
EnergyImbalanceMarket



Special Presentation to the UTC
August 11, 2015

Today's Topics

- PSE Decision and Need
- Project Overview
- Regulatory Matters

PSE's Decision & Need

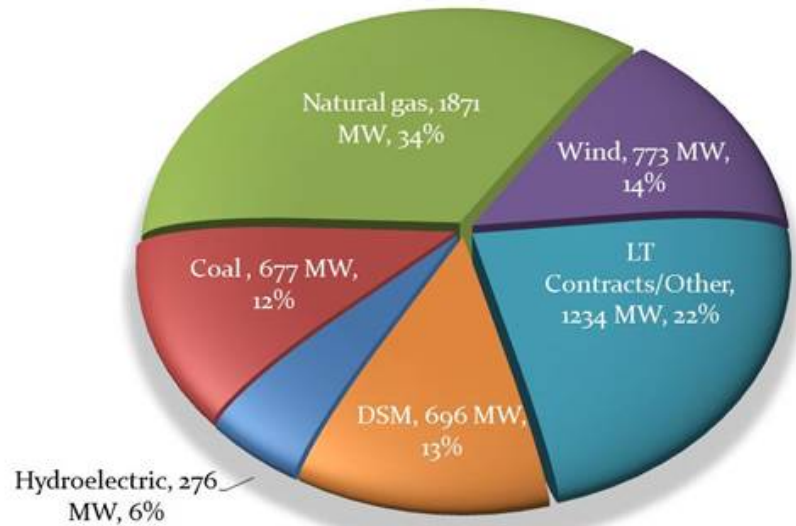


David Mills
Vice President of Energy Operations
EIM Executive Sponsor

How did we get here?



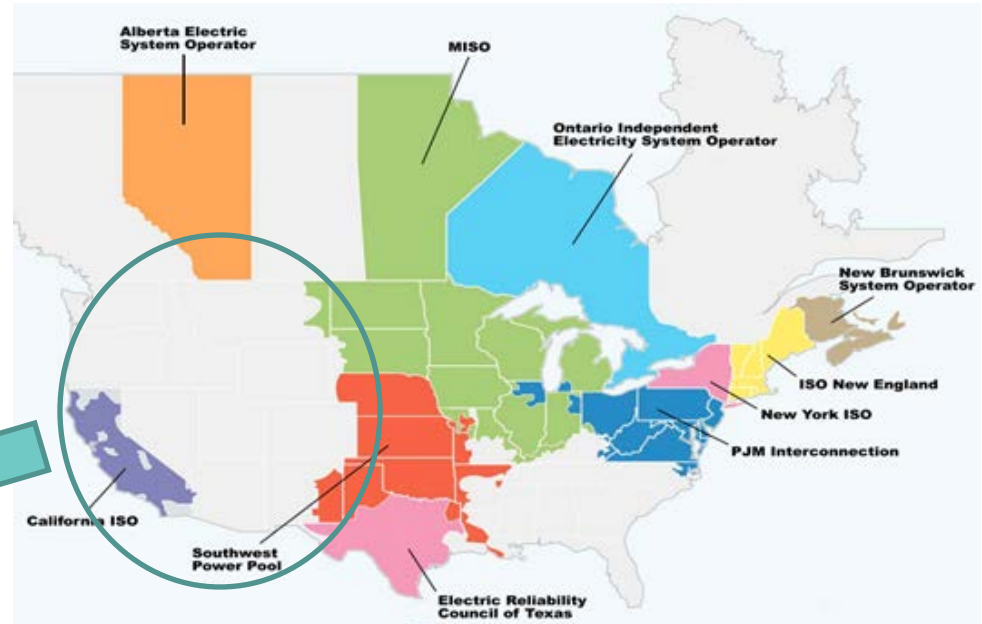
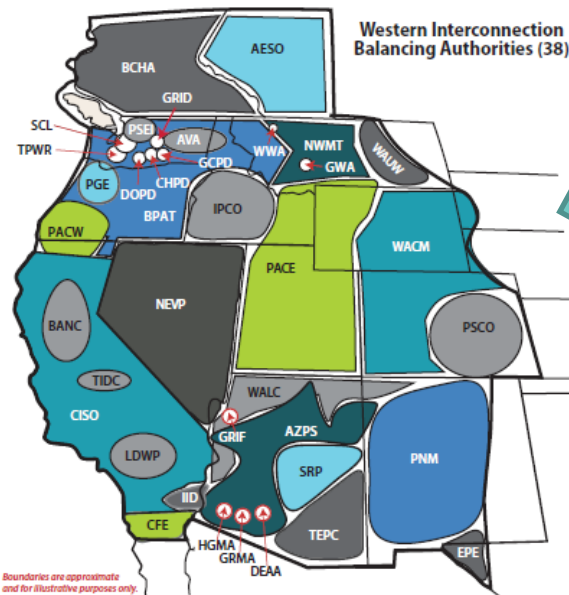
Resource Nameplate Capacity - 2014



