



Unserved Load, Congestion

August 10, 2022

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Unserved Load

General

- Loads have been increasing in recent years and are reflected in the 2032 forecast
- Forced outages seem high, some as high as 7.8%
 - Following data from GADS
- LBL is working on updating the Demand Response hourly shapes
 - Expected by end of week
 - May help in PSCO and WACM but not CFE

CFE

- Findings
 - 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
 - No major increase in resources from 2030 to 2032 ADS
 - Capacity higher than L&R capacity
 - Very small margin: Peak Load: 4,863 MW; Generator Capacity: 5,060 MW
- What was changed:
 - Two CC units modeled incorrectly, corrected
 - Changed Seed for Monte Carlo Simulation

WACM and PSCO

- Hayden retired, data initially showed no retirement date
- Both areas appear to have enough capacity to cover load but...
 - Forced outage,
 - High amount of wind and solar
- Demand Response will likely help

Yearly Stats

Area	Unserved Load (MWh)	Unserved Load Hours	Total Load (MWh) Served + Unserved	Percent Unserved	Largest % Unserved Hourly
CFE	63,439	235	24,047,697	0.26%	16.76%
PSCO	3,913	19	54,094,783	0.01%	7.31%
WACM	5,152	29	27,730,529	0.02%	9.43%
Total (3 areas above)	72,504	259	105,873,010	0.07%	5.96%

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
 - No changes have been made in the ADS

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

Congestion Hours

Total Congestion Hours (Hr)	Prevailing Direction of congested hours	2032 ADS 2022-8-3_100seed
P42 IID-SCE	Positive, IID to SCE	7027
P01 Alberta-British Columbia	Negative, BC to AB	4280
P83 Montana Alberta Tie Line	Positive, MT to AB	3990
P27 Intermountain Power Project DC Line	Split in both directions	2720
P45 SDG&E-CFE	Positive, SDGE to CFE	1386
P26 Northern-Southern California	Negative, South to North	1077



WECC

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