

## Wind and Solar Curtailment April 28, 2018

This report is produced daily to provide a detailed accounting of the wind and solar renewable generation that was curtailed and the reasons why<sup>1</sup>. This report should be read in the context of the Renewables Watch report for a more complete understanding of both renewable curtailment and generation<sup>2</sup>.

Wind and solar curtailments are grouped into the following categories:

1. Economic - Local: Market dispatch of generators with economic bids to mitigate local congestion<sup>3</sup>.
2. Economic - System: Market dispatch of generators with economic bids to mitigate system-wide oversupply<sup>4</sup>.
3. SelfSchCut - Local: Market dispatch of self-schedules to mitigate local congestion.
4. SelfSchCut - System: Market dispatch of self-schedules to mitigate system-wide oversupply.
5. ExDispatch - Local: Exceptional dispatch to mitigate local congestion.
6. ExDispatch - System: Exceptional dispatch to mitigate system-wide oversupply.

Note: Amounts smaller than 1 MW are filtered out for simplicity. Such small curtailments are occasionally observed when forecasts are lower than Pmin when market will de-commit the unit and send the 0 MW dispatch.

<sup>1</sup>Only wind and solar resources can be reported in this manner because these resources have a forecast. Curtailment is defined as the difference between actual production and the forecast when actual production is less than the forecast.

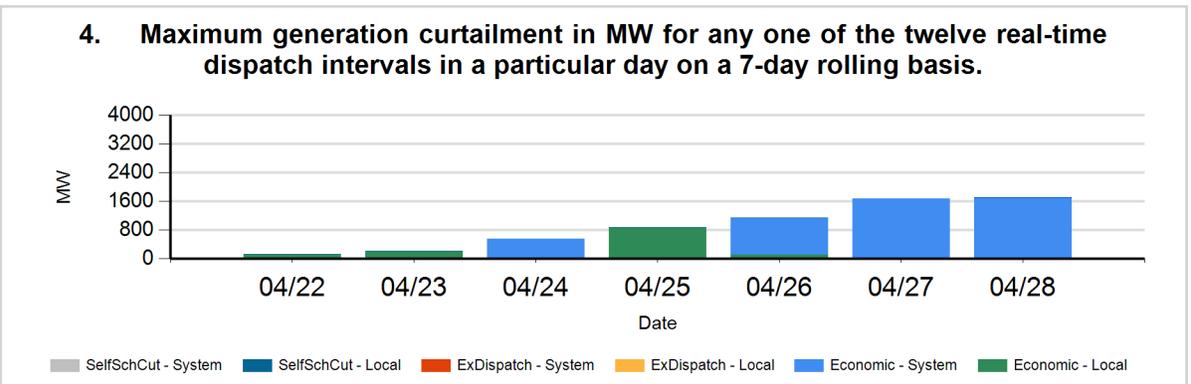
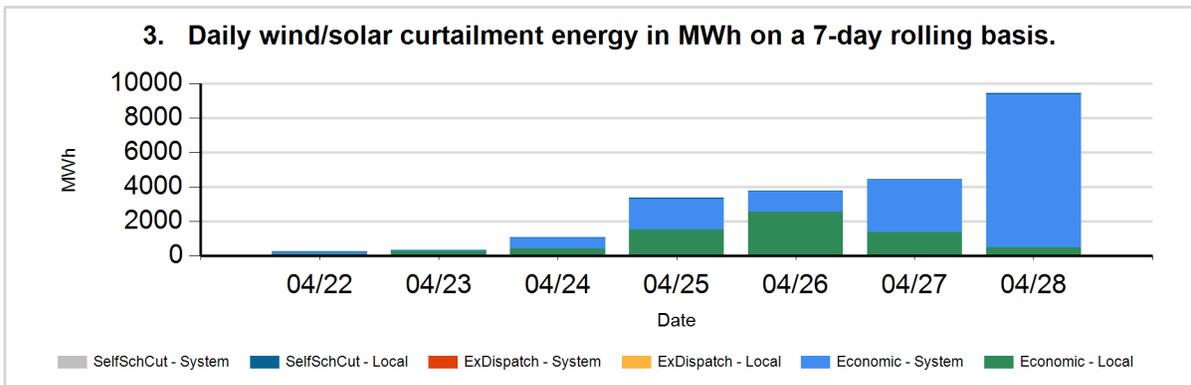
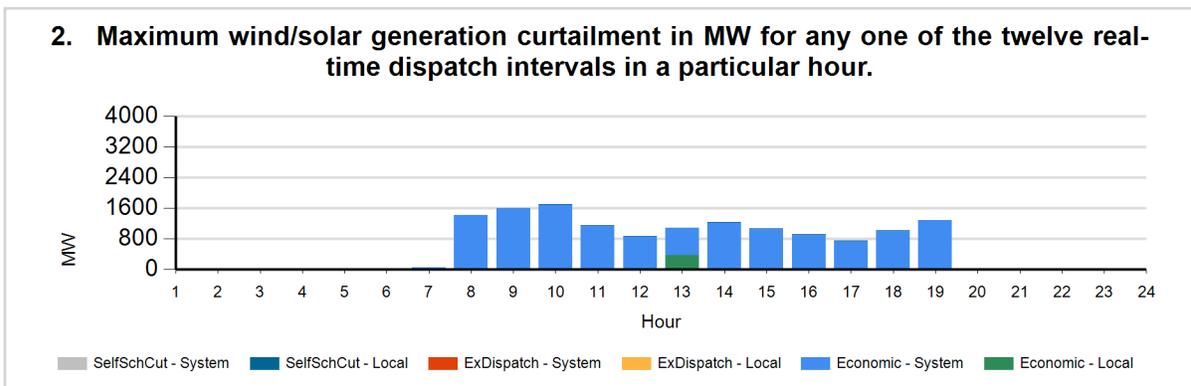
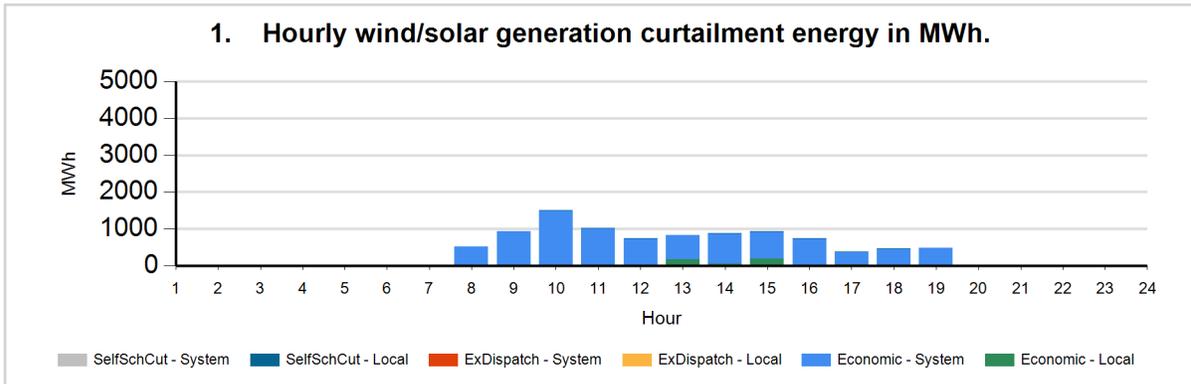
<sup>2</sup>The Renewables Watch report provides daily actual renewable production within the ISO grid. It is available at: <http://www.caiso.com/green/renewableswatch.html>.

