

WESTERN ENERGY IMBALANCE MARKET (WEIM)

Regional Issues Forum

Cathleen Colbert – Moderator

Lindsey Schlekeway – Moderator

January 18, 2023



Agenda

| Topic | Presenter |
|---|---|
| Introductions and Purpose of Meeting | Cathleen Colbert & Lindsey Schlekeway |
| Governance | Matthew Loftus, PacifiCorp Mary Wiencke, Public Generating Pool Scott Ranzal, Pacific Gas & Electric Vijay Satyal, Western Resource Advocates |
| Day Ahead Market Enhancements (DAME) | Michael Wilding, PacifiCorp Arnie Quinn, Vistra Sergio Duenas, California Energy Storage Alliance Scott Ranzal, Pacific Gas & Electric Carrie Bentley, Western Power Trading Forum Mary Wiencke, Public Generating Pool |
| Extended Day Ahead Market Enhancements (EDAM) | Pam Spborg, Portland General Electric Arnie Quinn, Vistra Russ Mantifel, Bonneville Power Administration Jeff Spires, Powerex Scott Ranzal, Pacific Gas & Electric Michael Wilding, PacifiCorp Vijay Satyal, Western Resource Advocates Mary Wiencke, Public Generating Pool |

RIF Sector Liaisons

| Sector | Name | Organization | Email |
|--|-----------------------|--------------------------------|--|
| WEIM entities | Lindsey Schlekeway | NV Energy | Lindsey.Schlekeway@nvenergy.com |
| | Josh Walter | Seattle City Light | Josh.Walter@seattle.gov |
| ISO participating transmission owners | Matt Lecar | PG&E | MEJ@pge.com |
| | Meg McNaul | Six Cities | mmcnaul@thompsoncoburn.com |
| Public Interest/Consumer Advocate | Vijay Satyal (CHAIR) | Western Resource Advocates | vijay.satyal@westernresources.org |
| | Jaime Stamatson | Montana Consumer Counsel | JStamatson@mt.gov |
| Consumer-owned utilities located within an EIM BAA | Lauren Tenney Denison | Public Power Council | tenney@ppcpdx.org |
| | Doug Boccignone | Flynn Resource Consultants Inc | dougbocc@flynnrci.com |
| Independent power producers and marketers | Cathleen Colbert | Vistra | Cathleen.Colbert@vistracorp.com |
| | Ian White | Shell North America | ian.d.white@shell.com |
| Federal power marketing administrations | Alex Spain | BPA | aispain@bpa.gov |

Governance

Matthew Loftus, PacifiCorp

WEIM/EDAM Governance



WEIM/EDAM Governance

- PacifiCorp thanks the members of the Governance Review Committee for their work and efforts in developing the Draft Final Proposal on WEIM and EDAM governance.
- A primary recommendation of the GRC is to continue, but expand the joint authority governance model.
- Expansion covers EDAM, as well as any rules that directly set or adjust LMP.
- Another important recommendation is to expand the advisory input role so that it covers any real-time or day-ahead market rules that do not fall within joint authority.

WEIM/EDAM Governance

- PacifiCorp continues to support the joint authority construct, along with the expansion to include rules that directly set or adjust LMP, as well as the expansion of the advisory authority.
 - The joint authority model is unique and a creative way to work within the California statutory limitations around overall governance of the CAISO, this approach reflects a good faith response to a lengthy stakeholder process involving broad interests of the voluntary participating entities within the WEIM.
 - The joint authority model strikes an appropriate balance between the explicit issues and oversight needs of the CAISO's incremental markets (i.e., the WEIM and eventual EDAM) and the more expansive responsibilities tied to the oversight and operations of the CAISO and its membership.
- PacifiCorp appreciates the GRC's acknowledgement that the joint authority model for the WEIM and EDAM would not be sufficient for purposes of a multi-state regional transmission organization.

WEIM/EDAM Governance

- PacifiCorp supports the GRC's recommendation that the EDAM proposal be considered by both the Board of Directors and the Governing Body under the joint authority construct and appreciates the Board's flexibility to allow joint consideration to take place.
- PacifiCorp further supports the GRC's proposal that the governance proposal become effective once the FERC has conclusively accepted the CAISO's section 205 filing for the EDAM market design.

Mary Wiencke, Public Generating Pool

EDAM Governance

REGIONAL ISSUES FORUM



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EDAM Governance

- Good governance should drive **unbiased decision-making and balanced outcomes**
- CAISO Board will not be unaffiliated absent legislative change; but the GRC's proposal for the **joint authority model moves us in the right direction**
- Narrowly tailored scope test does not reflect the integrated nature of the market nor CAISO's dual responsibility as balancing authority and market operator —time will tell; future consideration of **parity concepts** may be required
- Change to by-laws is positive and reinforce decision-makers' obligation to be balanced; more work is needed to **establish trust in the decision-making process**
- Proposals for Regional Issues Forum and stakeholder engagement are very positive

Scott Ranzal, Pacific Gas & Electric

*Governance
for the
Extended
Day-Ahead
Market*

*Regional exchange can be a source of
growth and development, and of
enhancing good governance.*

- Anna Lindh

Governance for the Extended Day-Ahead Market

Wide support for the major elements of the Governance Review Committees (GRC) proposal for Governance of the Extended Day-Ahead Market (EDAM).

Extension of joint authority concept adopted for the Energy Imbalance Market (EIM) to EDAM market design issues under the "applies to" test.

In addition, an extension of joint authority to CAISO rules that directly impact Locational Marginal Pricing was included.

Provisions for decisional classification and dispute resolution are also included.

It is widely acknowledged this proposal does not complete the governance needs for extension and continuation of regional cooperation and coordination.

Vijay Satyal, Western Resource Advocates



Special RIF Meeting: Perspectives on 2023 EIM GRC Governance Proposal

01/18/2023

Vijay Satyal Ph.D.

Public Interest Sub-Sector Liaison, RIF

&

Deputy Director, Regional Markets @ WRA

2023 EIM GRC Proposal - Governance

- ❖ Strongly support expansion of Joint Authority
 - Extend the “applied to” test to EDAM tariff rules.
 - Proposals that directly establish or change the formation of any locational marginal price(s) for a product that is common to the overall WEIM or EDAM market.
- Unique solution with many advantages
 - Equitably shares authority
 - Transparent
 - Supports holistic engagement by the two governing bodies, providing an opportunity for broader understanding and enhancing trust between the two bodies, market participants and other stakeholders
- Applaud GRC for providing extensive details about the application. Monitor application as potentially unique situations may arise.

