

Electric Production: EIM Implementation

Electric Production Needs:

- Software Support –Current Scheduling Software to be equipped with automatic forecasting capabilities.
- Implementation Consulting Contract- Keep LAC on track and in compliance by April 2021
- 1 New Full Time Employee - To assist in Operations

Implementation Schedule

California Independent System Operator (CAISO)
Energy Imbalance Market (EIM)



Gap Analysis Recommendations:

Functional Area	People	Process	Technology
Base Schedule Submission	Automated hourly workflow requiring analyst validation and possible data entry	Creation & Submission of hourly base schedules	Integration of energy systems, new user interface
Generation Outage Submission	Continuous workflow requiring minimal data entry and validation	Submission of availability limits in real-time with precision while observing rules	New system and user interface
Load Forecast Submission	Automated workflow requiring light analyst validation	Submit rolling 7-day load forecast to PNM	Integration of energy systems, new user interface
LANL Load Management	LANL/LAC coordination to manage seasonal load	"Smooth out" LANL load to avoid financial risk	Super computing requirements planning tools (where applicable)
Automated Dispatch Control Monitoring	Continuous workflow requiring light monitoring	Ensure dispatch signals align with market inputs to avoid financial risks	New system and user interface
Technology Support	Support technical data integrations for high availability	Required; Must adhere to 5-min dispatches within bid range. Must adhere to startup/shutdown instructions	N/A
After-The-Fact Analysis	Merchant review of market results	"Sanity Check" of market results	Not recommended, options provided
Recommendation	Hire one (1) new analyst to perform market-related activities	Implement capital project to integrate with PNM and CAISO	Integrate technology as prescribed above

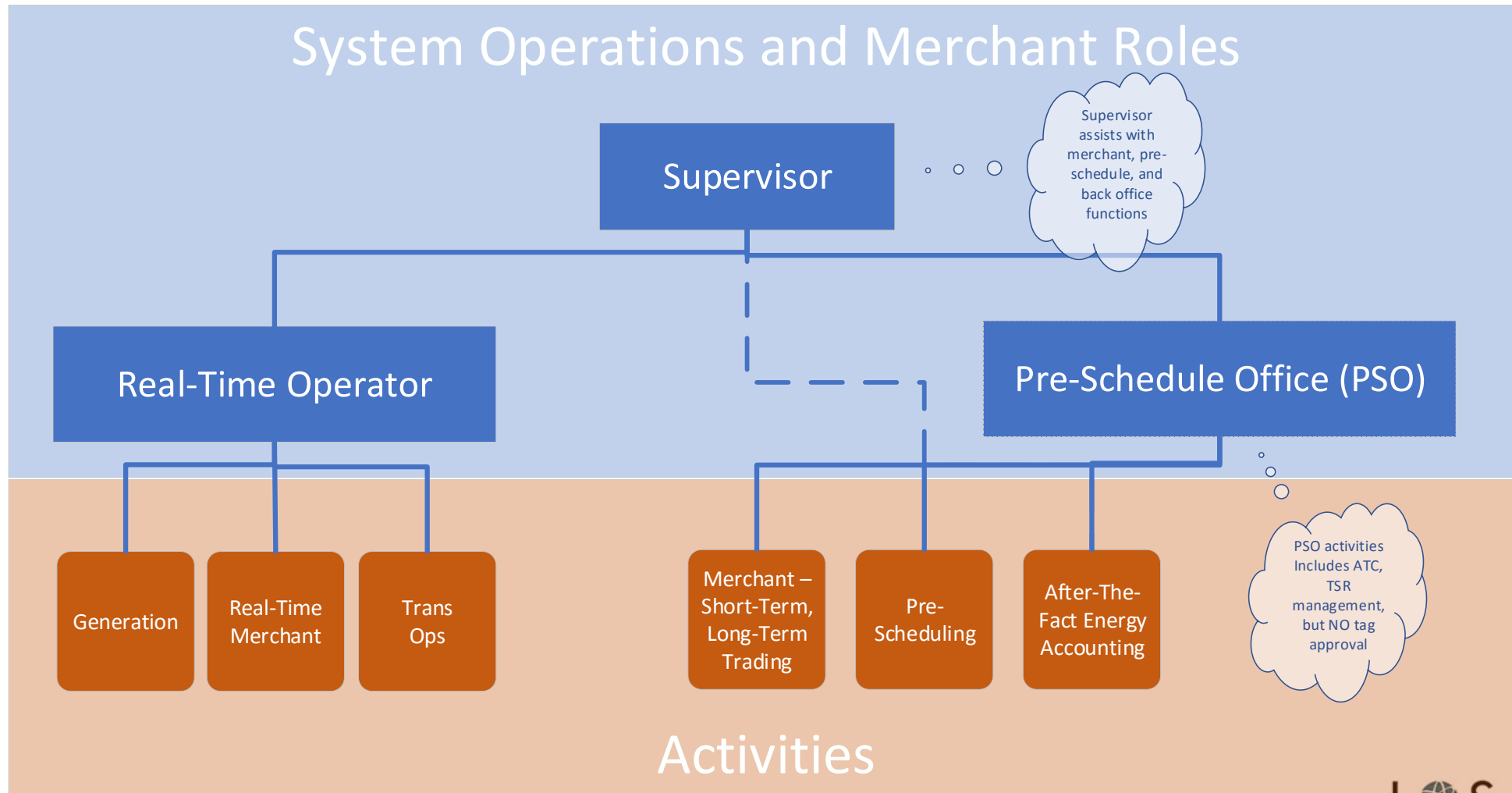
Technology: Expansion of Software Support

