



# ***Preliminary Report on The Estimated Benefits of Grid West***

## ***Risk/Reward Work Group Seminar***

***July 20 – 21, 2005***

***Volume 2, Thursday, July 21***

# ***Agenda: Thursday, July 21***

- ~~***Additional Questions on the TSLG Cost Estimate***~~
- ***Risk Reward Survey Results***
- ***Description of Qualitative Benefits***
  - *Improved Transmission Planning*
  - *Coordinated Generation and Transmission Maintenance*
  - *Load Following*
  - *Market Monitoring*
- ***Unquantified Risk Elements***
- ***Seminar Wrap-up***
  - *Final Q&A*
  - *Review Purpose and Process for Review and Clarification*
  - *Next Steps*

# ***Framing Questions***

- ***Validity of Analysis***
  - Clarity and accuracy of assumptions
  - Methods used in analysis
  - Limitations of models and data available
  - Confidence in results
- ***Comparison to Cost Elements***
- ***Areas for Further Analysis***
  - See specific items in report

# ***Risk/Reward Survey***

# ***Survey - Mechanics***

- **Survey regional Participants**
  - *Generators*
  - *Major Transmitting Utilities*
  - *Marketers*
  - *Transmission Dependent Utilities*
  - *Other stakeholders*
  
- **Survey questions (37)**
  - *Production Cost*
  - *Transmission System Operations*
  - *System Capability and Scope*
  - *Existing Transmission Constraints*
  - *Inconsistent Treatment of Generators/Loads*
  - *Tariff and Business Practice Confusion*
  - *Planning and Expansion*

# Survey – Responses

- **Production Cost – perceived issues associated with rate pancakes, dispatch inefficiencies, actual/perceived congestion, etc.**
  - *Users of BPA Network*
  - *Marketers, Generators, Constrained systems, Entities on fringe*
- **Transmission System Operations – perceived inefficiencies with coordination of operation, maintenance schedules, ancillary services (AS) markets, dispatch orders, etc.**
  - *No issues with access or participation in AS, dispatch orders*
  - *Significant concerns with barriers to entry to AS markets; outage coordination; ineffective or inaccurate dispatch orders; and, inability to recover from curtailments.*

# Survey Responses - Continued

- **System Capability and Scope** – concerns about how system capability is impacted by reliability policies, inadvertent flows, remedial action schemes, determination of ATC, interface systems, etc.
  - *No problems with ATC calculations, etc.*
  - *Seams problems including ATC calculations and outage coordination; ineffective curtailments (Intertie curtailments in order to address Network congestion); inefficient scheduling and reservation procedures, etc.*
- **Existing Transmission Constraints** – impacts due to transmission path limitations, real-time curtailments, constraint management techniques, etc.
  - *Operations not affected by flowgate constraints.*
  - *Proliferation of congestion (path deratings) since 1996; curtailments used to manage congestion; reported 20-30 paths that impact desired transactions, etc.*

# ***Survey Responses - Continued***

- **Inconsistent Treatment of Generators/Loads – concerns with non-comparable treatment imposed on suppliers of various ancillary services, remedial action schemes, etc.**
  - *No experience with non-comparable treatment.*
  - *Reports of non-comparable treatment involving RAS, compensation for reactive, operating reserves and, problems with gaining ability to participate in AS markets.*

# ***Survey Responses - Continued***

- **Tariff and Business Practice Confusion – perceived inefficiencies due to confusion over and conflicts among tariff interpretation, business practices, reservation and scheduling procedures, capacity determinations and queuing procedures, etc.**
  - *TDUs generally not impacted by rate and administrative pancakes and have not experienced problems with queuing delays, etc.*
  - *Problems with OASIS systems (Order 889 in 1997); lack of conformity in tagging procedures; conforming business practices to system inadequacies rather than the tariff; services do not support intermittent resources; refer to informal and formal complaints, etc.*

# ***Survey Responses - Continued***

- **Planning and Expansion – impacts that transmission congestion has on investment decisions, the identification of solutions, coordination of planning activities, allocation of costs and benefits, etc.**
  - *Respondents located in areas without congestion or using uncongested paths see no problems.*
  - *Those facing congestion experience dispatch inefficiencies; experience problems with developing and integrating new resources; congestion costs are internalized and there is a lack of formality in terms of documenting and valuing congestion that further complicates planning efforts.*

# ***Survey Responses - Continued***

- ***Survey responses (30 out of 33)***
  - *Correlation between character of respondent and answer*
  - *Geographic location*
  - *Business scope*
  - *Transmission adequacy*
  - *Supply adequacy*