2023 EIM GRC Proposal - Governance

- ❖ Support enhancements to Governing Body's advisory input process when Governing Body advises Board to not adopt a proposal
 - Discussion in joint general session
 - Right to hire outside counsel or independent assistance to prepare a written statement of opposition that will be submitted to FERC
- ❖ Recommendation will give more weight to the Governing Body's positions on topics

Governance - Areas for Continued Progress

- ❖ Stakeholder Engagement
 - Strongly support the continued application of CAISO's stakeholder framework: process is open equally to all without greater influence to market participants or a subset of stakeholders
 - Support the evolution of the RIF's role: Work to implement the RIF roundtable discussion on the policy roadmap and support a more forward thinking role for the RIF
 - Support working group approach as it enhances stakeholder engagement: Ensure the working group approach is used appropriately and applies the "complex and substantial" standard
- ❖ Timing of governance changes: effective once FERC has conclusively accepted the CAISO's filing for the EDAM market design.
 - Appropriately balances interests



Thank You

Vijay Satyal Ph.D.

Regional Markets & Clean Energy Program @ WRA

vijay.satyal@westernresources.org

Peer-to-Peer Discussion

Day Ahead Market Enhancements (DAME)

Michael Wilding, PacifiCorp

Arnie Quinn, Vistra

Vistra

Day-Ahead Market Enhancements

Residual unit commitment should not be revised and imbalance reserves should be



- Vistra intellectually supports the need for a zonal upward uncertainty product in the day-ahead market and moving out-of-market actions currently largely embedded in load bias into the day ahead market results.
- Vistra does not support RUC changes, because the proposed changes to Residual Unit Commitment run have not been supported as necessary and they will lead to unintended adverse contractual consequences for California RA resources, and potentially WRAP resources.
- Imbalance reserve market design concerns:
 - Downward imbalance reserve product is unnecessary, in part since the day-ahead schedules provide downward flexibility in real-time
 - Nodal design introduces significant complexities and market inefficiencies without commensurate benefits

RUC changes are unnecessary and add administrative burdens with little to no benefits



- Claims imbalance reserve is needed for EDAM are not well explained and we question whether this is the right dependency.
 - Imbalance reserve product appears similar to other ancillary service products, for example a load following ancillary service.
 - It is unclear why this ancillary service is included in EDAM initial design when other ancillary services are proposed to be managed by each EDAM BAA.
- Applying RUC changes to the entire EDAM complicates the obligations of California RA resources and potentially resources providing resource adequacy for WRAP participants.
 - We do not agree that California RA resources can offer non-zero prices into RUC, and it is questionable whether WRAP resources will be able to offer non-zero prices.
 - Any RUC availability revenues associated with providing reliability backstop RA capacity will need to be returned to RA buyers per RA contracts.
 - Settlement changes to begin providing payments to RA resources creates an administrative burden for companies with little corresponding benefit.

Nodal design is inferior to zonal design for imbalance reserves and may harm market outcomes

Nodal design proposed is unnecessarily complicated, not well supported, and introduces unnecessary market power mitigation.

- The nodal design is likely to lead to suboptimal market outcomes reducing effectiveness of the day-ahead market because the design:
 - Potentially distorts day-ahead prices without ensuring real-time deliverability
 - Assumes nodal deployment that is a poor predictor of real-time nodal deployment patterns
- Nodal design arguably creates concerns that the day-ahead market needs to “manage” congestion from assumed patterns, where deliverability concerns in real-time are not well-founded.
 - Should monitor and establish granular zones to address deliverability concerns, and if persists consider long-term transmission upgrades.
- Nodal design arguably creates the need for market power mitigation based on assumed congestion patterns that may not materialize.
 - Market power mitigation employed for other reserve services is appropriate and sufficient (\$247/MWh cap)

Sergio Duenas, California Energy Storage Alliance

Peer-to-Peer Discussion

Scott Ranzal, Pacific Gas & Electric

Day-Ahead Market Enhancements

The Day-Ahead Market Enhancements (DAME) initiative has been on-going for several years but is getting closer to introducing new products to the market to better account for net load variability and uncertainty including:

- Imbalance reserve product
- Downward dispatch capability within the residual unit commitment process

These new products impact the Day-Ahead and Real-Time markets and interplay within California with the existing Resource Adequacy (RA) program.

- Net Transfer limit is a positive to address RA needs.
- Settlement solutions have been challenging to resolve, but CAISOs final proposal includes a commitment to work with parties to facilitate contractual settlement provisions.
- Complexities for Imbalance reserve deviation settlements, market power mitigation, etc. will require focused effort during implementation.

DAME Implementation, as well as integration with other CAISO initiatives will require stakeholder input and effort to ensure the technical design aligns with the policy objectives and achieves an efficient, effective market outcome.

Carrie Bentley, Western Power Trading Forum

Mary Wiencke, Public Generating Pool

Day Ahead Market Enhancements

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Day Ahead Market Enhancements

- **Day-ahead imbalance management is critical** as greater amounts of variable generation are integrated and the imbalance reserve product is critical for further regionalization
- Ongoing load conformance action is not a solution, **market operator intervention should be limited in favor of market products that support system reliability**; this is also critical for leveling the playing field in the absence of a shared resource adequacy program
- However, **significant unresolved issues remain**: tie to EDAM, intersection with product price formation and market power mitigation
- **Start with conservative approach** to test concepts and gain understanding of potential benefits and operational challenges

Peer-to-Peer Discussion

10-minute Break

Be back at 2:00 pm

Extended Day Ahead Market Enhancements (EDAM)

Pam Sporborg, Portland General Electric

Arnie Quinn, Vistra

Vistra

Extended Day-Ahead Market

Regional markets should bring benefits, and avoid unfair or discriminatory design



- We support any effort that advances the benefits of competitive markets to a broader geographic region
- Hopefully, EDAM and SPP Markets+ participants will see benefits of regional markets and use these platforms as a step to a full RTO
- We are concerned certain elements of the greenhouse gas design, resource sufficiency, residual unit commitment run will:
 - Put internal California cleaner emitting generation at an inappropriate competitive disadvantage relative to external higher emitting resources
 - Undervalue Resource Adequacy resources marketing forward firm supply by allowing California obligations to be traded through an inferior product with other BAAs at a lower cost
- Vistra questions how CAISO's transmission proposal is consistent with long-standing open access principles and whether it avoids inappropriate confiscation of third party transmission rights.

