Energy Imbalance Services in the West

CRSP Management Center
August 1, 2019

Tim Vigil
VP of Power Marketing
Energy Imbalance Service

- Discussions on the SPP WEIS today only pertain to LAP, CRSP, and the WACM BA
Energy Imbalance Service

• Energy Imbalance Service is not a Day 2 market
• CRSP is not evaluating a Day 2 Market
What is Energy Imbalance Service

- EI Service provides:
  - The difference between a generation schedule and the generation meter
  - The difference between a load forecast and the load meter
  - Energy imbalances currently managed by BAs under their OATT (outside of market based EI)
    - BAs can use their own generation or contracted generation to resolve imbalances in real time
Why is Energy Imbalance Service important to WAPA

Critical for continued BA operations
Why is Energy Imbalance Service important to CRSP?

- Could reduce or avoid the further use of LAP and CRSP resources to balance the WACM BA
- CRSP cannot provide more resources to the BA
- CRSP resources should be operated primarily to the benefit of CRSP customers
What Energy Imbalance Service is Not

- EI Service does not provide:
  - Significant firming purchases for FES
  - Market opportunities for large volumes of surplus sales; day ahead and real time bilateral markets continue to provide market resources for expected balancing needs
Energy Imbalance Service Characteristics

- Resource offers are voluntary
- Geographical diversity
- Low barriers to entry/exit
- Member assets continue to be utilized for balancing and bilateral markets
- Dispatch efficiency and savings for EI
- Transmission system fully utilized
CRSP MC is looking at Energy Imbalance Service to:

• Reduce BA reliance on CRSP generator assets
• Support reliability on the CRSP system for all customers
• Keep pace with industry changes affecting WAPA’s ability to accomplish its mission
Statement of Principles

• Consistent with sound business principles
• Maintain reliable delivery of power and transmission to all customers
• CRSP resource participation will be voluntary
• No cost shifts
Anticipated Costs

• Start-up
  – SPP infrastructure
  – Generation offer and shadow settlement software modules

• On-going
  – SPP administration – WEIS run by SPP, not through BA
Cost Shift Issues

• Avoiding cost shift to customers outside of BA
• Seeking agreement from participants
• Must have agreement to consider membership - currently negotiating
Send comments or concerns to:

Tim Vigil
VP of Power Marketing

tvigil@wapa.gov
970-252-3005

Morrow Point Dam
The following slides will answer the 20 questions submitted to CRSP from the Colorado River Commission.
Economic study-costs/benefits of participating in the SPP EIS

- CRSP studied production cost benefits during Mountain West effort
- Production cost benefits in a full day 2 market are limited or non-existent
- With limited or no participating resources, no benefits expected at this time
- Limited generation flexibility due to water releases and environmental constraints
CRSP costs/benefits for EIS absent full market participation

• Previous study for full day 2 SPP market assumed Mountain West Participants:
  – Xcel, WAPA-LAP, WAPA-CRSP, BEPC, BHPL, CSU, PRPA, TSGT
• Benefits assumed to be less in EIS with fewer participants
• CRSP assumes EIS benefits would result from reduced and/or no additional regulation/flex reserve requirements in future
• CRSP may analyze limited resource offer participation in the future
• Provides tools to manage BA in the short term
CRSP participation in EIS governance

CRSP would participate/vote as a market participant

- Significant input and authority over administration through executive committee to
  - Approve or reject proposed amendments to the WEIS Tariff
  - Establish detailed WEIS Market Protocols to support the filed tariff
  - Provide consultation to SPP in determining the administrative rate charged to participants of the WEIS market
  - Recommend proposed amendments to the Western Joint Dispatch Agreement (WJDA)
SPP tariffs and EIS agreements

- WAPA will provide Tariff and EIS (JDA) documents made available by SPP to any CRSP customer if requested
- All documents are still under development
Seams Issues

• No impacts to Firm Electric Service schedules from CRSP generation to customers in any BA
• FES allocations are fixed schedules – incur no EI
• No seams impacts identified
• No timing constraints different from WECC tagging deadlines – no impact to WRP schedules
• CRSP currently schedules to FES customers within PACE BA, a member of the Western EIM – no seams or FES schedule impacts
Metering and Telecommunication Costs

