

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Consider
Smart Grid Technologies Pursuant to
Federal Legislation and on the
Commission's own Motion to Actively
Guide Policy in California's Development of
a Smart Grid System.

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ORDER INSTITUTING RULEMAKING

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ORDER INSTITUTING RULEMAKING

1. Summary

The California Public Utilities Commission (Commission) initiates this proceeding pursuant to federal legislation as well as its own motion to consider policies for California investor-owned electric utilities (IOUs) to enhance the ability of the electric grid to support important policy goals including reducing greenhouse gas emissions, increasing energy efficiency and demand response, expanding the use of renewable energy, and improving reliability. The proceeding will consider setting policies, standards and protocols 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.

The Energy Independence and Security Act of 2007 (H.R. 6, 110th Congress, or “EISA”) states:

It is the policy of the United States to support the modernization of the Nation’s electricity transmission and distribution system to maintain a reliable and secure electricity infrastructure that can meet future demand growth...¹

California shares this national goal, as demonstrated by its firm commitment to resource adequacy, reliability, distributed generation, and demand-side programs.

¹ EISA Section (§) 1301. For easy reference, the relevant portions of EISA are attached to this Order Instituting Rulemaking (OIR) as Attachment A.

This proceeding is an opportunity to evaluate the IOUs' existing electric infrastructure and policies and the steps they have already taken toward modernizing their electricity grids, and to consider whether and to what extent the Commission should develop a forward-looking regulatory program that encourages electric utilities to develop smart grid systems.

Consequently, we seek to achieve the following in this rulemaking:

- Consider the principles and criteria that should guide the Commission's smart grid policies;
- Address the specific provisions of EISA that relate to smart grid investments and information;
- 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;
- Develop an appropriate regulatory approach to support the development of a cost-effective smart grid in California;
- Address other issues as needed to guide Commission policy in this area.

Respondents for this proceeding shall be all electrical corporations.² In addition, we will serve this order on all other load serving entities (LSEs) as defined in § 380(j) of the Public Utilities Code, who may wish to participate in this proceeding, as well as on the California Energy Commission (CEC), the California Independent System Operator (CAISO), and the service lists in the following Commission proceedings: Rulemaking (R.) 07-01-041 (Demand Response), R.06-04-010 (Energy Efficiency), R.08-02-007 (Long-Term Procurement Rulemaking), R.05-12-013 (Long Term Resource Adequacy Rulemaking), R.08-04-012 (Planning Reserve Margin Rulemaking) and Application (A.) 08-07-021 et al. (Energy Efficiency Program Plans).

2. Federal Legislation - Energy Independence and Security Act of 2007

On December 19, 2007, the President signed EISA into law. Title XIII of EISA is titled “Smart Grid,” with § 1301 commencing with a statement that,

It is the policy of the United States to support the modernization of the Nation’s electricity transmission and distribution system to maintain a reliable and secure electricity infrastructure that can meet future demand growth...

Since “smart grid” is a new concept, EISA describes what constitutes a smart grid and what it can do. Section 1301 goes on to state:

² EISA requires consideration of certain smart grid issues by “each State regulatory authority (with respect to each electric utility for which it has ratemaking authority)” (§ 1307). The Commission has ratemaking authority for all electrical corporations, as defined in Public Utilities Code § 218. They are listed in Attachment B to this OIR.

...and to achieve each of the following, which together characterize a Smart Grid:

- (1) Increased use of digital information and controls technology to improve reliability, security, and efficiency of the electric grid.
- (2) Dynamic optimization of grid operations and resources, with full cyber-security.
- (3) Deployment and integration of distributed resources and generation, including renewable resources.
- (4) Development and incorporation of demand response, demand-side resources, and energy-efficiency resources.
- (5) Deployment of “smart” technologies (real-time, automated, interactive technologies that optimize the physical operation of appliances and consumer devices) for metering, communications concerning grid operations and status, and distribution automation.
- (6) Integration of “smart” appliances and consumer devices.
- (7) Deployment and integration of advanced electricity storage and peak-shaving technologies, including plug-in electric and hybrid electric vehicles, and thermal-storage air conditioning.
- (8) Provision to consumers of timely information and control options.
- (9) Development of standards for communication and interoperability of appliances and connected to the electric grid, including the infrastructure serving the grid.
- (10) Identification and lowering of unreasonable or unnecessary barriers to adoption of smart grid technologies, practices, and services.

