



Fact Sheet

November 2020

BPA prepares for potential changes that could enable joining Western Energy Imbalance Market

The Bonneville Power Administration is preparing for potential changes to its systems, rates and transmission tariff that could enable participation in the Western Energy Imbalance Market if it joins in March 2022.

The EIM is a voluntary, real-time energy market operated by the California Independent System Operator that offers BPA a new market for federal hydropower. BPA also believes the EIM could improve its transmission operations and more efficiently mitigate congestion along transmission corridors.

A well-designed electricity market is built on a foundation of resource adequacy and has features that provide for intra-hour energy balancing and sufficient compensation for capacity resources that enable enhanced system reliability and flexibility. The EIM is one element of that well-designed market and should complement BPA's long term sales of power to BPA's firm power customers in the Pacific Northwest.

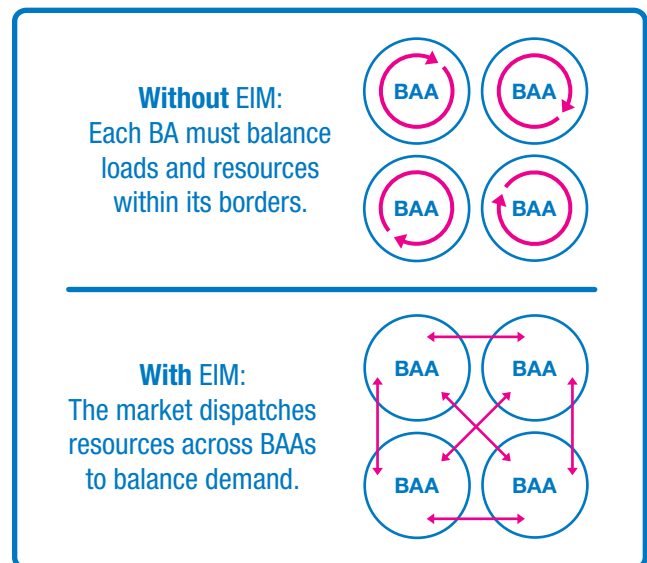
BPA's 2018–2023 Strategic Plan recognizes the importance of grid modernization. EIM implementation would allow BPA to take a more active role in evolving energy and capacity markets, while meeting its long term firm power obligations in the Pacific Northwest consistent with statutory preference requirements.

BPA continues to explore ways to fully realize the value of the flexible, carbon-free federal hydropower system. Traditional market designs have not sufficiently enabled BPA to offer the flexible capacity produced by the Federal Columbia River Power System, such as the

ability to quickly ramp power generation up or down to accommodate the variability of wind and solar energy, nor appropriately recognized the value of that carbon-free flexibility. Signing the EIM Implementation Agreement with CAISO in September 2019 enabled BPA to take a more active role in the development of new market activities.

What is the EIM?

The EIM centrally dispatches generation and coordinates the movement of wholesale electricity. It is a centralized, intra-hour, real-time energy market. It can more efficiently and economically maintain the load-resource balance of the balancing authorities that choose to participate. BAs maintain the load-resource balance for the balancing authority area, or all the generation, transmission and load within its metered boundary.



Unlike the hourly and day-ahead California markets BPA already operates in, the EIM dispatches generation in the most economical way every five minutes, balancing supply and demand across a large geographic footprint.

This optimization reduces energy supply costs and enhances integration of renewable energy sources to the electric grid. The EIM also allows for increased visibility of conditions across the grid, providing enhanced reliability.

The EIM is security-constrained, meaning transmission and reliability constraints are maintained and are not exceeded. BPA would preserve its autonomy and retain authority over its generation and transmission operations.

What the EIM is NOT

The EIM is not a regional transmission organization. An RTO is a transmission system operator that coordinates, controls and monitors a multi-state electric grid. In the EIM, BPA would maintain its control of the transmission system and its open access transmission tariff. The same goes for BPA's generation because the EIM is not a centralized generation unit commitment tool, meaning BPA and its federal partners would also retain autonomy over their federal projects and generating units.

Finally, the EIM is not a capacity market, and would not be a replacement for BPA's current contractual bilateral business structure.

