key Features or Capabilities
- Divide Key Issues and Topics into 3 Sub Groups
- Break Out into 3 Sub Groups
- Subgroups discuss, document and agree on as much as possible of the key issues assigned to the Sub Group
- Sub Groups Report Results of Breakout Session
- Discuss Microgrid Survey



Activities Between Workshops

- Technical Advisory Committee review workshop results
- Sub Groups continue to meet as required
- Complete survey with up to 200-300 responders
- Begin to develop roadmap draft outline
- Prepare for 3rd Microgrid Workshop



Third Microgrid Workshop

- Report on Results of Subgroups
- Report Results of Survey
- Open Discussion on Key Issues
- Discuss Key Elements of Draft Microgrid Roadmap
- Agree on Next Steps
- Plan Final Workshop



Activities Between Workshops

- Technical Advisory Committee review workshop results
- Sub Groups Finalize Roadmap Input
- Continue Survey if needed
- Develop Draft Roadmap
- Prepare for Final Workshop



Fourth/Final Microgrid Workshop

- Review Draft Roadmap
- Develop Consensus on Key Deliverables and Recommendations
- Review Next Steps



Questions