



Oregon

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Washington, DC 20585

The Oregon Public Utility Commission appreciates the opportunity to offer comments on the United States Department of Energy Smart Grid Request for Information (RFI). Attached is our response to selected questions in the RFI and our views on the role the federal government should play in advancing smart grid investments.

We have opened a Smart Grid investigation (UM 1460) that covers many of the policy issues raised in the RFI. Also, we opened an investigation (UM 1461) into policies for electric vehicle rates and infrastructure investments. We will send the results from these investigations when they are completed.

Thank you for your consideration of our comments.


Ray Baum
Chairman


John Savage
Commissioner


Susan Ackerman
Commissioner



Attachment

OPUC Responses to Selected Questions in USDOE SG RFI

1. How should combinations of education, technology, incentives, feedback and decision structure be used to help residential and small commercial customers make smarter, better informed choices?

There is a growing body of research in this area suggesting that education, feedback, etc. materially affect savings. (See: Brattle Group report to the Colorado Public Service Commission on June 7, 2010.) A review of such studies should inform USDOE actions in this area.

In Oregon and the Pacific Northwest, we have a nationally recognized organization – the Energy Trust of Oregon (ETO) – that operates all of our utility conservation programs. They and the Northwest Energy Efficiency Alliance (NWEA) are running a number of programs – pilot and otherwise – tailored to educate and provide feedback to users (e.g. Opower). The USDOE should look into both the ETO and NWEA activities.

2. How should the benefits of smart grid investments be quantified?

This Commission has approved Advanced Meter Infrastructure (AMI) costs for rate recovery based on a cost-benefit analysis in docket UE189¹. In that docket, the utility's estimate of capital costs was about \$132 million. There were two types of benefits identified (a) operational cost savings as a direct benefit of the AMI installation, and (b) customer and system benefits. The benefit associated with operational cost savings was estimated at \$18 million in the first full year of deployment (plus about \$400,000 annual reduction in working cash). Over the 20-year timeframe of the benefit-cost analysis, the net present value (NPV) of AMI was estimated to be about \$33 million from operational cost savings alone. As

¹ See: <http://apps.puc.state.or.us/edockets/docket.asp?DocketID=13956>.

a result of the investment passing the benefit-cost test using only the operational cost savings, the investment was approved.

The customer and system benefits arise from using AMI more dynamically to generate greater benefits through rate design and load control applications and other system and operational benefits. We do want to note that these other benefits would require additional investments.

However, the Commission's decision on cost-effectiveness was based solely on the direct operational cost savings. When these other potential benefits and costs are accounted for, the NPV ranged from \$33 million to \$80 million based on both operational cost savings plus customer and system benefits².

3. How should uncertainty about whether smart grid implementations will deliver on their potential to avoid other generation, transmission and distribution investments affect the calculation of benefits and decisions about risk sharing?

It should have no impact on benefit calculations. The risk analysis for utility SG investments should treat SG related benefits risk similar to the treatment of non-SG related benefits risk. Regarding the question of risk sharing, ultimately this is a decision for the Commission as one part of a contested rate proceeding. As a result, it is prudent for USDOE to avoid taking a position on this issue.

4. How should the costs and benefits of enabling devices (e.g., programmable communicating thermostats, in home displays, home area networks (HAN), or smart appliances) factor into regulatory assessments of smart grid projects?

² See: Testimony in Support of AMI Stipulation. Portland General Electric Company and Oregon Public Utility Commission. November 21, 2007. <http://edocs.puc.state.or.us/efdocs/HTB/ue189htb161057.pdf>

Benefits and costs of enabling devices that work with Advanced Metering Infrastructure (AMI) and/or Automatic Meter Reading (AMR) should be included in the regulatory assessment of the SG project. If the installation of enabling devices is independent of any utility program, analysis of the utility's SG investment should assign the appropriate level of uncertainty to the realization of the benefits and costs of the enabling devices.