Greenhouse gas rules should not displace lower emitting for higher emitting resources



- As owners and operators of non-emitting storage or cleaner emitting gas resources, greenhouse gas rules that displace cleaner emitting internal generation inefficiently harm Vistra
- It is essential that a day-ahead greenhouse gas approach:
 - Does not allow higher emitting resources external to California to displace lower emitting California generators
 - Only extends GHG compliance to resources likely to be awarded to support the net import into California, which we can only have confidence in if there is a reasonable baseline setting “surplus”
- CAISO approach fails to account for and attribute GHGs to resources and BAAs with reference to a reasonable base-case dispatch because:
 - It does not run balancing area-level base case to identify “surplus”
 - It does not limit external resources attribution to day-ahead award levels
 - BAA net export constraint may restrict deeming to a net exporting BAA, which ignores fundamental reality that net importing BAA may nonetheless have resources that have been contracted and/or dispatched up to serve California load

Market rules should not weaken signals to appropriately invest in forward resources



- It is important for an EDAM that there is a strong resource sufficiency test in the absence of a coordinated resource adequacy program to ensure that EDAM does not undermine forward planning and procurement
- Certain elements of CAISO's proposal muddy the distinction between resource adequacy and resource sufficiency and weaken signals to appropriately firm up supply for expected energy requirements prior to day-ahead by:
 - Enabling transfers to meet CAISO's backstop resource adequacy needs through an EDAM-wide RUC,
 - Enabling demand and uncertainty obligation trading between BAAs to meet the resource sufficiency test with an inferior product at a value much lower than the cost of firming up supply through a RA-equivalent contract, and
 - Allowing BAAs that pass the day-ahead test to be tested in real-time within the passing BAAs pool even if in real-time they are resource insufficient.
- We are also concerned that applying a net export constraint to hold back capacity from the day-ahead market could lead to self-reinforcing behavior where BAAs increasingly feel the need to withhold supply, at best reducing and at worst erasing benefits of a regional market.

Russ Mantifel, Bonneville Power Administration

Jeff Spires, Powerex



Jan 18, 2023

Jeff Spires

Enhanced Day-Ahead Market (EDAM) Western EIM Regional Issues Forum

Supply. Flexibility. Commitment.

Powerex Perspective

Respecting Priority of WRAP Transactions in EDAM

Forward Showing Transactions

Forward supply used to meet
WRAP Obligations

Firm/conditional firm OATT
transmission to deliver forward
supply

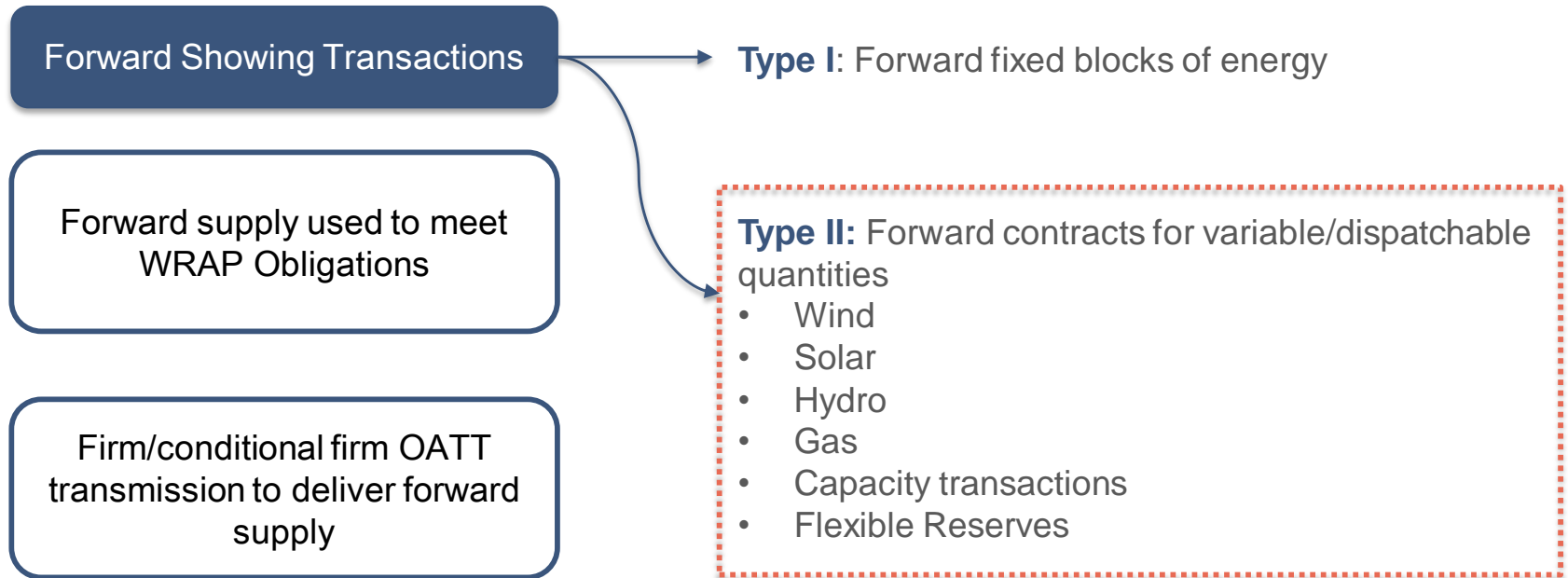
Operational Diversity

Supply supporting holdback
requests & obligations

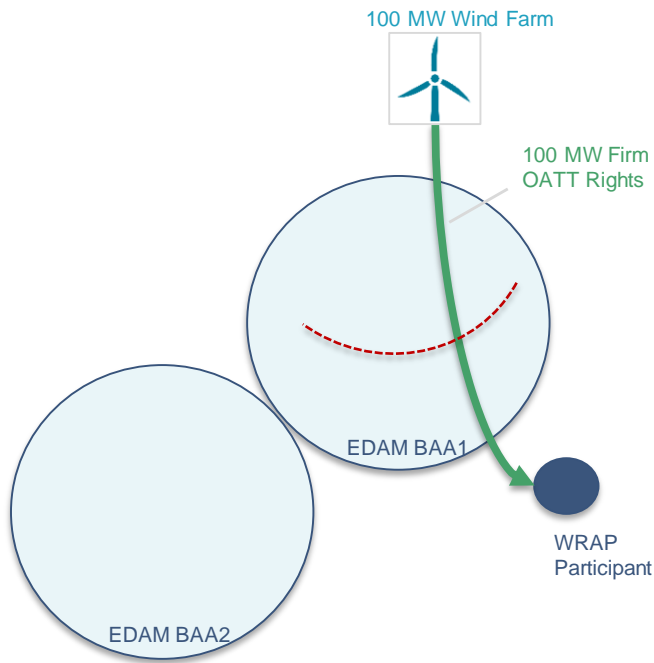
Firm/conditional firm OATT
transmission to deliver
holdback energy

