

November 2017

Peaks for November

Peak demand **31,460 MW**
November 22, 2017

 Renewables serving peak
5,488 MW November 10, 2017

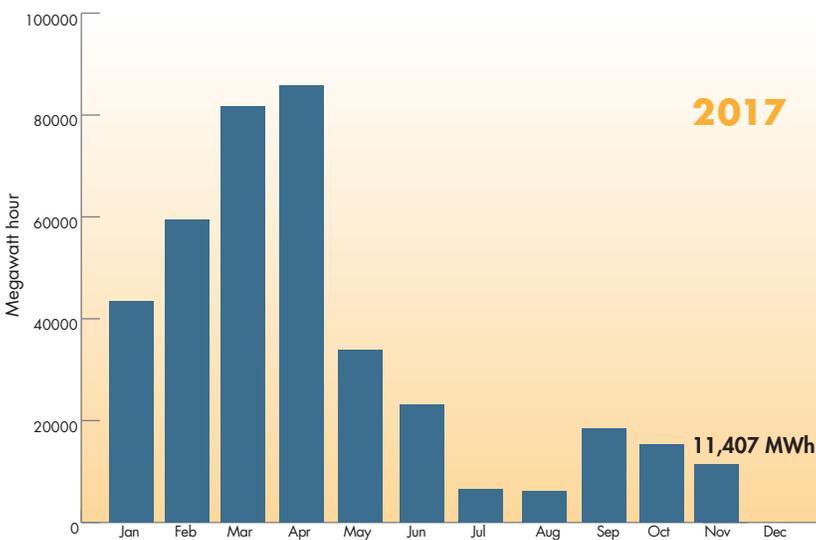
Percentage of renewables serving peak
19.1% November 10, 2017

Solar & wind **10,731 MW**
November 10, 2017

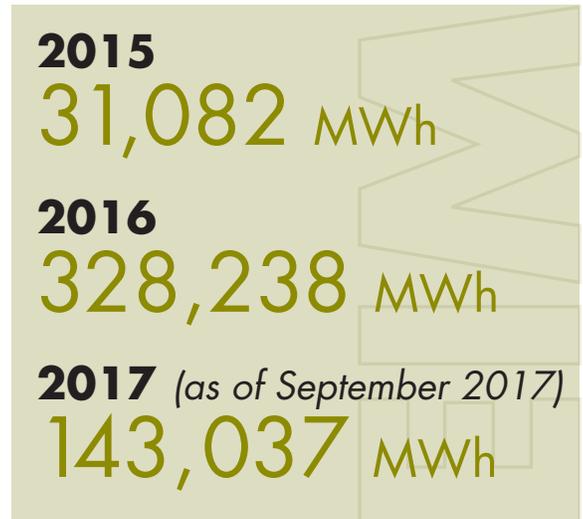
 Peak solar **8,033 MW**
November 19, 2017

 Peak wind **3,691 MW**
November 27, 2017

Key curtailment totals



Avoided curtailments due to EIM



[Click here](#) for more information on managing oversupply

[Click here](#) for EIM quarterly benefits reports

Good facts

Renewables served **67.2%** of demand
58.7% of demand = solar & wind
on May 13, 2017 at 2:55 p.m.

Previous milestones

65.2% - April 24, 2017 at 2:53 p.m.

56.7% - March 23, 2017 at 11:23 a.m.



Solar served **47.2%** of demand
May 14, 2017 at 1:07 p.m.



