



Thermal Mechanical Chemical Energy Storage Workshop

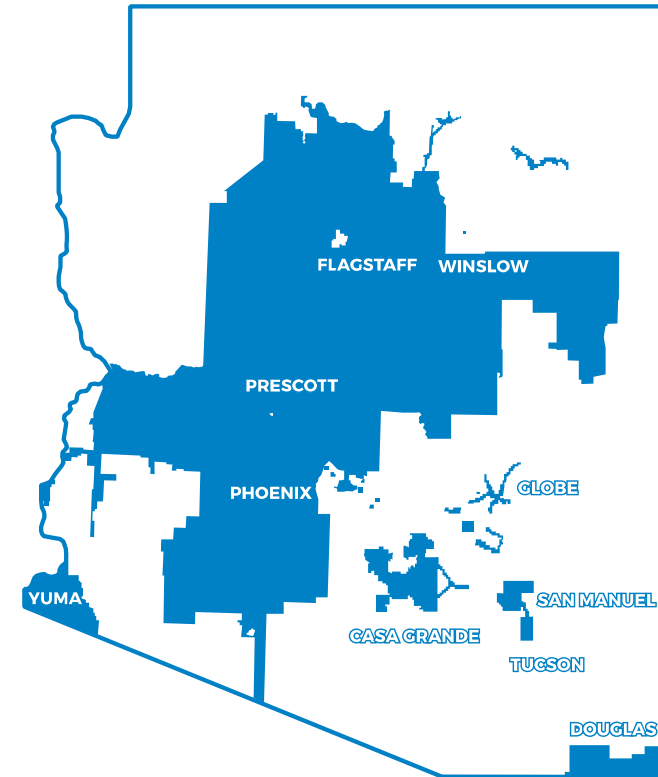
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APS SERVICE TERRITORY

Since 1886, Arizona's largest and longest-serving utility.

- 34,646 square mile service territory
 - 11 of 15 counties
 - 1.4 million customer accounts (89% residential)
 - Approximately 45% of Phoenix
- ~6,200 employees
- Peak demand is ~8,400 megawatts
- Investor owned (PNW)