And § 1306(d) of EISA defines “smart grid functions” as follows:

The term “smart grid functions” means any of the following:

- (1) The ability to develop, store, send and receive digital information concerning electricity use, costs, prices, time of use, nature of use, storage, or other information relevant to device, grid, or utility operations, to or from or by means of the electric utility system, through one or a combination of devices and technologies.
- (2) The ability to develop, store, send and receive digital information concerning electricity use, costs, prices, time of use, nature of use, storage, or other information relevant to device, grid, or utility operations to or from a computer or other control device.
- (3) The ability to measure or monitor electricity use as a function of time of day, power quality characteristics such as voltage level, current, cycles per second, or source or type of generation and to store, synthesize or report that information by digital means.
- (4) The ability to sense and localize disruptions or changes in power flows on the grid and communicate such information instantaneously and automatically for purposes of enabling automatic protective responses to sustain reliability and security of grid operations.
- (5) The ability to detect, prevent, communicate with regard to, respond to, or recover from system security threats, including cyber-security threats and terrorism, using digital information, media, and devices.
- (6) The ability of any appliance or machine to respond to such signals, measurements, or communications automatically or in a manner programmed by its owner or operator without independent human intervention.
- (7) The ability to use digital information to operate functionalities on the electric utility grid that were previously electro-mechanical or manual.

(8) The ability to use digital controls to manage and modify electricity demand, enable congestion management, assist in voltage control, provide operating reserves, and provide frequency regulation.

(9) Such other functions as the Secretary [of Energy] may identify as being necessary or useful to the operation of a Smart Grid.

In addition to these statutory characterizations of a smart grid and its functions, other definitions of a “smart grid” have been developed by various governmental and industry groups. For example, the Congressional Research Service (“CRS”) Report to Congress uses the term “smart grid” to refer to a distribution system that, among other things, allows for flow of information from a customer’s meter in two directions: both into the house to thermostats and appliances and other devices, and back to the utility.³ The smart grid system will also allow integration of “smart” appliances, the provision to consumers of timely information and control options, and the further development and incorporation of demand-side and energy-efficiency resources.

Section 1307 of EISA amended § 111(d)⁴ of the Public Utility Regulatory Policies Act (“PURPA”) by adding paragraphs regarding the smart grid. The PURPA provisions added by EISA complement the PURPA standards established in the Energy Policy Act of 2005 (“EPAAct 2005”). EPAAct 2005 added five new federal standards to PURPA § 111(d) for state commissions and utilities to consider: (11) Net metering, (12) Fuel sources, (13) Fossil fuel generation

³ CRS Report for Congress, “Smart Grid Provisions in H.R. 6, 11th Congress,” updated December 20, 2007.

⁴ 16 U.S.C. 2621(d).

efficiency,⁵ (14) Time-based metering and communications,⁶ or “Smart Metering,” and (15) Interconnection.⁷

Continuing the effort of EAct 2005, EISA § 1307(a) added paragraphs (16) Consideration of smart grid investments and (17) Smart grid information to PURPA § 111(d).⁸

With the new statute, PURPA § 111(d)(16) now requires states to consider imposing certain requirements and authorizing certain expenditures.

Specifically:

(16) Consideration of smart grid investments

(A) In general. — Each State shall consider requiring that, prior to undertaking investments in nonadvanced grid technologies, an electric utility of the State demonstrate to the State that the electric utility considered an investment in a qualified smart grid system based on appropriate factors, including —

- (i) total costs;
- (ii) cost-effectiveness;
- (iii) improved reliability;
- (iv) security;
- (v) system performance; and

⁵ EAct 2005 § 1251(a), adding §§ 111(d)(11), (12), and (13) of PURPA, respectively.

⁶ EAct 2005 § 1252, adding PURPA § 111(d)(14).

⁷ EAct 2005 § 1254, adding PURPA § 111(d)(15).

⁸ There is an apparent numbering error in EISA. EISA § 532 added different paragraphs (16) and (17) to the same subsection of PURPA, which address integrated resource planning and rate design modifications to promote energy efficiency investments.

(vi) societal benefit.

(B) Rate recovery. – Each State shall consider authorizing each electric utility of the State to recover from ratepayers any capital, operating expenditure, or other costs of the electric utility relating to the deployment of a qualified smart grid system, including a reasonable rate of return on the capital expenditures of the electric utility for the deployment of the qualified smart grid system.

