



IMM Quarterly Markets Performance Reports

Summer 2020 Report Highlights
June 2020 – September 2020 outcomes

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Outline

1. Overview of Market Outcomes
2. Special Section - DNE Wind Generator Must Offer Compliance



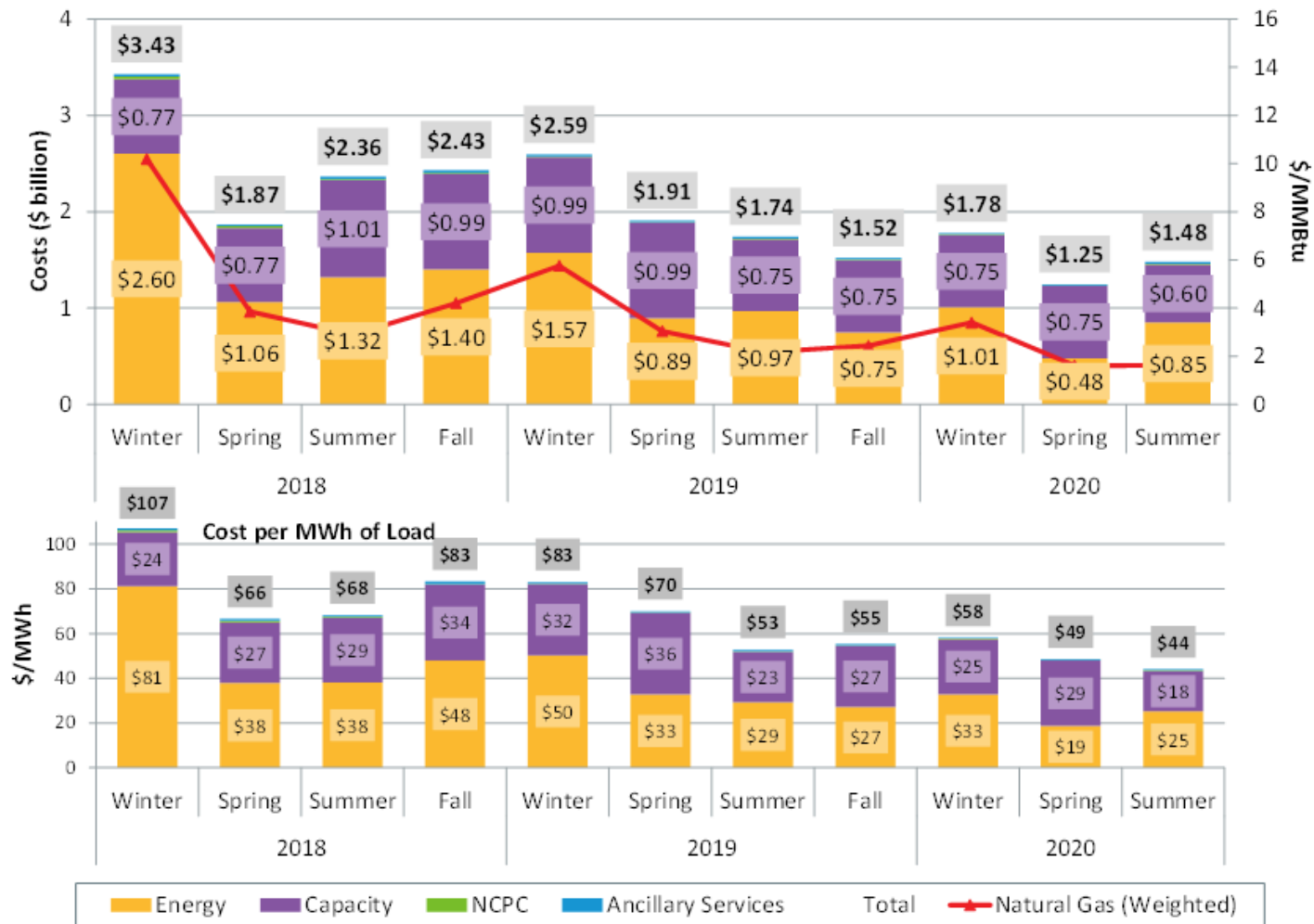
Summary for Summer 2020

- **Wholesale market costs totaled \$1.48bn, a 15% decrease (down \$0.26bn) compared to \$1.74bn in Summer 2019.**
 - Both energy and capacity market costs decreased significantly.
- **Large decrease in energy costs, down by 12% (totaled \$849m, down by \$120m), driven by a decrease in natural gas prices.**
 - Avg. day-ahead and real-time Hub LMPs were \$22.50/MWh and \$22.52/MWh; 13% and 10% lower, respectively.
 - Avg. natural gas price was \$1.62/MMBtu (or \$12.64/MWh assuming a 7,800 Btu/kWh heat rate), down 25% on the Summer 2019 price of \$2.17/MMBtu (or \$16.93/MWh).
 - Avg. hourly load of 15,199 MW was up by 2% (\approx 230 MW), driven by warmer weather.
- **Large decrease in capacity market costs, down by 19% (totaled \$603m, down by \$143m) on Summer 2019.**
 - Summer 2019 was the first quarter of the FCA 11 commitment period, with clearing prices of \$5.30/kW-month for rest-of-system, compared to a higher FCA 10 price of \$7.03/kW-month.

