Markets in the West Workshop
Summary of Discussion Report-outs
April 9-10, 2019

Note: The bulleted lists below are a consolidated summary of the notes taken during report-outs of the discussions participants had during the workshop.

Discussion I: Today’s Market Perspectives and Challenges

- Experiences: MISO, JEDI, PSCO JDA; MWTG; PJM OH; CAISO; UGP SPP
- Challenges:
  - Heavy on energy, low capacity
  - Markets complex – design matters
  - Partnership
  - Multiple Reliability Compliance Service providers in the West, problem? Not in east
  - WAPA: Limited benefits – renewables
  - Environmental limits on WAPA hydro are increasing
  - Tariff issues
  - Cost allocations
  - Bi-lateral trading challenges
  - Lack of liquidity
  - Uncertainty
  - Diversity of political and regulatory views
  - Renewable integration – challenge
  - Regulators – challenges
  - Cost shift – challenges
  - Transmission challenges
  - Time is ticking in West without market
  - Failed efforts not due to lack of knowledge
  - Liquidity
  - Transparency for WAPA customers
  - Protection of resources/FED contracts
- Significant benefits - Worthwhile
  - No market is perfect
  - Markets work well, transmission fought over
- More challenges:
  - Integration of renewables/carbon free
  - Market education/outreach needed
  - Regulations (state specific regulations in markets)
  - Governance
  - Integration of renewables
  - Seams issues
  - Diversity of states perspectives/goals
Cost differential across states
o Give people a voice – governance to support
o Changing mix of generation and load
o Growing appetite for transmission and need to regionalize or leverage/maintain
o Governance – state – individual entity control – generators
o Cost recovery
o Appropriate representation at all levels (distributed utilities)

Cost/benefit quantifiable
o Ensure right sizing and get what we need
o No Chu Memo approach (forced)
o Proactive approach – prepare and adjust as we learn
o Transmission cost shifts and associated regulatory challenges (PUCs)

Start small (like EIM) – should be some transmission cost recovery
o Responsive governance
o Open process
o Size of footprint matters
o Protect the hydro value

Discussion II: Opportunities and Risks

- Need to Embrace Change is the West
- Overall Goal: Ways to approach transmission from baby step perspective
- Leverage wider generation & load diversity
- Economies of scale
- Lower customer costs
- Incremental approach to markets
- Regional approach to transmission planning
- Environmental regulations
- Market Design-LMP doesn’t capture the true value
- WAPA generators in one market and the customers in another
- We are all interconnected – as neighbors make decisions there are collateral impact
- Renewable energy integration (benefit & cost)
- Governance structure > driving governance
  - Train = opportunity for those with less “clout”
  - If not at the table = Risk
- Transmission cost shift allocation
- Hold up evolution of markets in Western Area Power Administration Seams (Equity Not Reliability)
- Lost opportunity: Loss of control for market destiny
- Value of Hydro – reserve-opportunity & risk
- Lower prices
- Diverse resources
- Ensure small customers still have a voice
• Avoid the squeeze > don’t get into UGP position  
  o Where in constrained market & raise prices  
  o Market design > 10 generators/competition  
• Regional transmission planning in West – not currently aligned but needs to be  
• “Which” why? Can participate in all? (do we have to choose one?)

Opportunities

• Expectations of a less than perfect market. Reflect on past  
• Start small (EIM) show everyone small opportunities  
• Optimize DC ties in the West  
• Undiscovered transmission  
• Wealth of experience in West  
  o Energy costs up/rates up  
  o State/regulations risk  
• Increase Market access  
• Contract / flow base opportunities  
• Integrate renewables – Carbon  
• Integrate new technologies  
• New products: i.e. Frequency Reserve  
• Larger reserve sharing pool  
• Costs

Risks

• Long term risk to preference customer  
• Risk to Federal Use Priority  
• Transition: Winners & Losers (risk)  
• New charges (risk)  
• Price volatility  
• Learning curve  
• Loss of autonomy/control - Complexity (Risk)  
• Customer costs go up  
• If don’t participate now forced to later (didn’t help design)  
• move too fast, get in wrong  
• Costs not recoverable from PUC  
• Risk of join – cost shift allocation  
  o Costs  
  o Cyber security  
  o Employ – skill changes (risk of join)  
  o Regulatory oversight (risk of join)  
• Risk of no market participation  
  o Integrate renewables  
  o Liquidity – loss of partners (trading)
Resource cost
- Less efficient transmission expansion
- Regulatory environment is market based
- Diminishing Reliability
- Complex Cost Allocations