(C) Obsolete equipment. – Each State shall consider authorizing any electric utility or other party of the State to deploy a qualified smart grid system to recover in a timely manner the remaining book-value costs of any equipment rendered obsolete by the deployment of the qualified smart grid system, based on the remaining depreciable life of the obsolete equipment.⁹

EISA § 1307(a) also added PURPA § 111(d)(17) establishing federal standards on smart grid information provided to electricity purchasers and other interested persons:

(17) Smart grid information.

(A) Standard. – All electricity purchasers shall be provided direct access, in written or electronic machine-readable form as appropriate, to information from their electricity provider as provided in subparagraph (B).

(B) Information. – Information provided under this section, to the extent practicable, shall include:

(i) Prices. – Purchasers and other interested persons shall be provided with information on –

(I) time-based electricity prices in the wholesale electricity market; and

⁹ EISA § 1307(a). With adoption, the cited material became § 111(d)(16) of PURPA.

(II) time-based electricity retail prices or rates that are available to the purchasers.

(ii) Usage. — Purchasers shall be provided with the number of electricity units, expressed in kWh, purchased by them.

(iii) Intervals and projections. — Updates of information on prices and usage shall be offered on not less than a daily basis, shall include hourly price and use information, where available, and shall include a day-ahead projection of such price information to the extent available.

(iv) Sources. — Purchasers and other interested persons shall be provided annually with written information on the sources of the power provided by the utility, to the extent it can be determined, by type of generation, including greenhouse gas emissions associated with each type of generation, for intervals during which such information is available on a cost-effective basis.

(C) Access. — Purchasers shall be able to access their own information at any time through the Internet and on other means of communication elected by that utility for Smart Grid applications. Other interested persons shall be able to access information not specific to any purchaser through the Internet. Information specific to any purchaser shall be provided solely to that purchaser.

PURPA §§ 111 and 112¹⁰ are specific about the obligations imposed on the states to consider the standards contained in PURPA § 111(d). EISA § 1307(b)(1) added the following paragraph to PURPA § 112(b):

(6)(A) Not later than 1 year after the enactment of this paragraph, each State regulatory authority (with respect to each electric utility for which it has ratemaking authority) and each

¹⁰ 16 U.S.C. 2621 and 2622.

nonregulated utility shall commence the consideration referred to in section 111, or set a hearing date for consideration, with respect to the standards established by paragraphs (17) through (18) of section 111(d).

(B) Not later than 2 years after the date of the enactment of this paragraph, each State regulatory authority (with respect to each electric utility for which it has ratemaking authority), and each nonregulated electric utility, shall complete the consideration, and shall make the determination, referred to in section 111 with respect to each standard established by paragraphs (17) through (18) of section 111(d).¹¹

EISA provides broad guidelines and imposes no specific facilities investment requirements, and therefore leaves it up to each state to identify its relative needs. Furthermore, EISA neither contemplates specific “one-size fits all” technological solutions, nor mandates the actual deployment of smart grid upgrades over specific timelines. However, we intend to address the provisions of EISA related to smart grid investments and information in this proceeding.

3. Technical Background

There are numerous public and private organizations working on developing a definition for the smart grid and developing the necessary standards and protocols. Within the California state government, the CEC,

¹¹ EISA § 1307(b)(1) adding paragraph (6) to PURPA § 112(b). As noted in a previous footnote, there is an apparent numbering error in EISA. While this paragraph references paragraphs (17) and (18) of PURPA § 111(d), no such paragraphs were added to PURPA § 111(d). Based on the context and also considering EISA § 1306(c)(3), which references “the final date for State consideration of the Smart Grid Information Standard under section 1307 (paragraph (17) of section 111(d) of [PURPA],” we believe that it is reasonable to infer that PURPA § 112(b)(6) applies to paragraphs (16) and (17) added to PURPA § 111(d) by EISA § 1307(a).

through its Public Interest Energy Research program (“PIER”), is actively investigating the dimensions of a smart grid system. Initial work is expected to be completed in early 2009 and, if so, can be considered in this proceeding. Additionally, the CEC PIER program is planning to complete other research efforts in 2009 on smart grid technologies and the implementation of those technologies, which may provide results or recommendations for consideration in this proceeding.

