

Joint Authors to Publish “Issue Alerts” to Inform Public Dialogue on Day-Ahead Market Choices

In recent months, there has been considerable industry dialogue focused on the market seams that will exist between EDAM/EIM and Markets+, as well as the EDAM/EIM governance enhancements being pursued through the Pathways Initiative. While both topics are important, a number of the Markets+ Phase 1 Funding Parties¹ (“Joint Authors”) believe this dialogue is incomplete without also considering the numerous governance and market design differences between Markets+ and EDAM/EIM that are driving continued support for Markets+. To address this gap, the Joint Authors have worked together expeditiously to prepare timely information in this fourth “Issue Alert.” The Joint Authors will continue this collaboration to issue a series of Issue Alerts identifying and explaining the key governance and market design elements that differ between Markets+ and EDAM/EIM and why these differences have important consequences for customers in terms of reliability, economic value, and environmental objectives.

The Joint Authors will share a new Issue Alert every few weeks covering the following topics:

1. Governance
2. Reliability
3. Fair and Accurate Market Pricing
4. Seams Issues
5. Support for Clean Resources
6. Market Operator Actions & Modeling
7. Durable Customer Benefits

¹ Arizona Public Service Co, Chelan County PUD, Grant County PUD, Powerex Corp., Public Service Company of Colorado, Salt River Project, Snohomish PUD, Tacoma Power, Tri-State Generation and Transmission Association Inc. and Tucson Electric Power Company prepared this Issue Alert 4.

Issue Alert 4:

Markets+ Supports Equitable Resolution of Seams Issues

This Issue Alert is part of an ongoing series highlighting the key governance and market design elements that differ between Markets+ and EDAM/WEIM and why these differences have important consequences for customers in terms of reliability, economic value, and environmental objectives.

Key Take-Aways

- **Dozens of seams exist across the West today and will persist under all potential day-ahead market scenarios. A single day-ahead market will not eliminate these seams.**
- **Today, CAISO market rules play a significant role in determining market outcomes between California and neighboring jurisdictions via their application to these seams.**
- **Markets+ will enable existing seams to be resolved more equitably, via a peer-to-peer relationship between market operators.**

The development of two organized day-ahead and real-time markets in the West—Markets+ and EDAM—has led some to ask whether the addition of a new market-to-market seam will result in inefficiencies that increase reliability risks or cost ratepayers more than if there was only a single organized market in the West. This is a legitimate question but should be part of a broader discussion of the dozens of other seams that currently exist—and will continue to exist—in the West.

Numerous Balancing Authority and Transmission Service Provider Seams Will Continue to Exist in the West, With Outcomes Driven By Organized Market Rules

There are currently dozens of seams in the West—that is, instances of two different entities carrying out the same function.² Seams exist between adjacent Balancing Authority Areas (BAAs) and adjacent Transmission Service Providers (TSPs). These seams will continue to exist—even if all entities in the West join the same day-ahead organized market—because neither of the day-ahead market proposals involve consolidation of Balancing Authority (BA) or TSP functions.³

Once multiple organized day-ahead markets become operational, the rules of those organized markets will be used to resolve seams issues between BAs and TSPs that exist within their respective market footprints. For example, during extreme weather events when there might be insufficient generation to meet all load in one or more BAAs, organized market rules will play a key role in determining which load is served by the market and which load is not. Similarly, when transmission between TSPs is congested, organized market rules will play a significant role in determining energy prices on either side of the seam, which can have large financial consequences for participants and their consumers in the exporting region, the importing region and any intermediary region(s).

While organized markets can unlock substantial overall benefits, the specific organized market rules used to resolve BA-to-BA and TSP-to-TSP seams are pivotal in determining how those benefits will be

² [SPP Seams Informational Webinar](#) dated July 12, 2024.

³ There will also be seams between jurisdictions implementing different GHG programs (and those that do not adopt any GHG program), as well as between the Western Resource Adequacy Program (WRAP), once it enters its binding phase, and the California resource adequacy framework.

allocated between individual market participants and their customers. Resolving seams issues equitably is much more likely under market rules that have been developed through an equitable and inclusive governance process and implemented by a neutral market operator—as is the case in Markets+. Equitable resolution of seams issues will be more challenging in EDAM given the legacy institutional framework of the CAISO governance structure and the EDAM rules that have already been developed under that structure.

For entities outside California, joining EDAM would mean accepting that their BA-to-BA and TSP-to-TSP seams will be resolved by market rules developed by the CAISO under its governance framework, and implemented by a market operator that is also one of the participating BAs and one of the participating TSPs. The application of CAISO market rules in resolving BA-to-BA and TSP-to-TSP seams has raised significant concerns among entities outside California in recent years. One such concern involves the application of CAISO market rules that determine who receives power on inter-regional, multi-TSP paths from the Northwest region during heat waves when not all load can be served (and California is competing with the Southwest for available supply). The application of CAISO market rules in this type of scenario can result in California load receiving priority access to Northwest supply in a manner that many entities outside California view as inequitable. Another concern involves CAISO market rules that allocate congestion value on those inter-regional, multi-TSP paths. As an example, during a recent winter weather event, those market rules resulted in California transmission customers receiving a disproportionately high distribution of the congestion value associated with power flowing from the Southwest to the Northwest on those multi-TSP transmission paths.⁴

The Joint Authors believe that participation in Markets+ provides the best option for resolving Western BA-to-BA and TSP-to-TSP seams in a manner that enables all entities to be treated equitably and share the economic, reliability, and environmental customer benefits that an organized market can provide.