# Survey Responses – Grid West

- **Production Cost**
  - *Grid West will calculate AFC for the entire footprint.*
  - *Grid West will schedule all transactions.*
  - *Rate and administrative pancakes will be reduced*
- **Transmission System Operations**
  - *Grid West is an independent, membership corporation.*
  - *Grid West will administer AS markets.*
  - *Grid West will administer scheduling procedures.*
  - *Grid West will coordinate outage and maintenance schedules.*
- **System Capability and Scope**
  - *Grid West will be the reliability authority.*
  - *Grid West will be the gate-keeper of transmission capacity.*
  - *Grid West will administer a single OASIS.*

# Survey Responses – Grid West (continued)

- **Existing Transmission Constraints**
  - *Grid West will monitor and sell capacity based upon flow.*
  - *A broader view of the system should reduce curtailments.*
  - *A broader view of the system should enable operational improvements.*
- **Inconsistent Treatment of Generators/Loads**
  - *Grid West will oversee and administer markets in a non-discriminatory manner.*
  - *Grid West will implement standardized procedures.*
- **Tariff and Business Practice Confusion**
  - *Grid West will administer a single queue.*
  - *Grid West will administer a single OASIS.*
  - *Grid West will use a single set of business practices and reservation/scheduling procedures.*
- **Planning and Expansion**
  - *Grid West will be the gate-keeper of transmission capacity.*
  - *The RCS market will identify the cost of congestion.*
  - *One-utility planning for expansion with reliability back-up.*

# ***Improved Transmission Planning***

# ***Current Problems:***

- ***Current process is coordinated, yet fragmented.***
  - Difficulty in getting transmission built
  - Difficulty in actually implementing “one utility” perspective in transmission planning
  - Pancaked transmission queues
  - Multiple system impact studies / interconnection feasibility studies must often be conducted for a single project.

# ***Planning Improvements Contemplated by Grid West:***

- A more transparent planning process.
- Provision of a regionally consistent assessment of capacity, adequacy and security of the regional grid
  - Single impact & interconnection study for each proposed project.
  - One-stop information source for market participants and project sponsors.
- Clear authority for main grid planning (including backstop authority) should
  - ensure that investments for reliability are made
  - ensure the integrity of the regional grid over time.
  - Determine how transmission costs will be shared by TOs
  - Combined common queue for planning new projects allows clustering, facility sharing and more efficient and dependable solutions.
- Least cost transmission solutions encouraged by:
  - Independent, one utility planning with objective of identifying least cost solutions without regard to individual system boundaries.
  - Transmission solutions will be informed by the documented cost of congestion as revealed by:
    - reconfiguration auction
    - real time balancing market reflect such costs).
- Dedicated independent planning staff encourages equitable consideration of needs and impacts.

# ***Coordinated Generation and Transmission Maintenance***



# ***Coordinated Maintenance Current Practice***

## ***NWPP Coordinated Outage System (COS)***

<b>Timeline (approximate)</b>	<b>Coordination Process</b>
45 days	Deadline for submitting Significant Outages.
40 days	List of Significant Outages with capacity estimates posted on OASIS for customer comment.
Vary	Customer comment period closes
Vary	Outage Coordination group meets to develop draft outage plan
Vary	Draft Outage Plan. Approved outage plan with capacity estimates posted on OASIS for customer comment.
30 Days	Customer comment period on approved outage plan closes.
15 Days	Final Outage Plan. Plan with capacity estimates posted on OASIS.



# ***Coordinated Maintenance: Grid West***

- ***Grid West will continue to participate in NWPP Coordinated Outage System***
- ***Grid West ultimately be responsible for maintaining a reliable and coordinated system operation.***
- ***Grid West will require information on planned and/or forced outages of key transmission and generation facilities***
- ***Grid West will review outage requests***
- ***Grid West will publish the initial outage plan 30 days before operating day. Grid West will publish the final outage plan 15 days before operating day.***

