



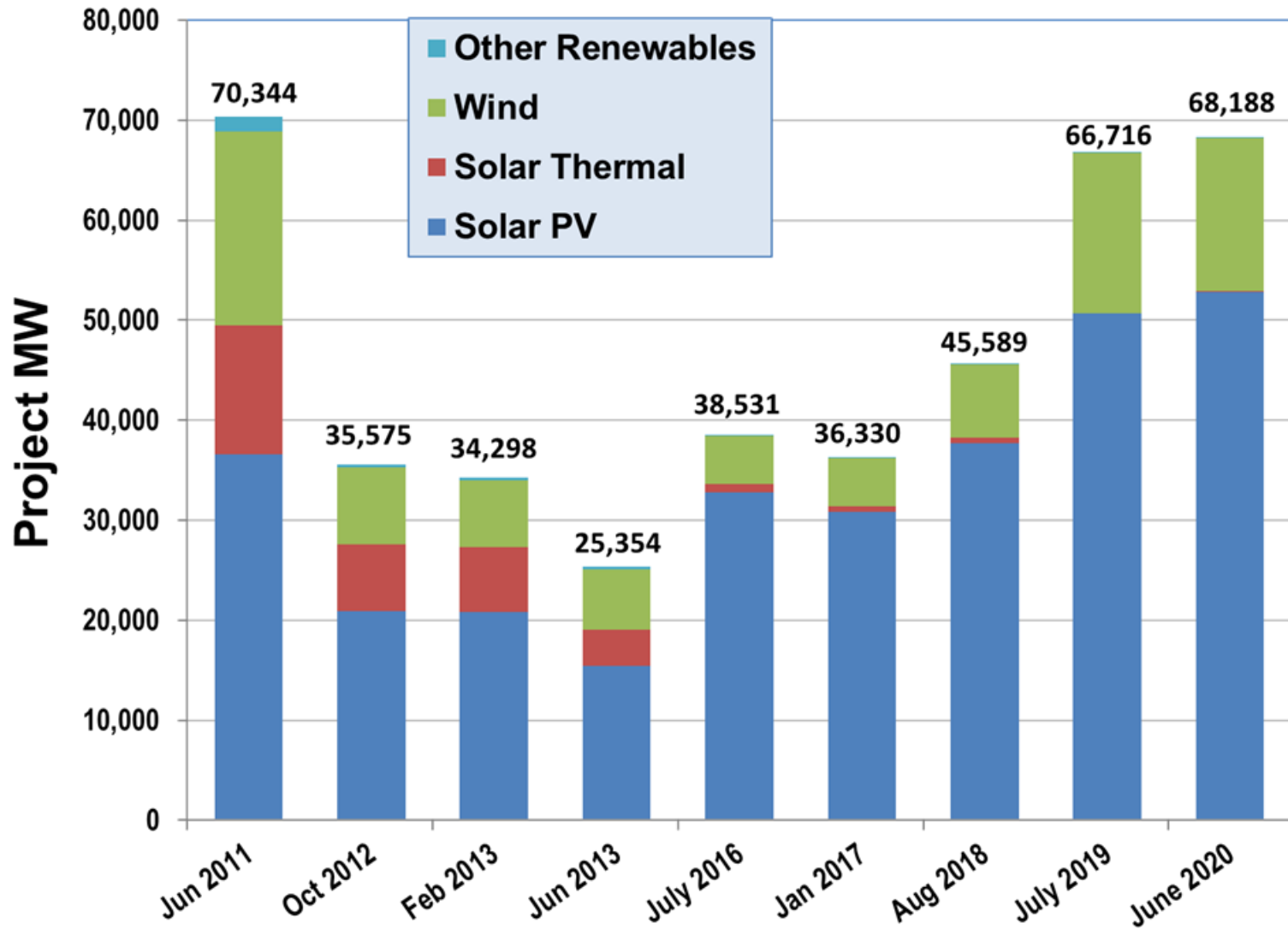
# Briefing on renewable and energy storage in the ISO generator interconnection queue