Powerex Perspective

Respecting Priority of WRAP Transactions in EDAM



Example - Assumptions



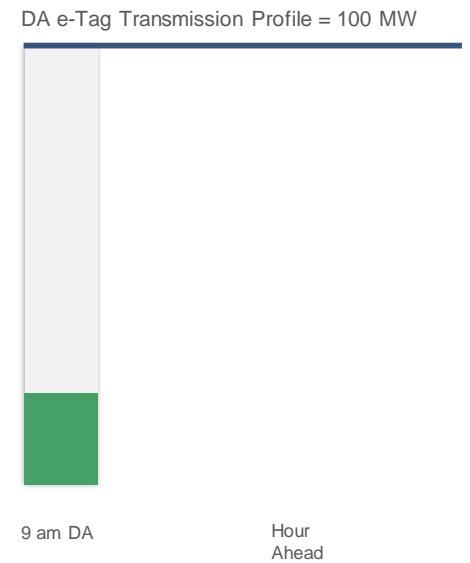
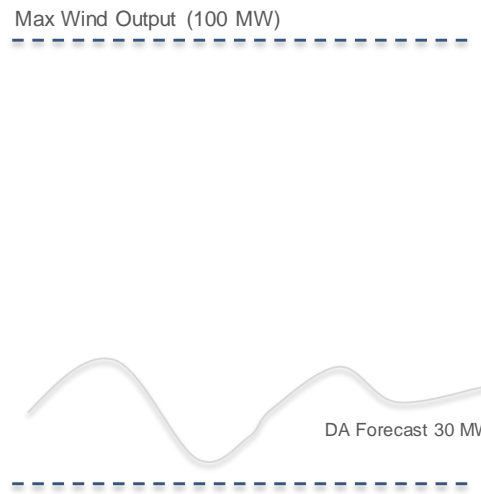
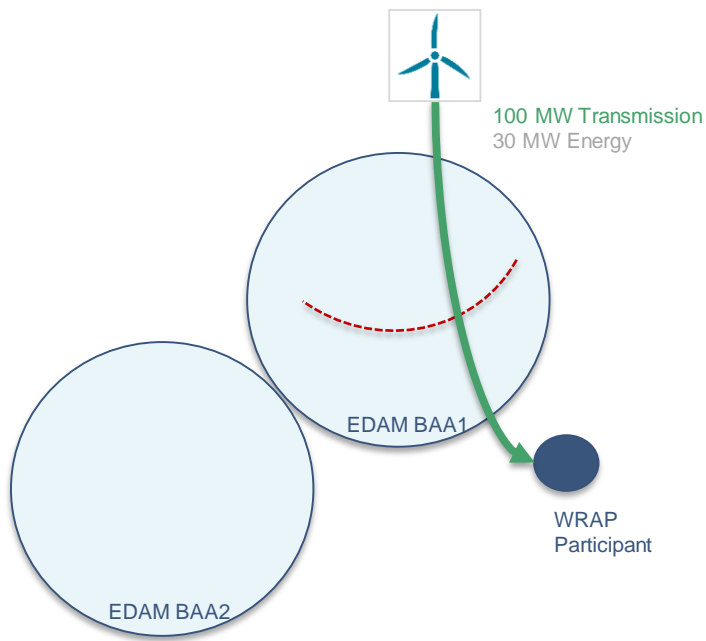
A WRAP participant outside EDAM forward contracts for:

(a) 100 MW Wind PPA

(b) 100 MW Firm OATT Rights across an EDAM BAA to deliver wind to load

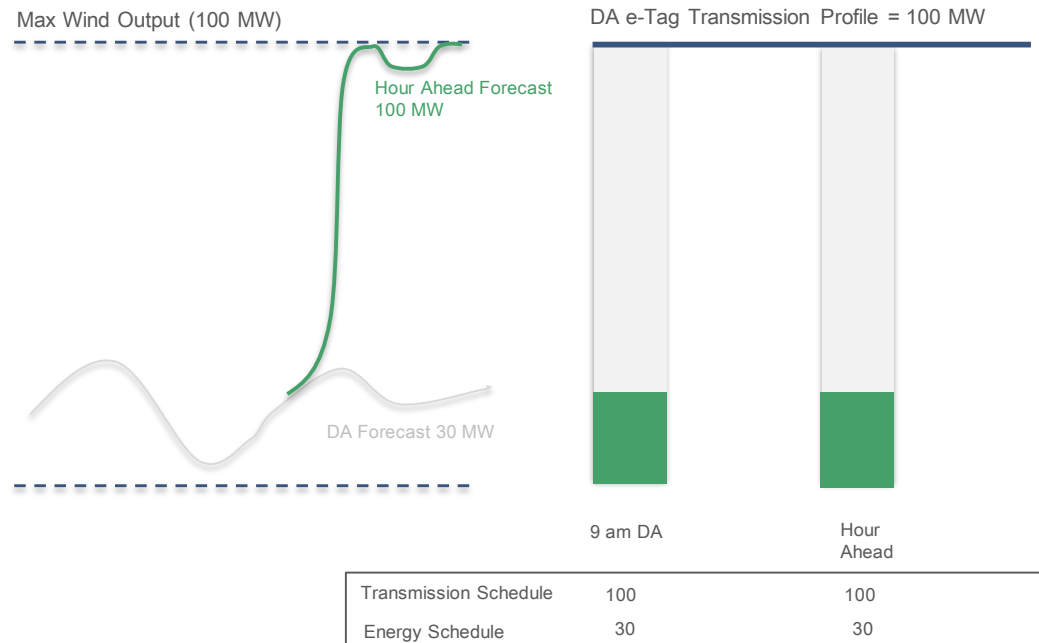
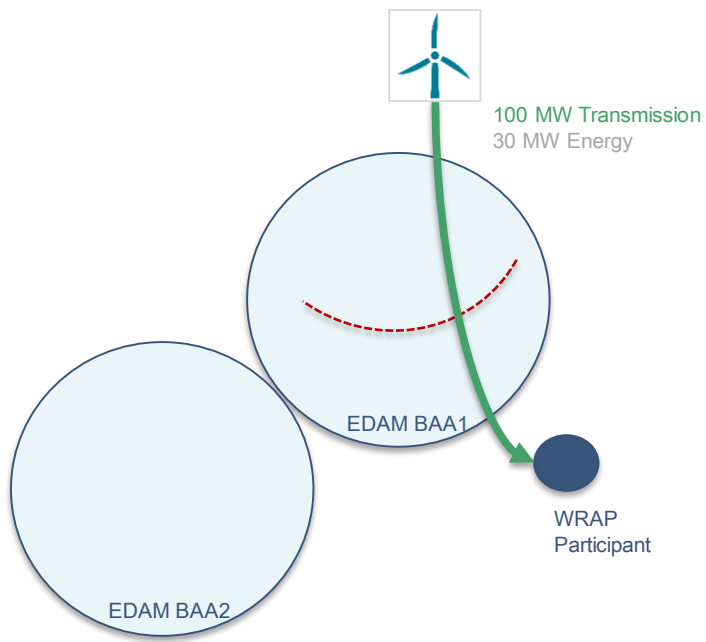
- On a forward basis, entity counts wind resource towards its WRAP forward showing obligation
 - *i.e.*, using ELCC counting methodology
 - assumes entire wind output can be delivered
- In operating timeframe, WRAP participant **submits a day-ahead schedule** using its 100 MW of firm transmission to delivery its hourly wind output to its load

