



# Tucson Electric Power RIF Introduction

March 11<sup>th</sup>, 2020

# RIF Presentation Agenda

- TEP Introduction
- Balancing Authority Summary
- TEP's EIM Decision
- Anticipated Business Benefits
- EIM Organizational Structure
- TEP Roadmap
- Potential Challenges



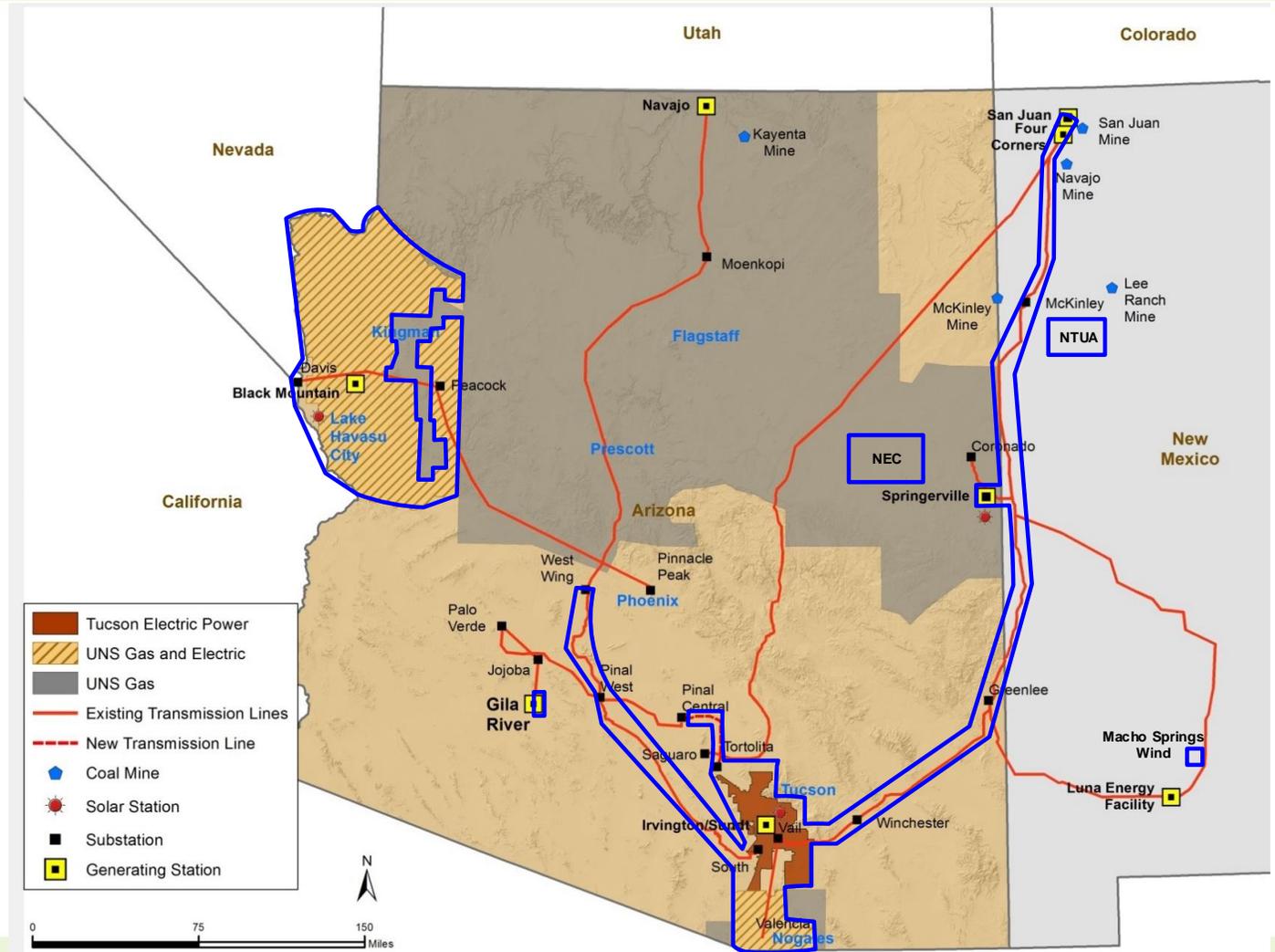
# TEP Introduction

- Providing service since 1892
- Among a family of utilities owned by Fortis
  - Canada's largest investor-owned gas & electric utility holding company
  - TEP, UES & UNS Gas acquired in 2014
- Over 428,000 customers