The Department of Energy (DOE), pursuant to § 1303(a) of EISA, has created a Smart Grid Task Force to ensure the successful implementation of EISA. The DOE through its Electric Advisory Committee has also recently created a smart grid subcommittee as required by EISA § 1303(b). The Smart Grid Task Force has adopted a working definition of smart grid to have the following characteristics:

- Anticipating and responding to system disturbances in a self-healing manner;
- Enabling active participation by consumers;
- Operating resiliently against physical and cyber attack;
- Accommodating all generation and storage options;
- Enabling new products, services, and markets;
- Optimizing asset utilization and operating efficiently;
and
- Providing the power quality for the range of needs in a digital economy.

From this, we see that a smart grid can be defined broadly as an electric grid that is enhanced through the use of digital communication technologies and that allows customers, utilities, and society to make better choices in how energy is produced, delivered, and consumed. In practical terms, the smart grid can

include an AMI (including home area networks of appliances), dynamic pricing (pricing that changes in response to grid and supply conditions), energy efficiency mechanisms (including in-home displays), distributed generation (generation deployed at multiple points in the network), energy storage, and networked plug-in vehicles.

Despite this general characterization, we believe that the technology is moving too fast for a one-size-fits-all definition of a smart grid. In addition, each utility system is unique and, therefore, each system may require technology and devices that address unique challenges.

As an alternative, it may be beneficial to develop a set of characteristics and general principles allowing technology to take its course and create the most efficient and cost effective smart grid system. Thus, another question arises: how do we define a “smart grid” with the specificity needed to guide industry investments and to protect ratepayers, yet provide sufficient flexibility to allow those implementing a “smart grid” to adapt to and include new technologies?

4. Preliminary Scoping Memo

The general scope of this proceeding is to consider further actions, if needed, to comply with the requirements of EISA and also to consider policy and performance guidelines to enable the electric utilities to develop and implement a smart grid system in California.

4.1. Issues to be Addressed

4.1.1. Obligation to Consider Smart Grid Investments and Information Access

4.1.1.1. PURPA § 111(d)(16), Consideration of Smart Grid Investment

As cited above, PURPA § 111(d)(16)(A) added by EISA § 1307(a) requires a state commission to consider whether to require an electric utility to make certain demonstrations prior to undertaking investments in nonadvanced grid technologies. In addition, PURPA § 111(d)(16)(B) requires that states consider authorizing utilities to recover smart grid investments and costs through rates, including a reasonable rate of return on capital expenditures for the deployment of a qualified smart grid system. Furthermore, PURPA § 111(d)(16)(C) requires that states consider authorizing utilities to recover the remaining book-value costs of equipment rendered obsolete by the deployment of a smart grid system.

We note that this Commission, through its AMI proceedings A.05-03-016 and A.05-06-028 (Pacific Gas and Electric Company); A.05-03-026, A.06-12-026, and A.07-07-026 (Southern California Edison Company); and A.05-03-015 (San Diego Gas & Electric Company)) has already addressed some aspects of these requirements.

EISA does not define what constitutes a “qualified smart grid system” for the purposes of State consideration of smart grid investments. However, as cited above, §§ 1301 and 1306(d) of EISA provide requirements that a smart grid must meet. We note further that EISA § 1306(b) (contained in Attachment A to this OIR) provides standards for smart grid investment costs to be eligible for federal matching funds, with EISA § 1306(c) specifying investments that would not qualify for federal matching funds. Thus, questions arise as to how the Commission should define “smart grid” and “qualified smart grid system” and whether the requirements listed in the statute are adequate for our purposes. In

particular, we wish to consider whether any grid that has any or all of the characteristics cited in EISA § 1301 and performs any or all of the functions cited in EISA § 1306(d) is “smart” and whether the treatment suggested in PURPA § 111(d)(16) added by EISA § 1307(a) should be considered for investments that meet the standards in EISA § 1306(b), excluding investments specified in EISA § 1306(c).

4.1.1.2. PURPA § 111(d)(17), Smart Grid Information

EISA § 1307(a) added paragraph (17) to PURPA § 111(d), which contains a new federal standard for the information that smart grid providers must provide to electricity purchasers and other interested persons, and the types of access that must be provided to this information. The standard specifies a broad range of information that must be made available. In the questions below, we ask whether the Commission should implement this standard, and we explore the extent to which each California utility already is complying with the standard.

