

## Wind and Solar Curtailment December 21, 2017

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.

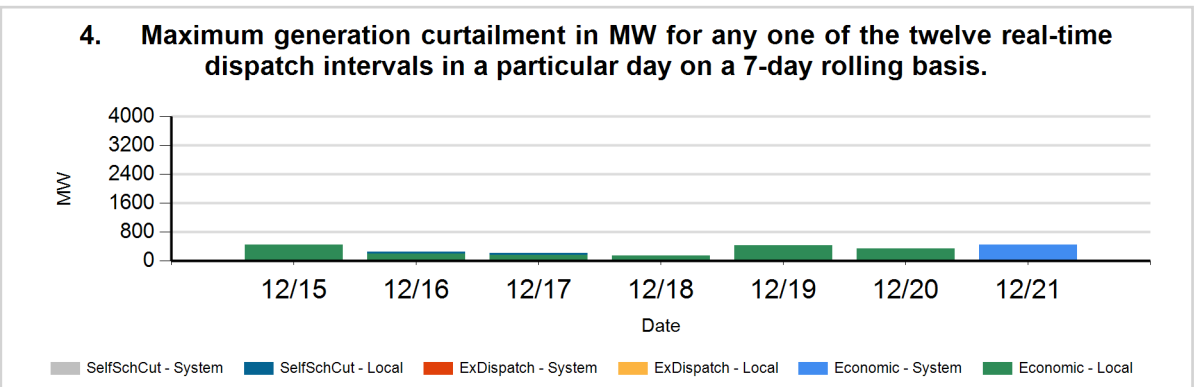
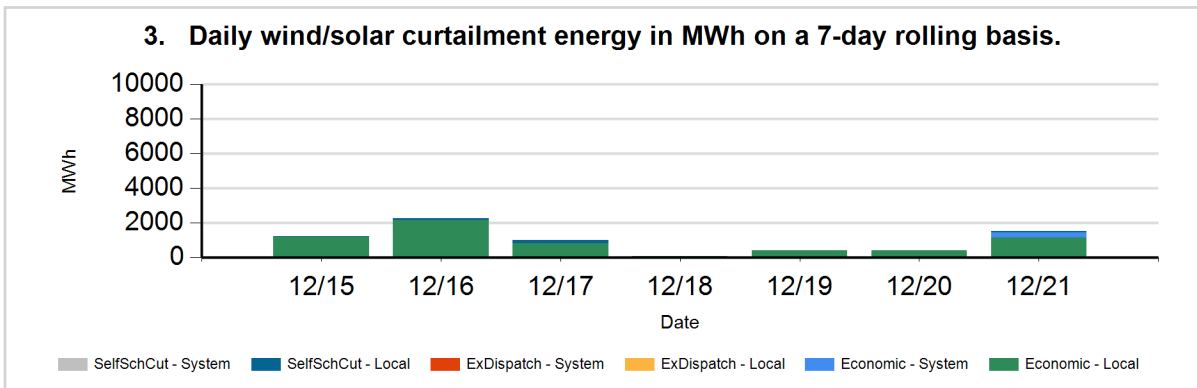
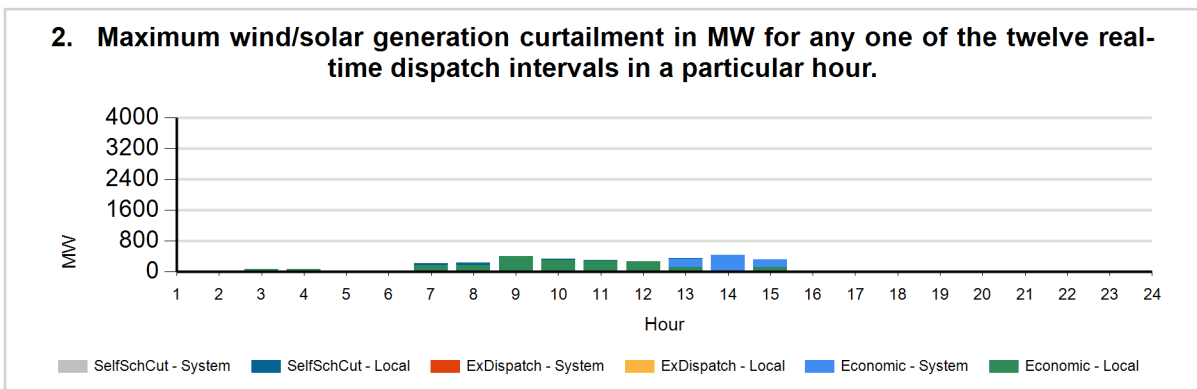
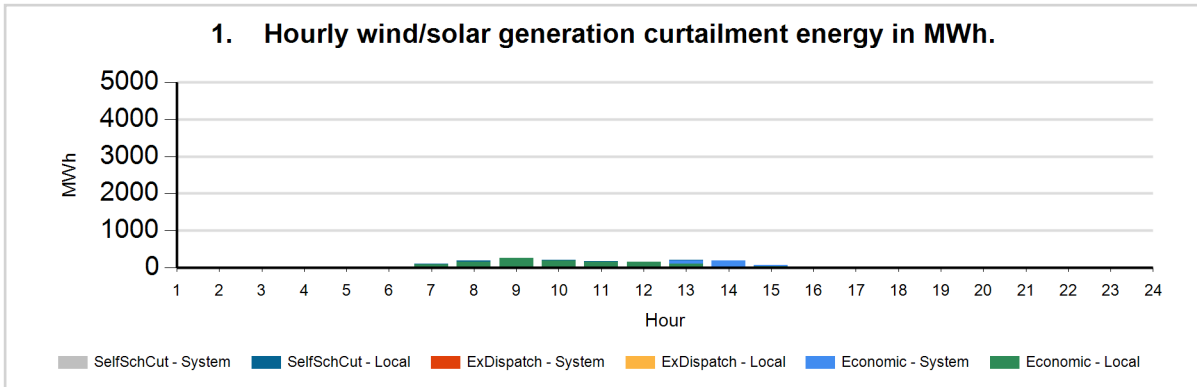
<sup>1</sup>Only wind and solar resources can be reported in this manner because these resources have a forecast. Curtailment is defined as the difference between actual production and the forecast when actual production is less than the forecast.

