BEFORE THE PUBLIC UTILITY COMMISSION

OF OREGON

UM 1667

In the Matter of	)
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PACIFICORP dba PACIFIC POWER	)
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2013 Annual Smart Grid Report	)
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COMMENTS OF THE
CITIZENS' UTILITY BOARD OF OREGON

September 11, 2013

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The Citizens' Utility Board of Oregon (CUB) appreciates the opportunity to submit comments on PacifiCorp's (the Company's) 2013 Annual Smart Grid Report. CUB recognizes that the Company has made a respectable effort in researching the elements of smart grid technology, but there is room for significant improvement in the Company's plan for and implementation of technological investments.

A More Visionary Approach

The Company has provided a thorough review of smart grid technology and detailed how it could theoretically be implemented on a broad scale. CUB commends the Company in its descriptive efforts pertaining to the scientific characteristics of a smart grid, and CUB is appreciative of having a clearer picture of the potential workings of such technology. However, the report's strength lies primarily in this expository component, and CUB feels that the analysis is weaker in providing a more visionary approach and realistic implementation. The Company states on page 11 of the Smart Grid Report that "it is essential that the market leaders be

identified and system interoperability be verified." While CUB concedes that there is wisdom in abstaining from significant risks, this must be balanced with practical, innovative endeavors.

The Company should consider two customer engagement projects it details in its own report: the direct load control Cool Keeper Program and the Pay-for-Performance Irrigation Program. The Cool Keeper Program began a decade ago and demonstrated Pacific Power's leadership in exploring demand response. These projects continue to operate successfully, yet the Company shows no sign of wanting to capitalize on these achievements, and PacifiCorp has made no recent attempt to significantly expand on these initiatives or to design new ones.

Pricing Programs vs. Direct Load Control

The methods through which PacifiCorp can implement demand response are more variable than the Company admits. CUB believes that the Smart Grid Report focuses too heavily on pricing programs in its consideration of demand response initiatives. CUB does not view pricing programs as the most efficient method to address peak load management. The Company states that 70% of smart grid benefits are highly dependent upon assumptions about customer participation and retention in pricing programs, and the impact on benefits will change depending on the degree to which customers respond to changes in prices. [1] CUB agrees—there should be a connection between demand response and smart grids, and behavioral change is indeed the primary uncertainty influencing the effectiveness of price controls. However, CUB disagrees that the main demand response tool should be time-of-use rates and critical peak pricing schemes.

It is CUB's belief that the true power of the smart grid lies in two-way communication potential. The Company also recognizes that bi-directional measurement capability must be

[1] Pg. 58, PacifiCorp's 2013 Smart Grid Report.

installed with each distributed generation resource,[2] but the discussion on innovation in this area is very limited. As the Company acknowledges, distributed generation is already happening and will continue to pose challenges. For example, many residents are installing solar panels on their roofs.[3] CUB agrees with the Company that distributed generation could be disruptive of grid reliability by negatively impacting distribution systems,[4] but since distributed generation is happening and, in many cases, is under the control of customers and not the Company, managing distributed generation is a critical challenge. CUB believes that demand response can play a significant role in managing this challenge, but it requires moving beyond pricing mechanisms and considering direct load control. The Company's report gives the impression that its preferred method of demand response implementation consists of price mechanisms. At the same time, PacifiCorp effectively dismisses this method due to the uncertainties involved with behavioral incentives. This is concerning to CUB.

In addition to these concerns, the challenge of integrating renewable resources—both distributed and utility-scale—does not lend itself to demand response that relies on customers responding to prices. When the wind dies down at 3 AM, most customers are not awake to respond to a price signal. When a cloud drifts across Portland on a summer day, there is little time to change prices and wait for the effect of that price change. CUB believes that the Company should be exploring the development of more direct load control programs, like Cool Keeper, that can be developed and used to integrate renewables. There is significant potential for these direct load control programs when applied to commercial freezers, hot water heaters, electric vehicles (EVs), and other uses of electricity that can be used to store energy through pre-chilling, preheating, and variable charging.

[2] Pg. 49, PacifiCorp's 2013 Smart Grid Report.
[3] *Ibid*.
[4] *Ibid*.

Social Benefits

CUB is disappointed that the Company does not include social benefits in its analysis. As page 54 of the report states, "The societal benefits are difficult, if not impossible, to quantify with any degree of accuracy." While CUB agrees that absolute precision in estimating societal benefits is impossible, it is possible to identify some level of real and quantifiable benefits, and benefits should be analyzed where they exist. For example, if demand response presents the Company with a more cost-effective alternative to a company's least efficient power plant, the Company may find that there are both economic and air quality benefits to shifting resources. Recent modeling of carbon and pollution reduction benefits further proves the relevance of taking into consideration future carbon and air pollution regulation. As regulations become more stringent, the cost of carbon and other air pollutants will continue to increase and will burden the utility even further.

As an example, consider a demand response program that allows wind energy to charge electric vehicles at night by enabling the increasing and decreasing of charging as the wind speed rises and falls. Such a mechanism would be an alternative to time-of-use programs that encourage electric vehicle owners to begin charging at 10 PM as well as no demand response program that encourages automobiles to be charged when people arrive home after rush hour. These three methods have different implementation costs and push car charging onto different resources. With no demand response, the charging may require the Company's most expensive, least-efficient peaking resources. With demand response that pushes the charging to 10 PM, the Company may find that it is sometimes necessary to run its peaking resources a bit longer. With demand response that times the charging with wind, the primary resource will be wind. While these different programs have different costs associated with them, they have different social

benefits associated with air pollution, and they have different social benefits associated with the public policy implications of electric vehicles. CUB's discussions with the promoters of electric vehicles have led us to the conclusion that the electric vehicle industry sees demand response programs that require time-of-use rates as unhelpful and a potential barrier to the adoption of EVs. However, the EV industry views direct load control that allows renewables to charge automobiles as appealing to potential purchasers of electric vehicles.

Conclusion

PacifiCorp built its most meaningful demand response programs years ago, and CUB is disappointed at the lack of ambition the Company has demonstrated in recent years. The PacifiCorp Smart Grid Report would have greatly benefitted from a more robust discussion of demand response. PacifiCorp should be considering more than the oft vaunted time-of-use rates that have limited ability to integrate renewables and create the potential for customer backlashes. While it is reasonable to assume that the time may not be right for mass investment in smart grid technology, there is room for more inventive thinking and more innovative programs.

Sincerely,

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UM 1667 – CERTIFICATE OF SERVICE

I hereby certify that, on this 11th day of September, 2013, I served the foregoing **COMMENTS OF THE CITIZENS' UTILITY BOARD OF OREGON** in docket UM 1667 upon each party listed in the UM 1667 PUC Service List by email and, where paper service is not waived, by U.S. mail, postage prepaid, and upon the Commission by email and by sending one original and one copy by U.S. mail, postage prepaid, to the Commission's Salem offices.

(W denotes waiver of paper service)

(C denotes service of Confidential material authorized)

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