4.1.2. Policies, Standards, and Protocols for a Smart Grid System

We believe that it is important to set policies to ensure functionality and interoperability with technologies such as distributed generation, plug-in hybrid and electric vehicles, and distributed storage. The vision of a smart grid should lead to interoperability of the entire electric grid, from the generation side to the customer’s home area network devices and the exchange of integrated advanced intelligence that provides the information necessary to optimize electric services and empower customers to make informed energy decisions. For instance, a smart grid system should help facilitate the use of additional distributed generation and help encourage other non-traditional generation such as combined heat and power systems, and plug-in hybrid and electric vehicles.

To this end, we seek to achieve the following in this rulemaking:

- Consider the principles and criteria that should guide the Commission's smart grid policies;
- Address the specific provisions of EISA that relate to smart grid investments and information;
- 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;
- Develop an appropriate regulatory approach to support the development of a cost-effective smart grid in California;
- Address other issues as needed to guide Commission policy in this area.

4.1.3. Questions

To address the issues delineated above, we pose the following questions for all interested parties to comment on.

Principles and Criteria

1. Does the following list include the appropriate principles and criteria to guide the Commission's decisions in this proceeding regarding the possible development of a smart grid in California? Explain any modifications you propose.

- Cost effectiveness;
- Interoperability of a smart grid system with non-traditional as well as traditional generation;
- Interoperability of a smart grid with current and future investments in infrastructure, including advanced metering protocols;
- Ability to enable distribution and transmission automation, e.g., be self-healing and adaptive;
- Ability to reduce overall usage (especially peak usage) because it will be interactive and price responsive, and
- Maintenance of system security and reliability.

EISA Questions

2. Should the Commission require that, prior to undertaking investments in non-advanced grid technologies, an electric utility demonstrate to the Commission that the electric utility considered an investment in a qualified smart grid system, pursuant to PURPA § 111(d)(16)(A) added by EISA § 1307(a)?
3. Should the Commission authorize each electric utility to recover from ratepayers any capital, operating expenditure, or other costs of the electric utility relating to the deployment of a qualified smart grid system, including a reasonable rate of return on the capital expenditures of the electric utility for the deployment of a qualified smart grid system, pursuant to PURPA § 111(d)(16)(B) added by EISA § 1307(a)?
4. Should the Commission authorize any electric utility or other party deploying a qualified smart grid system to recover in a timely manner the remaining book-value costs of any equipment rendered obsolete by the deployment of a qualified smart grid system, based on the remaining depreciable life of the obsolete equipment, pursuant to PURPA § 111(d)(16)(C) added by EISA § 1307(a)?
5. For purposes of the preceding three questions, how should “qualified smart grid system” be defined? Should any grid that

- has some or all of the characteristics cited in EISA § 1301 and performs some or all of the functions cited in EISA § 1306(d) be classified as a “qualified smart grid system”?
6. How should investments and other costs of a qualified smart grid system be determined for purposes of considering recovery from ratepayers? In particular, should the investment standards in EISA § 1306(b), excluding investments specified in EISA § 1306(c), be used to determine investments in qualified smart grid systems that may warrant ratepayer recovery?
 7. Should the Commission implement the standard regarding smart grid information contained in PURPA § 111(d)(17) added by EISA § 1307(a)?
 8. Is each California utility complying with the standard for the information that electricity providers must provide to electricity purchasers and other interested persons pursuant to PURPA § 111(d)(17) added by EISA § 1307(a)? If not, which part(s) of the standard is each utility not complying with and what efforts are underway to comply with the standard? If a utility is complying, please provide further details on how the utility complies.

Requirements of a California Smart Grid System

9. What should the characteristics or requirements be for a California smart grid? Should they be the same as those established for a “qualified smart grid system”? (See Question 5 above.)
10. How could a smart grid system in California affect the following areas of concern?
 - a. Increase energy conservation and energy efficiency;
 - b. Increase demand response;
 - c. Increase renewable energy;
 - d. Reduce greenhouse gas emissions;
 - e. Improve system reliability; and

- f. Lower consumer costs.

