

# WECC

#### Generation, Unserved Energy, Congestion

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## **Generation Comparison**

- Max capacity in PCM doesn't align with L&R
  - Largest contributors are Combined Cycle and Gas Turbines
- Generator types may differ between PCM and L&R. This may contribute to the discrepancy as well.



#### AESO

**AB\_AESO Capacity (MW)** 



## IPCO

#### **BS\_IPCO Capacity (MW)**





#### BANC

#### CA\_BANC Capacity (MW)





### CISO





## TIDC

CA\_TIDC Capacity (MW)





#### NWMT





#### PSEI





## PSCO





#### WACM

#### **RM\_WACM Capacity (MW)**





#### EPE





## **Palo Verde Trading Hub**



## **WECC Total**



L&R Cap PCM Cap



#### **Unserved Load**



## What has been done?

- Modified two CFE units as total combined cycle units instead of each individual part
- Changed Seed for Monte Carlo simulation
  - There was more unserved load in CFE
- CFE peak and energy increased by 13% and 15% respectively in August from the 2030 case to 2032
  - Actual peak in 2019 and 2021 went from 2,818 to 3,132 MW, 11% increase
- Investigating forced outages, min up/down times, maintenance



### **Congestion on Transmission Paths**



## **Observed Congestion**

- Path 1 importing power to AESO many hours of the year
- Path 83 importing power to AESO many hours of the year
- Path 42 hitting the limit many hours of the year
  - There is discussion of increasing the limit from 750 MW to 1400 MW
    - Is not in the path rating catalog yet. Expected to make it in the 2024 catalog.
    - Limit may end up being anywhere from 1200 to 1400 MW



## What has been done?

- Fixed phase shifters, type -4 in PF were added in the PCM
  - MATLB
  - Crossover
  - Billings steam plant
  - Anaconda-Mill Creek
  - Anticline phase shifters
  - Billings Rimrock





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