- Develop future Reserve sharing
- Hedging – price certainty

**Goals:**

- Continue exploring markets
  - Work together
  - Leverage Commonalities

**West changes (what to change in West)**

- Transparency – West change
- Market is necessary
- Change from independent approach to collaborative
- Use under-utilized assets
- Transmission tough nut to crack
- If not at table then you are on menu – engage early
- Define clear objectives
- Ensure stakeholder transparency

**Discussion III: Key Roles and Missing Links**

WAPA opportunities: Transparency, Communication, Coordination transmission – some thought WAPA should provide small entities – Don’t have same resources / education

- Transparency
- Integration of renewables
- WAPA Role – integrate all WAPA systems
- Start small – (Challenge – learn from the past)
- WAPA owns wires but no load or gen
- Diverse opinions on level of input – some customers want to just join WAPA figure out rest
- Company roles: Evaluate benefit and risk to customers, evaluate market options – pros & cons
- Lessons learned What it means to join EIM
- Actively engage and advocate on behalf
- Give voice to “small fish”
- Engage owners of DC ties
- WAPA role: White paper how WAPA Helpful
- How do WAPA resources help you meet State goals (RPS)
- Market participation – all active engage – ISO/RTO
- Take input from participants
- PMAs – role to coordinate with customers and get folks to table – include all
• Need for education – WAPA facilitate or Coordinate
• Need to include NGOs; State stakeholders (not just regulators)
• Customer association: Opportunity
• Generating Agencies included
• Transparency – Need & Responsibility & role for all avoid NDAs if possible
• ISO/RTO: Seek input; listen; propose next steps; propose steps to match where people are
• All: Seek to collaborate to solve problems
• From Customer up not WAPA down
• Incremental Approach to markets
• BOR – BOR different set of priorities and Power Market not high
• Recognize federal role in market
• Small entities different role for WAPA than large entities
• Preference power issues – CAISO – SWPA power – focus on what can do
• Priority use power customers – first on for transmission
• AEPCO – key role
• SRP – Low cost customers – EIM but open
• CAP – congestion pumping load
• Ensure boards comfortable
• XCEL – open to markets
• HOPI Tribe – renewable develop
• Protect Customer interest
• Studies coincide regulation
• Protect Value of Hydro power
• Look for new ways to compromise
• Keep Customers informed
• Missing = no Mandate; tribal participation
• Look at contracts – can they be updated
• UGP Lessons learned to join markets
• MWTG WAPA updated website with information – good job keeping people informed
• Regulators missing – played a key role in shutting down MWTG so they need to be educated
• State legislators education
• Small entities need a seat at the table – everyone involved
• SPP: Facilitate expansion existing and potential new members; provide related services
• WAPA role: facilitate flow of info; elevate concerns to right customers; contract nuances; involved with leadership but not solely (alone); maintain grandfathered obligations; engage DOE; customer forums
• Companies: support customers
• WAPA: seek widespread buy in; facilitate education and input
• Missing: PUC, State
• Inclusive – Involve people at right time – involve when needed – but not all the whole time
• WAPA facilitator
• COMM – cultural changes within organizations
• Education (regulators; use customers; employee)
• Handle how portrayed in media – get in front of message
• Continue to reassess
• Discussions around viable alternatives – as information changes reassess
• Benefit studies – right info; RPS changes – how to incorporate; often lag behind regulation

Discussion IV: Bright Ideas for the Future

• Energy Imbalance Market
• Common Transmission System is still needed
• Incremental step to get here
• Could Transmission Planning/Regional Expansion
• Should be cost savings
• Real Time and Day Ahead Coverage
• Transparent
• Broader Day Ahead Market
• Integration between wholesale and behind meter
• Integrate storage- battery and pump
• Non-wire alternatives
• West = EIM taking away bilateral traders, need to lay the foundation now
• Common Tariffs
• Dispatch savings
• What will energy/environmental policies be
• Technologies
• Success = Everyone involved
• One centralized market
• Lots of industry change still coming
• Transitional issues – end bilateral trade (old contracts/new skills)
• Non Market – NPP/ACE scheduling/Joint dispatch/AGI
• Agreements need flexibility for markets