State of the Smart Grid in California

11. What progress has each utility made toward establishing a smart grid? In answering this question, please provide details on progress related to each of the ten characteristics identified in EISA § 1301 and repeated below:
 - a. Increased use of digital information and controls technology to improve reliability, security, and efficiency of the electric grid.
 - b. Dynamic optimization of grid operations and resources, with full cyber-security.
 - c. Deployment and integration of distributed resources and generation, including renewable resources.
 - d. Development and incorporation of demand response, demand-side resources, and energy-efficiency resources.
 - e. Deployment of “smart” technologies (real-time, automated, interactive technologies that optimize the physical operation of appliances and consumer devices) for metering, communications concerning grid operations and status, and distribution automation.
 - f. Integration of “smart” appliances and consumer devices.
 - g. Deployment and integration of advanced electricity storage and peak-shaving technologies, including plug-in electric and hybrid electric vehicles, and thermal-storage air conditioning.
 - h. Provision to consumers of timely information and control options.

- i. Development of standards for communication and interoperability of appliances and equipment connected to the electric grid, including the infrastructure serving the grid.
- j. Identification and lowering of unreasonable or unnecessary barriers to adoption of smart grid technologies, practices, and services.

Standards as Part of a Smart Grid

12. Are standards needed as part of a smart grid? If so, in what areas are standards needed to integrate components into the grid, e.g., interoperability standards for distributed generation, distributed storage, plug-in hybrid and electric vehicles, home area networks, in-home displays, energy management systems, etc.?
13. For each type of standard that is needed please answer the following:
 - a. Who should issue the standards, e.g., the National Institute of Standards and Technology, American National Standards Institute, Institute of Electrical and Electronics Engineers, and/or the Commission?
 - b. What standard-making processes are already underway?
 - c. What is or should be the role of the California utilities in the standards-making process?
14. What specific standards, if any, should the Commission adopt in this proceeding, and why? What type of standards should the Commission avoid because they risk obsolescence or might lead to unnecessary costs?
15. What types of standards should be common across California utility service territories? Do characteristics of each utility's transmission and distribution system (e.g., different mix of overhead versus underground wires) suggest that some types of standards are unnecessary?

16. What type of standards or protections, if any, are needed to allow secure access by approved market participants or third parties, such as Electric Service Providers or demand response aggregators? Would “guidance” work in lieu of standards?

Cost and Benefits of a Smart Grid

17. Given the IOUs’ existing transmission and distribution infrastructure and policy programs, to what extent will incremental investments be required in additional smart grid technologies?
18. How should the Commission assess the cost-effectiveness and reasonableness of smart grid-related expenditures?
19. What types of costs would be associated with deploying a smart grid?
20. How should any smart grid upgrades that are approved by the Commission be staged over a reasonable time horizon that mitigates rate impacts?
21. Should smart grid-related costs be borne by ratepayers, shareholders, or third parties?
22. What types of benefits would result from a smart grid? Which benefits can be easily quantified, and how? Which benefits are difficult to quantify, and how should they be addressed?
23. How should a competitive bidding process for IOU investments in smart grid technology be structured and monitored? Are existing competitive procurement processes sufficient?

Deploying a Smart Grid in California

24. How should a smart grid be deployed? What should a utility do in order to successfully deploy smart grid technology?
25. What type of regulatory approach should the Commission take to support the development of a cost-effective smart grid?

26. What, if any, regulatory barriers to the deployment of a smart grid should the Commission address?
27. If the Commission requires the utilities to develop smart grid deployment plans, what should those plans consist of?
28. What milestones should the Commission use to measure the utilities' progress toward the development of a smart grid?

Other Questions

29. How should a smart grid interact with the operation of the transmission system and wholesale market? What is the role of the CAISO relative to a smart grid?
30. Will deployment of a smart grid further the State's Assembly Bill 32 greenhouse gas reduction goals? If so, how?
31. How will deployment of a smart grid system impact the Commission's Planning Reserve Margins? Will a smart grid system impact the amount and type of generation necessary to meet peak demand? Off peak demand?
32. What other smart grid-related issues should the Commission address in this proceeding?

4.2. Schedule and Initial Comments

The schedule for this proceeding is stated below in Table 1:

Table 1

December 18, 2008	Issuance of Order Instituting Rulemaking.
February 9, 2009	Responses addressing scope, schedule, and other procedural issues and responding to the questions above to be filed with the Commission.
March 9, 2009	Replies to initial responses filed with the Commission.