Source: PSE Form 10-K, December 31, 2013

Grid Efficiency Opportunity in the West

Western Balancing Authorities



Existing Organized Markets

What else informed PSE's Decision?

Voluntary Participation: Resources can voluntarily elect to participate in offering imbalance energy.

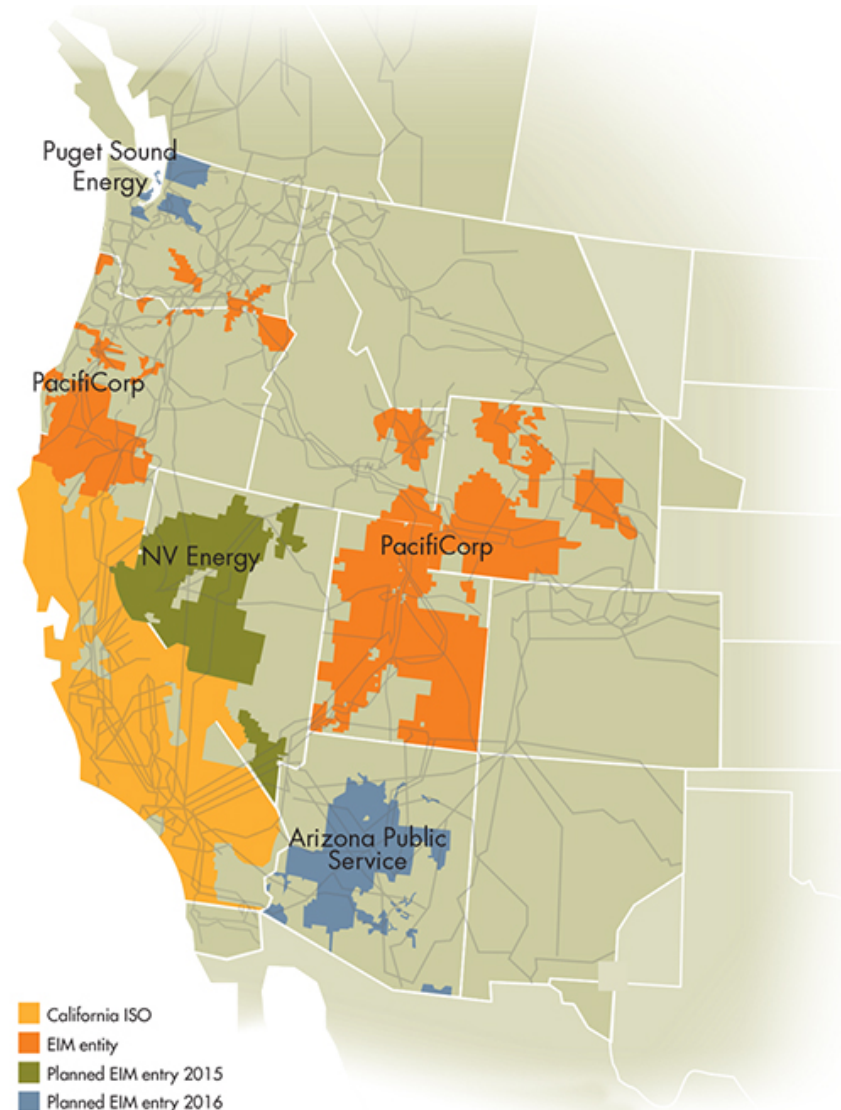
Enhanced Reliability: The EIM will strengthen reliability through improved real-time grid visibility and hour ahead tests.