- Pre-Schedule
 - Current Operation-
 - load forecasting was done on a monthly basis. Three days before the end of the month the load forecast was due for the entire month.
 - EIM Operations-
 - Forecasting will have to be completed much more frequently. It will need to be submitted to the Balancing Authority (BA) every day for a 7-day rolling forecast.
- Real-time
 - Current Operations-
 - Forecasting is mostly taken care of by the monthly forecast, however on a hourly basis when the previous hour is checked out a quick mention of the current hour's load is given.
 - EIM Operations-
 - Forecasting will have to be completed much more frequently. It will need to be submitted to the BA every hour for a 5-hour rolling forecast.
- This requirement must be completed for both the Power Pool and Sandia/Kirtland.
- Implementation is \$9,000.00 capital expense and a \$6,000.00 O&M, however it possibly saves the addition of an entire real time merchant desk (Doubling of Staff).

Process: Implementation Consulting Contract

- Oversee the creation and Submission of Hourly Base schedules and Daily schedules
- Creating the Procedures for the notification process for Generation Outages, Transmission Outages, system limitations etc.
- Assistance with understanding/avoidance of financial risk with regarding to load fluctuations
- Procedures for possible instructions from the Balancing Authority (BA)
- Liaison with BA and California Independent System Operator (CAISO) to ensure proper data share and tuning of Operations
- Implementation contract is \$125,000.00 with a \$32,181.19 Contingency and should be closed out after May 1st 2021

Merchant & Operations Org Structure



People: 1 New Full Time Employee (FTE)

- The New FTE will Support:
 - Base schedule Submission- Will help Real-Time with validation of Base-Schedule submission and plan 24-48 hours in advance
 - Generation Outage Submission- Continuous workflow with coordination on the Hydro's and LANL Combustion Turbine and possible Transmission operations support
 - Load Forecast Submission- Consistent entry and validation of the Automated workflow
 - Automated Dispatch Control Monitoring- Light monitoring of the processes
 - Technology Support- Constant monitoring of new functionality by LAC and the Balancing Authority
 - After-The-Fact (ATF) Analysis- Review of operational performance against the planned results
 - Financial Settlement Review- Review EIM sub-allocation charges from EIM Entity Scheduling Coordinator (EESC) and check for accuracy. Support continuous improvement based on financial awards and penalty optimization.
- The new FTE is being estimated at a midpoint of \$75,808 for with a loaded cost of \$115,482.