Why would BPA join the EIM?

BPA continues to evaluate joining the EIM in March 2022. EIM participation could increase BPA's efficiency and visibility into the dispatch and marketing of federal power and transmission assets. This could support maintaining BPA's financial strength, enabling the agency to continue to provide competitive power products and services, and meeting transmission customer needs efficiently and responsively — all key goals of the 2018–2023 Strategic Plan.

BPA completed a cost-benefit analysis that considered qualitative benefits, estimated startup and annual costs, as well as expected annual benefits, as part of its business case. BPA expects the dispatch benefits of the EIM could quickly outpace the costs of both startup and ongoing participation costs. Mature

participation is expected to result in annual net benefits of \$29 million to \$34 million a year. This would be achieved by marketing surplus spinning reserves into the EIM from 10 federal hydropower projects. The revenues would come from the optimized value of hydropower that cannot be realized in intra-hour markets today.

The EIM can also provide numerous qualitative transmission benefits. EIM dispatches would provide an additional grid management tool. The EIM optimizes congestion relief across the entire footprint instead of looking at only local congestion relief. It could provide more precision and effectiveness in mitigating intra-hour flow relief, which could minimize non-optimized curtailments. The market may also offer a complementary, low-cost non-wires solution to more effectively mitigate congestion along transmission corridors.

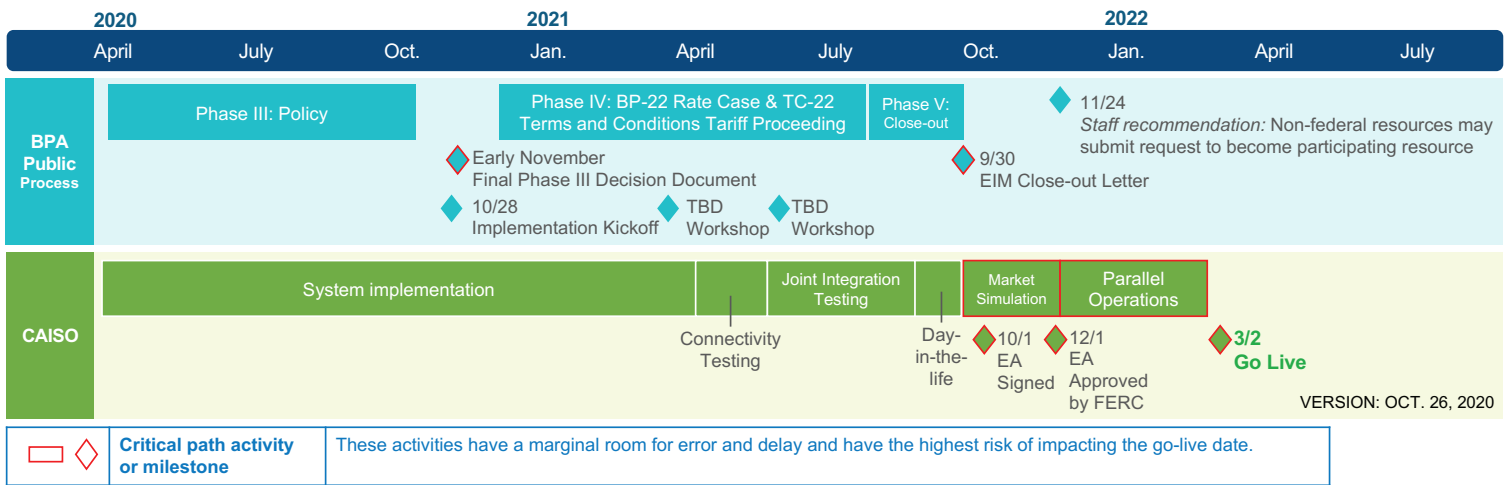
BPA's customers in its BAA may also directly benefit by being able to bid their resource flexibility, allowing them an additional opportunity to optimize their energy dispatch and maximize the value of their resources.

What could change for BPA?

BPA launched five grid modernization projects in October 2019 that would be needed to enable EIM participation. These projects would provide systems and processes to address potential changes to real-time operations, to allow BPA to bid and schedule in the market, and to create a new settlements system. They also will ensure BPA staff receives the proper training and support, and will build a testing program to ensure BPA's processes could effectively work in the market.