Today's World: Day-Ahead

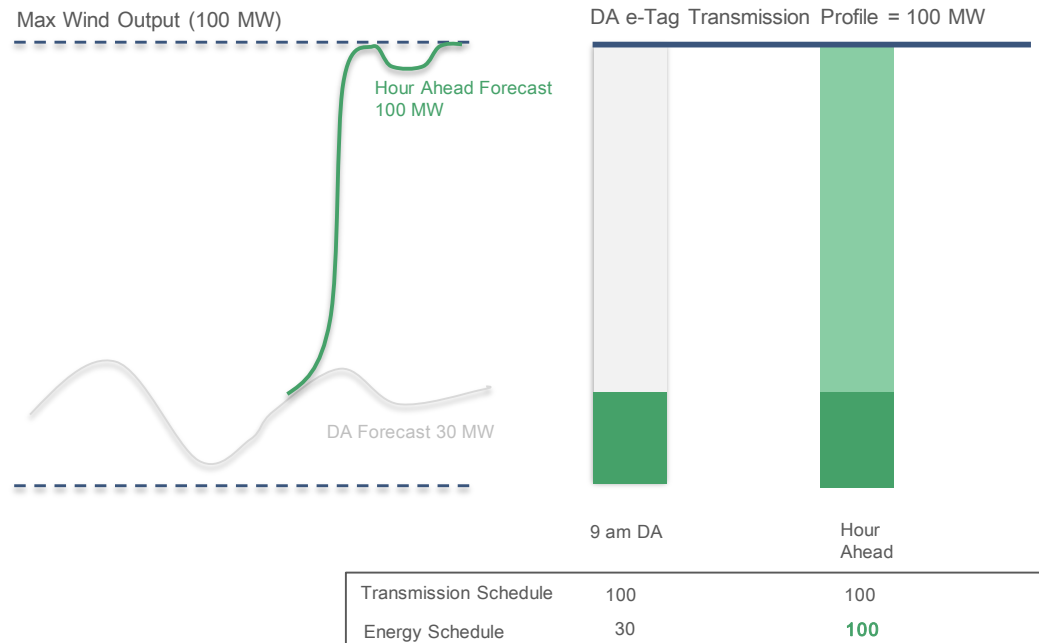
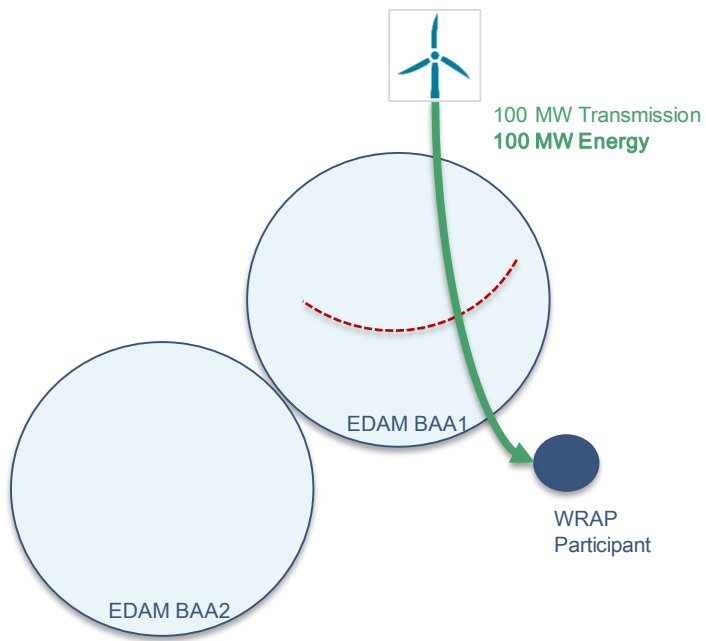


| | |
|-----------------------|-----|
| Transmission Schedule | 100 |
| Energy Schedule | 30 |