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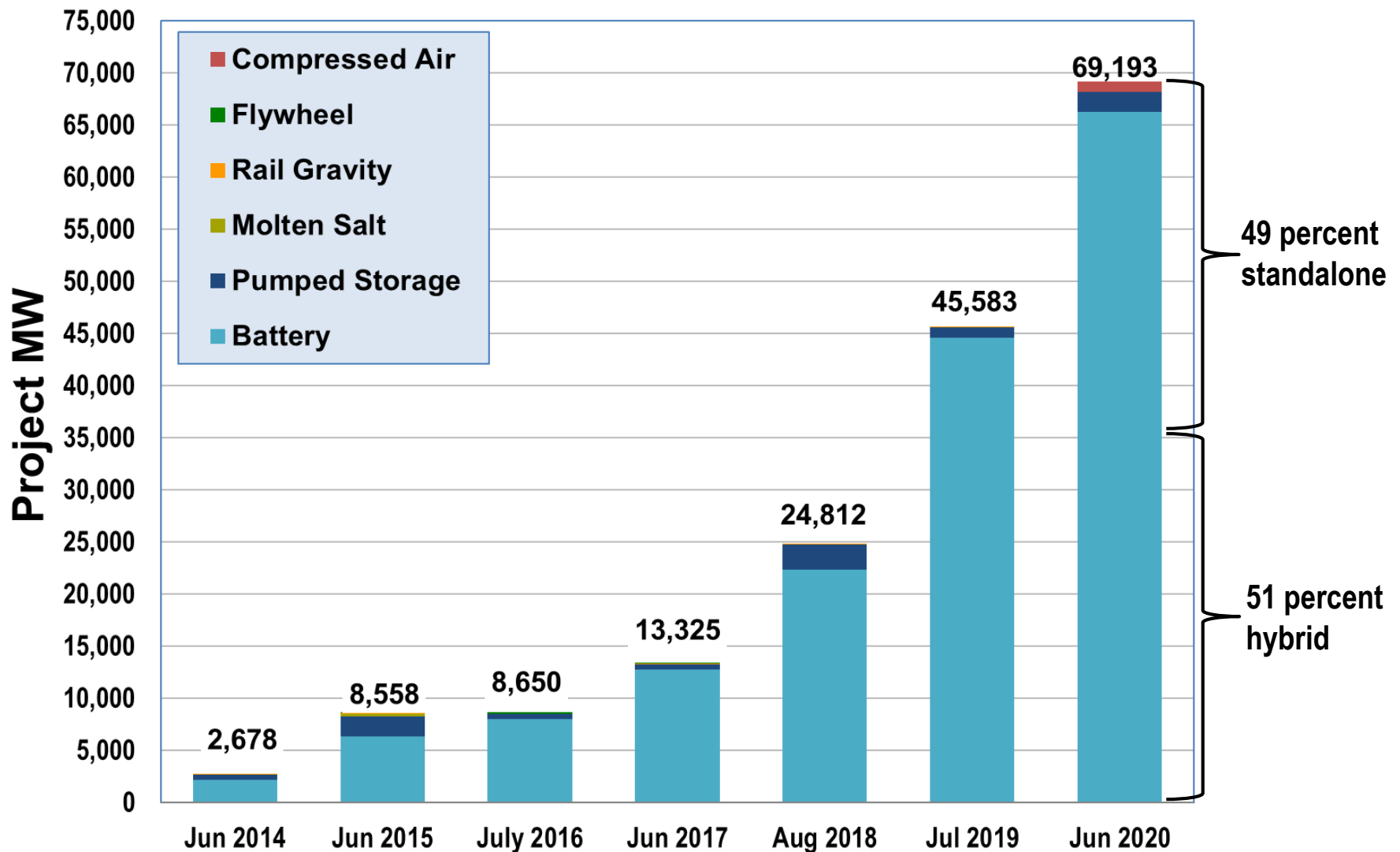
Board of Governors Meeting  
General Session  
July 22, 2020

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# Renewable capacity in ISO queue



