



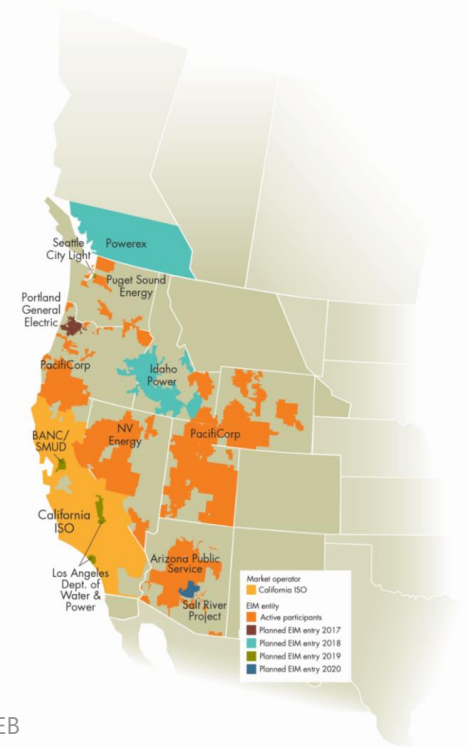
Powerex EIM Go-Live Experience

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Key Features of Powerex's EIM participation

- **Powerex participates under Canadian EIM Entity Agreement**
- **Supported by resources and load located in Canada**
 - EIM area does not extend into Canada
 - Powerex transacts at BC-US Border using aggregated resources and load
- **Transmission rights voluntarily made available to EIM**
 - Set aside ahead of the hour
 - Typically 150 MW to and from Puget Sound Energy at BC-US Border*
 - Typically 150 MW to and from CAISO at Malin*
 - Includes dynamic transfer capability (subject to availability)
- **Participation with aggregate resources**
 - Aggregate Participating Resource (APR)
 - Aggregate Non-Participating Resources (e.g. VER, Load, small hydro, etc.)



*Powerex has reduced its voluntary provision of transmission rights to mitigate harm associated with CAISO's LMPM and DEB framework

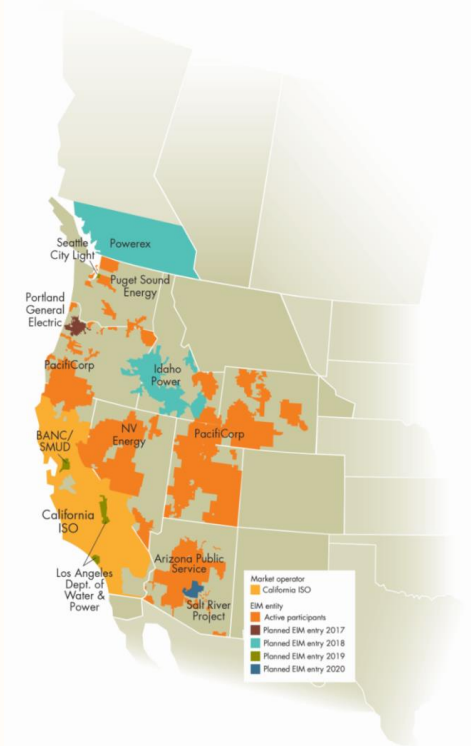
Expected Benefits of Powerex's EIM participation

Key Benefits To Powerex

1. Co-optimizing imbalances and reserves
 - Offset BC imbalances with diversity and lower cost EIM resources
 - Utilize residual BC Hydro imbalance reserves to support EIM transfers
2. Removal of transmission hurdle rates
 - Purchasing over-supply energy
3. Congestion rent for transmission rights provided

Key Benefits To EIM Area

1. Lower cost of meeting EIM Area imbalances and integrating renewables
2. Reduced GHG emissions
3. Increased EIM transfer capability



Powerex's EIM Project Implementation: Key Success Factors

- **Extensive experience in CAISO markets**
 - Participated in CAISO's 5-minute markets since 2005
- **Extensive in-house IT development**
 - Most EIM tasks are automated
 - Many existing processes and systems leveraged
 - Settlements system, dynamic scheduling framework
- **Significant co-ordination with BC Hydro, Puget and BPA**
 - Dynamic scheduling, network and transmission modelling, ETSRs
- **High level of support from CAISO staff**
 - Highly knowledgeable project and integration staff
 - Online and on-site training sessions and problem solving

Project completed on schedule (10 months) and under budget



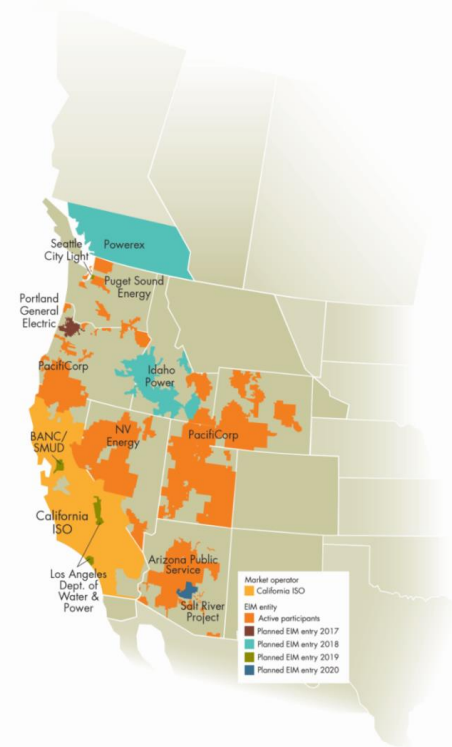
Powerex's EIM Experience To Date

Realized Benefits

1. **Energy purchases during over-supply conditions**
 - Although some purchases blocked due to LMPM / DEB issue
2. **Congestion rent received for transmission provided**

Benefits Not Yet Realized

1. **Co-optimization of imbalances and residual imbalance reserves**
 - Diversity benefits have been offset by the need to carry a “buffer” of capacity and flexibility to meet uncertain RS volumetric requirements
2. **Sales Opportunities**
 - Existing LMPM processes and DEB options not workable for external hydro
 - Formula over-rides voluntary bids and offers, resulting in forced sales
 - The net result is the EIM is currently less attractive for surplus energy sales than the intertie bidding framework



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Thank You

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