The Markets+ Flow-Based Approach Enhances Trade Across Existing Seams

A tremendous volume of trade occurs across the West today, including across numerous BAA and TSP boundaries, with most trade executed bilaterally and scheduled through the Open Access Transmission Tariff (OATT) framework. Markets+ will greatly enhance this existing trade by minimizing hurdle rates and increasing the availability and use of transmission through a flow-based dispatch within the Markets+ footprint. This flow-based dispatch approach will facilitate greater reliability and economic benefits relative to today by enabling more transfers across the same transmission infrastructure, including across BA-to-BA and TSP-to-TSP seams.

Unlike Markets+, EDAM does not employ a full flow-based approach. As a result, EDAM transfers between BAAs and between TSPs will continue to be subject to contract-path scheduling limits used under the OATT framework (and currently employed in WEIM). The impact of applying contract-path limits (rather than enabling a fully flow-based dispatch) is observable in WEIM, as most of the congestion in the WEIM area reflects contract-path limits that typically bind before the underlying physical transmission facilities have been fully utilized.

⁴ See [Transmission Congestion Revenue Distribution \(Mar 8 PNUCC Meeting\)](#)

Efficient and Equitable Trade Will Occur Between Markets+ and EDAM

Seams between Markets+ and EDAM will not be resolved exclusively by the rules of Markets+. But with the launch of Markets+, Western seams will also no longer be resolved exclusively by the CAISO and its market rules. Instead, transactions between Markets+ and EDAM that encounter seams issues will be resolved through the application of the two markets' rules on either side of the seam. Each market operator will seek to ensure that its participants receive the fair value of trade at each applicable seam, including through seams agreements negotiated between these peer market operators, as is the practice today between adjacent organized markets in the Eastern Interconnection.

Some stakeholders have raised concerns that the new market seam between Markets+ and EDAM will create a high barrier to efficient trade. The Joint Authors have a different perspective and anticipate that market-to-market trade between Markets+ and EDAM will efficiently capture the bulk of available economic trade opportunities, resulting in significant customer benefits, for the following reasons:

- **Substantial trade occurs today and will continue in the future.** The drivers of the major trade opportunities—weather, time of day differences, seasonality, demand, fuel prices, unit outages, hydro conditions, and Variable Energy Resource (VER) output—will persist regardless of entities' day-ahead market decisions. These are well understood and tracked closely by experienced personnel whose business is to identify opportunities to buy and sell electricity products.
- **Markets+ will provide expanded trade opportunities with CAISO on day one.** Today, the majority of trade with CAISO is arranged on a day-ahead basis using the contract-path OATT framework (with energy often delivered in 16-hour or 8-hour blocks, consistent with block trading that occurs in bilateral markets). Markets+ will immediately improve on this existing approach by providing trading entities with the ability to import and export energy at numerous Markets+ boundaries on an hourly basis, increasing market liquidity and facilitating more efficient trade between markets.
- **Transactions between Markets+ and EDAM will face very low incremental costs for OATT transmission service.** The production cost studies conducted by E3 and Brattle assume that new transmission service is required for every transaction between EDAM and Markets+ (at a cost of up to about \$9/MWh). In reality, substantial quantities of transmission service are already reserved under yearly or multi-year terms, resulting in upwards of 90% of electricity deliveries⁵ between the Northwest and California being scheduled on “sunk” transmission service reservations at no incremental cost of transmission.
- **There is a strong incentive to reduce remaining economic hurdles.** For example, the current export charge from the CAISO BAA is likely unsustainable in a two-market environment. Continuing to apply an approximately \$12/MWh charge on exports from the CAISO BAA would make California exports of surplus solar electricity to the Markets+ footprint uncompetitive relative to solar generation elsewhere in the West and will result in California solar output being curtailed first. For this reason, it is reasonable to anticipate that this export fee will be significantly reduced or eliminated.
- **Transmission availability between Markets+ and CAISO can be improved using the Market+ design.** The flow-based approach used in Markets+ footprint can be leveraged to improve

⁵ Based on analysis of OASIS schedule detail data provided by western TSPs.

transfer capability between markets, supporting increased transfers to maximize reliability and economic benefits.

- **A market-to-market seams agreement is highly likely.** Parties in both markets will benefit from market-to-market seams agreements that can enable improved congestion management, further reduce trading friction, and even increase transfer capability between markets. SPP brings experience in co-optimized seams management that can be further developed in the West.

Conclusion

The emergence of a new market seam between Markets+ and EDAM will provide a vital opportunity to improve resolution of the dozens of existing BA-to-BA and TSP-to-TSP seams between California and the rest of the West. This dynamic will ensure electricity customers outside of California equitably share in the benefits of trade with California, since those seams (and the distribution of market benefits) will no longer be managed exclusively by rules developed by the CAISO under its legacy institutional governance framework. Further, the Markets + flow-based approach to transmission will maximize the many trade opportunities that will exist within the future Markets + footprint, untapping additional benefits relative to that achievable under EDAM's contract-path approach. Finally, efficient and equitable trade can be expected to occur between Markets+ and EDAM and will be managed by seams agreements negotiated between peer market operators and shaped by the robust, inclusive and independent governance framework that is the foundation of Markets+.