

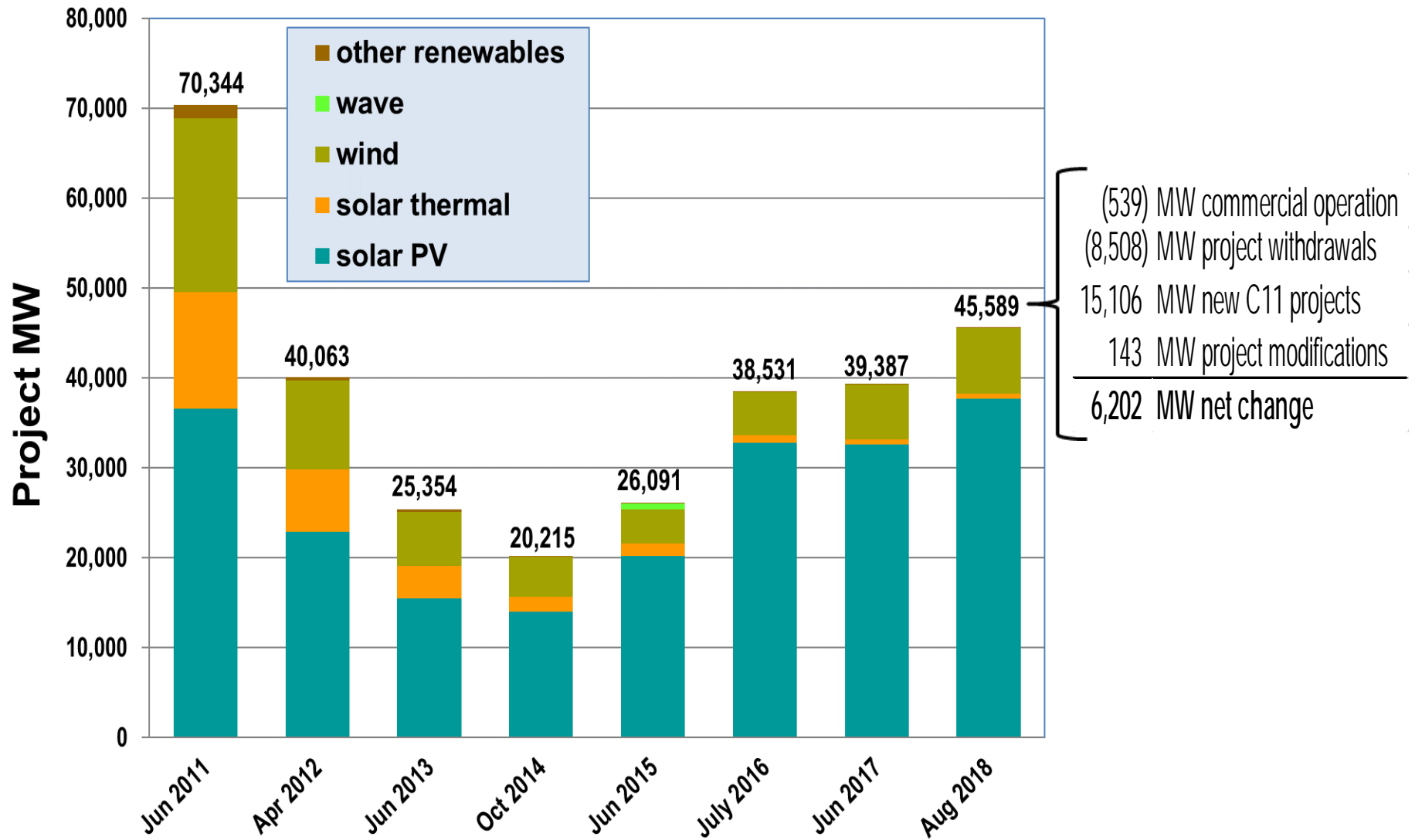


Briefing on renewable generation in the ISO generator interconnection queue

