



CALIFORNIA ENERGY COMMISSION

Grid Operations, Transmission & Distribution Systems and Electric Vehicles

EPIC Breakout Session

California Energy Commission, 2nd Floor Fishbowl

August 2nd, 2012

Jamie Patterson

Erik Stokes

For Remote Access Participants:

<https://energy.webex.com>

Meeting Number: 928 495 511

Password: ch@4epic

Audio only: 866-469-3239



Purpose of Breakout Session

- Gather stakeholder input on investment areas and specific initiatives
- Provide feedback on proposed technology, resource, and strategy topic areas
- Prioritize investment topics
- Identify ways the Energy Commission can coordinate with organizations to leverage other efforts as well as avoid duplication

Breakout Session Expectations

- Speakers should identify their names and affiliation
- Speakers are limited to 3 minutes at a time
- Comments should be limited to the scope of CPUC EPIC decision
- Any additional input should be submitted in written comments by 8/10/12.



Schedule of Activities

- 1:00 Staff overview of potential Grid Operations, Transmission & Distribution and Electric Vehicle priorities
- 1:15 Stakeholder input on investment priorities
- 3:15 Final discussion
- 3:30 Break
- 4:00 Reconvene in Hearing Room A



Energy Innovation Pipeline

ENERGY INNOVATION PIPELINE

APPLIED RESEARCH AND DEVELOPMENT

CEC- \$55 million/year

- Pre-commercial development
- Lab-scale demonstration
- Pilot-scale demonstration

TECHNOLOGY DEMONSTRATION AND DEPLOYMENT

CEC - \$45 million/year

- Pre-commercial demonstration
- Pre-commercial deployment

MARKET FACILITATION

CEC - \$15 million/year

- Regulatory assistance
- Workforce development
- Education and outreach
- Program tracking
- Market research



Grid Operations, Transmission & Distribution Systems and Electric Vehicles

- Provide IOU electric ratepayer benefits
- Increase cost competitiveness
- Mitigate variable renewable generation & electric vehicle impacts
- Reduce environmental impacts, including climate change effects on the energy system
- Streamline permitting and develop workforce
- Help technologies overcome “valleys of death”
- Complement and leverage other public and private funding sources

Key Policy Drivers

- Renewables Portfolio Standard (RPS)
- Governor Brown’s Clean Energy Jobs Plan
 - 12,000 MW of localized renewables
 - 8,000 MW of large scale renewables
 - 6,500 MW of combined heat and power (CHP)
- State Alternative Fuels Plan
 - Displace 376 million gallons of gasoline with electricity.



Grid Operations, Transmission & Distribution Systems and Electric Vehicles

Technology Areas:

- Smart Grid/Microgrids
- Electric Vehicle charging and grid integration
- Electric Vehicle efficiency and battery reuse
- Storage (including ancillary services)
- Renewable integration into the grid (Forecasting Tools)
- Grid system monitoring, Controls and Analysis
- HANs and technologies that directly benefit ratepayers
- Others?



Questions

1. What are the major barriers to developing and commercializing clean energy technologies?
2. Where should funding be placed to maximize the deployment of clean energy technologies? (i.e. where is technology innovation needed versus where is support for commercial scale-up the critical need?)
3. What specific initiatives are recommended to advance innovative energy technologies that benefit ratepayers?
4. Define the ratepayer need for which EPIC investment should be targeted.
5. Prioritize initiatives and identify the benefits that should be anticipated and measured, such as:
 - Energy and cost savings, grid reliability, job creation, economic benefits, environmental benefits, likelihood of return on investment, other.
6. What areas are already well covered by DOE and private funding?



Market Facilitation

Full Discussion Tomorrow

Potential Initiatives

- Permitting and deployment facilitation tools
- Innovation clusters
- Workforce development
- Others?



Summary and Additional Stakeholder Input

Summary of all breakout sessions to be held at workshop site:
CA Energy Commission, Hearing Room A, 1516 9th St

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Submit written comments by 8/10/2012 to the following:

California Energy Commission

Dockets Office, MS-4

Re: **Docket No. 12-EPIC-01**

1516 Ninth Street

Sacramento, CA 95814-5512

Or E-mail: Dockets@energy.ca.gov