In addition to comments responding to the questions above, workshops will be needed to establish a thorough record. For organizational reasons we propose that the workshops be divided into four distinct areas that make up a smart grid system:

1. Transmission,
2. Distribution,
3. Integration/interoperability, and
4. Consumer issues.

Following the receipt of responses and replies, we anticipate holding a prehearing conference (PHC). At the PHC, we will address scope and scheduling issues including whether and, if so, how, this rulemaking should be divided into phases. For example, Phase I could deal with complying with federal legislation as well as establishing overarching policies for a smart grid system, while Phase II could establish specific standards and protocols to guide utilities toward building a cost effective and interoperable smart grid system. In addition to the questions identified above, parties may address any scope and scheduling concerns in their comments and reply comments. After the PHC, the assigned Commissioner will issue a ruling refining the scope and procedural schedule.

This proceeding will conform to the statutory case management deadline for quasi-legislative matters set forth in Pub. Util. Code § 1701.5. In particular, it is our intention to resolve all relevant issues within 24 months of the date of the assigned Commissioner's scoping memo for each phase. In using the authority granted in Section 1701.5(b) to set a time longer than 18 months, we consider the number and complexity of the issues and tasks, the need to coordinate with other

proceedings, and the need to coordinate with the processes and role of the CAISO and the CEC as discussed below.

4.3. Proceeding Category and Need for Hearing

Rule 7.1(d) of the Commission's Rules of Practice and Procedure (Rules) specifies that an order instituting rulemaking will preliminarily determine the category of the proceeding and the need for hearing. Pursuant to Rule 7.1(e), we determine that this proceeding is quasi-legislative as defined in Rule 1.3(d). It appears that the issues may be resolved through comments and workshops without the need for evidentiary hearings. However, we will not make a final determination regarding the need for hearings until after the workshops have been completed in order to make sure that we have a complete record. The Assigned Commissioner may make this determination in the scoping memo or through a subsequent ruling.

5. Respondents

All electrical corporations shall be respondents in this proceeding. They are listed in Attachment B. Respondents shall be placed on the service list automatically as parties, but each respondent shall follow the instructions below to alert the Process Office of the name and address and email information for its representative to receive service within 20 days of issuance of this rulemaking.

6. Service List

The Executive Director shall serve copies of this rulemaking on respondents to this proceeding. In addition, the Executive Director shall serve copies of this rulemaking on all LSEs listed on the Commission's official records, the CEC, the CAISO, and the service lists for R.07-01-041 (Demand Response), R.06-04-010 (Energy Efficiency), R.08-02-007 (Procurement Rulemaking),

R.05-12-013 (Long Term Resource Adequacy Rulemaking), R.08-04-012 (Planning Reserve Margin Rulemaking), and A.08-07-021 et al. (Energy Efficiency Program Plans). The temporary service list, which includes the entities referenced in this paragraph (and Ordering Paragraph 5) is appended as Attachment C to this OIR and should be used for service of all pleadings until a service list for this proceeding is established. Such service does not confer party status in this proceeding upon any person or entity, and does not result in that person or entity being placed on the service list for this proceeding.

The following procedures regarding party status and inclusion on the service list shall be followed. While all respondents identified in the OIR will be bound by the outcome of this proceeding, only those who notify us that they wish to be on the service list will be accorded service by others until final rules are proposed and/or a final decision issued.

We invite broad participation in this proceeding. All persons or entities seeking to be added to the service list, including respondents, should inform the Commission's Process Office no later than 20 days after the issuance date of this rulemaking via email (Process_Office@cpuc.ca.gov) or by postal mail (Process Office, California Public Utilities Commission, 505 Van Ness Avenue, San Francisco, California 94102). To be included on the service list for this proceeding, the request to the Process Office must include pertinent information such as:

- Name and party represented, if any
- Address
- Telephone number

- Email address
- Request for party, state service or information only status.¹²

The service list will be posted on the Commission's website at www.cpuc.ca.gov. Parties should ensure they are using the most up-to-date service list by checking the Commission's website prior to each service/filing date.¹³

Those seeking party status through either method status shall comply with Rule 1.4 (b).¹⁴

We encourage electronic filing in this proceeding. Electronic filings should be made according to Rule 1.10 and Resolution ALJ-188. Consistent with those rules, a hard copy of all pleadings shall be concurrently served on the assigned ALJ.

The Commission notes that the CAISO and the CEC could play important roles in the design, implementation, and ongoing operation of a smart grid system. We therefore invite and welcome the active participation of the CAISO

¹² Party status is for those planning to actively participate in this rulemaking through, at a minimum, submission of written comments on the questions raised in the Preliminary Scoping Memo. State service status is for employees of the State of California who will not be submitting comments. Information Only status is for those who wish to follow the proceeding and receive documents associated with it, but who will not be actively participating.