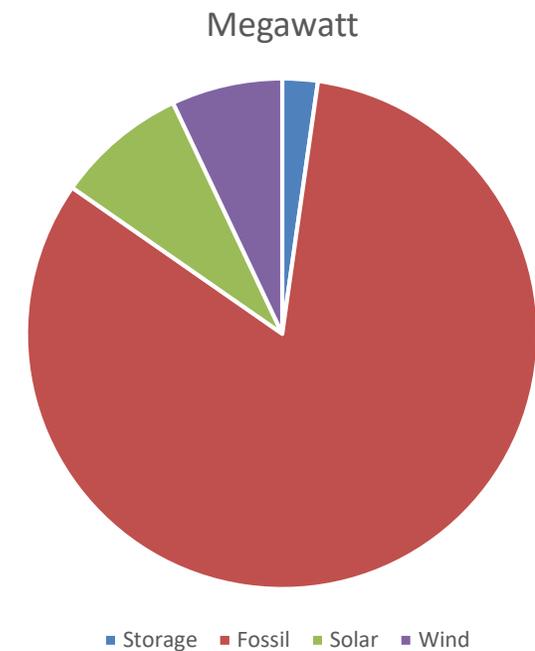
# Generation Transmission and Balancing Authority

Load	Peak (MW)	Energy (MWh)
City Load	2,314	9,194,138
Total BA Load	3,187	14,520,390



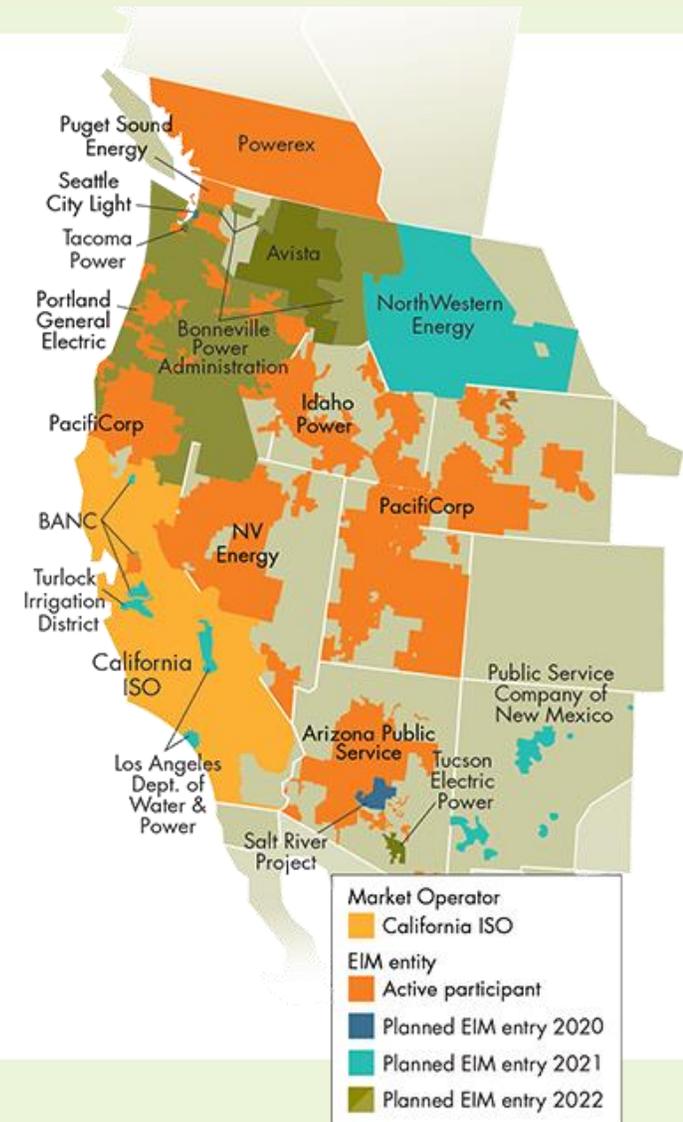
# Generating Assets

Fuel Type	Unit Type	Generating Capacity (Megawatts)
<b>Fossil</b>	Fossil	3,510
	Peakers	965
Nuclear	Nuclear	-
Utility Scale Renewables	Hydro, Geo-Thermal, Landfill	10
	Wind	440
	Solar (large Scale)	261
	Solar Distribution	91
	Battery	121