# ***Coordinated Maintenance Benefits***

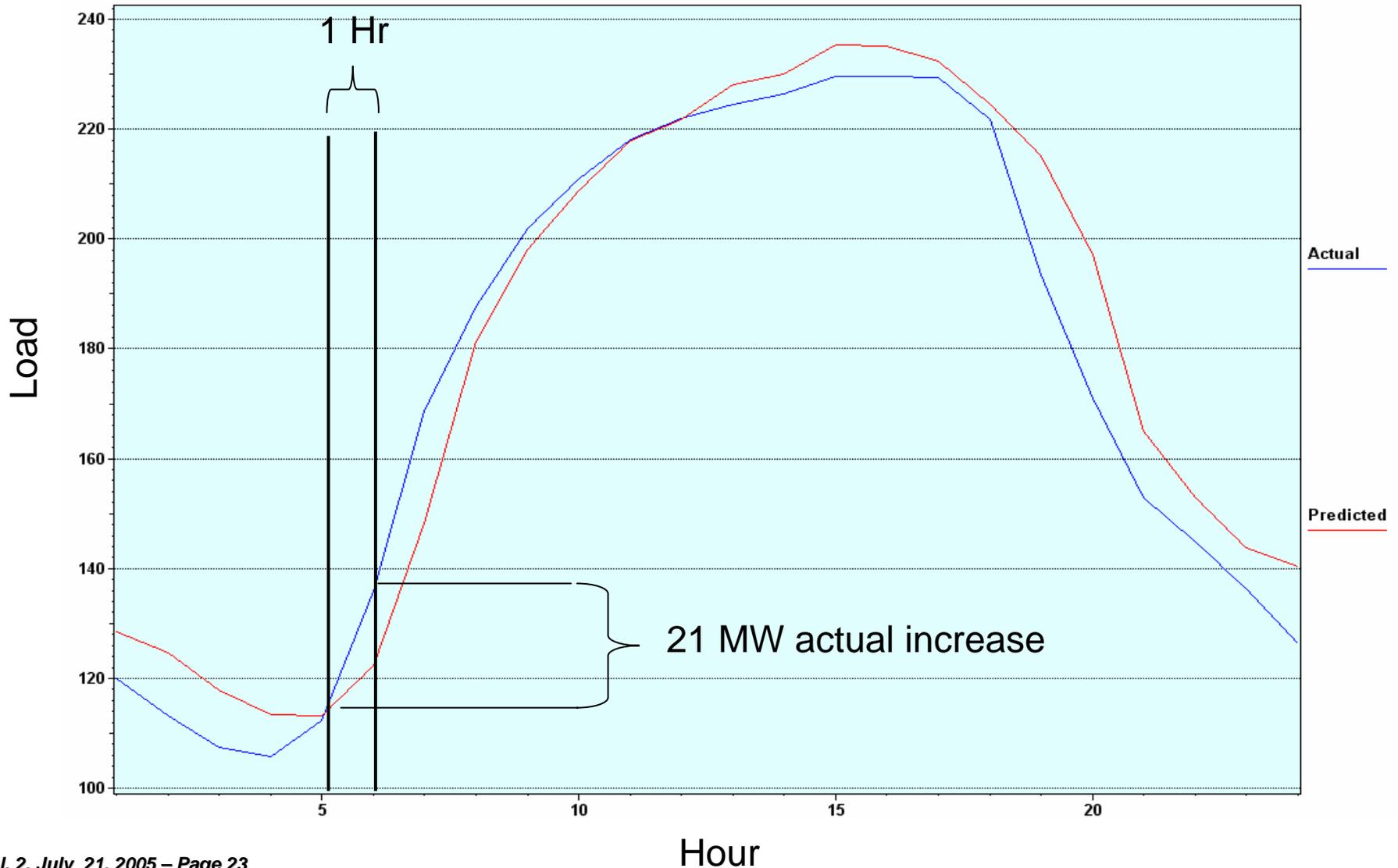
- ***Preliminary outage plans published 30 days ahead of scheduled outage (NWPP publishes 15 days ahead)– gives more foresight to participants.***
- ***Outage plans analyzed by single independent entity.***
- ***Market impacts specifically considered.***
  - Independent entity will enable submission of the commercially sensitive information needed for efficient outage coordination.
  - Provides mechanism for consistent and fair analysis of impacts of outage on all parties.

# ***Load Following***

# ***Load Following Benefits of Grid West***

- ***Current Load Following Process:***
  - Individual control area operators follow load with their own resources.
- ***Grid West Load Following Process:***
  - CCA participants will pool load following resources, via the voluntary real time balancing service.
- ***Benefit:***
  - Improved efficiency reflected in reduced production costs of meeting load.

# Load Following Example: Morning Load Pick Up



# ***Market Monitoring Benefits***

- ***Current Practice:***
  - No market monitor
  - SSG-WI and other regional bodies studying market monitoring needs/possibilities.
  - Inconsistent, voluntary, flawed regional pricing data may be insufficient for determining current market abuses.
- ***Grid West Case:***
  - Grid West market monitor to provide detection, facilitate prevention and mitigation of market dysfunction.
  - Market monitoring function is important to Grid West, as more liquid markets can be more volatile. Grid West's market monitor will control for unnecessary price spikes.
  - Centralized market for transmission and balancing energy provide for provide clearer basis for evaluating market power abuses.
  - Grid West, as an independent entity, will be uniquely qualified to monitor markets.

# ***Unquantified Risk Elements***

# ***Unpredictable Costs***

- ***New organizations can have unanticipated transition costs.***
- ***Cost escalation risk.***
- ***Grid West Controls:***
  - Grid West developing in stages, no FTR market.
  - Detailed, bottom-up, Grid West cost estimate should facilitate accurate cost estimates.
  - Bylaws require that budgets are developed through member driven process
  - Grid West transmission agreements will be subject to FERC regulation.