<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>.

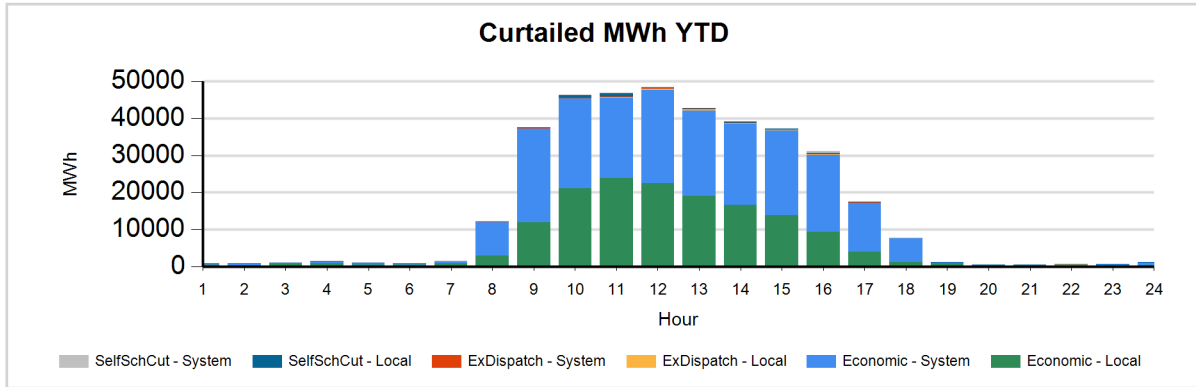
<sup>3</sup>Congestion occurs when available, least-cost energy cannot be delivered to some loads because transmission facilities do not have sufficient capacity to deliver the energy.