More renewables: Sets the stage for a reduced carbon footprint for PSE and Washington State by helping ease the wind integration challenges and a reduction renewable energy curtailments.



CAISO – CA Independent System Operator

- CAISO is the non-profit market operator based in Folsom, CA
- CAISO EIM entities include:
 - PacifiCorp – WA, OR, CA, ID, UT & WY
 - NV Energy – Nevada
 - Arizona Public Service (APS) – Arizona (in 2016)
- PSE is working collaboratively on CAISO Transitional Committee (TC) Governance Proposal and other regulatory issues.



EIM Project Overview

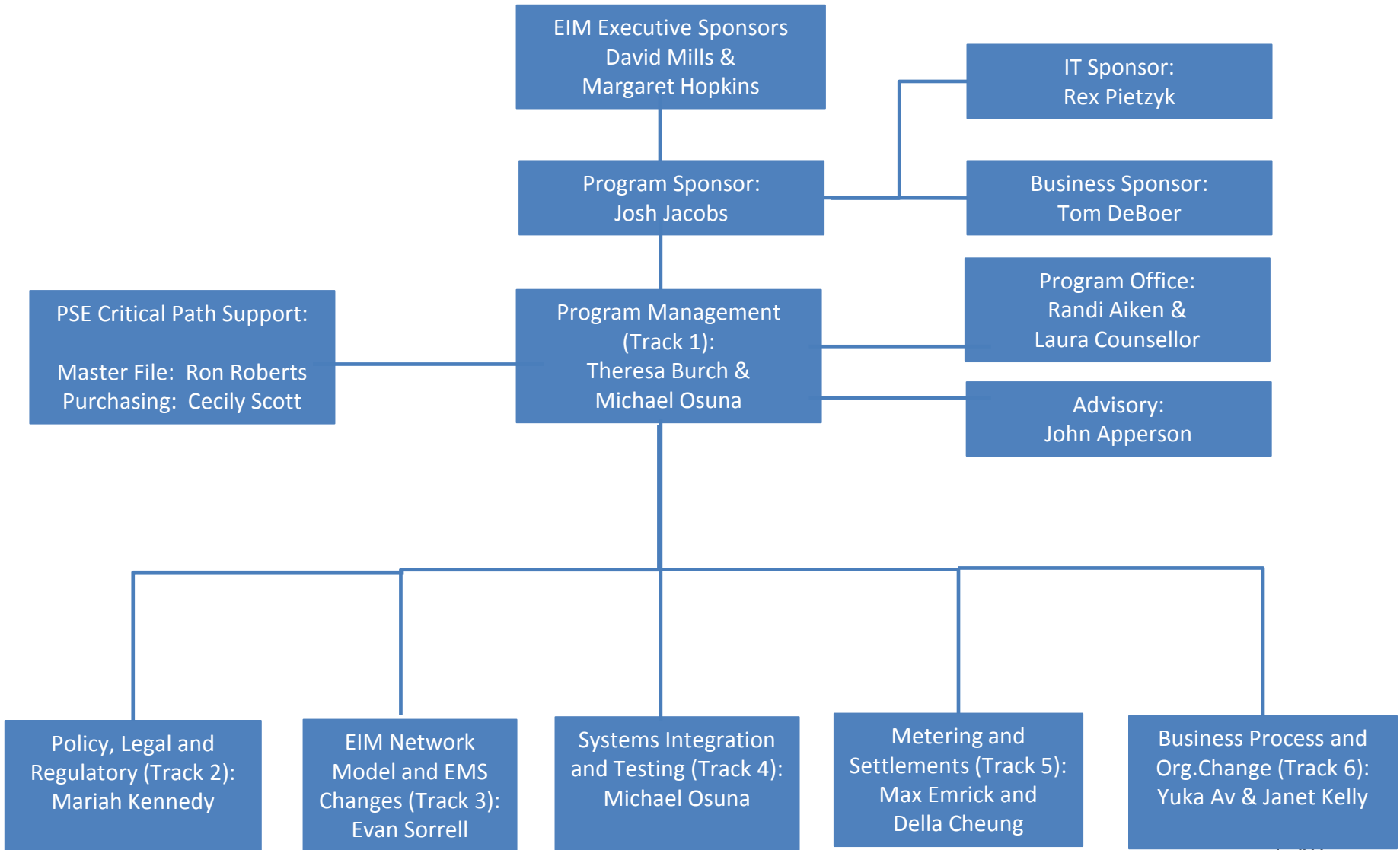


Josh Jacobs
Director of Load Serving Operations
EIM Project Sponsor

What Does PSE Implementation Look Like?

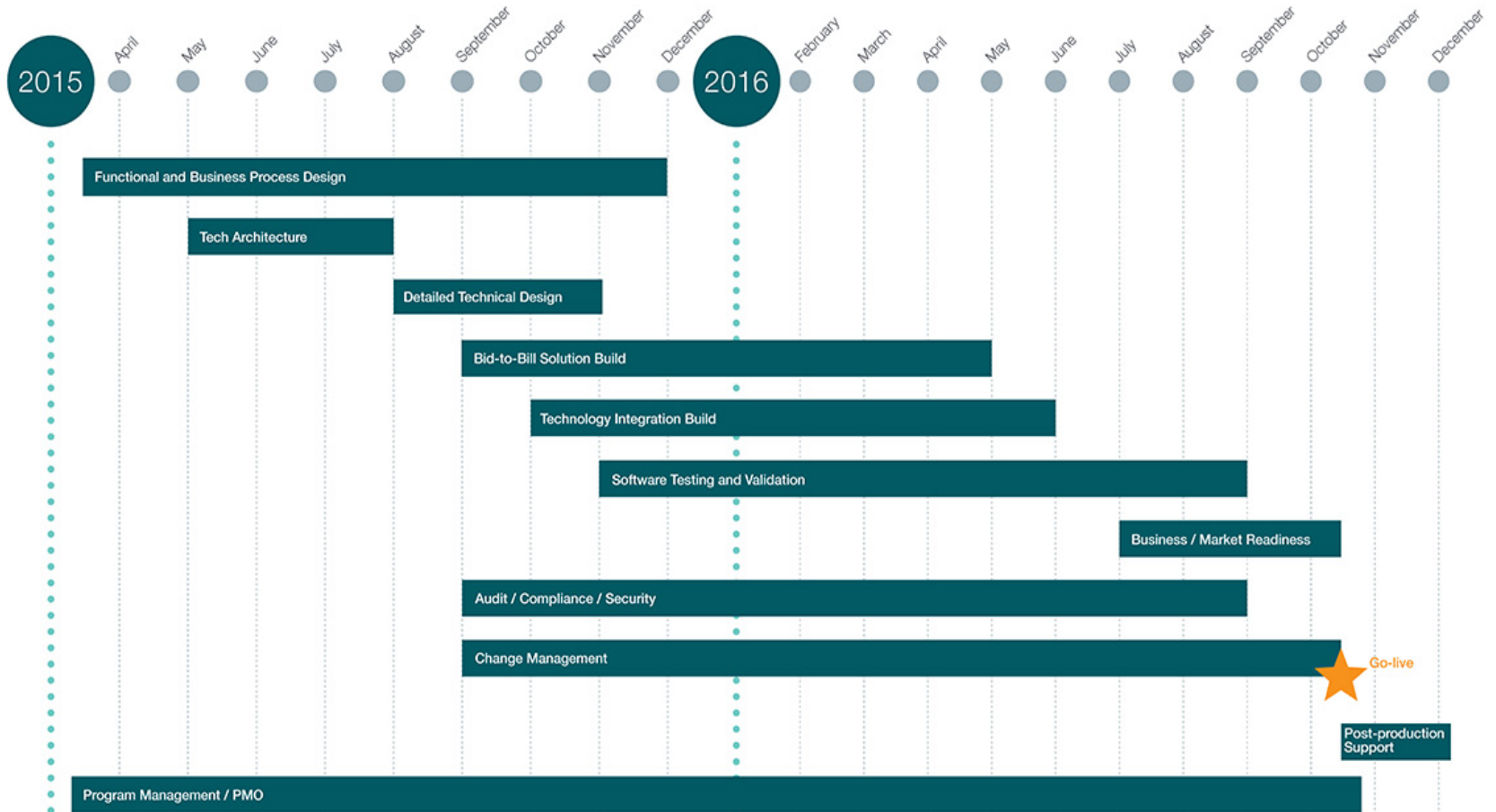
- Preparing for October 1, 2016 “Go-Live”
- Project implementation:
 - Project Team Members
 - Project Schedule
 - IT Configuration
 - Business Unit Impacts
- Collaboration with BPA