# EIM Decision

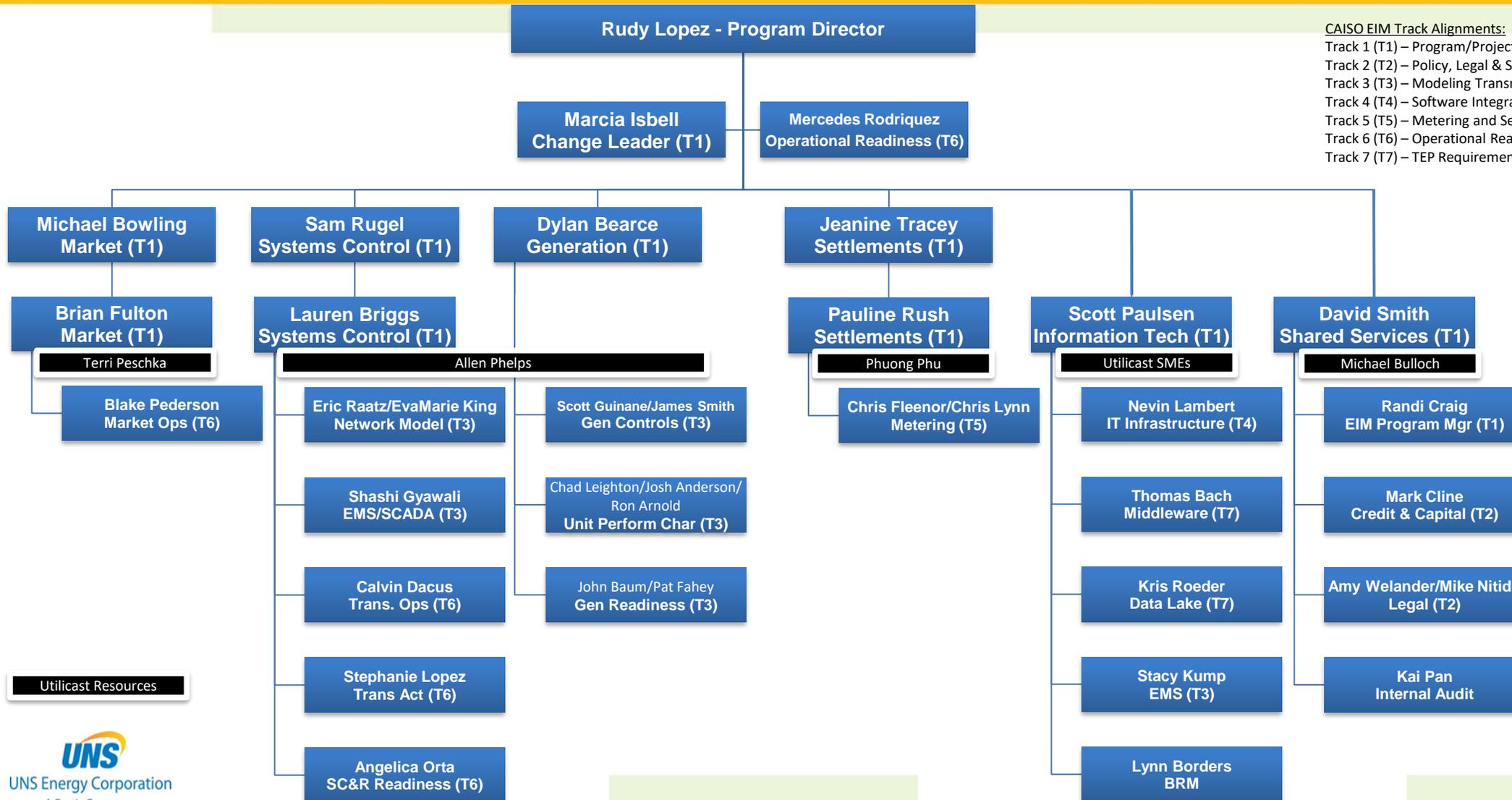
- **2016 Investigation (Wait and See)**
  - Net estimated benefits appeared to be a push
  - Other market opportunities
  - Limited interconnectivity
- **2018 Second Look**
  - Increased regional market participation (APS, SRP, PNM)
  - Mountain West Group Collapse
  - Increased fleet flexibility
    - Accelerated coal plant retirements
    - Significant increase in quick start/ramping units
    - Continued decreased in Real-Time Market liquidity
  - 2022 Entry due to required EMS upgrades



# Business Benefits

- **Benefit Estimation: \$10 – \$15 M/year**
  - Reasonable approach
  - Savings for the customer
- **Increase in operational flexibility/visibility**
  - Supports intermittent energy initiatives
  - Standardized forecasting and scheduling regionally
  - Provides additional Real-Time (liquidity)
- **Streamlined operations**
  - Generation, Marketing and Reliability more in sync
  - Operations in sync with regional utilities
  - Improved operational metrics

