# Wind and Solar Curtailment March 16, 2020

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

Wind and solar curtailments are grouped into the following categories:

1. Economic - Local: Market dispatch of generators with economic bids to mitigate local congestion[3].
2. Economic - System: Market dispatch of generators with economic bids to mitigate system-wide oversupply.
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.

[1]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.

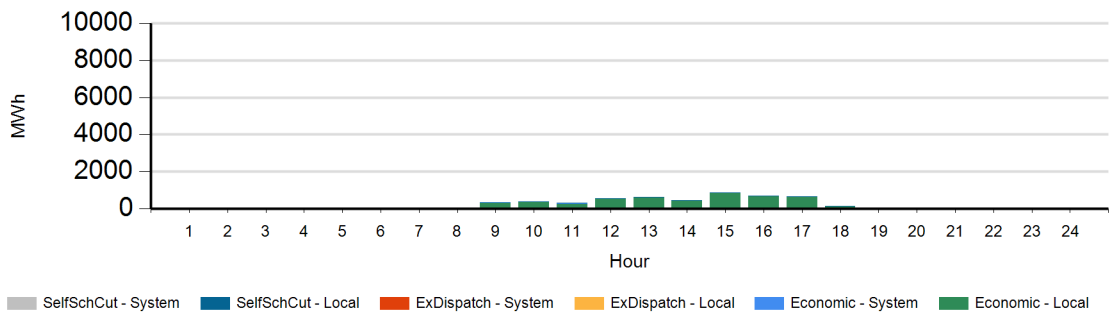
[2]The Renewables Watch report provides daily actual renewable production within the ISO grid. It is available at: http://www.caiso.com/green/renewableswatch.html.

[3]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.

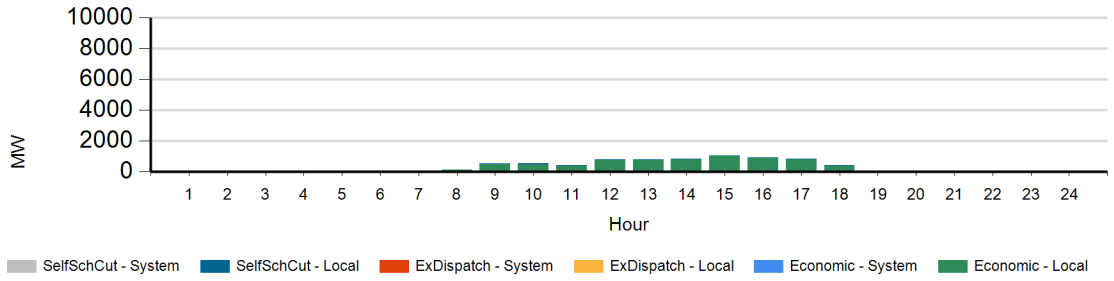
For more information on oversupply conditions, please see:
https://www.caiso.com/Documents/FlexibleResourcesHelpRenewables_FastFacts.pdf

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

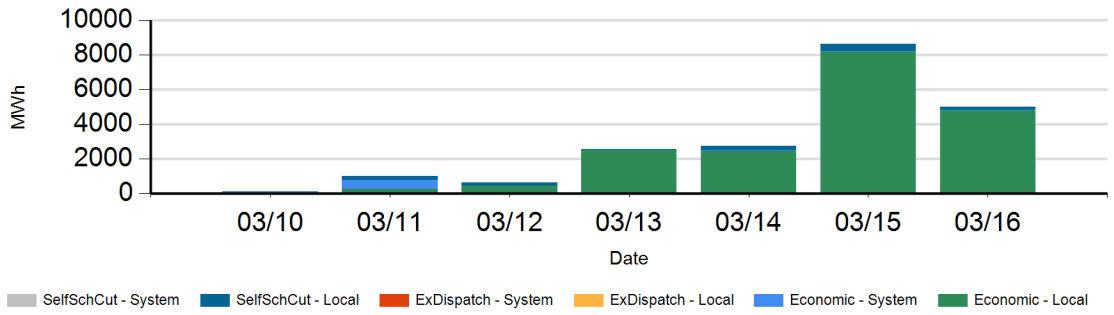
**1. Hourly wind/solar generation curtailment energy in MWh. - 3/16/2020**