PSE's EIM Project Team



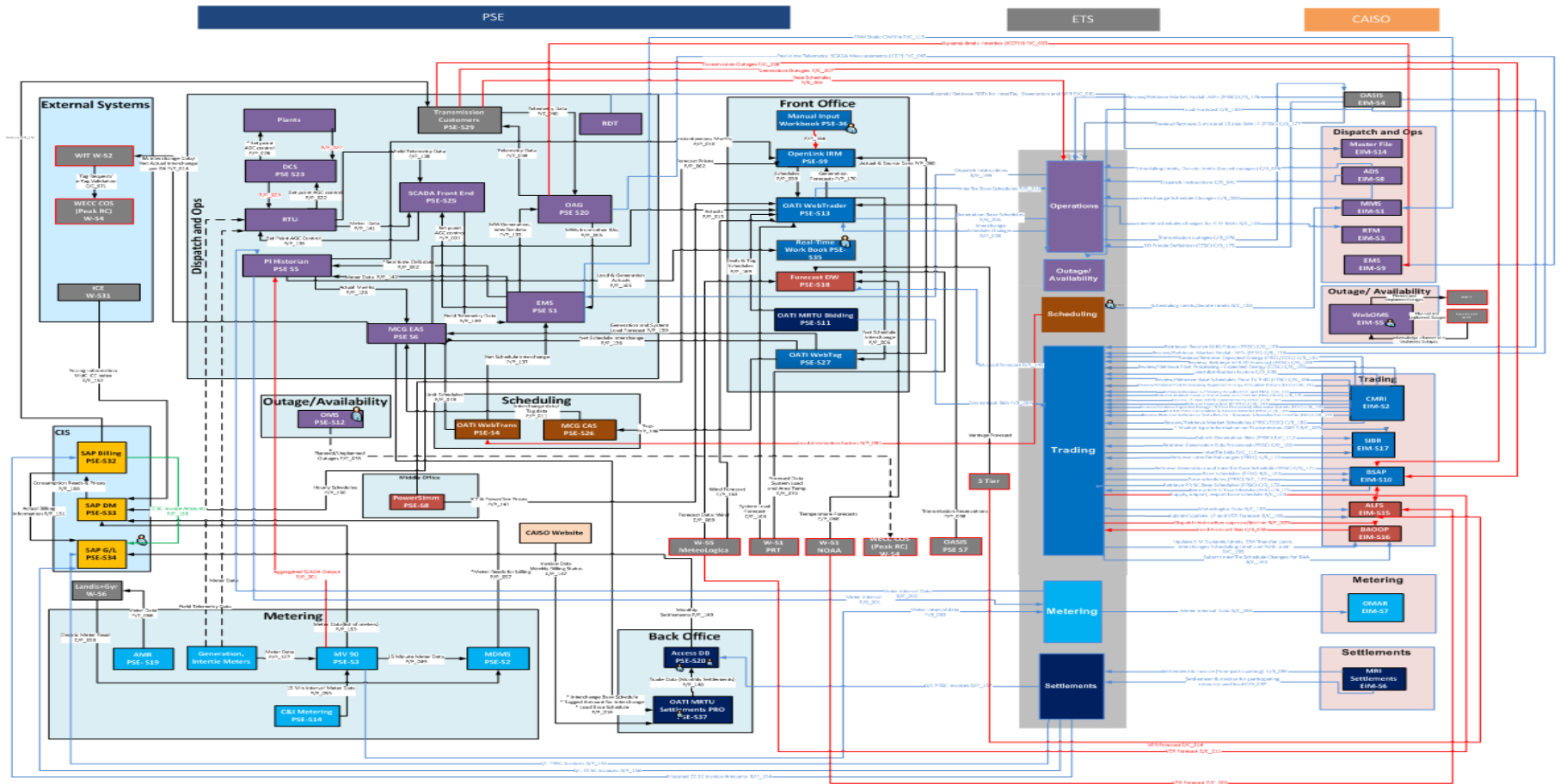
Project Schedule

EnergyImbalanceMarket
Project implementation roadmap



EIM High Level Solution Diagram

- Over 120 interfaces included in the EIM solution
- Hundreds of configurable business rules in the Bid to Bill solution that need to be defined and set-up