¹³ In addition, pursuant to Rule 1.4 (a), persons and entities seeking party status may (a) file a response to this rulemaking; or (b) file a motion to become a party at a later date. If you do not provide your information to Process Office in advance of filing a response, you will not receive service of responses by parties.

¹⁴ Rule 1.4(b) states that those seeking party status shall "(1) fully disclose the persons or entities in whose behalf the filing, appearance or motion is made, and the interest of such persons or entities in the proceeding; and (2) show that the contentions will be reasonably pertinent to the issues already presented."

and the CEC in this rulemaking, as close and careful coordination of the activities of the CEC and CAISO and those of this Commission is indispensable to the success of a smart grid system.

7. Public Advisor

Any person or entity interested in participating in this rulemaking who is unfamiliar with the Commission's procedures should contact the Commission's Public Advisor in San Francisco at (415) 703-2074 or (866) 849-8390 or e-mail public.advisor@cpuc.ca.gov; or in Los Angeles at (213) 576-7055 or (866) 849-8391, or e-mail public.advisor.la@cpuc.ca.gov. The TYY number is (866) 836-7825.

8. Intervenor Compensation

Any party that expects to claim intervenor compensation for its participation in this rulemaking shall file its notice of intent to claim intervenor compensation no later than 30 days after the first PHC.

9. Ex Parte Communications

Pursuant to Rule 8.2(a) *ex parte* communications in this investigation are allowed without restriction or reporting requirement.

IT IS ORDERED that:

1. The Commission hereby institutes this Rulemaking pursuant to federal legislation as well as its own motion to initiate policy for California utilities to develop a smart grid system.

2. All electrical corporations are named as respondents and are parties to this proceeding pursuant to Rule 1.4(d) the Commission Rules of Practice and Procedure (Rules). Attachment B lists such entities as reflected in the

Commission records. Any error or omission in Attachment B shall not excuse any electrical corporation from respondent status.

3. This proceeding is classified as quasi-legislative, as that term is defined in Rule 1.3(d). Parties shall file responses addressing the questions identified in this order and scope, schedule, and other procedural issues by February 9, 2009. Parties shall file replies to the responses by March 9, 2009.

4. The assigned Commissioner or Administrative Law Judge (ALJ) may adjust the schedule identified herein and refine the scope of this proceeding as needed.

5. The Executive Director shall cause this Order Instituting Rulemaking (OIR) to be served on the Respondents, all load serving entities listed in the Commission's official records, the California Energy Commission, the California Independent System Operator, and the service lists for Rulemaking (R.) 07-01-041 (Demand Response), R.06-04-010 (Energy Efficiency), R.08-02-007 (Procurement Rulemaking), R.05-12-013 (Long Term Resource Adequacy Rulemaking), R.08-04-012 (Planning Reserve Margin Rulemaking) and Application 08-07-021 et al. (Energy Efficiency Program Plans).

6. The temporary service list, which includes the entities referenced in Ordering Paragraph 5, is appended as Attachment C to this OIR and shall be used for service of all pleadings until a service list for this proceeding is established. A service list for this proceeding shall be created by the Commission's Process Office and posted on the Commission's Website (www.cpuc.ca.gov) as soon as it is practicable after the first prehearing conference. Parties may also obtain the service list by contacting the Process Office at (415) 703-2021.

7. Parties serving documents in this proceeding shall comply with Rule 1.10 regarding electronic service. Any documents served on the assigned Commissioner and ALJ shall be both by e-mail and by delivery or mailing a paper format copy of the document.

8. All respondents shall be parties to this proceeding. Entities other than respondents shall comply with Rules 1.4(a) and Rule 1.4(b) to become parties in this proceeding.

9. A party that expects to request intervenor compensation for its participation in this rulemaking shall file its notice of intent to claim intervenor compensation in accordance with Rule 17.1 of the Rules.

10. *Ex parte* communications in this investigation are governed by Rule 8.2(a).

This order is effective today.

Dated December 18, 2008, at San Francisco, California.

MICHAEL R. PEEVEY
President
DIAN M. GRUENEICH
JOHN A. BOHN
RACHELLE B. CHONG
TIMOTHY ALAN SIMON
Commissioners