Docket Number UM1657

Smart Grid Oregon's Response to Portland General Electric's 2014 Smart Grid Plan

GENERAL COMMENTS

The lack of an independent system operator, the lack of any official state or federal mandate, and the paucity of utilities that are seriously engaged in moving towards a smarter grid on their own, make it difficult to move quickly towards a smarter grid. This context dramatically limits the progress towards creating a critical mass of technologies and instrumentation on both the supply and demand side of the electric grid. Within this context, Smart Grid Oregon believes that Portland General Electric's 2014 Smart Grid Plan (Plan) is exemplary.

We believe that if other utilities in the region were taking similar actions to the ones contained in PGE's 2014 SGP, and collaborating on those actions, that the region would move faster towards the critical mass (more on this below) needed to implement a fully functioning Smart Grid.

We believe that it is crucial to speed up the movement to a smart grid. The reasons for doing so are many and well known by the OPUC and its staff. One example is the extreme capital cost of T&D serving peak loads in the Northwest. Our estimates put the T&D cost alone to serve loads above 75% of peak at $.20-$100 per kWh for the 500 or so hours per year above 75% of peak, which has continued to climb even through the recent recession.

Smart Grid options that store power in water heaters, batteries, and other solutions that automate efficiency and create demand response could serve most of the 9,000 MWe load above 75% of peak, and could reserve existing transmission to serve future load growth. These solutions would also provide more flexibility, resiliency, and responsiveness to the grid.

Ultimately, a legislative mandate at the Regional or Federal level may be needed to see implementation of a fully functional Smart Grid, with all the benefits it can confer on society. The critical mass of technology and instrumentation mentioned in the first paragraph may be difficult to create in the near-term if left largely to market forces. Owners of smart electricity using devices envisioned on the demand side of a Smart Grid derive limited benefits from those smart appliances unless utilities have the means to control them for system and customer benefits. Thus, end-users of electricity will be reluctant to buy them until the required controls exist. At the same time, until those demand-side resources are in place, utilities will be reluctant to install the communication systems necessary to take advantage of the flexibility smart appliances could provide to the grid. This chicken and egg problem creates a huge barrier to rapid development of a smart grid, even with the substantial benefits that it would provide.

In part, PGE's Plan, which admittedly takes an incremental approach towards smart grid, is a manifestation of this chicken and egg dilemma. Smart Grid can be thought of as a full menu of options that when implemented together will lead to the fully functional smart grid. But, because of the chicken

and egg problem, many parts cannot be implemented cost-effectively today without a government mandate.

PGE's Plan tends to focus at this time on those parts of the menu that bring benefit now, or soon. The question is whether it preserves the opportunity to take advantage of future possibilities. Many of our comments will focus on maintaining the future possibilities. Our comments do not detract from the current Plan, written in the context that PGE finds itself, and are aimed at PGE's future actions.

COMMENTS ON THE 2014 PLAN

1. We would like to see PGE , OPUC, and the public react to the "chicken and egg" analogy when addressing public comments on the Plan; further we would like to hear PGE's and the OPUC's strategy for overcoming this barrier, and what help it might need from legislators, the OPUC, Smart Grid Oregon, and others.

2. Associated with our first comment, we would like to see PGE's long-term vision of itself as a comprehensive energy services company using smart grid technologies and strategies to benefit its rate payers and all Oregonians. We see PGE as the best hope in the region for becoming this kind of utility, and we would like to see it get the support it needs to do so.

3. We would hope PGE provides leadership in the deployment of interoperability standards such as OpenADR and IEC 61850. This probably would require OPUC support and rated-basing of smart grid standards recommended by the NIST / Smart Grid Interoperability Panel and deployed by PGE. PGE should be active in the standard setting arenas, providing information to them as it learns through its pilot programs.

4. We are pleased to see that PGE is planning for the replacement of four obsolete enterprise systems (Outage Management System, Geographic Information System, Customer Information System, and Meter Data Management System) with modern systems that enable Smart Grid applications. These systems should be consistent with our Comment 3.

5. We think it is important to maintain the progress made in Transactive Control/Transactive Energy (TC/TE) within the NW Regional Smart Grid Pilot. We would hope that PGE would explore taking advantage of the significant learning from these efforts as it begins broadly transmitting pricing signals to customers. PGE has experience and investment in TC with the Salem Smart Power project. PGE should maintain the TC node at this pilot project. PGE should work directly with BPA and the 10 other utilities involved in the Demo project to keep, maintain, and refine the transactive control system.

6. As it links utilities' demand response programs to the smart thermostats, PGE should actively discourage proprietary systems linked to a single manufacturer. Proprietary systems would be a major barrier to the wide spread benefits that will accrue from a smart grid.

7. Associated with comment 6, we encourage PGE to continue to participate in the federal Green Button program and to provide continued opportunities and education for customers to access and effectively use their energy use data by partnering with third party providers.

8. We would like to applaud PGE for its Dispatchable Standby Generation Program with over 100MW of available distributed energy. We would like to see PGE take this program to the next level. Distributed generation assets are becoming available at increasingly market competitive packages (from residential solar to fuel cells to electric vehicle and station battery storage). We would like to see PGE take strides to effectively accommodate distributed assets in addition to the 500kw and greater generators that have to date been the focus.

9. Available energy solutions and grid assets are developing and changing rapidly. It is time for utilities to better fund innovation, research, and new commercialization opportunities. We would encourage PGE to look at creating models to better fund continued programs that test new grid technologies with the intent of deploying solutions at commercial scale that best fit the regions energy needs.

10. We would like to see a plan or formal statement from PGE to prioritize working with Oregon and PNW technical companies, and collaborating with other Oregon/NW utilities on pilots and demonstrations. These suggested activities would add jobs in Oregon/region and assist in the growth of a smart-grid cluster, providing the region and state with credibility as a place for smart-grid companies to do business.

11. Some comments that we submitted on PGE's 2013 Plan are still appropriate:

    a. No Northwest utility is listed in the top tier of GridWise Alliances ranking of utilities in the move towards Smart Grid.
    b. PGE sees the adoption and implementation of SG as inevitable and important as a business proposition. We agree with that assessment.
    c. SGO is glad to see that PGE envisions implementing its smart grid plan through its existing IRP framework. In our opinion it is the way to proceed.
    d. Funding for staff, pilot projects, and implementation should be authorized to implement PGE's Plan

We have one highly technical comment

1. In addition to eliminating all electromechanical relays, we would like to see a pilot project at one of PGE's substations that moves to reduce the hardwiring needed to protective relays by digitizing copper wiring using IEC 61850 merging units and GOOSE messaging. It has been shown in numerous studies around the world that cost savings and greater reliability is achieved by conversion to these systems. PGE should begin to get their staff knowledgeable in these types of deployments. OPUC should allow training for these types of systems and pilot projects to be recoverable in rates when included as part of smart grid development.

Thank you for the opportunity to provide comments on this important Plan.