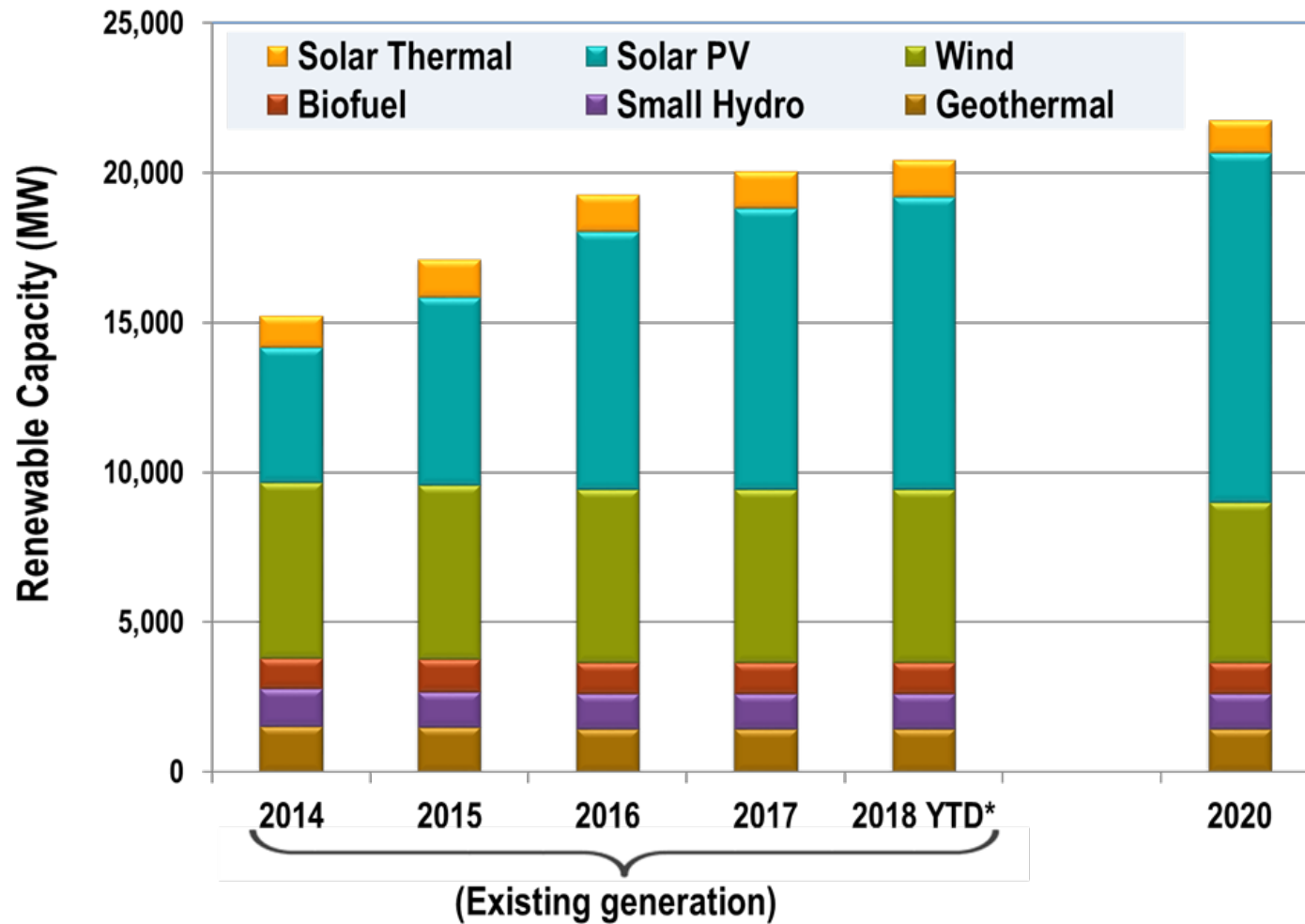
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Manager, Interconnection Resources