<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)

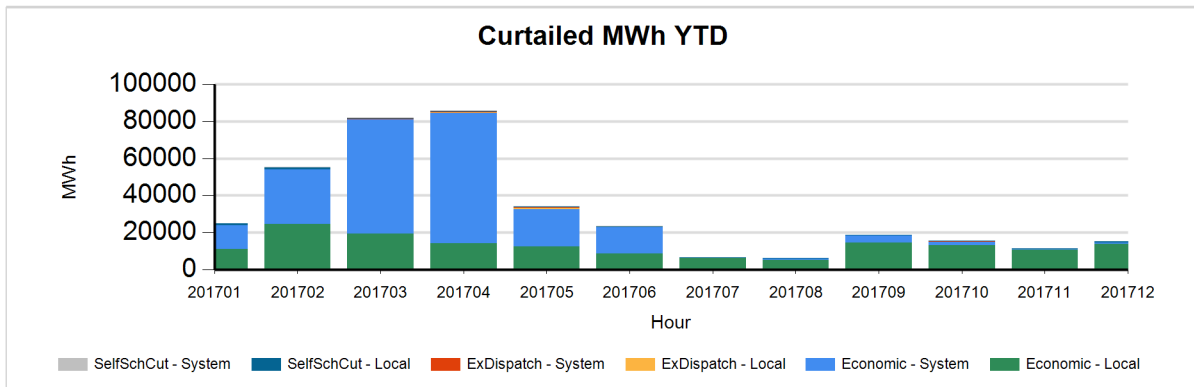
The following charts show the daily and 7-day rolling wind and solar curtailment by category, if any.



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	153,589
LocalExDispatch	1,491
LocalSelfSchCut	4,336
SystemEconomic	218,021
SystemExDispatch	551
SystemSelfSchCut	828
<b>TOTAL</b>	<b>378,814</b>

**Data used to produce hourly chart**

DATE	HOUR	CURT TYPE	REASON	FUEL TYPE	CURTAILED MWH	CURTAILED MW
12/21	3	Economic	Local	WIND	12	63
12/21	4	Economic	Local	WIND	7	65
12/21	7	Economic	Local	WIND	92	161
12/21	7	SelfSchCut	Local	WIND	10	50
12/21	8	Economic	Local	SOLR	24	
12/21	8	Economic	Local	WIND	126	157
12/21	8	SelfSchCut	Local	SOLR	0	
12/21	8	SelfSchCut	Local	WIND	40	81
12/21	9	Economic	Local	SOLR	184	335
12/21	9	Economic	Local	WIND	74	69
12/21	10	Economic	Local	SOLR	63	155
12/21	10	Economic	Local	WIND	121	144
12/21	10	SelfSchCut	Local	SOLR	0	
12/21	10	SelfSchCut	Local	WIND	21	30
12/21	11	Economic	Local	SOLR	35	173
12/21	11	Economic	Local	WIND	123	101
12/21	11	SelfSchCut	Local	SOLR	0	
12/21	11	SelfSchCut	Local	WIND	9	23
12/21	12	Economic	Local	SOLR	52	138
12/21	12	Economic	Local	WIND	99	126
12/21	13	Economic	Local	SOLR	1	2
12/21	13	Economic	Local	WIND	99	117
12/21	13	Economic	System	SOLR	97	228
12/21	13	SelfSchCut	Local	WIND	1	2
12/21	14	Economic	Local	WIND	3	
12/21	14	Economic	System	SOLR	178	434
12/21	14	Economic	System	WIND	1	3
12/21	15	Economic	Local	SOLR	34	109
12/21	15	Economic	System	SOLR	26	208

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).



California ISO