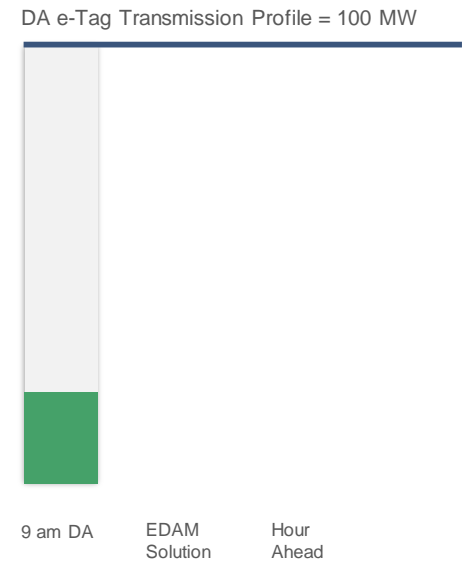
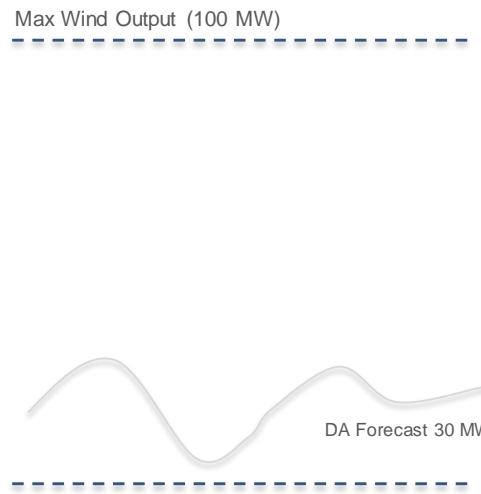
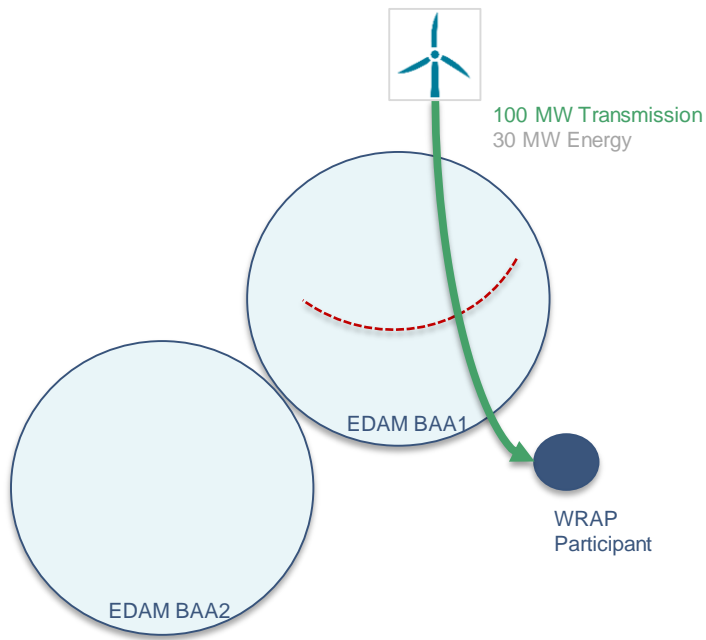
Today's World: Hour-Ahead (1)



Today's World: Hour-Ahead (2)

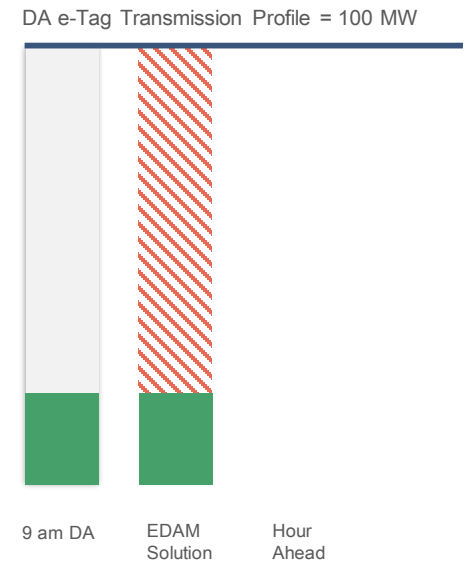
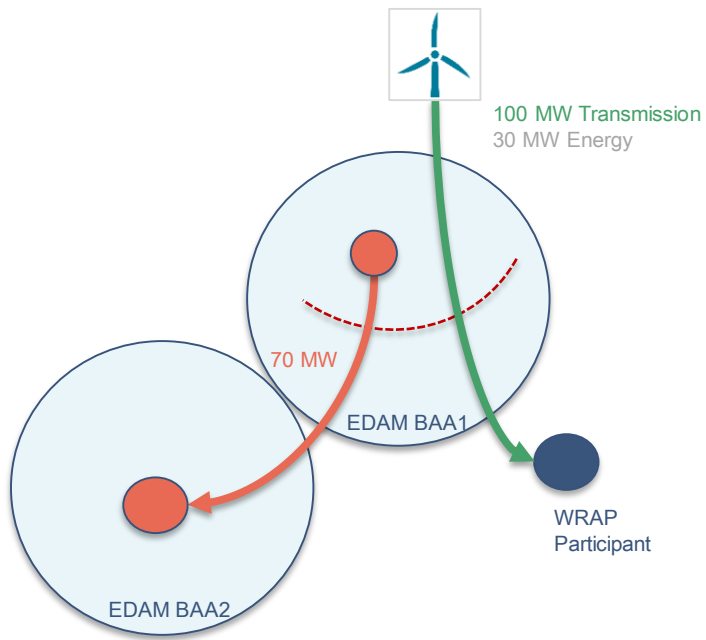


EDAM Proposal: Prior to 9 AM Day-Ahead



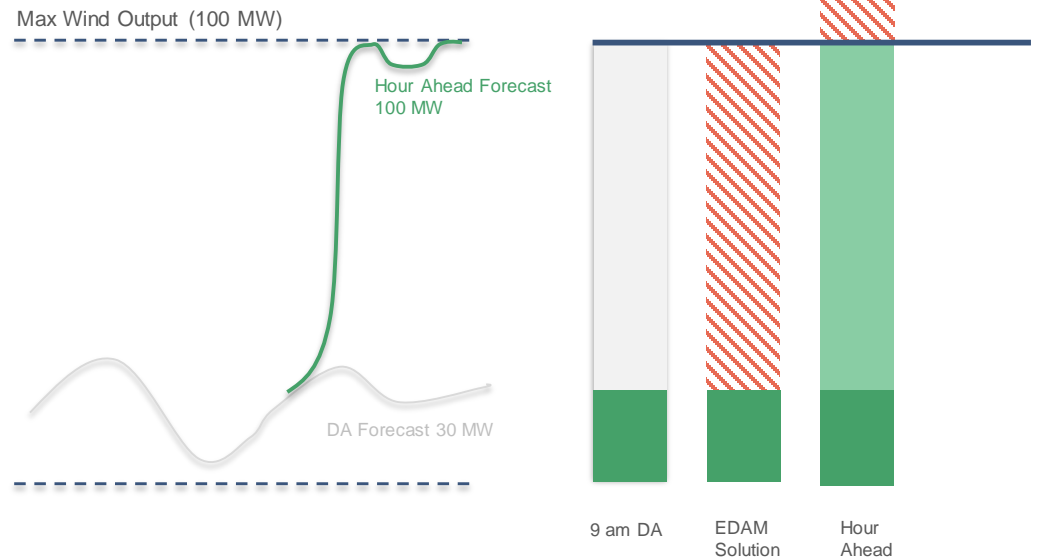
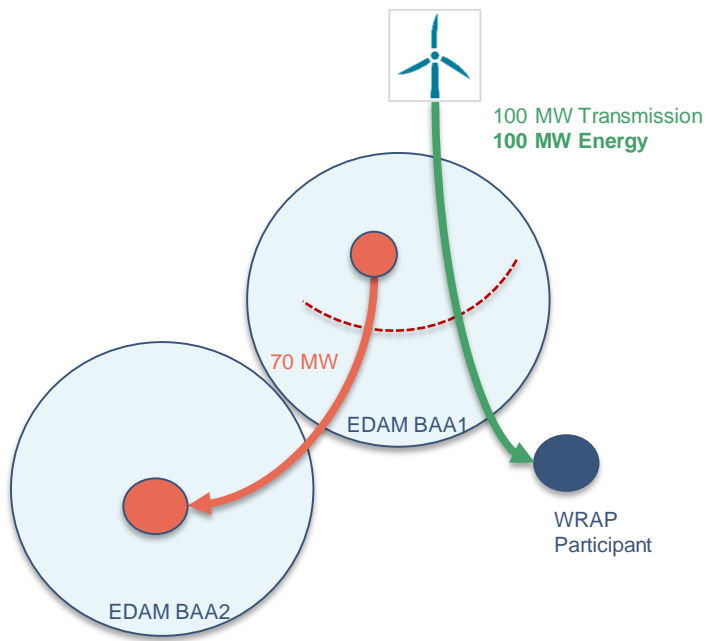
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| Transmission Schedule | 100 |
| Energy Schedule | 30 |