- 5. With numerous energy efficiency and renewable energy programs across the country competing for ratepayer funding, how should State Commissions assess proposals to invest in smart grid projects where the benefits are more difficult to quantify and the costs are more uncertain?**

This question is asking if SG capital spending should be treated the same as or different from other capital spending due to greater difficulties in benefit and cost estimation. We see no reason to apply fundamentally different criteria to SG related capital spending than are applied to other utility capital spending.

- 6. To what degree should State Commissions try to ensure that the beneficiaries of smart grid capital expenditures carry the cost burdens?**

Generally, the beneficiary of an investment ought to bear the cost of the investment. However, our Commission also has a responsibility to ensure that rates are fair and reasonable and not unduly discriminatory. The Commission will make these determinations when reviewing a particular set of facts placed before it. A Commission must have the latitude to interpret its legislative mandate, given the set of facts placed before it at a point in time.

7. What is the potential for third-party firms to provide smart grid enabled products and services for use on either or both the consumer and utility side of the meter?

Third party firms have been supplying the electric and gas utilities with products and services since inception of the utility industry. The potential is great for third-party firms to provide SG enabled products and services. With the significant expansion in communications technologies to the electric grid, issues of customer privacy and grid security become even more important. There will be a need for on-going work on these issues between federal and state regulatory and legislative bodies, standard setting boards, utilities, and other stakeholders to help address these cyber security and privacy issues. This is especially important as utilities have not interacted with large segments of its customers in as involved a way as will be required by SG.

8. What policies, if any, are necessary to ensure that distributed generation and storage of thermal and electrical energy can compete with other supply and demand resources on a level playing field?

It is important that utilities be required to do analysis that compares them on a level playing field. For example, Commission Staff has proposed³ that Integrated Resource Planning (IRP) guidelines address the potential for electric vehicle (EV) to provide ancillary services for the integration of renewable generation. These draft guidelines, if adopted by the Commission, would require utilities to (1) forecast the demand for balancing reserves at various time intervals, (2) forecast the supply of balancing reserves at various intervals, and (3) include EV's as a source of any needed (demand exceeding supply) balancing reserves "on a consistent and comparable basis."

³ This IRP guideline is contained in *Staff Straw Proposal, Electric Vehicle Charging Rates and Infrastructure*, UM1461, July 22, 2010.

9. What are the costs and benefits of delaying investment in metering and other smart grid infrastructure while the technology and our understanding of it are rapidly evolving?

Waiting to make investments until benefits and costs can be fully quantified may result in missing opportunities or at a minimum, diminish the benefits and possibly raise the costs. Yet, it is important to help assure that customers do not become the “venture capital” for investments that do not produce benefits. One way to approach this challenge is to place greater attention on those segments of the power system that have the highest total cost and are the least flexible to changes in processes.

For example, customer level communications/energy management technologies have been estimated to contribute the greatest amount to overall communications costs and be the least flexible to future changes. As a result, it appears that this segment of SG warrants closer scrutiny than Core Level investments.

Role of the Federal Government

Regarding possible constructive roles for Federal involvement in Smart Grid (SG) activity, one important role the federal government can play is providing an information clearinghouse on SG activities throughout the country. SG activities are occurring so quickly across the country that it is daunting for a Commission to keep abreast of these activities. Having a federal agency charged with creating and maintaining such a clearinghouse would be a great benefit to all the various jurisdictions involved in SG. That clearinghouse would ideally include state Commission investigations and Orders on SG, utility SG pilots and results, one-stop shopping for guidelines and rules adopted by organizations like the National Institute of Standards and Technology, the National Electric Reliability Council, Federal Energy Regulatory Commission, USDOE, and the Federal Communications Commission. One other area where federal participation can help move forward is a collective understanding of SG funding for pilot programs

and the like, much as the American Recovery and Reinvestment Act (ARRA) funding has provided.