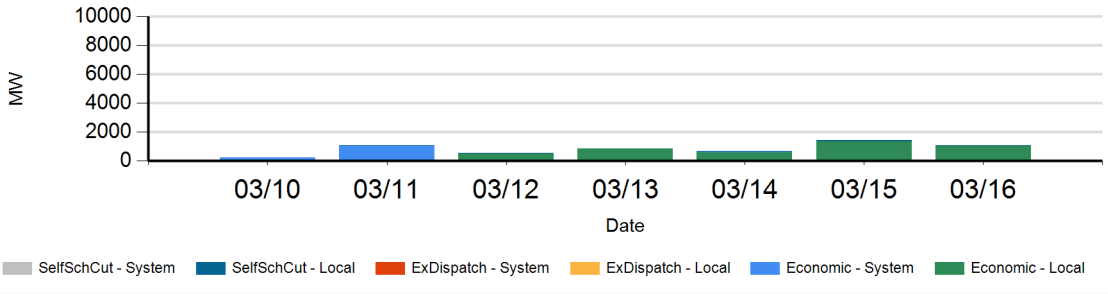

**2. Maximum wind/solar generation curtailment in MW for any one of the twelve real-time dispatch intervals in a particular hour. - 3/16/2020**



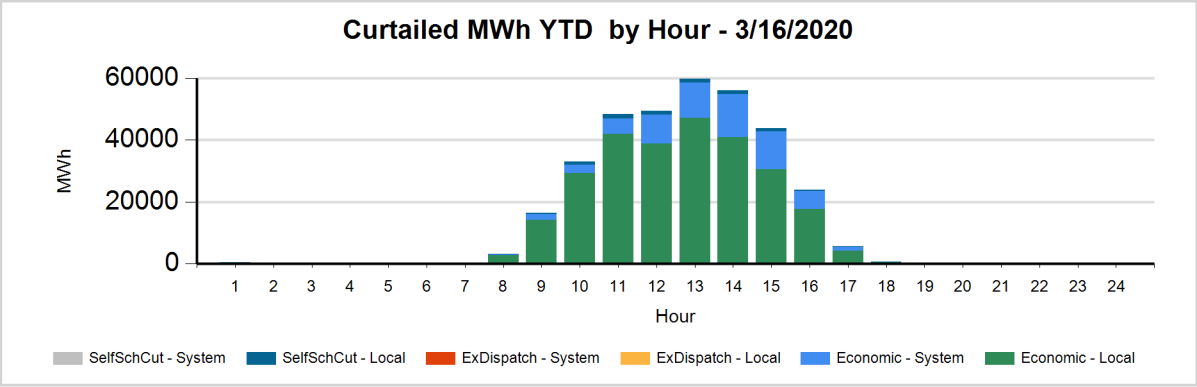

**3. Daily wind/solar curtailment energy in MWh on a 7-day basis. - 3/16/2020**



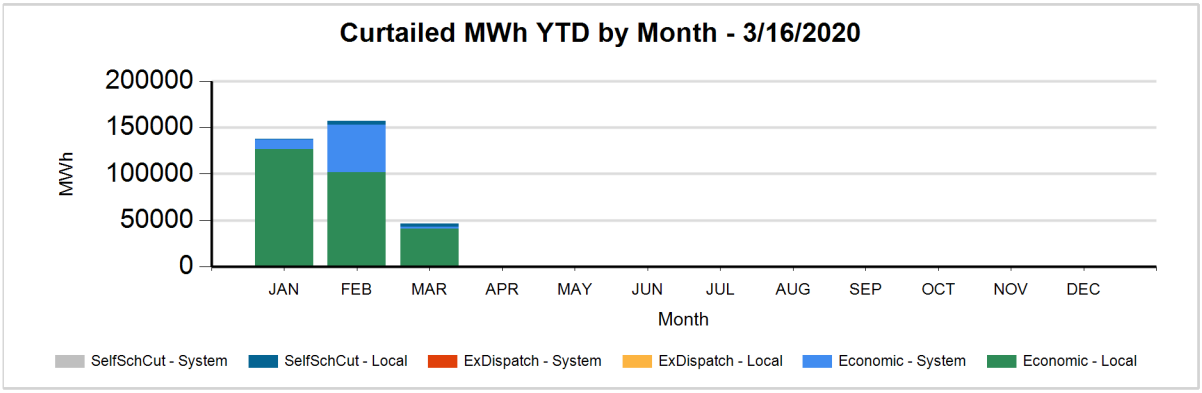

**4. Maximum generation curtailment in MW for any one of the twelve real-time dispatch intervals in a particular day on a 7-day basis. - 3/16/2020**



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 - 3/16/2020 |
|---|---|
| LocalEconomic | 268,908 |
| LocalSelfSchCut | 8,097 |
| SystemEconomic | 64,286 |
| TOTAL | 341,292 |

California ISO

Data used to produce hourly chart

| DATE | HOUR | CURT TYPE | REASON | FUEL TYPE | CURTAILED MWH | CURTAILED MW |
|---|---|---|---|---|---|---|
| 03/16 | 8 | Economic | Local | SOLR | 29 | 128 |
| 03/16 | 8 | Economic | System | SOLR | 1 | |
| 03/16 | 9 | Economic | Local | SOLR | 241 | 407 |
| 03/16 | 9 | Economic | Local | WIND | 69 | 127 |
| 03/16 | 9 | Economic | System | SOLR | 15 | 3 |
| 03/16 | 10 | Economic | Local | SOLR | 249 | 365 |
| 03/16 | 10 | Economic | Local | WIND | 87 | 102 |
| 03/16 | 10 | Economic | System | SOLR | 0 | |
| 03/16 | 10 | SelfSchCut | Local | SOLR | 30 | 55 |
| 03/16 | 11 | Economic | Local | SOLR | 189 | 294 |