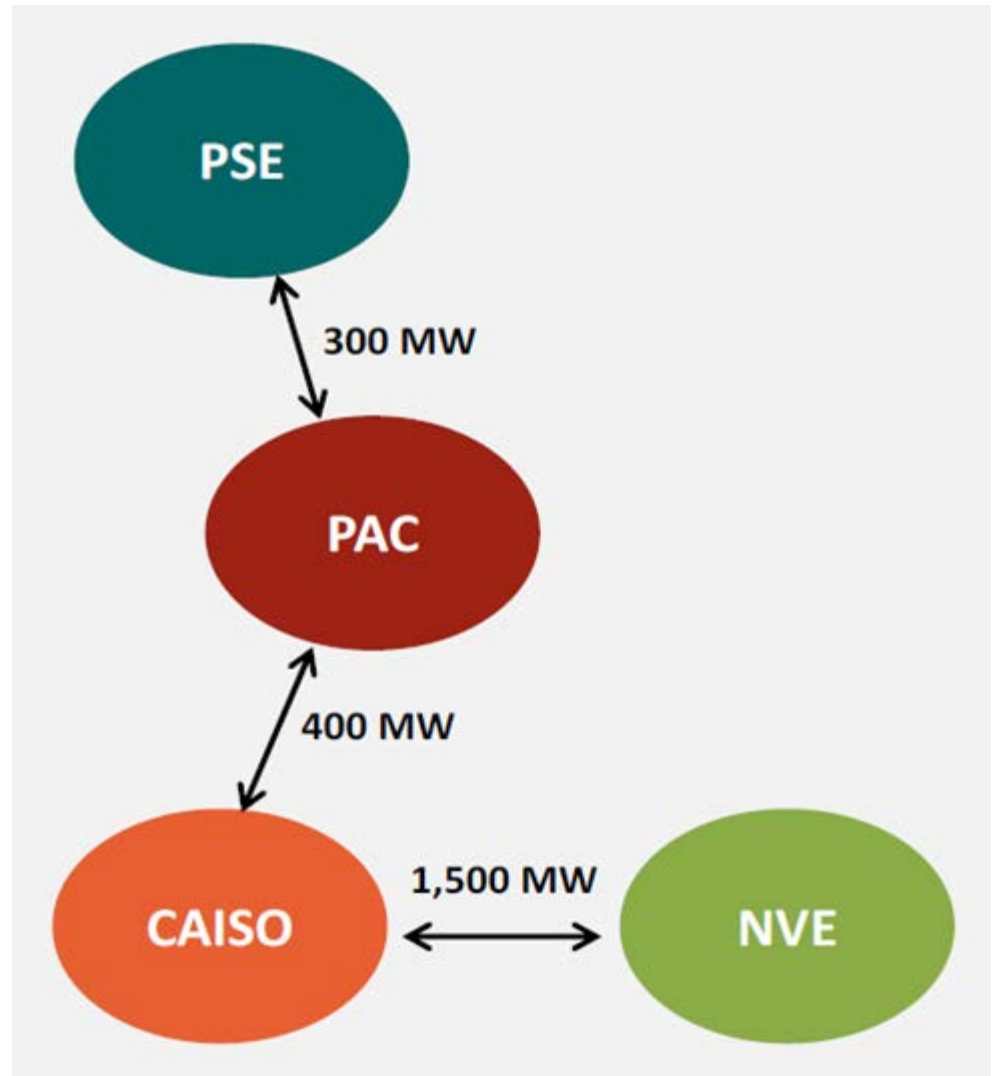


PSE Business Unit Impacts

Business Unit	Overview of Change
Trade Floor	Real time trading will continue as done today; bid curves will be supplied to the market operator each hour to inform the sub hourly dispatch.
Load Office	Hour ahead resource sufficiency tests for the PSE BAA; sub-hourly automation of energy management; sub-hourly dispatch signals coming from CAISO (market operator); generation/transmission outage reporting reduction of balancing reserves.
Generation (Thermal/Hydro/Wind)	Sub-hourly automation of generation with dispatch instructions driven by the market operator; potential shifts in dispatch patterns with operations and maintenance impacts.
Transmission Settlements	Increasing frequency of settlements and changes to PSE's settlement construct within our Open Access Transmission Tariff (OATT).
Energy Accounting	New processes will be implemented to settle EIM transactions including weekly settlement management with CAISO.
Information Technology	Support for new system may require additional resources.

Transmission for EIM Transfers

- PSE's transmission plan includes the use of existing BPA transmission rights to interconnect with PAC.
- PSE is engaging with BPA to coordinate the use of long term transmission rights in a way that does not impact other transmission customers.
 - MOU
 - OATT Section 23
 - Dynamic Transfer
- PacifiCorp's transmission rights utilized on the Southern Intertie.



EIM Policy Overview



Mariah Kennedy
Regional Energy Policy Consultant

Stakeholder Outreach

- PSE's participation in the EIM will require an updated Open Access Transmission Tariff (OATT) to be filed and approved by FERC.
- Primary revisions include: (i) moving imbalance and losses from the Mid-C ICE index to LMP/LAP pricing, and (ii) adding a forecasting requirement that becomes financially binding 57 minutes prior to the hour.
- Stakeholders include a diverse set of transmission customers. PSE plans to treat all transmission customers equitably.
- First stakeholder meeting was conducted on August 7th and outreach will continue through early next year before anticipated filing in Q1 2016. The next stakeholder meeting will be November 17, 2015.

CAISO Developments

- Transitional Committee Governance Proposal
- Year 1 Enhancements – Phases 1 and 2
- EIM Entity Readiness Criteria & Technical Solutions
- Transitional Period
- Joint PSE-CAISO Project Plan and weekly & monthly meetings

Questions