CLEAN ENERGY COMMITMENT



By 2050 - 100% clean, carbon-free electricity



2030 target - 65% clean energy, 45% coming from renewables

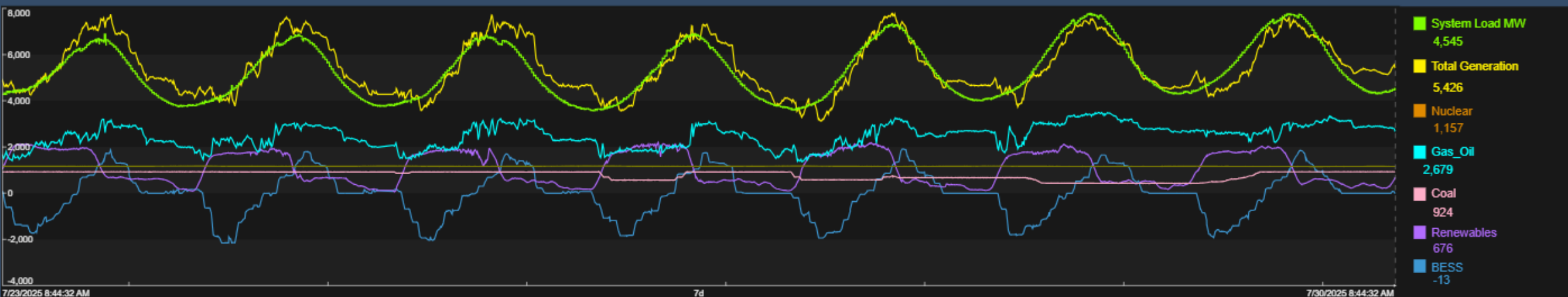


2031 – exit coal-fired generation

Current Asset Mix / Load Profile - Summer

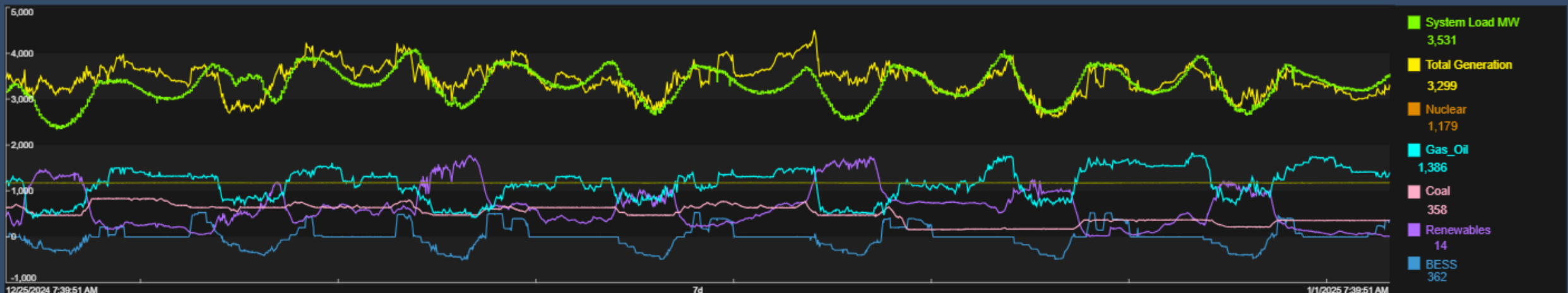
Total Generation			System Load MW: 4,545															
	APS(MW)	(Cap)																
Nuclear	1,157	1,170	PV1 387	PV2 386	PV3 382													
Gas / Oil	2,679	5,222																
Gas - PPA	1,138	1,598	AVEX 211	GFY 442	SPTX 477													
Ocotillo	-4	644	CT1 0	CT2 0	GT3 0	GT4 -2	GT5 0	GT6 -2	GT7 0									
Redhawk	874	1,040	CC1 452	CC2 422														
Saguaro	0	237	CT1 0	CT2 0	CT3 0	DG 0												
Sundance	0	420	SD1 0	SD2 0	SD3 0	SD4 0	SD5 0	SD6 0	SD7 0	SD8 0	SD9 0	SD10 0						
West Phoenix	679	1,007	CC1 22	CC2 60	CC3 57	CC4 102	CC5 438	GT1 0	GT2 0									
Yucca	0	287	CT1 0	CT2 0	CT3 0	CT4 0	CT5 0	CT6 0	IG 0									
Microgrid	0	39	ALIGN 0	MCASY 0	COPH 0													
Coal	924	1,357																
Cholla	0	387	CH1 0	CH3 0														
Four Corners	924	970	FC4 452	FC5 472														

	APS(MW)	(Cap)																
Renewables	676	2,703																
Solar - APS	109	379	CHV 7	CCS 4	FHL 12	HYD 5	PAL 0	HY2 4	GB1 6	GB2 5	DSS 3	RDR 17	LUK 3	AGV 55				
Solar - PPA	428	1,441	AJO 1	BAG 3	PRS 4	SM1 1	SLN 0	BGD 4	GSP 4	MSQ5S 22	SS3 91	SS4 96	YUMA 22	HARQ 123	SER 56			
Wind - PPA	123	853	AWM 3	HLS 0	PRR 8	CB1 72	CB2 41											
Geothermal / Bio	16	30	IVG 0	SWM 14	WML 2													
Storage	-13	2,238																
BESS - APS	9	199	CHV 11	CCS 0	FHL 0	HYD 0	PAL 0	HY2 0	GB1 0	GB2 0	DSS 0	RDR 0						
BESS - PPA	-33	2,039	MSQ5B 0	SS3 0	WW1 -79	ELS 0	SS4 0	YUMA 0	WW2 0	HARQ 0	PPG -2	SCW1 -2	SCW2 52	SER 0	PLUX 0			



Load Profile- Winter

Total Generation			System Load MW: 3,531														
	APS(MW)	(Cap)															
Nuclear	1,179	1,170	PV1 394	PV2 394	PV3 391												
Gas / Oil	1,386	5,222															
Gas - PPA	0	1,598	AVEX 0	GFX 0	SP1X 0												
Ocotillo	-4	644	CT1 0	CT2 0	GT3 0	GT4 -2	GT5 0	GT6 -2	GT7 0								
Redhawk	867	1,040	CC1 483	CC2 385													
Saguaro	43	237	CT1 0	CT2 0	CT3 43	DG 0											
Sundance	33	420	SD1 0	SD2 0	SD3 33	SD4 0	SD5 0	SD6 0	SD7 0	SD8 0	SD9 0	SD10 0					
West Phoenix	448	1,007	CC1 0	CC2 62	CC3 62	CC4 93	CC5 232	GT1 0	GT2 0								
Yucca	0	287	CT1 0	CT2 0	CT3 0	CT4 0	CT5 0	CT6 0	TG 0								
Microgrid	0	39	ALIGN 0	MCAS1 0	COP1 0												
Coal	358	1,357															
Cholla	380	387	CH1 113	CH3 267													
Four Corners	-23	970	FC4 -23	FC5 0													
Renewables	14	2,703															
Solar - APS	0	379	CHV 0	CCS 0	FHL 0	HYD 0	PAL 0	HY2 0	GB1 0	GB2 0	DSS 0	RDR 0	LUK 0	AGV 0			
Solar - PPA	0	1,441	AJO 0	BAG 0	PRS 0	SM1 0	SLN 0	BGD 0	GSP 0	MSQ5S 0	SS3 0	SS4 0	YUMA 0	HARD 0	SER 0		
Wind - PPA	0	853	AWM 3	HLS 0	PRR 0	CB1 -1	CB2 -1										
Geothermal / Bio	15	30	MG 0	SWM 12	WML 3												
Storage	362	2,238															
BESS - APS	9	199	CHV 0	CCS 0	FHL 0	HYD 0	PAL 0	HY2 0	GB1 0	GB2 0	DSS 10	RDR 0					
BESS - PPA	353	2,039	MSQ5B 60	SS3 215	WW1 79	ELS 0	SS4 0	YUMA 0	WW2 0	HARD 0	PPG -1	SCW1 0	SCW2 0	SER 0	PLUX No Data		



Supply-Demand Gap

FIGURE 2-3. SUPPLY-DEMAND GAP (2023-2038)

