

Chelan County PUD

PURPA Hearing

Public Utilities Regulatory Policies Act

Consideration of Smart Grid Investments
Smart Grid Information

Chelan County PUD
November 3, 2008



Overview – Smart Grid PURPA Standards

- Hearing process
- Smart grid – what is it?
- What is PURPA?
- Communication efforts
- Staff testimony on 2 standards
- Staff recommendation today
- Public comments
- Next steps



Hearing Process Overview

- ❑ Presiding Officer
- ❑ Meeting is recorded
- ❑ Order of testimony
- ❑ Formal adoption today or deferred
- ❑ Presentation and exhibits will be made available



Smart Grid Myths

- ❑ The Smart Meter is being superseded by the Smart Grid
- ❑ The Smart Grid will happen in one big bang
- ❑ The Smart Grid is a brand or certification

Chelan County PUD

Defining Smart Grid:

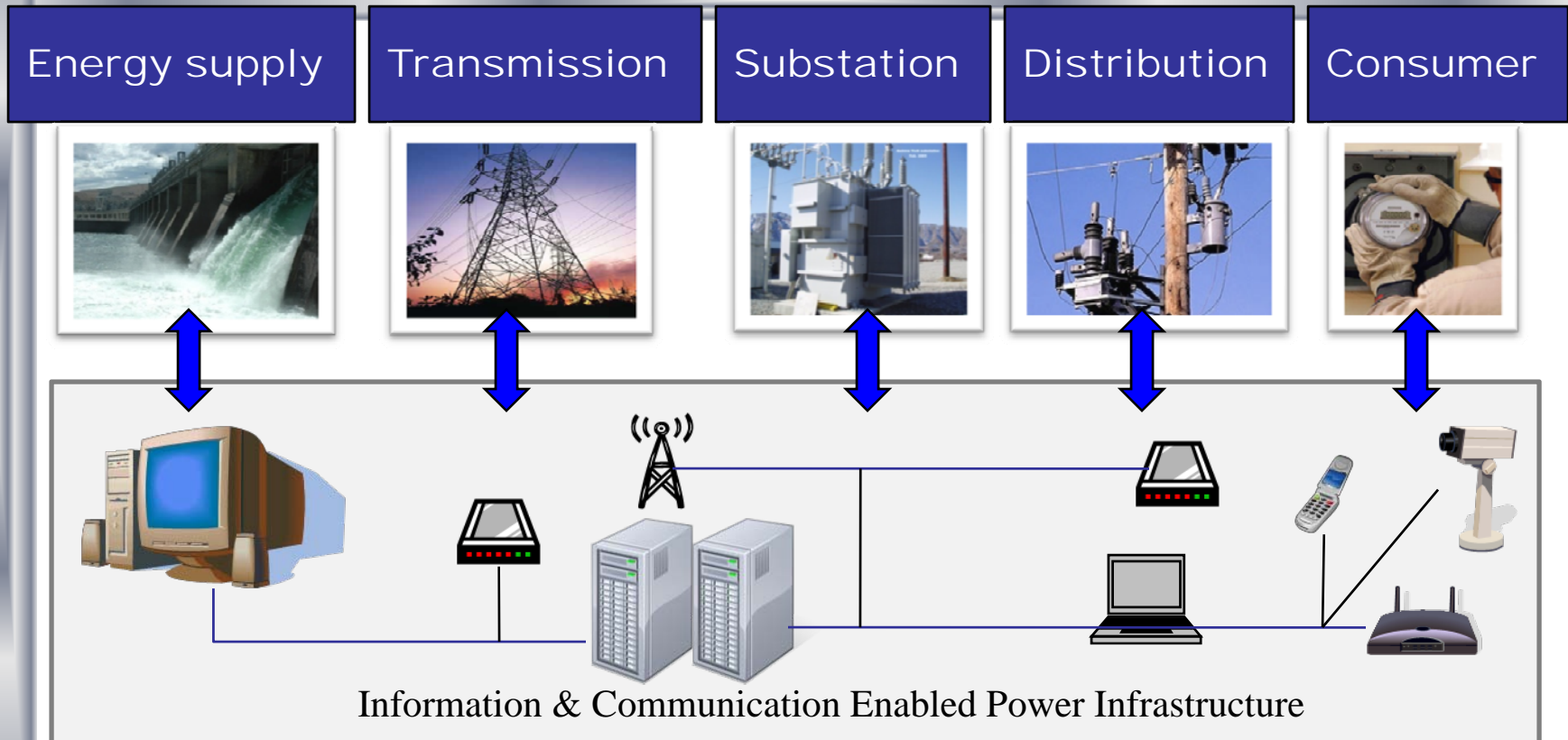
A *SMART GRID* vision includes advanced two way communication and modern computing to upgrade the electrical grid so that it can operate more efficiently and reliably and support additional services to customers. These investments equate to improved energy conservation and reduction in CO₂ emissions.

