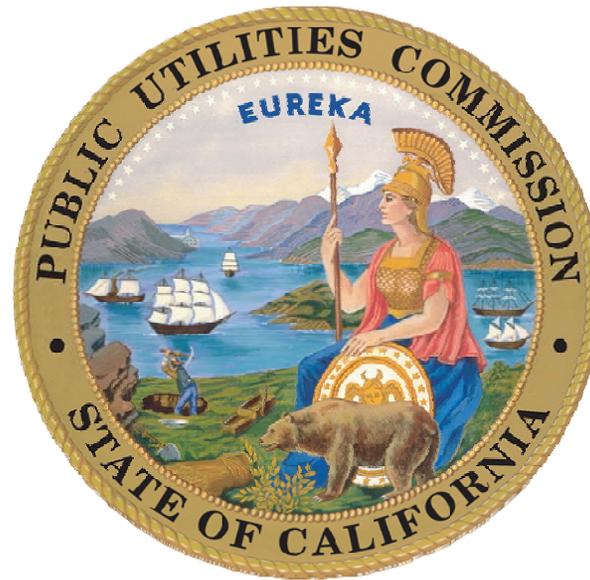




Status of Smart Grid Proceeding and SB 17 Presentation to the CEC



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California Public Utilities Commission

December 17, 2010





Presentation Objectives & Agenda

- **Why do we have a Smart Grid proceeding?**
 - History of proceeding
 - What has been done as part of the Rulemaking?
 - State legislation (SB 17)
- **CPUC Final Decision on Smart Grid Deployment Plan Requirements**
 - Smart Grid Deployment Plan Requirements
 - Proposed Decision's View of Smart Grid
 - What are the policy goals?
- **Next Steps**
 - Metrics
 - Customer Access to Information
 - Privacy (SB 1476)
 - Cyber-Security
 - Home Area Networks





History of Smart Grid Rulemaking

- **December 2008**: Issued Order Instituting Rulemaking (R.08-12-009)
- **October 11, 2009**: Governor signs SB 17 (Padilla) directing CPUC to set requirements for IOU Smart Grid Deployment Plans by July 1, 2010; IOUs to file Deployment Plans by July 1, 2011.
 - Directs PUC to work with CEC and CAISO to develop policies to implement Smart Grid
- **December 2009**: Issued Decision addressing Energy Independence and Security Act requirements and identified customer access issues for next phase of OIR (D.09-12-046)
 - Declines to adopt PURPA standards as directed by EISA
 - Sets schedule for providing customers with retail and wholesale price information by end of 2010, access to usage data through an agreement with a third party by end of 2010, and provide access to usage information on a near real-time basis for customers with AMI by end of 2011.
- **February 8, 2010**: Assigned Commissioner issues Scoping Memo to address customer access to prices and usage information, and to address SB 17 implementation issues.
- **June 24, 2010**: Final Decision on utilities' Smart Grid deployment plan requirements issued, as required by SB 17. (D.10-06-047)





What has been done thus far?

D.09-12-046

- Sets timeframe for IOUs to provide certain information to customers:
 - SCE, SDG&E, and PG&E must be capable of providing an authorized third party with access to the customer's usage information that is collected by the utility by the end of 2010 should the customer desire that information.
 - SCE, SDG&E, and PG&E must be capable of providing a customer possessing an advanced meter with access to the customer's usage information on a near real-time basis by the end of 2011.
- Sets the following policy goals:
 - Customers be provided retail and wholesale electricity prices in a uniform manner by end of 2010
 - Provide access to usage data through an agreement with a third party by end of 2010, and
 - Provide access to usage information on a near real-time basis for customers with AMI by end of 2011.





State Legislation SB 17

- SB 17 defines what characterizes a “Smart Grid”
 - Cost effective digital technologies
 - Dynamic optimization of grid operations and resources
 - Deployment and integration of cost effective distributed resources and generation, including renewables
 - Development and incorporation of cost effective demand response, energy efficiency and demand side resources
 - Deployment of cost effective smart grid technologies, such as communication networks concerning grid operations and technologies that optimize grid operations
 - Integration of cost effective smart appliances and consumer devices
 - Deployment and integration of cost effective electricity storage and peak-shaving technologies, such as PHEVs and thermal storage A/C
 - Provide customers with timely information and control options
 - Develop standards for communication and interoperability of appliances and equipment connected to the grid
 - Identification and lowering of barriers to adoption of smart grid technologies