10 Years:

• Outside Events/Tech Change
• Include efficiencies and work together
• BA consolidation
• Generation diversity
• Flow vs. contract path
• Duck curve changes
• Common Transmission System is still needed
**Challenges:**

- Aging Infrastructure
- Renewable efficiencies
- Load variations
- Reliability
- In 10 years consistency in the markets across west - same rules on seams
- Balance standardization/innovation
- Substantial RTO engagement
- Integrate changing mix – 4k MW coal offline in this region – what’s behind it?
- Can market evolve to standardize – phone bill example – need or tax driven?
- Who is filling ancillary services behind coal
- In 10 years market not talking approach to get there. Straight to RO hard – baby steps/be transitional/mitigate risks through governance structure

**Non Market Option:**

- Consolidation of BAs?
- Uncertainty – agree in 10 years optimize markets we are not in – do we join?
- Market options mean different things to different people
- WAPA/BOR/COE could be high price provider with renewables – markets more important
- Transmission equal access maintained
- Transmission built for customers not providers
- Goal of market – dispatch on carbon impact, not price in future?
- Continued growth storage – funding? (Pump vs battery (Battery warranty leverage))
- Micro grids – how do we leverage – DC ties?
- Cyber Security- as we leverage technology – how do you protect? Gray area in market systems
- In 10 Years: Markets more diversified today and offer broader array of products
- Trend self-sufficiency of retail customers
- Transparent/member driven/limited barriers to enter/exit; predictable; understandable (market of future)
- Do markets need to be centralized? Retail micro-grid
- A single market or multiple decentralized markets?
- Markets Interim until something else?
- Elements of market of future -
- Definition of Utility
- Market structure
- Technology
Closing Session: Mapping out next steps

What were your Ah-Ha Moments?

- Don’t let perfection get in the way of good
- Incremental phased approach
- Long on Energy, short on capacity – how to fix
- Been at this for 20-25 years – need to get it done!
- Markets just a group of people collaborating to bring value – how do we start?
- Is WAPA the facilitating organization?

What should be our Next Steps?

- Customer involved committee – broad involvement across the footprint
- Is WAPA looking for a single solution across the WAPA footprint?
  - WAPA wants what’s best to facilitate interest of customers
  - What brings value to you
- Perfect big WAPA footprint; good multiple options
- Shrunken group – just DSW to discuss
- Many components we’ve discussed – establish in regions working groups to discuss
  - i.e. DSW contract paths discussion – doesn’t have to be market specific.
- WAPA wide or regions = yes
- How will water decisions impact path forward?
- WAPA has a role – large entity/many connections
  - Leadership role – how do we move forward
  - W/out direct leadership will continue to spin wheels
  - Problem will only get worse if we don’t move forward
  - WAPA give leadership, customers
- All politics are local – need to start at the regions
- Look inside current construct – can WAPA help us address (renewable portfolio standards)
  - Not just binary market or not move scheduling closer to operational hours
- WAPA videos – compliment – great resource
- Continued education to customers
  - Risks to customers on costs
  - Benefit receive or forced
  - WAPA needs educated customers
- Perspective from SPP/CAISO how did this happen elsewhere?
  - CAISO
    - We don’t “push” closer together.
    - Provide a proposal in response to PUC
      - Autonomy/local control tenant
    - WAPA role – 5 separate regions – diverse perspectives – looking forward to how WAPA solves it
  - SPP
- Issues with confidentiality – commercial and critical infrastructure info – need NDA.
- SPP Mission - helping facilitate members working together to keep the lights on today and into the future.
- SPP – independent – member driven
  - Board = safety valve to ensure independence
  - Vote – transmission owners & users vote separately and average >67%
- Biggest hurdle now = educations & what do they mean to organizations
- In SPP how is more important that what
  - Win-win-collaborate

We talked a lot about Transparency – what does it look like?

- Don’t sign NDAs that prevent sharing commercial information with customers
  - Supports suspicion
- Start at the region level – can’t get arms around anything larger
- Figure out agenda for next step – invite those in the room to participate
- Don’t tell – involve (SMEs need to be in the room)
- Grass roots effort
- Negotiations in MWTG were confidential – if WAPA didn’t sign NDAs, they wouldn’t have been at the table. Still need to protect confidential information
- Direct impact at other nonparticipants – how do we then involve those impacted?