Board of Governors Meeting
General Session
September 5, 2018

Change in renewable capacity in the ISO queue



Current and projected renewable generation capacity in operation within the ISO

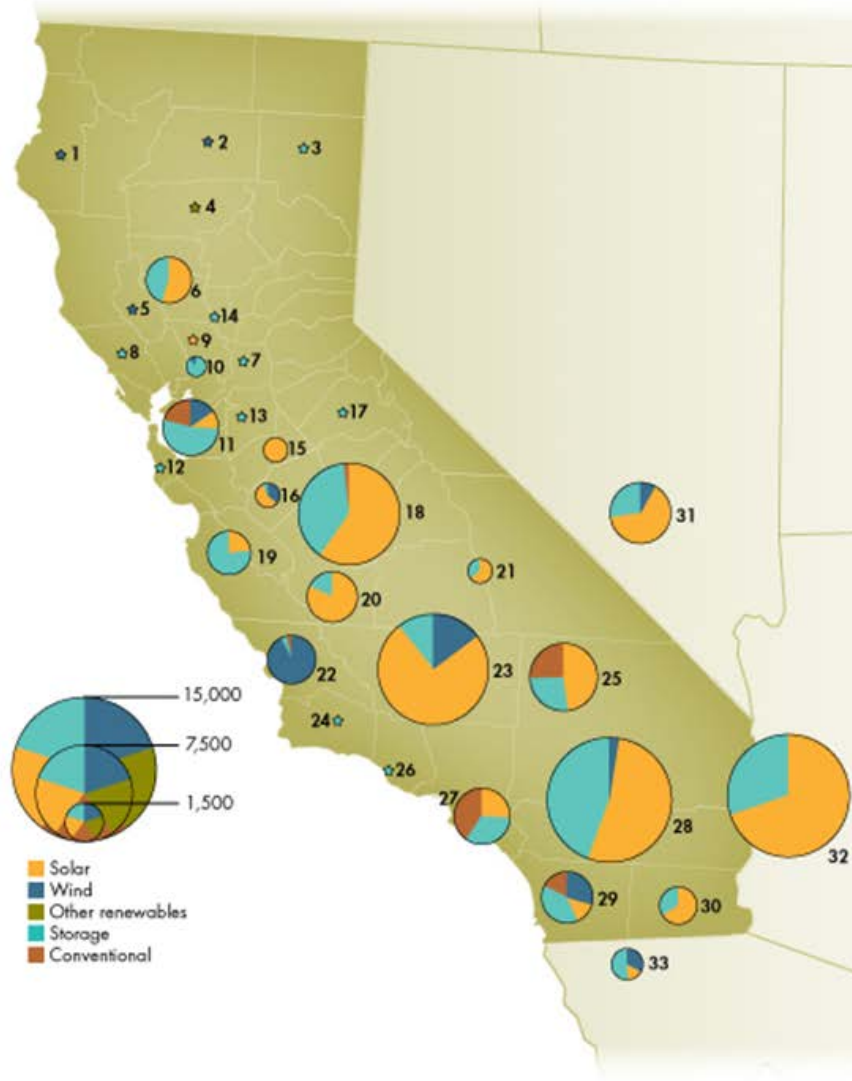


*All online resources that are not in test mode are included in the 2018 YTD amounts, including those yet to achieve full commercial operation.

Queue statistics

- 45,589 MW renewable energy projects
 - 21,624 MW have completed the study process
 - 23,965 MW are currently in the study process
- 24,812 MW of energy storage projects
 - 22,268 MW battery
 - 2,400 MW pump storage
 - 144 MW rail and compressed air energy storage
- New cluster 11
 - 56 projects, 15,106 MW, renewable (all configurations)
 - 31 projects, 10,160 MW, combined solar with energy storage

ISO Queue Map – Conventional & Renewables



Interconnection queue by county

County	# of Projects	Megawatts			Total
		Renewables	Storage	Conventional	
1 Humboldt	3	268	28		296
2 Shasta	1	200			200
3 Lassen	2	21	27		48
4 Tehama	2	6			6
5 Lake	3	145	39		184
6 Colusa	7	1,261	1,035		2,296
7 Sacramento	1		59		59
8 Sonoma	1		100		100
9 Yolo	1	12			12
10 Solano	4	92	668		760
11 Alameda-Contra Costa-Santa Clara	27	891	1,818	723	3,432
12 San Mateo	1		40		40
13 San Joaquin	6	51	376		427
14 Sutter	3		171		171
15 Stanislaus	5	898			898
16 Merced	10	814	69		883
17 Tuolumne	1		10		10
18 Fresno-Madera	46	4,827	3,118	123	8,068
19 San Benito/Monterey	6	520	1,709		2,229
20 Kings	14	2,123	465		2,588
21 Tulare/Kings	5	551	310		861
22 San Luis Obispo	4	2,582	106	100	2,788
23 Kern	65	8,210	974		9,184
24 Santa Barbara	1		32		32
25 San Bernardino	22	2,156	1,202	38	3,396
26 Ventura	1		100		100
27 Los Angeles-Orange	10	820	1,032	1,270	3,122
28 Riverside	31	6,115	4,875		10,990
29 San Diego	21	1,137	1,036	457	2,630
30 Imperial	7	1,025	525		1,550
31 Nevada	12	2,714	1,014		3,728
32 Arizona	22	7,549	3,246		10,795
33 Mexico	3	601	628		1,229
In-state Totals	311	34,725	19,924	2,711	57,360
Out-of-state Totals	37	10,864	4,888		15,752
TOTAL ALL PROJECTS	347	45,289	24,184	3,711	73,112