EDAM Proposal: DA Market Solution (1 PM)



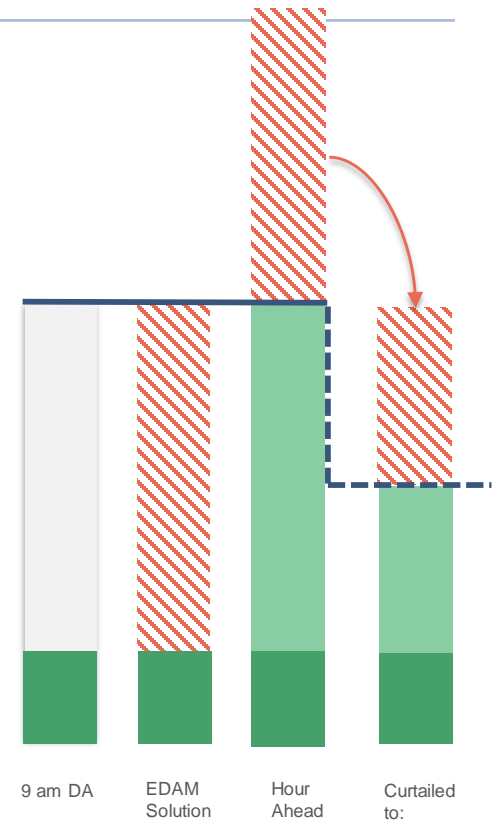
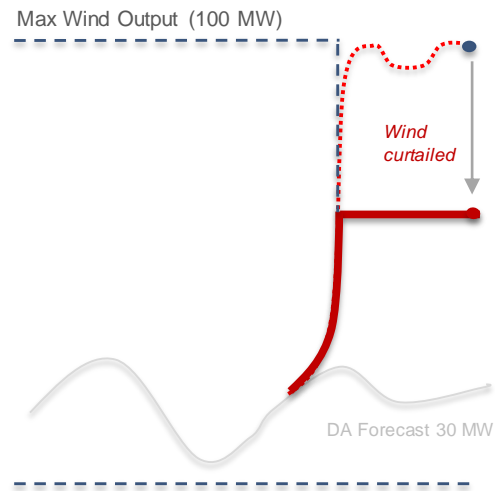
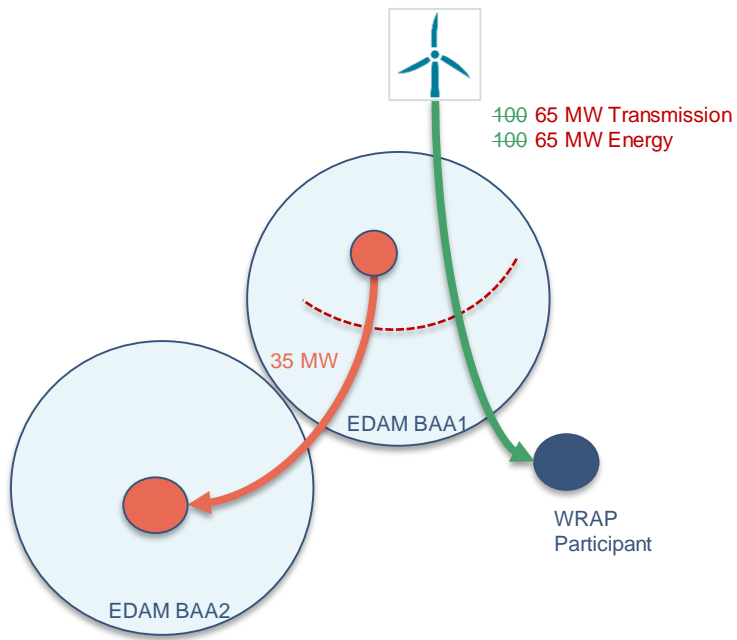
| | | |
|-----------------------|-----|-----------|
| Transmission Schedule | 100 | 100 |
| Energy Schedule | 30 | 30 |
| EDAM Transfer | | 70 |

EDAM Proposal: Hour-Ahead



| | | | |
|-----------------------|-----|-----------|-----------|
| Transmission Schedule | 100 | 100 | 100 |
| Energy Schedule | 30 | 30 | 100 |
| EDAM Transfer | | 70 | 70 |

EDAM Proposal: Curtailment in Real-time



| | | | | |
|-----------------------|-----|-----------|-----------|-----------|
| Transmission Schedule | 100 | 100 | 100 | 65 |
| Energy Schedule | 30 | 30 | 100 | 65 |
| EDAM Transfer | | 70 | 70 | 35 |

Powerex Perspective

Conclusion

- The WRAP program relies on NERC priority 6 or 7 transmission rights being respected as the highest priority use of the applicable facilities to ensure deliverability of WRAP supply to load to protect reliability
- Not just day-ahead fixed blocks: EDAM must also respect transmission that is scheduled on a day-ahead basis to enable varying energy deliveries in real-time
 - Necessary to support VERs, dispatchable hydro and gas, capacity, flex reserves, etc.
- Firm/Conditional OATT rights scheduled by 9 am day-ahead must be recognized and assigned highest priority, ahead of EDAM transfers that are using the same ATC without any transmission reserved



Thank You

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Supply. Flexibility. Commitment.