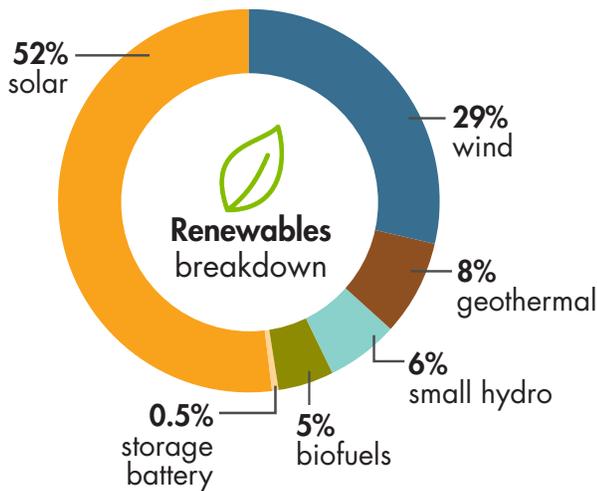
Wind served **22.4%** of demand
March 31, 2017 at 3:17 a.m.

Demand & resources *(as of 12/08/2017)*

Resource adequacy net qualifying capacity (NQC) = **48,525 MW**

Does not include current outages

Installed renewable resources *(as of 12/08/2017)*



	Megawatts
 Solar	11,163
 Wind	6,322
 Small hydro	1,256
 Geothermal	1,799
 Biofuels	991
 Storage battery	116*
TOTAL	21,628

[Click here](#) for Today's Outlook

NOTE — Reporting Net Dependable Capacity only (numbers are rounded). Only fully commercial units are counted, not partials or test energy, as reported via the Master Generating File and captured in the Master Control Area Generating Capability List found on [OASIS](#) under "Atlas Reference".

**Includes 20 MW of storage integrated with power plants*

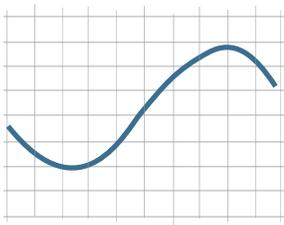
Record peaks *(solar peaks are now frequent and change often)*

SOLAR
 **9,914 MW**
 June 17, 2017, 12:13 p.m.

WIND
 **4,985 MW**
 May 16, 2017, 5:26 p.m.

PREVIOUS SOLAR RECORD **9,892 MW** set on May 19, 2017, 1:15 p.m.

Season peak demand



2017	50,116 MW
2016	46,232 MW
2015	47,358 MW
2014	45,089 MW

SEPTEMBER 1, 2017, 3:58 P.M.

JULY 27, 2016, 4:51 P.M.

SEPTEMBER 10, 2015, 4:53 P.M.

SEPTEMBER 15, 2014, 4:53 P.M.

[Click here](#) to see historical peak demand

2016 Energy use as percentage of total resources available

 Natural gas = 32% Down 40% from last year	 Non-hydro renewables = 20% Up 18% from last year	 Geothermal decreased 8% and provided almost 5% of total system energy
 Net imports = 28% Roughly unchanged from last year	 Solar increased 32% and accounted for 9% of total system energy	 Biofuels = 2% of total system energy, a slight decrease compared to last year
 Nuclear = 8% About the same from last year	 Wind increased 12% and accounted for 6% of total system energy	
 Total hydro = 10% Up 5% from last year		

Other mostly evergreen facts

- 30 million California consumers
- 1 MW serves about 750-1,000 homes
- 25,622 (or about 26,000) circuit miles of transmission
- 9,524 Pnodes (pricing nodes) (ISO & all EIM entities as of Jan. 5, 2017) ISO only Pnodes = 5,669
- Serve ~80% of California demand
- ISO serves ~33% of WECC demand
- 184 market participants
- 18 participating transmission owners
- Market transactions for 2016 = 29,651 (2015 = 27,488) daily average
- MWh of demand served for 2016 = 237M MWh, ~1.25% lower than 2015 (239.6M in 2015)
- Total estimated wholesale cost of serving demand in 2016 = \$7.4 billion or about \$34 MWh (down ~9% from \$8.3 billion/\$37MWh in 2015; \$12 billion in 2014/\$52 MWh).*

*Note — This is lowest nominal cost since at 2008 — mostly due to lower natural gas prices. After normalizing for natural gas prices and greenhouse gas compliance costs, total wholesale energy costs decreased by about 4 percent.