# ***Uncertain Efficacy of Planning Process***

- ***Potential for transmission-centric planning.***
- ***Grid West Controls:***
  - Planning/expansion model proposes economic framework for investment decisions.
  - Grid West will have no interest in financing transmission assets to increase its rate base.
  - Grid West planning tools to model the entire power system.

# ***Unaccounted For Costs***

- ***Unanticipated costs might be socialized:***
  - Unaccounted for energy
  - Greater than expected construction costs
- ***Grid West Controls***
  - No unaccounted for energy in Grid West model
  - Pricing proposal attempts to address revenue under-recovery
  - Construction costs to be vetted in regional planning forum.

# ***FERC Engagement (or non engagement)***

- ***There are no assurances that FERC will monitor Grid West processes when needed, nor that it will minimize involvement when it is not needed***
- ***Grid West Controls: FERC Declaratory Order, July 1<sup>st</sup>, 2005 stated that:***
  - Grid West would not have to satisfy requirements of Order 2000
  - Non jurisdictional entities would not be subject to additional review as a result of joining Grid West
  - BPA would not need FERC approval to withdraw from Grid West
  - Grid West TOs could continue to serve as providers for pre-existing transmission agreements

# ***Governance - Lack of True Independence***

- ***Risk that “focused economic interests” will capture the Grid West process at the expense of smaller, financially limited parties.***
- ***Grid West Controls:***
  - PNW has long tradition of public involvement and advocacy organizations.
  - BPA commissioned report by National Association of Public Administration concluded that the Grid West bylaws “establish accountability to regional interests while maintaining independence of the governance structure from special interests.”

# Cost Shifts

- ***Structural changes in power and transmission markets are likely to shift wealth due to:***
  - Changes in transmission cost recovery
  - Shifts due from region to region due to increased market access
  - New and different incentives for generation transactions
  - Changes in transmission rate design, e.g. segmentation.
- ***Grid West Controls***
  - Specific charge in market design to minimize cost shifts.
  - De-pancaking limited to new contracts.
  - Voluntary participation in balancing markets means that participants will control the impact on themselves.
- ***Potential cost shift impacts to be addressed in Decision Point 3 or 4 analysis***

# ***Uneconomic Real Power Loss***

- ***Costs may shift as a result of changes in the real power loss methods to be used by Grid West.***
- ***Grid West control:***
  - Customers can elect to take service under pre-existing transmission service agreements that contain company specific loss factors, just as they are today.
- ***Issue to be studied in more detail post DP2***

# ***Short-Term Time Horizon***

- ***Potential that Grid West might encourage increased reliance on short term markets – leading to greater volatility in power costs and rates.***
- ***Grid West Controls:***
  - Design provisions which preserve and bolster existing long term bilateral market.
  - Participation in ST markets voluntary.

# ***Conservatism in Operation***

- ***Incentives to ensure reliability might result in Grid West operating the transmission system based on conservatively estimated limits***
- ***Grid West Controls:***
  - Conservatism in power system operations is usually encountered when operators have less information about system state. Grid West will have a higher degree of visibility and tools to manage grid redispatch.

# ***Market Power***

- ***Competitive real time markets, together with the existence of a single commercial entity operating on either side of a constraint, might create or exacerbate market power abuse.***
- ***Grid West Controls:***
  - Risk under current structure may be greater
  - Increased ATC and market scope reduces market power concentration

# ***Erosion or Extension of Existing Transmission Rights***

- ***Grid West might cause the reinterpretation, or even abrogation, of existing contracts.***
- ***Grid West Control:***
  - Grid West developers have focused on preserving existing contracts
  - FERC declaratory order stated that it will honor our intention to preserve existing rights.

# ***Loads Pay***

- ***Regional loads might become dumping ground for costs.***
- ***Grid West Control:***
  - Principles of cost allocation by relevant jurisdictions is not altered by Grid West

# ***Market Mismanagement***

- ***Grid West might take actions that impede efficient operation of the market place.***
  - East coast concerns that market design favors marketers
  - expressed by industrial groups and CATO institute
- ***Grid West Control: Grid West Market and Operational Design is substantially different from the retail access models adopted by CA or the East Coast.***

# Next Steps

- **Short-term**
  - Finalize report and appendices
  - Collect and respond to Q&A's.
  - Redispatch Efficiency model review session
  - BPA Cost Benefit assessment for public review process.
- **Long-term (Post-Decision Point 2)**
  - Refine analytical methods and models
  - Further attempts to quantify unquantified benefits
  - Conduct assessment of the distribution of potential Grid West Costs/Benefits
  - Further analysis of net utility level costs