Smart Grid Deployment Plan Requirements

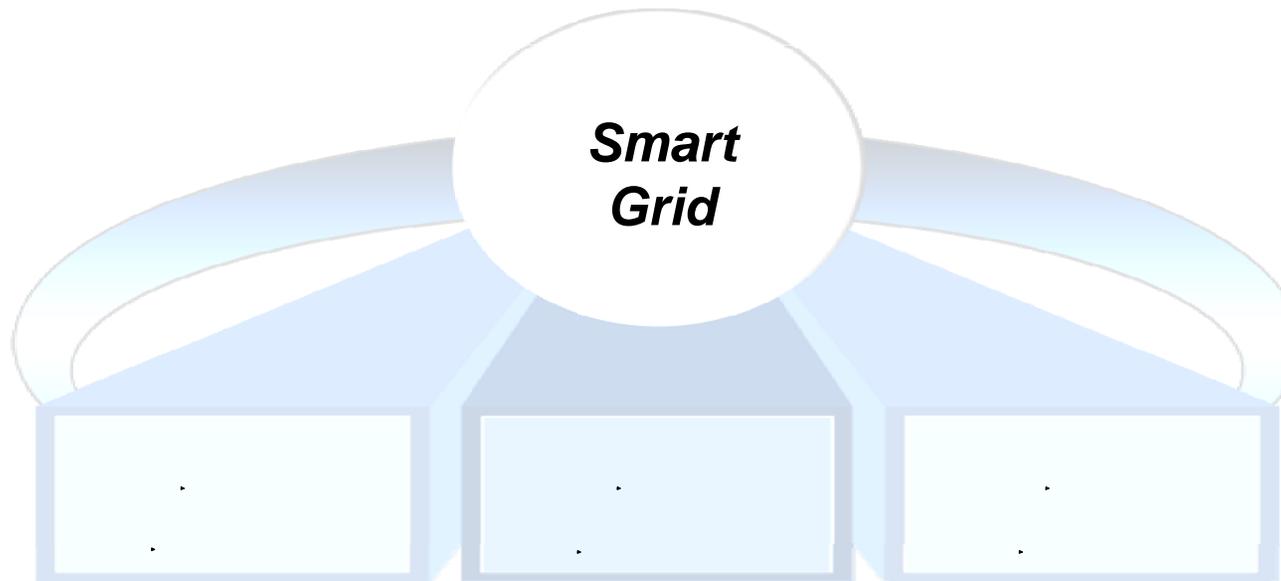
- **Smart Grid Deployment Plans must address 8 topics:**
 - Smart Grid Vision Statement
 - Deployment Baseline
 - Smart Grid Strategy
 - Grid Security and Cyber Security Strategy
 - Smart Grid Roadmap
 - Cost Estimates
 - Benefits Estimates
 - Metrics
- **Smart Grid Deployment Plan to be filed by July 1, 2011**
 - Utilities to present status report on Deployment Plan progress before a joint CEC, PUC, CAISO public workshop to be held in March or April 2011





Final Decision's View of Smart Grid

- The Smart Grid is a system of networked utility and consumer devices and information technology that optimize the secure, reliable and efficient production, delivery and consumption of electricity.



- Transparent
- Demand Responsive
- Pricing

- Informed
- Empowered
- Efficient

- Predictive
- Enabling
- Self-healing





What are the policy goals?

- The goal is to set policies to guide the development of a smart grid system and facilitate integration of new technologies such as distributed generation, storage, demand-side technologies, and electric vehicles in a cost effective manner.
 - Determine the characteristics and requirements of a smart grid in California that would support existing policies;
 - Identify the IOUs' existing activities and investments related to a smart grid;
 - Consider whether standards and protocols are needed for the deployment of a smart grid in California and, if so, identify what the Commission's role should be in standards development, if any;
 - Determine how the Commission should assess the costs and benefits of smart grid-related expenditures that may be necessary to meet the state's future needs; and
 - Develop an appropriate regulatory approach to support the development of a cost-effective smart grid in California.





Next steps on Smart Grid implementation

- **Metrics**
- **Privacy**
- **Cyber-Security**
- **Home Area Networks**





Smart Grid Metrics

- **Initiated phase to determine consensus Smart Grid metrics to measure progress on Smart Grid deployments**
- **Held workshops and informal webinars with participants**
- **Utilities distributed consensus and non-consensus metrics**
- **Metrics cover:**
 - Customer/AMI issues
 - Plug-in Electric Vehicles
 - Electricity Storage
 - Grid Operations
- **Further discussions on metrics for:**
 - Environmental
 - Cyber-security
 - Customer/AMI
 - Grid Operations
- **Proposed Decision expected 1st Quarter 2011**





Customer Access to Information

- **Customer access to information major goal of PUC**
- **Who should have access to that information, and how are privacy protections enforced?**
 - Where is PUC jurisdiction over third parties, e.g., Google?
- **Smart Grid privacy groups recommend reliance upon Fair Information Practices principles**
- **Final Decision issued in June 2010 directs PUC to consider customer access and privacy issues later this year to meet customer access goals.**





Privacy Issues

- **Initiated phase to discuss privacy rules relating to obtaining access from utility**
- **Governor signed SB 1476 (Sen. Padilla) which addresses utility privacy requirements**
- **Workshops held to address privacy issues**
 - Proposal by Center for Democracy and Technology
- **Three types of access:**
 - Third party obtaining data via the utility backhaul
 - Third party obtaining data via customer's Home Area Network
 - Third party utility contractor
- **Jurisdictional concerns raised over third parties**
- **Proposed Decision expected 1st Quarter 2011**





Cyber-Security

- **Difference between security of customer data and overall grid security**
- **Two phase approach to address customer security and grid security**
- **National Institute of Standards and Technology (NIST) issued guidelines for regulators on cyber-security and privacy earlier this year**
- **Anticipate new phase of Smart Grid proceeding to address potential cyber-security rules and policies 1st-2nd Quarter 2011**





General Security Concerns

- **Traditionally, grid security focused on transmission grid, and subject to Federal jurisdiction.**
- **With Smart Grid, grid security concerns need to address distribution grid to the home**
- **States currently have jurisdiction on distribution security, but have not normally set specific rules**





Home Area Networks

- **Utilities AMI investments include Home Area Network (HAN)**
- **Currently, HAN is not activated by utilities**
 - HAN loaded with Zigbee SEP 1.0(X)
 - Waiting for SEP 2.0 to be finalized in national standard making process
 - Estimated date for SEP 2.0 completion and market readiness uncertain
- **Third parties participating in Smart Grid proceeding advocating for HAN to be activated**
 - Texas in process of activating HAN with SEP 1.X
- **A number of concerns raised by utilities**
 - Security and privacy risks
 - Stranded costs
 - Questions related to interoperability and upgrading of devices





For Further Information

CPUC Smart Grid webpage:

<http://www.cpuc.ca.gov/PUC/energy/smartgrid.htm>

Chris Villarreal
Policy and Planning Division
Phone: (415) 703-1566
Email: crv@cpuc.ca.gov

