Northwest Power Pool MC Initiative – Within-hour Market Solution

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Energy Northwest Public Power Forum
What the Pundits Say

- shrinking NW EIM effort but at a go / no-go
- BPA postponed the letter to the region....
- E.M. wants to hear from parties about next steps....
- Hardy said ‘difficult but not impossible...heading towards a westwide RTO in 5–10’
- NW effort has limited thermal displacement
- What advantage for wind integration?
- But an under-appreciated point...MC is not just about a voluntary EIM, but regulation reserve efficiencies, over a modest footprint
- E.M. says a co-evolutionary process with Cal-ISO/PacifiCorp et al.
- CA has a 13,000 Mwh Over-Supply issue in 2023 at times
- E3 quotes $3.4 Billion to $9.1 Billion in first 20 years
- And their discount rate was?
- And California memories have not faded circa 2000
Recommended NWPP MC Initiative Path
(or, tell them what you are going to tell them)

- Continued commitment to evaluate market solutions / EC will meet on November 17 to address next steps
- Play to our strengths and launch a market design as soon as practical
- Commit now to a structured evolution of the Northwest market solution
- Achieve a level of funding commitment by December 2015 while the implementation schedule and cost estimates are being finalized
What Such a NWPP MC Initiative Path Can Provide (tell them)

- Rational, marginal cost, with efficient short term dispatch
- Fair and transparent pricing based on offers
- Transmission solutions that support an ‘evolutionary’ market design with no free-rider for within-hour transmission
- Value-driven focus on fair compensation for Northwest Hydro Capacity
- Reliability as a cornerstone of our solution
- Recognized and fairly monetized environmental attributes of low-carbon generation
Reasons for a NWPP Within-Hour Market

- Agree that the NW needs a within-hour market and overtly recognize that CCED is a first step to a NW solution for 5-minute EIM

- Putting up our own EIM based on a CCED at a reasonable cost is a good thing. Don’t just demand / rely on short term benefits – low cost with leveraged negotiation

- Analysis shows market will be well-supplied at most times with effective price signals

- Collective organization of BA’s and thus enhanced negotiation position is a good thing. If not, each BA will eventually face the CAISO one-on-one and the outcome would be very different

- Start with a better negotiated solution then build on initial structure with enhanced features where they make sense while negotiating with CAISO for market-to-market rules that treat transmission and generation in ways that enhance the value of those NW assets
So Why don’t we just...

- Makes sense….right?
  - BPA retains leverage in its ability to affect transmission issues
  - CAISO really needs BPA’s cooperation, as defined by CAISO, if it’s to realize full benefits of their EIM
  - And CAISO needs our flexible resources and transmission access

- But….remember that NOT doing something is the same as actively deciding TO DO something. If we wait, more BA’s join CAISO and all of a sudden the strength of our hand waxes and wanes as CAISO’s perception of need from us fades? IF we do something, we impact NW IOU’s and CAISO in a way that we can’t do if we just watch the game being played on the field, with group-think in believing that we still hold the actual game ball in our hands. When in fact the game has moved from football to rugby and we’re bruised by new rules
CAISO IS NOT THE..

- It’s price formation is complex and lacks transparency
- It overrides offer prices to mitigate market power, setting prices at formulaic cost–based levels
- It takes many actions outside of the basic locational marginal pricing calculation that results in artificially managing prices
- It does not provide fair capacity compensation
CAISO collects congestion rent from market participants, as well as a transmission access charge from loads and exports, to fund its transmission system. BPA recovers its transmission revenue requirements from its firm transmission rights holders (PTP and NT customers). These disparate pricing models create inequities between the regions. So???

Devil’s Advocate – BPA used to wrap power and transmission together as a package. BPA has moved to PTP, and Network, with varying products that line up with 0–7 levels of surety of service.

Is it in our best interest to think that being myopic on our approach to transmission products, pricing, access is our best ‘long-term’ approach to our current dilemma?

Is it in our best interest to waffle on pancake transmission issues? CAISO has already planned for future scenarios........have we?
Is the remaining big footprint without thermal still viable?

- Yes – We can Reduce Wind Integration Costs
  - Implementation of Resource Sufficiency and Regulating Reserve Sharing Program will result in a more efficient use of balancing reserve capacity reducing costs of integration.
  - The within-hour market will provide the opportunity for wind parties to elect a 30/15 scheduling option further reducing their costs of integration.
  - Given CPP, why are we thinking of centering a world around coal and natural gas on the long-run? Hydro, Demand Response, Wind, Solar, home batteries, wind turbine batteries, a battery future we have not even thought of?
Is the remaining big footprint without thermal still viable?

- Yes – Within-hour markets are about managing variability not about thermals.
  - The majority of thermal economic displacement happens prior to the operating hour. This market is designed to optimize within-hour variability which occurs among renewable resource and load and the flexible generation resources like hydro and demand response.
Is the remaining big footprint without thermal still viable?

- The market footprint still has significant wind and load variability and the market can assure that the system best positioned to respond to that variability will be able to respond
- The remaining footprint is of comparable size to the New England ISO, NY ISO, and Alberta
Is the remaining footprint without thermal still viable?

- Congestion and System Management Reliability Benefits
  - The tools developed and used to support the within-hour market provide very valuable congestion and system management benefits
Is the remaining footprint without thermal still viable?