There could be organizational changes like a new EIM desk focused on coordinating market transactions. BPA could also add a new EIM settlements group specializing in settling the CAISO EIM charges or credits for market-related activities.

Operationally, BPA may: establish new timelines for scheduling; establish mechanisms for making transmission capacity available to the market; establish procedures for offering energy to the market; revise variable energy forecasting and scheduling practices; and change how signals are sent to our federal partners to ensure compliance with EIM requirements.



BPA's EIM implementation timeline. The complete timeline and updates are available at www.bpa.gov/goto/eim.

What could change for customers?

Customers could see changes to scheduling timelines. There could be new settlement processes and billing changes associated with participation in the market. There could also be changes to rates and the transmission tariff to enable EIM participation. These topics were discussed in the TC-22, BP-22 and EIM Phase III customer workshops, and decisions will eventually be made in either the rate and tariff proceedings or a business practice policy with customer input, as appropriate.

Policy decisions and implementation changes may be phased in over time. Due to the complexity of changes, BPA may opt for a simplified implementation for the first rate period on some issues. BPA may look to change some policies to match a new or more mature understanding of the market as market experience is gained.

BPA would offer customer training on how EIM settlements would work and how to understand potential changes to their bills before going live in the EIM.

Five phases to decide whether to join the EIM and next steps



- Exploration** July 2018–June 2019
- Implementation agreement** June–Sept. 2019
- Policy decisions** Oct. 2019–Oct. 2020
- BP-22 & TC-22** Dec. 2020–July 2021
- Close-out** Aug.–Sept. 2021

Since 2018, BPA has been using a collaborative, five-phase decision-making process to determine whether to join the EIM. BPA concluded Phases I, Exploration, and II, Implementation Agreement, in 2019 with broad participation from across the region. BPA concluded Phase III in October 2020 by issuing a final decision document on a set of policy decisions after incorporating customer feedback. The next step is Phase IV, the BP-22 Rate Case and TC-22 Terms and Conditions Tariff Proceeding, which will start in December 2020.

In Phase V, BPA will issue a closeout letter that will determine whether joining the EIM aligns with the six participation principles presented in the September 2019 record of decision. Customers and constituents will have a chance to submit their comments on the letter. The process will conclude in the fall of 2021 with BPA issuing a final decision on whether to join the EIM. If BPA decides to join, it would then sign the EIM Entity Agreement as its final step.

BPA adopted six EIM participation principles that it will use throughout the implementation of joining the EIM and as a final determination of whether or not it should join the EIM.

- 1. BPA's participation is consistent with its statutory, regulatory and contractual obligations.**
- 2. BPA will maintain reliable delivery of power and transmission to its customers.**
- 3. BPA's participation is discretionary and BPA retains its ability to effectively exit the market in the event participation is no longer consistent with these principles.**
- 4. BPA's participation is consistent with a sound business rationale.**
- 5. BPA's participation is consistent with the objectives of BPA's strategic plan.**
- 6. BPA's evaluation of EIM participation includes transparent consideration of the commercial and operational impacts on its products and services.**

BPA is committed to continuing transparent and open processes throughout the remaining decision phases. BPA will also continue to share information on its EIM implementation efforts.

Other considerations

BPA is engaged in other regional initiatives that could impact how it might participate in the EIM. One focus is the CAISO's Western EIM Governance Review Committee initiative. The initiative is looking at whether or not changes should be made to the EIM's governance structure, as the market has evolved since its creation in 2014. While BPA believes the current governance structure is not a barrier to joining the market, there could be benefits to changing the current structure. BPA will continue to participate and evaluate the outcome to ensure the new governance structure continues to pose no barriers to potentially joining the EIM.

BPA also participates in other market initiatives, like the CAISO's extended day-ahead market initiative and the Northwest Power Pool's Resource Adequacy program, with the objective to ensure these efforts are compatible with potential EIM participation.

For more information

Visit www.bpa.gov/goto/eim to stay up to date on BPA's EIM implementation or email questions to gridmod@bpa.gov.