



Review of NERC-WECC Report on IBRs in WECC Base Cases

September 17, 2020

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Report Background

- Momentary Cessation
 - Blue Cut Fire
 - Canyon 2 Fire
 - Models didn't capture it
 - Models can capture it but need to have parameters set correctly

WECC Model Review

- 2020 HS3 Operating Case
 - All IBRs (Wind, Solar PV, Energy Storage)
 - Steady-state & Dynamics

4 Top Issues Observed

- IBR facilities
 - modeled with 1st-gen dynamic models
 - modeled w/incorrect or no dynamic models
 - modeled with generic or typical data
 - modeled with incorrect turbine type
- Retired units not identified as such
- Incorrect modeling of dynamic reactive devices

2020 HS3 Gen Summary

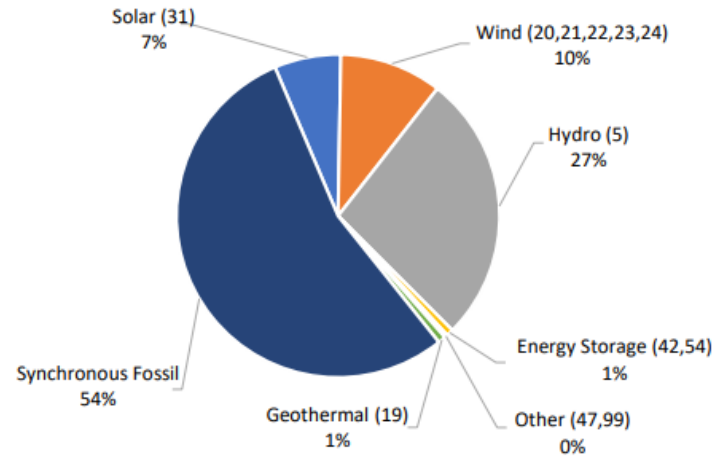


Figure 2.1: Overview of Generation Capacity in WECC 2020 HS3 Base Case

Table 2.1: Overview of Generation Capacity in WECC 2020 HS3 Base Case			
Generation Type	# Units	Total MW	% MW Capacity
Solar (31)	414	18,180	7%
Wind (20, 21, 22, 23, 24)	424	27,995	10%
Hydro (5)	1,329	73,456	27%
Energy Storage (42, 54)	34	1,911	1%
Other (47, 99)	22	861	0%
Geothermal (19)	66	2,064	1%
Synchronous Fossil	1,932	148,123	54%

Wind Models

Table 3.1: Overview of Dynamic Models for Wind Power Plants

Dynamic Model	# Units	Total MW Capacity	% MW Capacity
genrou	72	3,108	11.10%
gentpj	1	76	0.27%
genwri	2	191	0.68%
gewtg	16	1,604	5.73%
motor1	12	243	0.87%
No Dynamic Model	49	2,700	9.65%
regc_a	116	10,283	36.73%
wt1g	21	1,141	4.08%
wt2g	26	1,907	6.81%
wt3g	79	4,385	15.67%
wt4g	30	2,355	8.41%
Total	424	27,995	

Solar PV Models

Table 4.1: Overview of Dynamic Models for Solar PV			
Generator DYD Record	# of Units	MW Capacity	% of Total MW Capacity
genrou	3	10	0.05%
gentpf	3	35	0.19%
gentpj	6	66	0.36%
gewtg	11	333	1.83%
None	83	2,119	11.66%
regc_a	274	14,833	81.59%
wt4g	34	785	4.32%
Total	414	18,180	

Current Efforts

- WECC Groups
 - MVS
 - REMWG
 - SRS
 - ESTF
- Industry Efforts



WECC

Electric Reliability and Security for the West

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