Below are characteristics of a valued Smart Grid:

- Minimizing downtime from power disturbance events.
- Enabling active participation by consumers in energy conservation.
- Operating resiliently against physical and cyber attack.
- Providing power quality and reliability for local Distribution and regional Transmission.
- Enabling new products, services, and markets
- Optimizing asset life and operating systems efficiently

Smart Grid

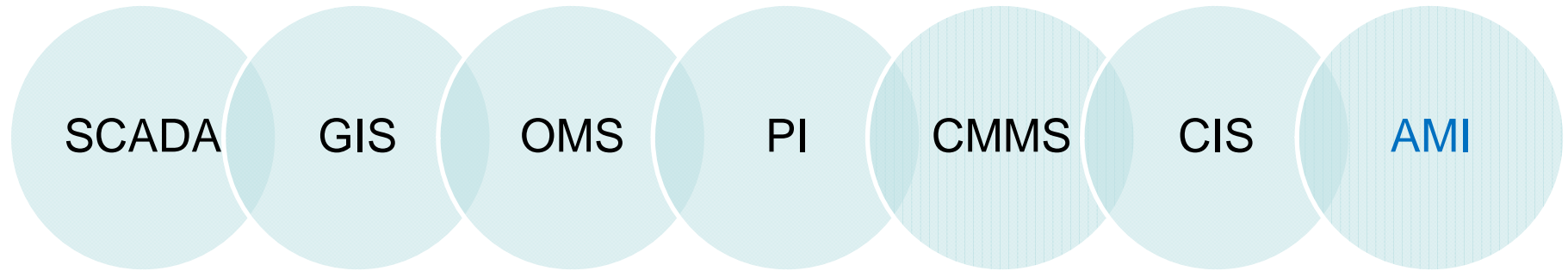
Two Way Communications....Sensors....Distributed Computing



Exchanging information across the electrical system to improve efficiency, reliability, safety and delivery.

Smart Grid – Application Spectrum

Two Way Communications....Sensors....Distributed Computing



Exchanging information across the electrical system to improve efficiency, reliability, safety and delivery.

Smart Grid at Chelan PUD

□ Is Smart Grid already here?

- ✓ SCADA (supervisory control and data acquisition)
- ✓ GIS/OMS (Geographic information and outage management systems)
- ✓ CMMS (computerized maintenance management system)
- ✓ CIS (customer information system)
- ✓ Broadband / Fiber Network
- ✓ PI (Real time engineering software)
- ✓ AMI (Smart Metering currently being evaluated)
 - Real time pricing, critical peak pricing
 - Home area networking (HAN)
 - Smart Appliances
 - Demand response

PURPA - History and Purpose

- Public Utility Regulatory Policies Act (PURPA) of 1978 – Reform aimed at:
 - *Conservation* of energy supplied by electric utilities;
 - *Optimal efficiency* of electric utility facilities and resources; and
 - *Equitable rates* for electric consumers

- Required utilities to buy back power from qualified customer-generators

Board Action Required

- PURPA requires electric utilities to consider standards and make a determination about whether or not appropriate to implement.
 - Consideration and determination is required
 - Decision to implement is discretionary
 - For Public Power utilities: the Board of Commissioners must consider and determine the standards.