<sup>3</sup>Congestion occurs when available, least-cost energy cannot be delivered to some loads because transmission facilities do not have sufficient capacity to deliver the energy.

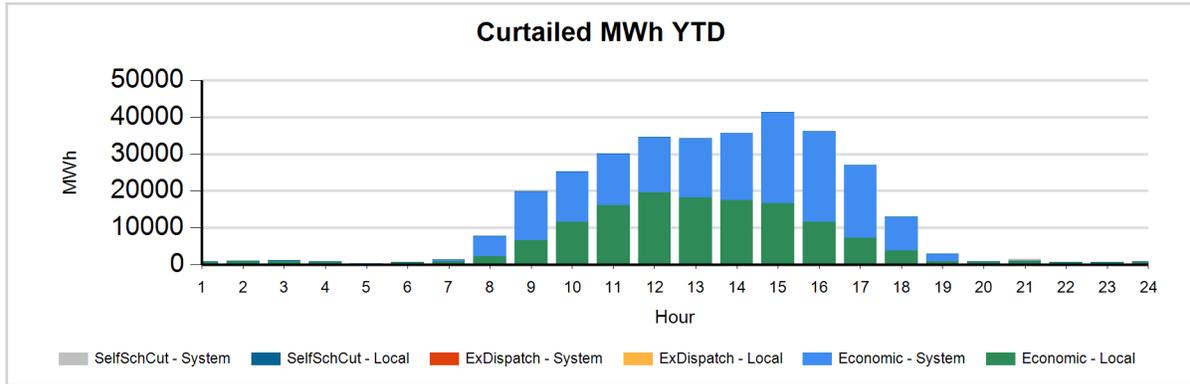
<sup>4</sup>For more information on oversupply conditions, please see:

[https://www.caiso.com/Documents/FlexibleResourcesHelpRenewables\\_FastFacts.pdf](https://www.caiso.com/Documents/FlexibleResourcesHelpRenewables_FastFacts.pdf)