- Meters replaced as part of on-going maintenance cycles meet market protocols
- All plants but GC meet protocols. GC partially done-replacing meters as each transformer is replaced
- No significant capital investment will be needed Communication points and SCADA programming likely needed for data from WACM BA to SPP

*SPP grandfathers existing metering in EIS
Additional FTEs for EIS participation

- WAPA’s Organizational Approach to Markets (OAM) initiative aligned departments so WAPA could enter markets efficiently:
  - Identified areas where FTE can be reassigned to cover staffing requirements without adding additional FTEs for market participation
CRSP generation in EIS

• WAPA’s generating resources are obligated for firm electric service
• Blue Mesa and Morrow Point may have limited participation in EIS after implementation if low risk and benefit to all customers
• CRSP’s generation resources need to abide by environmental restrictions and water release schedules, and customer schedules. Market participation secondary to these priorities
• Resource offers are voluntary – even if offers are made SPP has no control over generators – CRSP/BOR retains
CRSP Generation Assets – Economic Benefits

- Limited purchase and sale opportunities for purchase power and excess sales
  - Bulk of transactions continue in day ahead and hour ahead bilateral markets
  - Daily water release criteria and elevation restrictions for Blue Mesa and Morrow point severely limits EIS offers
- CRSP participation intended to balance forecast error on generation/load and reduce BA reliance on CRSP generator assets
  - Mechanism for the BA to leverage market assets to support the required energy imbalance service (ancillary service schedule 4 and 9 of the OATT tariff)
Transmission Revenue Impacts

- Transmission must be acquired to balance each market participant before the start of the hour
- The EIS uses actual transmission available regardless of OASIS reservations
- Existing CRSP network service agreements will continue to charge on metered load regardless of EIS resources dispatched to load
- EI/GI service today under tariff uses actual transmission available
CRSP Business Practice Impacts to Customers From WAPA Submitting Load and Generation Forecasts to WEIS

- No impacts to Firm Electric Service schedules from CRSP generation to customers
- Fixed FES schedules are not affected by the energy imbalance operations within the WACM BA
- Generation schedules submitted to BA as today through automated software
- WACM already provides forecasts to RC
- No timing constraints different from WECC tagging deadlines – no impact to WRP schedules
Anticipated Transmission Constraints Subject to High LMPs (Congestion)

• Any area with existing congestion would be a likely candidate for high LMP prices (actual not scheduled)
• Varies with generation dispatch configuration
• CRSP FES schedules not impacted
• CRSP has low EI subject to LMPs
Allocation of CRSP Charges/Credits for GI/EI

- CRSP project incurs charge/credit for any EI/GI as today
- No single CRSP customer would incur for FES schedules as today
Cost/Benefits
Western EIM vs. WEIS

• CRSP anticipated little benefits from either as main purpose is to reduce use of generation assets by BA and support reliability

• Costs comparison can be made using data from SN Western EIM analysis – CRSP and SN similar water project size
Number of Participants
Western EIM vs. WEIS
Further Comparison

- Little benefit to CRSP in either – minimal EI/GI
- Currently one market available at this time
- Another EI service option could change current rate of participation
- WAPA supports unique situation of different projects – SN actively analyzing Western EIM
Decision Drivers and Participation in Multiple Energy Imbalance Services

- As an integral part of the WACM BA, CRSP has a responsibility to support BA solutions and reliability on the CRSP system to deliver FES to all customers.

- Balance the interests of all its customers – committed to preventing any cost shifts that may occur between external customers and those within WACM.

- Participation in two different markets would require separating CRSP generators and transmission among different BAs – Duplicative costs would be incurred.
Excess CAISO Energy in the EIM Further Analysis

• Ability to purchase excess energy from CAISO through the Western EIM would be limited because of existing constraints on generation

• Increasing RPS standards will lead to more surplus/deficit across the West

• WACM BA currently has interconnection requests for ~4,000 MWs of capacity – majority renewables
Governance – Western EIM vs. CAISO
Still a Factor?

- In the long run – day 2 markets on horizon
- Several failed attempts of CAISO to end CA state control – no guarantees
- Member-driven board preferable – competition could provide
- SPP RTO already member-driven governance
Next Steps

• Decision Points
  – Cost mitigation required
  – Customer support
  – BA requirements

• Customer Meetings

• Deadline September 3, 2019