Prior PURPA Standards

PURPA 1978 – 6 Standards

- Cost of service
- Declining block rates
- Time of day rates
- Seasonal rates
- Interruptible rates
- Load management techniques

Energy Policy Act of 1992 – 4 Standards

- Integrated Resource Planning
- Conservation
- Demand management
- Efficiency investments in power generation & supply

Energy Policy Act of 2005 – 5 Standards

- Net metering (*Hearing on Nov 6th, 2006*)
- Interconnection (*Hearing on Nov 6th, 2006*)
- Time-based metering and communication (*Hearing on Nov 6th, 2006*)
- Fuel diversity (*Hearing on Nov 19th, 2007*)
- Fossil Fuel generation efficiency (*Hearing on Nov 19th, 2007*)



Energy Independence and Security Act of 2007 PURPA Standards (EISAct of 2007)

- Four new standards were added in 2007's Energy Independence and Security Act
 1. **Considerations of Smart Grid investments**
 2. **Smart Grid information**
 3. Integrated Resource Planning
 4. Rate design modifications to promote energy efficiency investments (and conservation)

Today's hearing is on the first two standards



PURPA Timeline – EIS Act of 2007

- ✓ Begin consideration by December 19th, 2008
- Complete consideration and make determination by December 19th, 2009



Communications to date...

- Board presentation October 6th 2008
- Notice of proceedings advertised via legal notice and display advertisement
- PURPA section advertised on District website
- Hearing date and process advertised via legal notice
- Legal affidavits will be submitted

Consideration of Smart Grid Investments (Standard 16)

PURPA language:

(A)

IN GENERAL- Each State shall consider requiring that, prior to undertaking investments in non-advanced 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
- (vi) Societal benefit



Consideration of Smart Grid Investments

Standard 16

PURPA language:

(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.



Consideration of Smart Grid Investments

Standard 16

PURPA language:

(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.



Smart Grid Considerations...

What Chelan PUD considers

Drivers for Smart Grid decisions today include:

- Strategic decisions, board guiding principles
- Business case review & feasibility studies
- Return on investment, rate of return, capital budgeting
- Reliability impact and operating efficiencies
- Customer expectations, market trends & legislation
- Engineering analysis, system performance
- Leveraging existing technology & future integrations



Smart Grid Investments Standard 16 – Staff Recommendation:

Staff recommends to not adopt Smart Grid Investments Consideration (Standard 16) at this time.

Rather, continue to evaluate potential Smart Grid investments using current feasibility and justification tools while maintaining flexibility and local control for future considerations in any Smart Grid investments.



Smart Grid Investments Standard 16 – Public Comments or Questions?

Consideration of Smart Grid Information

Standard 17

PURPA language:

- (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 – time based
 - ii. Usage in kwh
 - iii. Intervals and projections – daily basis, hourly price & usage
 - iv. Sources – by type of generation, provided annually, including greenhouse gas emissions on a cost effective basis



Consideration of Smart Grid Information

(Standard 17)

PURPA language:

(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.



Smart Grid Information

What Chelan PUD considers...

Currently Chelan PUD does not offer rate structures that require Smart Grid Information as defined by PURPA standard 17. Examples include:

- **Critical Peak Pricing** – similar to TOU where certain times of the year there are increased rates or discounts
- **Real-Time Pricing** – based on market prices with frequent, sometimes hourly changes



Smart Grid Information Standard 17 – Staff Recommendation:

Staff recommends to not adopt Smart Grid Information (Standard 17) at this time.

Rather, continue to evaluate effective means of providing customers with information about electric usage and prices.



Smart Grid Information Standard 17 – Public Comments or Questions?



Next Steps

- Consider formal adoption of staff recommendation
- Begin to address the last two PURPA standards in 2009
 - Integrated Resource Planning
 - Rate design modifications to promote energy efficiency investments

Consider combining with 2009 I-937 Conservation Plan Hearing – (November/December 2009)

Discussion