ENERGY IMBALANCE MARKET (EIM) PROGRAM BRIEF

Tacoma Public Utility Board July 14, 2021

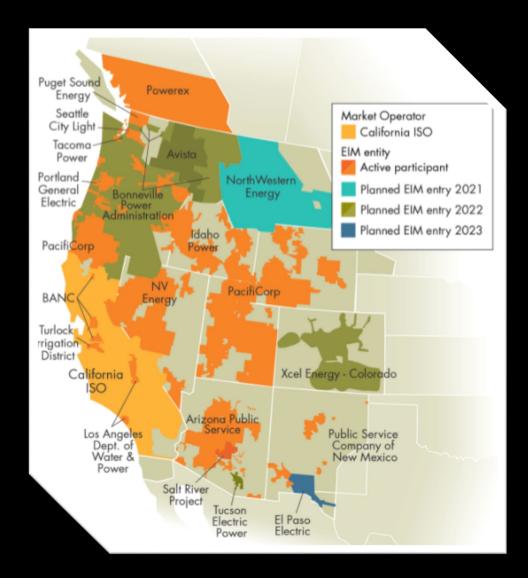
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- Why is Tacoma Power joining the EIM
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WHAT DOES EIM STAND FOR?

E-Energy I-Imbalance M-Market

When Tacoma joins in March 2022, 82% of load in the Western interconnection will be served within the Western EIM.



WHAT IS EIMS

EIM is

- A centralized wholesale market (not bi-lateral)
- An energy market only (not ancillary services)
- A real-time, five-minute market (not hourly)

EIM is a real-time **energy** supply **market** that offers electricity generation and transmission services. It automatically balances demand every 15 minutes and dispatches power plants to meet demand every five minutes with the lowest cost **energy**.

WHY IS TACOMA JOINING EIM?

- Traditional bi-lateral partners are joining the EIM
- Flexible hydro can support grid as more renewables are integrated
- Forecast positive Net Present Value over 10 years
- Participation gets us a "seat at the table" re future market evolution

WHAT DOES IT TAKE TO JOIN EIMS

- Legal agreements
- New systems
- Upgrades to current systems and infrastructure
- Significant IT architecture and interface work
- More than a year of training and testing
- Energy Control Center upgrades and more system operators

WHAT HAS BEEN DONE SO FAR?

Milestone 1: Feb 27, 2020
EIM Implementation Agreement
Approved by the Federal Energy
Regulatory Commission (FERC)

Milestone 3: June 1, 2021 CAISO Promoted Tacoma Network Model

Milestone 4a: June 1, 2021
Joint Integration Testing
Started with CAISO

Milestone 6: Mar 2, 2022 Go-Live

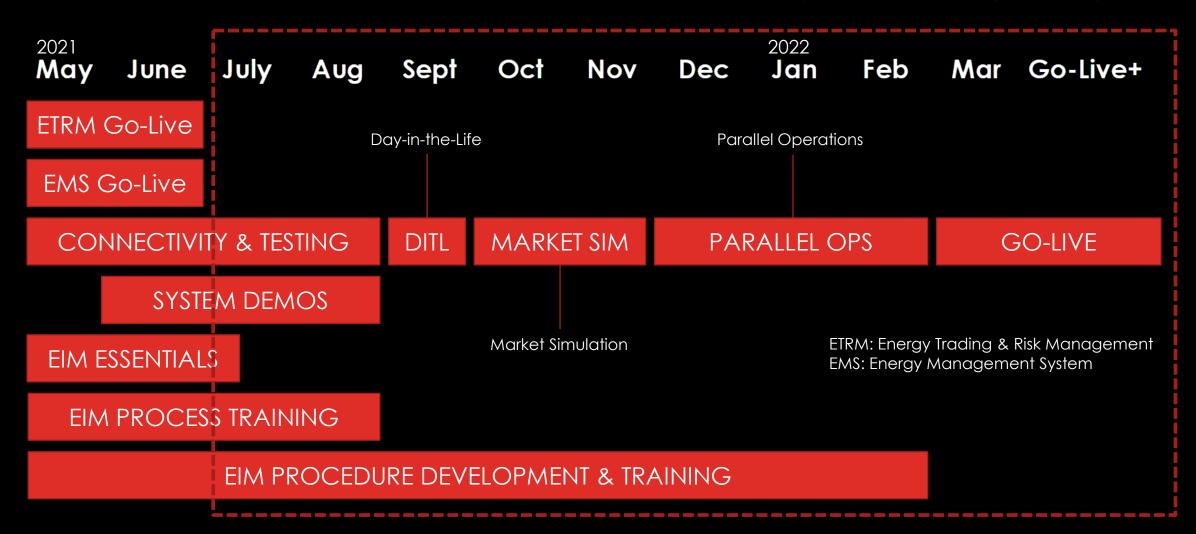
Milestone 4c: Oct 1, 2021 Start Market Simulation

Milestone 0: June 26, 2019 PUB Approved Joining the EIM Milestone 2: May 15, 2021
Validated Integrated Full
Network Model (FNM)

Milestone 5: Dec 1, 2021 Start Parallel Operations

Milestone 4b: Sept 1, 2021 Start Day-in-the-Life Testing

WHAT IS LEFT TO DO?

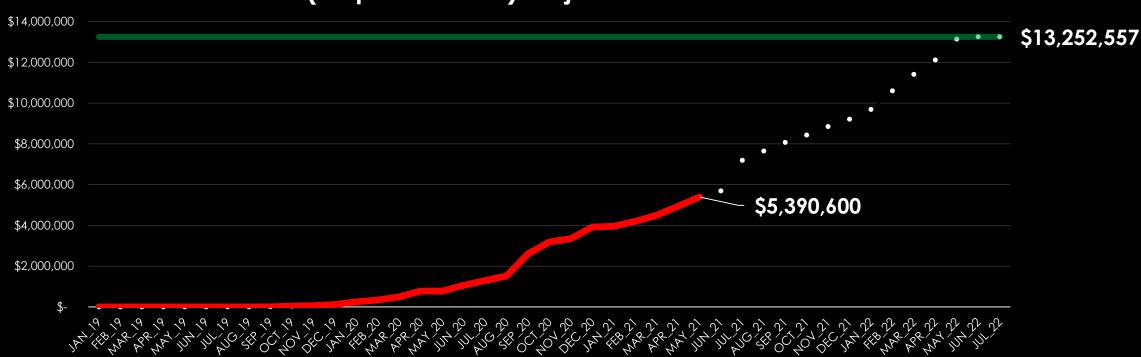


BUDGET BACKGROUND

- Original Estimate (2019) = \$18 MM
- Revised Budget (2020) = \$13.5 MM

EIM PROGRAM BUDGET

Total (Capital + O&M) Project Life Forecast



EIM PROGRAM STATUS