Peer-to-Peer Discussion

Scott Ranzal, Pacific Gas & Electric

Extended Day-Ahead Market

Western grid regionalization is the idea of better connecting and coordinating power grids across the West.

It is not a new concept.¹

We have an opportunity to continue to make this concept a reality.

1: <https://news.gerona.ca/>

Extended Day-Ahead Market

The CAISO Extended Day-Ahead Market (EDAM) has the building blocks for another meaningful step toward a Western Regional Transmission Organization (RTO).

- Regional cooperation is important to achieving public policy goals and accommodate a changing resource fleet for the western power grid to avoid inefficient and ineffective market outcomes.
- **Resource Sufficiency Evaluation (RSE)** establishes a common day-ahead measure for resource supply and reserves.
 - California's, as well as ***all*** other, resources will be accounted for enabling state commission and resource adequacy efforts to support the market.
 - Tools (e.g., Net-Export Limit) enable appropriate resource management
- **All transmission** will be included in the market optimization, hurdle-free, to ensure the market produces the most efficient and effective market result.
- Greenhouse Gas accounting provides an initial base to manage and monitor EDAM's emissions impact, as the West continues to **identify objectives and drive strategies to combat climate change**.

EDAMs design has made enormous progress to date and holds promise to deliver substantial benefit to the market.

Extended Day-Ahead Market

EDAM progress, like every market design, will need to continually evolve and will be closely measured and monitored.

- The Extended Day-Ahead Market is a new market design.
- CAISO has several other major initiatives in development that will impact the Day-Ahead market and will require alignment and consistency across its market and initiatives.
- EDAMs implementation will require extensive effort by the CAISO, EDAM / EIM participants, stakeholders, government regulators and many more contributors to deliver a successful result.
- Market monitoring of the resource sufficiency evaluation, transmission revenue recovery, congestion, GHG accounting, and many other aspects of EDAM must be comprehensive, extensive, and transparent.
- Continuing market design and development will be necessary to ensure proper incentive alignment and appropriate market functioning.

Michael Wilding, PacifiCorp

Vijay Satyal, Western Resource Advocates



Special RIF Meeting: Perspectives on 2023 EDAM Proposal

01/18/2023

Vijay Satyal Ph.D.

Public Interest Sub-Sector Liaison, RIF

&

Deputy Director, Regional Markets @ WRA

Competing Priorities & Interests: EDAM Market Offering



We get it! Rome took a long time to build! Get EDAM right but let's move away from (bilateral) status quo!



We get it! Current rights & contracts matter. However long term benefits outweigh short term; need to remove barriers to efficient and inclusive participation

2023 EDAM Transmission Proposal

- ❖ ***Support inclusive, transparent, and market optimization maximizer product***
- ❖ **Recognize the diverse interests**
- ❖ **Transmission Participation**
 - Support the ability for generators to use a financial mechanism to meet the transmission requirement
 - Avoid costs that discourage participation or impact market efficiency
- ❖ **Transmission Provision**
 - Support “three-bucket” framework and general framework for transmission compensation to Transmission Service Providers
 - Equitable treatment between all entities providing transmission to market
 - Significant concessions awarded to differing transmission right holders
 - **PIOs want a glide-path to fullest and efficient use of transmission in EDAM that is also free of pancaked transmission with robust reporting on market performance**

2023 EDAM Greenhouse Gas Accounting Proposal

- ❖ Selected GHG accounting method – Resource specific support with added modeling of a GHG reference pass
- ❖ Appreciate the debate on how to base the net export constraint.
- Strongly endorse CAISO willingness to provide emissions intensity information for in-state generation and the total MW of BAA-level transfers, as well as the CAISO's stated intent to begin a longer-term effort to provide states with data on centralized market transactions to help meet other state clean energy programs, with and without carbon pricing programs.

- ❖ States policies matter. So does progress towards WI-wide decarbonization

2023 EDAM Greenhouse Gas Accounting Proposal



- ❖ Stakeholder Engagement & Policy Challenges Ahead
 - WRA and clean energy advocates' endorse the need for robust reporting metrics; transparency of energy transfers with carbon intensity; coordination on reporting practices and a "one-stop" platform to host all post-dispatch emissions profile data
 - GHG accounting seams: all resource tracking and best practices on GHG reporting project – partnership with Grid Lab, CEBA and allies underway
 - Market monitoring & reporting with EDAM (GHG, Transmission, RS)

- ❖ WRA request to EDAM community (incl. CAISO staff):
 - Developing technical specifications for good reporting in a West-wide platform for market operators (day-ahead service), clean energy buyers, and state agencies
 - Coordination of EDAM with other day-ahead market offerings

GHG - Select Western States' Needs & WRA Request

- ❖ WRA and allies 2022 survey of Western state agencies and staff:
 - *Independence of reporting and verification post-market dispatch*
 - *Evidence of leakage being curtailed, if not fully eliminated*
 - *Integration compatibility of the systems of a market, each state, and any other entities*
 - *System(s) need to be forward looking for market changes and support multi-state coordination*

- ❖ WRA request to EDAM community (incl. CAISO staff):
 - Support need for technical specifications for **robust reporting** in a West-wide platform for market operators (day-ahead service), participants, clean energy buyers, customers and state agencies
 - **Seams** - Coordination of EDAM with other day-ahead market offerings
 - Exploration of **one-stop coordination for data reporting and access**



Thank You

Vijay Satyal Ph.D.

Regional Markets & Clean Energy Program @ WRA

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Mary Wiencke, Public Generating Pool

Extended Day Ahead Market

REGIONAL ISSUES FORUM



January 18, 2023

Extended Day Ahead Market

- **A well-designed day-ahead market is expected to be beneficial** to both a reliability and economic perspective, and can support further integration of renewables
- There are significant challenges associated with designing a day-ahead market that **achieves benefits and but also retains existing balancing authority and transmission frameworks**
- Lack of a common resource adequacy program, in particular where program footprint and penalty pricing may vary, may impact ability to realize benefits; **WRAP interoperability is critical**
- Further work on a **durable solution for greenhouse gas program pricing** and accounting will be needed; greater dialogue and collaboration across states and stakeholders will be critical

Peer-to-Peer Discussion