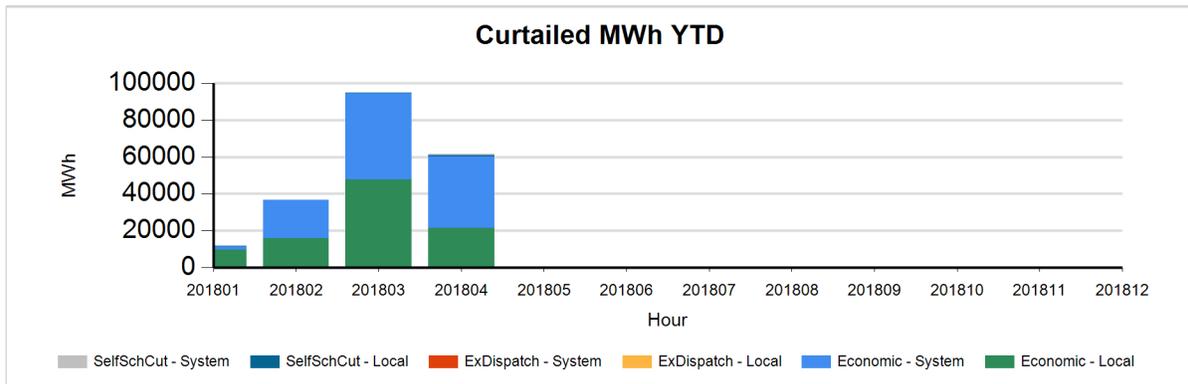
The following charts show the daily and 7-day rolling wind and solar curtailment by category, if any.



The following charts show hourly year to date wind and solar curtailment by category, if any.



The following charts show monthly year to date wind and solar curtailment by category, if any.



TYPE	YTD CURTAILED MWH
LocalEconomic	140,589
LocalSelfSchCut	1,370
SystemEconomic	175,893
SystemSelfSchCut	493
<b>TOTAL</b>	<b>204,853</b>

Data used to produce hourly chart

DATE	HOUR	CURT TYPE	REASON	FUEL TYPE	CURTAILED MWH	CURTAILED MW
04/28	7	Economic	System	SOLR	4	40
04/28	8	Economic	System	SOLR	455	1254
04/28	8	Economic	System	WIND	62	156
04/28	9	Economic	System	SOLR	800	1412
04/28	9	Economic	System	WIND	129	192
04/28	10	Economic	System	SOLR	1329	1536
04/28	10	Economic	System	WIND	161	158
04/28	10	SelfSchCut	Local	SOLR	5	2
04/28	11	Economic	Local	SOLR	11	9
04/28	11	Economic	System	SOLR	879	999
04/28	11	Economic	System	WIND	121	126
04/28	11	SelfSchCut	Local	SOLR	15	19
04/28	12	Economic	Local	SOLR	15	12
04/28	12	Economic	System	SOLR	710	784
04/28	12	Economic	System	WIND	10	58
04/28	12	SelfSchCut	Local	SOLR	2	12
04/28	13	Economic	Local	SOLR	169	364
04/28	13	Economic	System	SOLR	655	697
04/28	13	Economic	System	WIND	5	22
04/28	14	Economic	Local	SOLR	52	14
04/28	14	Economic	System	SOLR	736	939
04/28	14	Economic	System	WIND	78	268
04/28	14	SelfSchCut	Local	SOLR	10	14
04/28	15	Economic	Local	SOLR	172	14
04/28	15	Economic	System	SOLR	664	888
04/28	15	Economic	System	WIND	75	152
04/28	15	SelfSchCut	Local	SOLR	14	20
04/28	16	Economic	Local	SOLR	11	19
04/28	16	Economic	System	SOLR	710	868
04/28	16	Economic	System	WIND	15	8
04/28	16	SelfSchCut	Local	SOLR	12	14

04/28	17	Economic	Local	SOLR	27	13
04/28	17	Economic	System	SOLR	331	660
04/28	17	Economic	System	WIND	12	51
04/28	17	SelfSchCut	Local	SOLR	4	18
04/28	18	Economic	Local	SOLR	5	7
04/28	18	Economic	System	SOLR	370	720
04/28	18	Economic	System	WIND	94	280
04/28	18	SelfSchCut	Local	SOLR	5	9
04/28	19	Economic	System	SOLR	366	972
04/28	19	Economic	System	WIND	111	318

The information contained in this report is preliminary and subject to change without notice. No inference, decision or conclusion should be made based on the information in this report or any series of these reports. All values are hourly average unless otherwise stated. Questions about this report should be directed to Hong Zhou at [hzhou@caiso.com](mailto:hzhou@caiso.com).