Energy Imbalance Market
Frequently Asked Questions

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This sounds like a complicated utility thing. Why should we weigh-in?

Q: What are balancing services? Why do we need them?

• Balancing services match a utility’s power demand with supply on a moment-to-moment basis. We need balancing services in order to keep the lights on (also referred to as maintaining system reliability).

• Balancing services match a utility’s short-term fluctuations in load, or customer use, to its fleet of diverse electricity generators (power plants). Balancing services also smooth out the fluctuations in renewable energy generation (like wind and solar) so that it can be used to reliably serve load on a predictable basis.

• In the Northwest, there are 23 different balancing areas that provide this service, such as Bonneville Power Administration (BPA) and larger generating utilities like Portland General Electric or Seattle City Light. Each one of those 23 balancing areas currently needs to maintain enough balancing resources for its own customers’ use.

Q: What is an EIM? How will it work?

• An “Energy Imbalance Market” (EIM) is a coordinated market across utilities that allows them to share balancing reserves for their mutual benefit. Joining an EIM is voluntary for any utility. Currently, the 23 different balancing areas in the Northwest act like islands, performing their balancing functions independently of each other. An EIM would enable them to pool their resources, improving efficiency and reliability of the system overall.

  o By aggregating balancing areas’ needs together into a single larger pool, an EIM reduces the need for balancing services and optimizes the supply of balancing reserves, resulting in a net benefit to participants. This netting effect decreases the cost of providing reliable electric service.

  o For example, when BPA has extra electricity on its system and PGE doesn't have enough, rather than separately adjusting their own generation, an EIM would offset each other’s individual requirement and the collective system would be in equilibrium, without added costs to either one. The result is a win-win for BPA, PGE and their ratepayers.
• With an EIM, participating balancing authorities – such as BPA or PGE – would make balancing resources available in the market and in turn have access to the lowest-cost available balancing resource when needed.
  
  o Purchasers save money by not having to rely only on their own resources that might be more expensive sources of balancing reserves at that moment.
  
  o Sellers gain a new revenue stream for generator capability that would otherwise sit idle.

• Participating generators can set the price at which they are willing to provide the service. If the price is not met, the generation just doesn’t get sold. If the price is met, and that generation is the least cost at that time, the market will select it.

• The big picture management of balancing reserves under one larger umbrella provides economies of scale and efficiencies in the operation and management of the electric grid. These improvements provide greater customer benefits through cost savings and improved reliability.

Q: Why change our existing system? Don’t we need stability, not more change?

• The current system requires power providers to hold more balancing reserves on hand to meet balancing reserve requirements than would be necessary with a coordinated EIM. This leads to unnecessary costs for customers.

• An EIM creates a more reliable and more affordable electric grid that has proven to work in other parts of the US.

• The electric system in the Northwest currently lacks the coordination and communication between utilities and balancing areas required by an ever-evolving mix of available generating resources.

• As energy policies cause us to transition toward a more diverse resource mix that increasingly includes clean resources like wind and solar, the operations of the system must also change in order to provide customers least-cost and reliable service.

• Geographic and resource-type diversity help strengthen the system overall, just like an investment portfolio is stronger with diverse investments.

Q: Who would benefit from an EIM? What would the benefits be?

• Utility industry and other government studies have concluded that the entire Northwest would benefit from an EIM.

• Participating utilities and their customers would benefit from an EIM by reducing the cost of providing balancing services on their system.