# Energy storage capacity in ISO queue



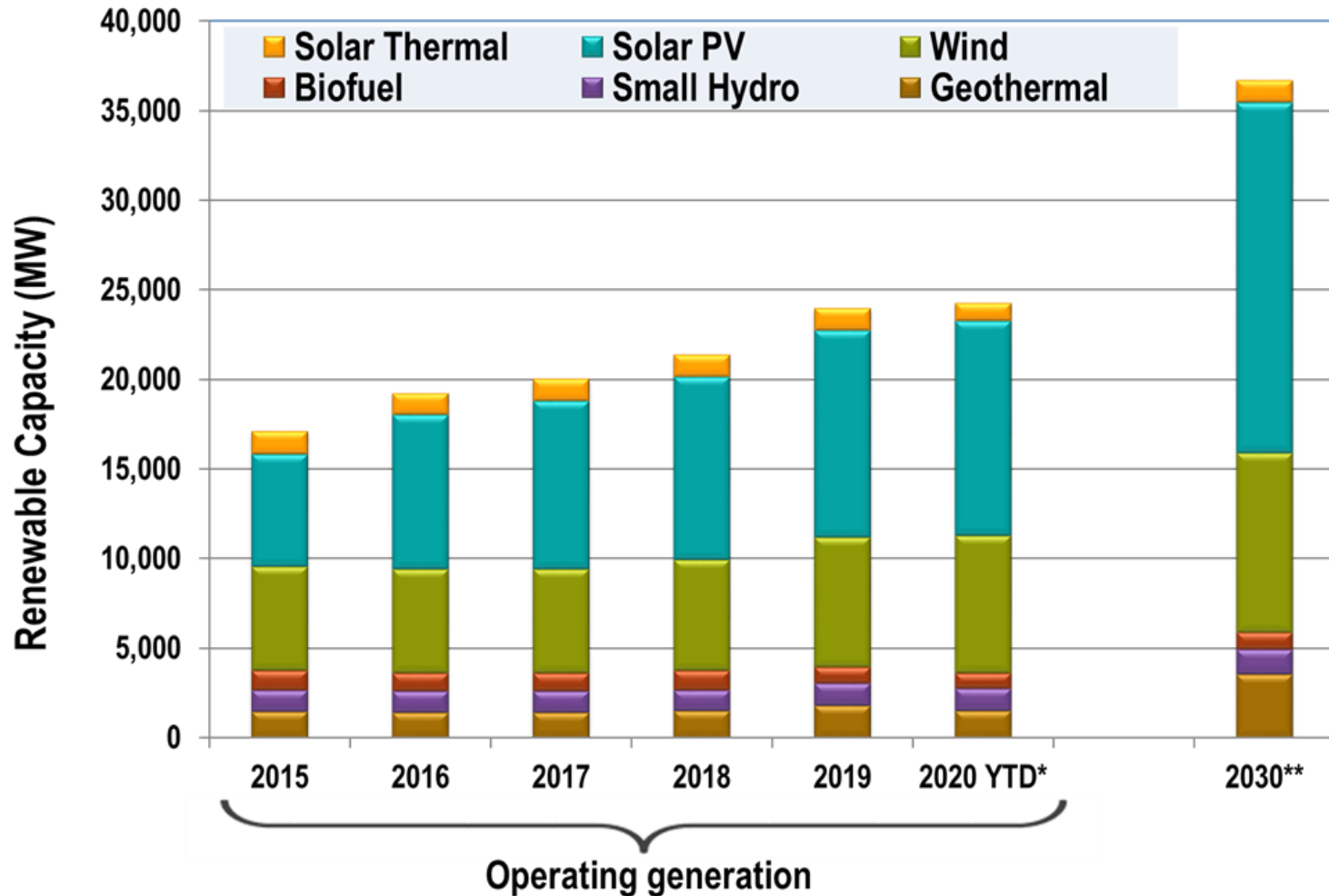
## Queue statistics

- 68,188 MW renewable energy (stand alone or hybrid)
  - 39% have completed the study process, 61% are being studied
- 69,193 MW of energy storage projects
  - 33,653 MW stand alone storage (all types)
  - 35,540 MW storage as a component of a hybrid project

### By Type:

- 66,218 MW battery
  - 1,907 MW pumped storage
  - 1,024 MW compressed air
  - 44 MW other
- New cluster 13
    - 147 projects
    - 31,384 MW, renewable
    - 32,302 MW energy storage