- **Market Rules between NW and CAISO**
  
  - A significant value for having a within-hour market is the development of a market to market relationship between the northwest and the CAISO for transacting among the markets with a fair valuation of energy, capacity, transmission, and environmental attributes.
“All Interties Lead to CAISO” (tell them what you told them)

- True, but there is strength in our numbers
- Whether it’s negotiations of seams issues, market-to-market rules, all negotiations regarding market structure lead to Rome – BA’s negotiate now, or later
- BPA TBL has leverage
- BPA has flexibility
- End-game CAISO EIM benefits need BPA TBL
- Now is not the time to compromise
- Don’t sell our systems/people/ideas/..short
- Northwest public power has a successful legacy of working together for the greatest good. CAISO does not have the same goal
- It’s about *Evolution* – Not a slow evolution, nor a revolution, but rather a determined, strategic time-line to meet our goals
That’s All Folks
Operational Impacts of Potential Market Changes

Scott Gleason
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Energy Northwest Northwest Public Power Forum
TEA – ENW Shared Clients

- Benton PUD
- Clark Public Utilities
- Cowlitz PUD
- Franklin PUD
- Grays Harbor PUD
- Klickitat PUD
- Lewis PUD
- Mason County PUD#3
- Pacific PUD
Year of Limbo

- Over the last year
  - EIM
  - SCED
  - CCED
  - CCED Stalled
  - ???
- Hard to plan / build in this environment
Decision Time

• Northwest market is at a crossroads
  – Do Nothing
  – Start NW Centric Market (CCED / SCED)
  – Join CAISO-EIM

• Each path leads to different structures, costs, etc...
  – Need to think thru what is best for long-term
Which Way Do We Go?

• Is CCED Dead?
  – How many other entities join CAISO-EIM
  – What happens to liquidity
  – What changes must happen to NW Trading to accommodate

• Is CCED / SCED Alive and Well?
  – What flavor will the region take?
    • 15 min Bilateral
    • 5 Min SCED
  – What do our clients want / need
What is TEA Doing?

• As a result of the ever-moving target. TEA is evaluating all options and impact to operations
  – What needs to change
  – Can current systems handle
  – Tee-Shirt sizing potential costs
Current Operations- Trading

• TEA Trading Systems built/configured for Hourly Operations
  – Resource Portfolio Manager (Scheduling / Balancing System)
  – Trading Optimization Platform – Tagging / Deal Entry
  – Slice Water Routing Simulator
  – Commodity XL (System of Record)
Current – Mid / Back

• TEA Mid/Back Office Systems built/configured for Hourly Operations
  – Settlement
  – Accounting
  – Risk Controls
Current – Market Limitations

- Hourly and Sub-Hourly Markets exist
  - TEA only active in hourly due to resource and system constraints
  - Sub Hourly: Transmission and Reserves procured hourly - not cost effective
  - Liquidity not there
Current - Resources / Obligations

- Resources and Obligations
  - Load: Hourly by BPAT tariff
  - Slice/Block: Hourly by contract
  - Wind: Hourly via Contractual Constraints thru 2016
  - LFG & RRP: Hourly due to plant limitations
  - FRDR/PWD/SWFT: Hourly due to plant staffing and contractual limitations
  - MKT (buys/sells): Hourly and limited 30 min markets exist
# Options

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<tr>
<th>Options</th>
<th>Do Nothing</th>
<th>CCED</th>
<th>Full SCED</th>
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| **Action** | -15 Min MKT Exists  
-Choose not to play | -Purchases /Sales for load and non-federal resources | -Hourly Bilateral Trading  
-Submit bids / offers for residual MWs |
| **Assumptions - Notes** | -Hourly Bilateral MKT remains liquid | -Can Use Slice for Resource Sufficiency  
-No guarantee that bids/ offers will be hit | -Bids / Offers will clear at LMP/LIP (Price Taker) |
| **System Impact** | None | -Most of our Systems will need to be upgraded  
-This is a new animal and will be the most expensive | Procure / Upgrade TEA RTO Software. Currently use PowerOptix |
15 Min Market

• If TEA Clients participate: Upgrades / Changes to most of our systems / processes are necessary
  – Trading Optimization Platform (trade position management, tagging, transmission)
  – Commodity XL
  – Resource Portfolio Manager (Used for balancing Client Loads and Resources)
  – Mid / Back systems and reports
15 Min Market

- Load – Would require BPAT tariff change
- Slice - Would require contract change
- Wind - Could Participate provided “All for one and one for all” - (Nine Canyon- would require coordination among clients and the MIDC Owners)
- Biogas, Baseload Thermal – Hourly with operational changes
- Non Fed Hydro (Packwood) - Limited potential; requires operational or contractual changes
SCED / EIM

• Hourly Systems remain intact

• Go with Vendor Solution (PowerOptix)
  – Use PO to submit bids/offers, track awards, capture deals
  – Would require setup and configuration

• TEA would utilize duel systems of record

December 2, 2015
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Risk Factor Assumptions

• Island Risk: Numerous Utilities join CAISO EIM and BPA becomes island surrounded by CAISO

• Hourly liquidity is a risk factor.

• Timing of Trading activity will change

• System Implementation Risk

• 15 Min: Not all bids cleared by market
Critical Thought

• Many express distress at thought of NW becoming an RTO. If we do nothing, entities will / may continue to join the CAISO EIM

• Many view joining the CAISO EIM as first step to becoming full RTO participant.

• Winds of change seem to indicate that it is only a matter of time until the NW gets incorporated into the RTO paradigm.

• If we believe this is true, wouldn’t it be better to make our own rules, rather than have the CAISO (or other) rules imposed upon us?
Questions?