### Benefits of an EIM in the Northwest

<table>
<thead>
<tr>
<th>Balancing Authority/ Utility</th>
<th>$$ Saved/Year under an EIM (thousands)</th>
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<tbody>
<tr>
<td>AVA (Avista)</td>
<td>$4,309</td>
</tr>
<tr>
<td>BCTC (British Columbia)</td>
<td>$15,891</td>
</tr>
<tr>
<td>BPA (Bonneville Power Administration)</td>
<td>$23,281</td>
</tr>
<tr>
<td>IPC (Idaho Power)</td>
<td>$4,716</td>
</tr>
<tr>
<td>MidC (Mid-Columbia)</td>
<td>$3,054</td>
</tr>
<tr>
<td>NWMT (NorthWestern Energy)</td>
<td>$3,288</td>
</tr>
<tr>
<td>PAC (PacifiCorp)</td>
<td>$8,899</td>
</tr>
<tr>
<td>PGN (Portland General Electric)</td>
<td>$4,617</td>
</tr>
<tr>
<td>PSE (Puget Sound Energy)</td>
<td>$4,544</td>
</tr>
<tr>
<td>SCL (Seattle City Light)</td>
<td>$6,234</td>
</tr>
<tr>
<td>BANC (Northern California)</td>
<td>$8,357</td>
</tr>
<tr>
<td>TIDC (Turlock Irrigation District)</td>
<td>$1,662</td>
</tr>
<tr>
<td>TPWR (Tacoma)</td>
<td>$1,202</td>
</tr>
<tr>
<td>WAUW (Western Area)</td>
<td>$289</td>
</tr>
<tr>
<td><strong>TOTAL/NWPP (Northwest Power Pool)</strong></td>
<td><strong>$90,343</strong></td>
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</tbody>
</table>

- Allowing and facilitating utilities and power generators in western states to pool balancing reserves would provide the following significant benefits:
  - Help reduce upward pressure on rates driven by increasing demands on the system;
  - Improve reliability of the electric grid; and
  - Support local economic development across Northwest communities by providing greater opportunity for the integration of wind, solar and other renewable resources that customers are demanding.

**Q: Is the EIM designed to benefit just renewable resources?**

- An EIM benefits all customers and all users of the system, and makes the best use of all system resources. An EIM is a solution that optimizes the use of renewables and conventional resources.

- Customers would benefit from an EIM even in the absence of renewable generation. An EIM allows all changes in supply and demand on the power system to be accommodated more efficiently and at lower cost. An EIM provides benefits simply by balancing the fluctuations of load more efficiently, such as from factory equipment coming on and offline, or from consumers turning appliances on and off.

**Q: Are new transmission lines needed to build the EIM?**

- No. The EIM can function over the existing transmission lines already in place within the region. One of the benefits of an EIM is that no new infrastructure is needed. By using the existing generation and transmission infrastructure more efficiently, the EIM can delay the need for new transmission lines.
Q: How do we know an EIM will work in the West?

- Real-world experience in other parts of the US proves that the benefits of an EIM greatly exceed the costs. The Southwest Power Pool (SPP)\(^2\) launched its EIM in February 2007, and the benefits have exceeded SPP’s expectations. SPP’s analysis in 2005 calculated the cost of operating SPP’s EIM for the first ten years to be $212.5 million, while the benefits over that ten-year period would be around $600 million.\(^3\) That analysis was based on estimated benefits of $86 million for the EIM’s first year, and the actual benefit was even higher at $103 million.\(^4\)

- PacifiCorp and the California Independent System Operator (CAISO) are planning to coordinate their two systems through an EIM starting in October 2014. Additional participants such as Nevada Power are expected to join in 2015. This effort estimates significant economic and reliability benefits from forming an EIM.\(^5\)
  - Annual benefits of the CAISO EIM are projected between $21-129 million; costs are estimated at $3-6 million for start up, and between $1-5 million annually.
  - Annual benefits of the Nevada Power EIM are projected at between $9-29 million.

- As a national leader in clean, affordable energy and resource diversification, the Northwest should learn from and leverage successes in other regions and consider an automated, real-time system that can balance loads across all balancing areas covering the region, and implement it.

Q: What’s the difference between an EIM and a RTO?

- The EIM only impacts balancing services required on a fast, real-time basis – those too quick for bilateral trades.

- EIM does not set prices for energy itself; those prices and those transactions are still provided through the bilateral energy market that we know today.

- An EIM is not an organized energy market or a Regional Transmission Organization (RTO). An EIM is a voluntary effort that optimizes the supply of balancing services only – not energy or capacity. An RTO broadly manages all of the transmission and energy generation assets in a geographic area, influencing the price of all energy sold, not just balancing reserves. An RTO influences all the energy sold in the market, whereas an EIM just manages intra-hour variability of generation and loads.