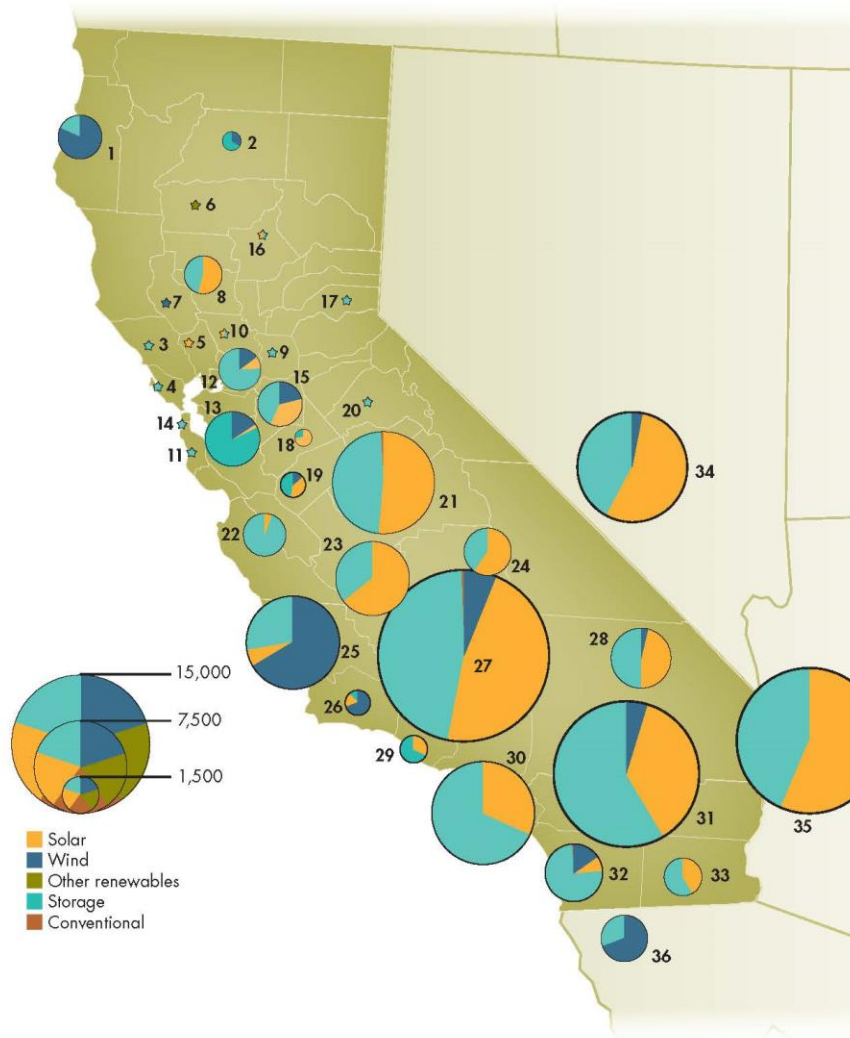
# Current and projected renewable generation capacity in operation within the ISO



\* All online resources that are not in test mode, including those yet to achieve full commercial operation.

\*\* Estimate of renewable capacity build-out to meet the 2030 60% RPS requirement (based on CPUC 2019 Unified Resource Adequacy and Integrated Resource Plan, BASE portfolio, transmitted to CAISO for the 2019-2020 TPP).

# Queue Map – Conventional & Renewables



CAISO PUBLIC

## Interconnection queue by county

County	# of Projects	Megawatts			Total
		Renewables	Storage	Conventional	
1 Humboldt	5	1,827	410		2,238
2 Shasta	2	206	415		621
3 Sonoma	7		103		103
4 Marin	9		305		305
5 Napa	1	25			25
6 Tehama	6	6			6
7 Lake	3	145	39		184
8 Colusa	9	1,048	890		1,938
9 Sacramento	1		59		59
10 Yolo	8	92	92		184
11 San Mateo	5		254		254
12 Solano	2	521	1,618		2,139
13 Alameda-Contra Costa-Santa Clara	26	734	3,335		4,069
14 San Francisco	40		250		250
15 San Joaquin	9	1,318	1,016		2,334
16 Butte	3	87	189		275
17 Placer	33		102		102
18 Stanislaus	7	341	116		457
19 Merced	6	554	499		1,053
20 Tuolumne	9		10		10
21 Fresno-Madera	38	4,221	3,903	63	8,187
22 San Benito-Monterey	5	115	2,042		2,156
23 Kings	25	3,476	1,937		5,413
24 Tulare-Inyo	12	1,562	1,055		2,618
25 San Luis Obispo	5	5,706	2,190		7,896
26 Santa Barbara	3	978	134		1,111
27 Kern	129	11,818	10,294	109	22,221
28 San Bernardino	29	3,151	3,146	15	6,311
29 Ventura	2	500	1,060		1,560
30 Los Angeles-Orange	20	2,536	5,452		7,988
31 Riverside	31	7,387	10,375		17,762
32 San Diego	30	1,235	3,912	49	5,195
33 Imperial	9	814	1,162		1,976
<b>In-state Totals</b>	<b>529</b>	<b>50,401</b>	<b>56,363</b>	<b>236</b>	<b>107,000</b>
34 Nevada	32	5,673	4,123		9,796
35 Arizona	37	10,204	7,857		18,061
36 Mexico	8	1,910	850		2,760
<b>Out-of-state Totals</b>	<b>77</b>	<b>17,787</b>	<b>12,830</b>		<b>30,617</b>
<b>TOTAL ALL PROJECTS</b>	<b>606</b>	<b>68,188</b>	<b>69,193</b>	<b>236</b>	<b>137,617</b>