| 03/16 | 11 | Economic | Local | WIND | 82 | 82 |
| 03/16 | 11 | Economic | System | SOLR | 4 | |
| 03/16 | 11 | SelfSchCut | Local | SOLR | 19 | 35 |
| 03/16 | 12 | Economic | Local | SOLR | 446 | 642 |
| 03/16 | 12 | Economic | Local | WIND | 91 | 106 |
| 03/16 | 12 | SelfSchCut | Local | SOLR | 30 | 25 |
| 03/16 | 13 | Economic | Local | SOLR | 515 | 645 |
| 03/16 | 13 | Economic | Local | WIND | 101 | 105 |
| 03/16 | 13 | SelfSchCut | Local | SOLR | 19 | 22 |
| 03/16 | 14 | Economic | Local | SOLR | 343 | 682 |
| 03/16 | 14 | Economic | Local | WIND | 59 | 112 |
| 03/16 | 14 | SelfSchCut | Local | SOLR | 29 | 53 |
| 03/16 | 15 | Economic | Local | SOLR | 740 | 882 |
| 03/16 | 15 | Economic | Local | WIND | 89 | 112 |
| 03/16 | 15 | SelfSchCut | Local | SOLR | 44 | 59 |
| 03/16 | 16 | Economic | Local | SOLR | 555 | 741 |
| 03/16 | 16 | Economic | Local | WIND | 126 | 142 |
| 03/16 | 16 | SelfSchCut | Local | SOLR | 20 | 18 |
| 03/16 | 17 | Economic | Local | SOLR | 507 | 658 |
| 03/16 | 17 | Economic | Local | WIND | 127 | 145 |
| 03/16 | 17 | SelfSchCut | Local | SOLR | 14 | 22 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 03/16 | 18 | Economic | Local | SOLR | 98 | 251 |
| 03/16 | 18 | Economic | Local | WIND | 42 | 131 |
| 03/16 | 18 | SelfSchCut | Local | SOLR | 3 | 10 |
| 03/16 | 24 | Economic | Local | WIND | 1 | 6 |