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\(^1\) The Southwest Power Pool includes utilities in Nebraska, Kansas, Oklahoma, North and South Dakota, Iowa, Minnesota, Montana, Missouri, New Mexico, Texas, and Arkansas.

\(^2\) Available at [http://www.spp.org/publications/CBARevised.pdf](http://www.spp.org/publications/CBARevised.pdf)


\(^5\) Available at [http://www.spp.org/publications/CBARevised.pdf](http://www.spp.org/publications/CBARevised.pdf)
Q: Would an EIM cause our region to be FERC-regulated?

• No. An EIM would not cause entities that are currently outside FERC’s jurisdiction (e.g., your public utility) to become jurisdictional.

• Participation in an EIM would be voluntary. A balancing area can decide to participate or not and each individual generator can sign up to bid into this new market or not.

• An EIM is a market designed and controlled right here in the Pacific Northwest and is structured such that it’s bi-laws guard against any “scope creep” beyond the intention of those establishing the rules under which the EIM will operate. In other words, the region gets to maintain its local control.

Q: Would an EIM negatively impact BPA and customers served by federal hydro?

• No. An EIM would provide BPA with a market into which it can sell its surplus hydro. Studies show that by doing so, BPA could generate more revenue from these sales and use that revenue to keep rates low (and potentially even lower) for its publicly owned customers who have access to BPA power. These publicly owned utilities would not lose any of their preference rights to BPA power under an EIM.

Q: What would it cost to move to an EIM? Who will cover those costs?

• Voluntary participants are anticipated to split start-up costs. It is estimated that the start-up costs would pay for themselves within one year of implementing the EIM. Start up cost estimates are between $29-59 million\(^6\). The annual cost savings of an EIM far outweigh these start-up costs.

• A number of studies – including NREL, CAISO, NWPP and SPP - have analyzed the costs and benefits of EIMs, and all have concluded that the benefits of well-designed EIMs greatly exceed the costs.

Q: Wouldn’t EIM savings come from burning more coal/fossil fuels? Isn’t that counter to clean energy advocates’ goals?

• An EIM allows for the use of the least-cost resource at any given moment over the entire EIM footprint of participating balancing areas. Other energy polices and economic variables will primarily determine which resources will actually turn out to be least-cost. Whichever it is, the EIM will dispatch it more. For example, resources with no fuel cost – like solar and wind – are the cleanest and will be dispatched first. Current and future policy scenarios, which will impact least-cost resources, include:
  o Carbon policy: would increase cost of all fossil fuel resources, factoring for social costs and other externalities.
  o Natural gas prices and their volatility: should gas prices stay below the cost of coal, more gas and less coal would be dispatched.
  o Snow pack volume and melt timing
  o Renewable energy incentives
  o Demand response

Q: How can we be assured that this is the right solution for the Northwest?

• Bringing our Pacific Northwest utility systems and their balancing reserves management into the 21st Century could take many forms. We’re not set on one approach, but we do know that we need to modernize and move forward. Because the system is voluntary, we can observe whether it attracts many participants or not. Changes can be made to the basic concept to meet the needs of generators and customers.

• It’s time for policymakers and the energy industry to modernize and move toward a forward-looking region-wide solution for a more reliable grid to better meet the energy challenges of the future and the needs of Northwest customers.

• As major stakeholders in energy and transmission, we represent many and varied perspectives, but we can all agree that a better system is needed and better models for systems exist.

• An EIM offers us today the best option for a low-cost, clean, diverse and reliable electric grid for the future.

Q: This sounds like a complicated utility thing. Why should we weigh-in?

• Progress on establishing an EIM in the Northwest has been slow, despite the benefits that it would bring to ratepayers. Utilities should be seizing the opportunity to make the PNW electric system more efficient, thereby reducing costs to their customers and helping insure future sources of clean generation. Until the utilities hear directly from their constituents that they care about this issue, they are likely to resist modernizing and just continue to do business the same way they have always done it.

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