

Determination of the EISA 2007 Standards in Utah: Facilitated Discussion

Utah Public Service Commission
Smart Grid Workshop – May 13, 2009



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Overall Considerations

➤ Mission statement

- The Public Service Commission ensures that Utah residents and businesses receive safe, reliable, adequate and reasonably priced utility service. This provides an attractive environment for business, strengthens the free enterprise system, and enhances the quality of life for Utah citizens.



Overall Considerations (cont.)

➤ Commission objectives (FY 2010)

1. The PSC endeavors to maintain an accelerated pace of work resulting from having three major rate cases filed in one year as well as other significant utility matters utilizing the same staff and resources.
2. Maintain reasonably priced, safe, adequate and reliable utility service for all Utah residents.
3. The PSC will continue to encourage the deployment of clean energy resources such as geothermal and other renewable energy.
4. The PSC will continue to provide and promote consistent levels of customer service in these increasingly difficult economic circumstances.



Overall Considerations (cont.)

➤ State Energy Policy (Utah Code §63-53b-301)

It is the policy of the state that:

- (a) **Utah have adequate, reliable, affordable, sustainable, and clean energy resources;**
- (b) Utah will promote the development of:
 - (i) nonrenewable energy resources, including natural gas, coal, oil, oil shale, and tar sands; and
 - (ii) renewable energy resources, including geothermal, solar, wind, biomass, biodiesel, hydroelectric, and ethanol;
- (c) Utah will promote the study of nuclear power generation;
- (d) **Utah will promote the development of resources and infrastructure sufficient to meet the state's growing demand,** while contributing to the regional and national energy supply, thus reducing dependence on international energy sources;



Overall Considerations (cont.)

- (e) **Utah will allow market forces to drive prudent use of energy resources**, although incentives and other methods may be used to ensure the state's optimal development and use of energy resources in the short- and long-term;
- (f) **Utah will pursue energy conservation, energy efficiency, and environmental quality;**
- (g) (i) state regulatory processes should be streamlined to balance economic costs with the level of review necessary to ensure protection of the state's various interests; and
- (ii) where federal action is required, Utah will encourage expedited federal action and will collaborate with federal agencies to expedite review;
- (h) **Utah will maintain an environment that provides for stable consumer prices that are as low as possible while providing producers and suppliers a fair return on investment**, recognizing that:
 - (i) economic prosperity is linked to the availability, reliability, and affordability of consumer energy supplies; and
 - (ii) investment will occur only when adequate financial returns can be realized....



Overall Considerations (cont.)

- Utah goal to reduce greenhouse gas emissions to 2005 levels by 2020
- SB 202 –20% of retail electricity sales from qualifying renewable energy resources or certificates by 2025, if cost-effective



Overall Considerations (cont.)

- What information is necessary to evaluate the EISA 2007 smart grid standards and make the determination?
 - What are the problems smart grid is purported to solve?
 - How do they match the Commission's priorities?
 - What information does the Commission need to analyze the issues it wants to address?
 - What kind of analysis will inform the best ways to address these issues?



Overall Considerations (cont.)

- Actions in other states
 - Policies
 - AMI roll-outs
 - Smart grid pilots



Overall Considerations (cont.)

➤ Funding under federal stimulus bill*

- \$3.375 billion for smart grid investment grants
 - \$500,000 to \$20 million each for smart grid technology deployments
 - \$100,000 to \$5 million each for grid monitoring devices
 - Require 50% match from non-federal funds
 - Utilities and other entities can apply
- \$615 million for smart grid demos w/utilities (est. # projects)
 - Smart grid demo on a regional scale (8-12), energy storage on utility scale (12-19), and networking of grid monitoring devices (4-5)
- Expected application due date 7/29/09; if funds remain, subsequent application dates are 12/2/09 and 3/31/10

*Based on Notice of Intent; funding opportunity expected to be issued 6/17/09



Overall Considerations (cont.)

➤ Other considerations

- PacifiCorp's investment in AMR (drive-by)
 - Can the company build toward smart grid on this platform?
- Electric industry is not restructured in Utah
 - What are the implications for consumer programs that smart grid can enable?
 - Vertical integration means value from demand-side actions to optimize generation and transmission stays with the utility, helping the smart grid business case
- What else?



Smart Grid Investment Standard

➤ 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
 - (vi) societal benefit.



Smart Grid

Investment Standard (cont.)

- What is a qualified smart grid system?
 - Equipment capable of engaging in Smart Grid functions (Qualifying Investments in 1306(b))
 - Appliances; specialized electricity-using equipment such as motors and drivers in industrial or commercial applications; monitoring and communications equipment on the T&D system; meters, sensors and control devices integrated with an electric utility system, retail distributor or marketer; software; equipment that allows Smart Grid functions to be coordinated among utilities and regions; integration controls for distributed generation; PHEV devices
 - Nine smart grid functions (Section 1306(d))
- What are “nonadvanced grid technologies”?
 - Not defined; could include many things

Smart Grid

Investment Standard (cont.)

➤ 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.

Smart Grid

Investment Standard (cont.)

➤ Considerations for rate recovery

- How are smart grid investments different from other utility investments?
 - Technology risk and cost
 - Smart grid represents numerous investments in equipment that goes into service quickly and continually over the deployment period
- What are the options for providing cost recovery?
 - General rate case
 - Surcharge/rate rider during deployment period
 - Mini rate cases (e.g., Duke's proposal to update direct distribution system costs and revenues annually, based on prior year)
 - Deferred accounting

Smart Grid

Investment Standard (cont.)