# EIM Program Organizational Structure

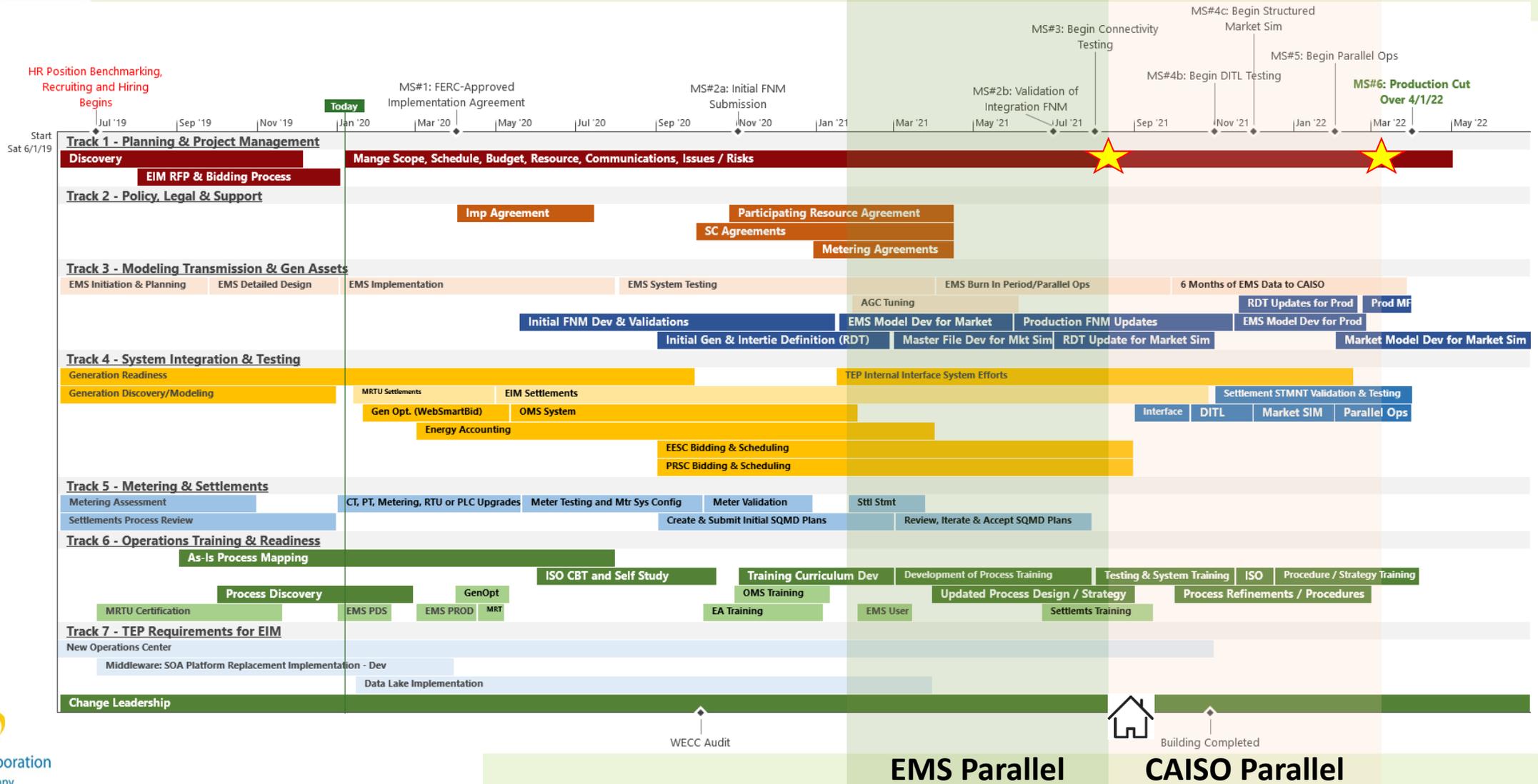


CAISO EIM Track Alignments:

- Track 1 (T1) – Program/Project Mgmt
- Track 2 (T2) – Policy, Legal & Support
- Track 3 (T3) – Modeling Transmission and Generation Assets
- Track 4 (T4) – Software Integration and Testing
- Track 5 (T5) – Metering and Settlements
- Track 6 (T6) – Operational Readiness
- Track 7 (T7) – TEP Requirements for EIM

Utilicast Resources

# EIM Program Roadmap



# Potential Challenges

- The modeling of JOU's as multistage generators in EIM
  - Luna (2x1 combine cycle with 3 owners)
  - Gila River Unit 2 (2x1 combine cycle with 2 owners)