- Cost recovery for “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.



Smart Grid

Investment Standard (cont.)

➤ Considerations for obsolete equipment

– Used and useful standard

- Test period should best match utility conditions when the rates will be in effect (Utah Code Ann. § 54-4-4(3))
- Address on a case by case basis, considering economics of new technology?

– Accelerated depreciation

- PacifiCorp meters have a 26-year depreciation life in Utah
- Other states have adopted shorter meter lives (e.g., 10 years) to address the quickened pace of technology change
- Consider a shorter depreciation life within the overall smart grid business case?



Smart Grid Information Standard

➤ Time-based electricity prices

- Purchasers and other interested persons shall be provided with information on--
 - (I) time-based electricity prices in the wholesale electricity market; and
 - (II) time-based electricity retail prices or rates that are available to the purchasers.

Smart Grid

Information Standard (cont.)

➤ Usage information

- Purchasers shall be provided with the number of electricity units, expressed in kwh, purchased by them.

➤ 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.

Smart Grid

Information Standard (cont.)

➤ 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.

Smart Grid

Information Standard (cont.)

- Disclosure of power sources and GHG emissions
 - Lets customers know more about the electricity products they buy
 - Utah has no requirements
 - 23 states* require it, generally in tandem with green power options (like Blue Sky) or customer choice of supplier

| POWER CONTENT LABEL | | |
|-----------------------|-----------------------------|----------------------|
| ENERGY RESOURCES | [Product Name]† (projected) | 2001 PJM Power Mix** |
| Eligible Renewable | % | 1.6% |
| -Biomass | % | % |
| -Geothermal | % | % |
| -Small hydroelectric† | % | % |
| -Solar | % | % |
| -Wind | % | % |
| Coal | % | 46.3% |
| Large Hydroelectric | % | 1.2% |
| Natural Gas | % | 2.5% |
| Nuclear | % | 35.0% |
| Oil | % | 1.8% |
| Other Fossil | % | 11.6% |
| TOTAL | 100% | 100% |

† X% of [Product Name] is specifically purchased from individual suppliers.

** Percentages are estimated annually by the California Energy Commission based on the electricity sold to California consumers during the previous year.

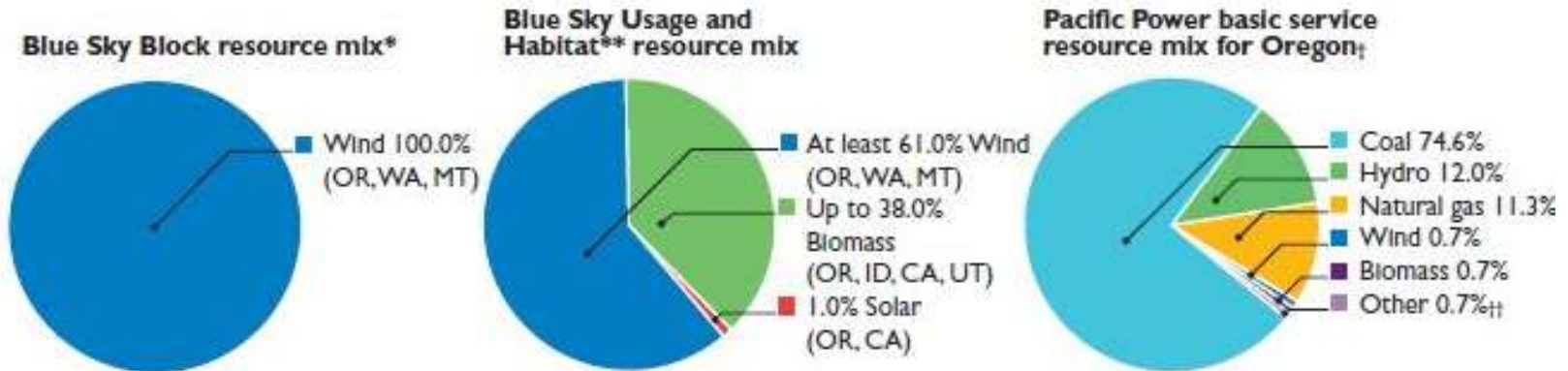
For specific information about this electricity product, contact Company Name. For general information about the Power Content Label, contact the California Energy Commission.

*www.dsire.org

Smart Grid

Information Standard (cont.)

Example: PacifiCorp power disclosure in Oregon*



*Environmental impacts also disclosed (CO₂, NO_x, SO₂ and nuclear waste)

Smart Grid

Information Standard (cont.)

➤ 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.



Options and Ramifications

- Adopt the Standards as is
- Decline to adopt the Standards (rely on Company decisions and address prudence of investments in rate cases)

— *or* —



Options and Ramifications (cont.)

➤ Adopt modified standards

- Maintain fundamental concepts but modify language
- Require PacifiCorp to file by a date certain a study on technology readiness and costs/benefits
- Develop a technology plan to meet the Commission's goals
- Establish a Smart Grid pilot in Utah
- Pilot dynamic pricing for mass market in Utah
- Implement bridging strategies (e.g., do more DSM, add Smart Grid components that don't require smart metering infrastructure) until other pilots are further along
- Direct smart grid group to recommend policies to guide deployment and steps toward implementation
- Other suggestions?