Summary for Summer 2020 (cont.)

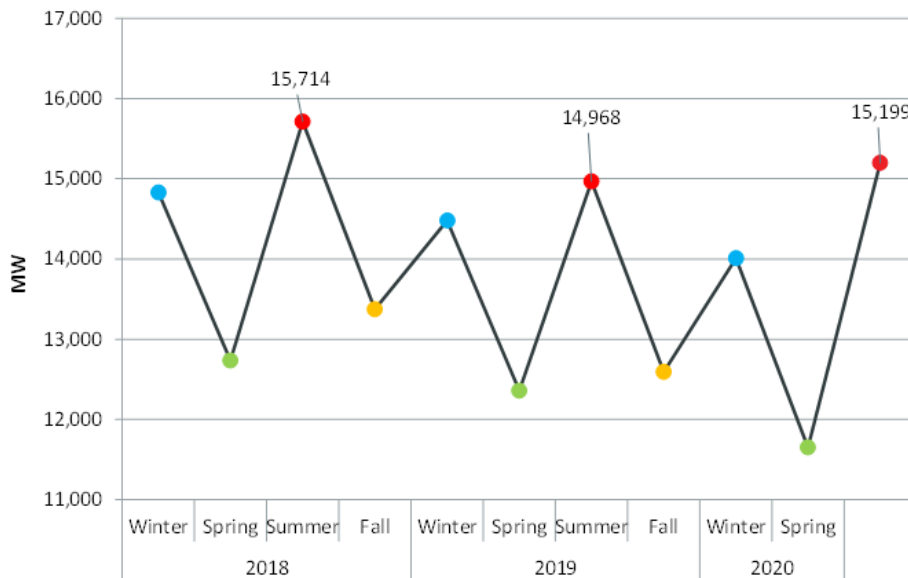
- **Gross real-time reserve payments totaled \$4.4m, a 67% increase from \$2.6m in Summer 2019.**
 - Increase driven by redispatch of system to maintain reserves during tight system conditions leading to larger ten-minute non-spinning reserve (TMNSR) and thirty-minute operating reserve (TMOR) payments, which rose by \$847 thousand and \$437 thousand, respectively.
 - The average non-zero spinning reserve price decreased relative to Summer 2019, from \$9.81 to \$6.96/MWh.
 - The frequency of non-zero spinning reserve prices increased to 506 hours from 365 hours.
- **Total regulation payments were \$6.4m, up by \$0.6m (11%) compared to Summer 2019.**
 - Increase reflects higher regulation capacity requirements, along with an increase in service offer costs.
- **Net Commitment Period Compensation (NCPC) costs totaled \$7.0m, up by 4% (by \$0.3m) on the prior summer.**
 - NCPC costs represented less than 1% of the total energy costs, consistent with the historical range.
 - Economic payments made up 81% (\$5.6m) of the total, up by 46% on Summer 2019 costs.
 - Increase driven by real-time commitments made due to generator trips and load forecast error.
 - Local reliability payments fell by 60% to \$0.9m. Most of these payments occurred in the day-ahead market and went to generators in Maine and NEMA/Boston, to support planned transmission outages.

Total costs less than Summer 2019; lower energy and capacity costs

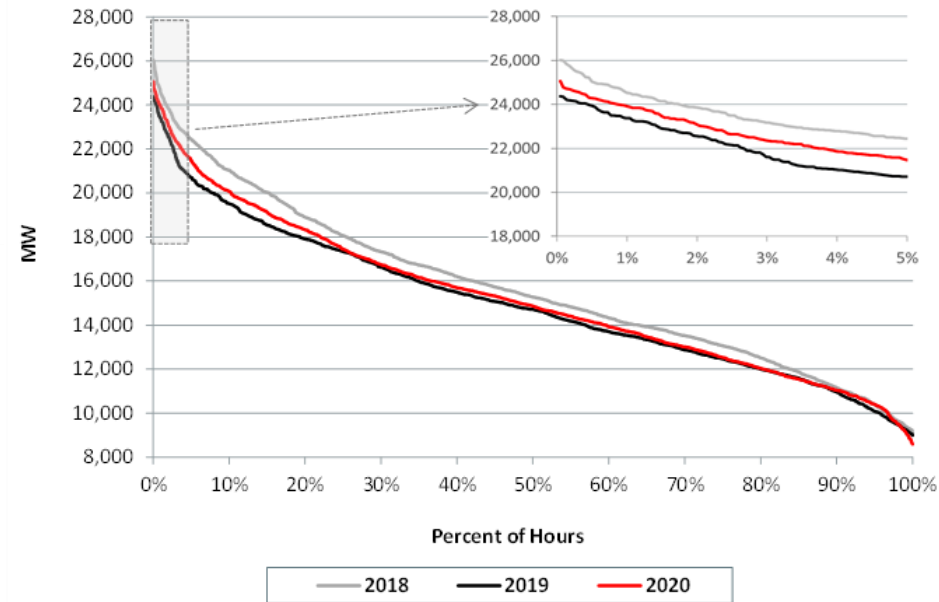


Average and peak loads up on last summer due to warmer weather and greater demand

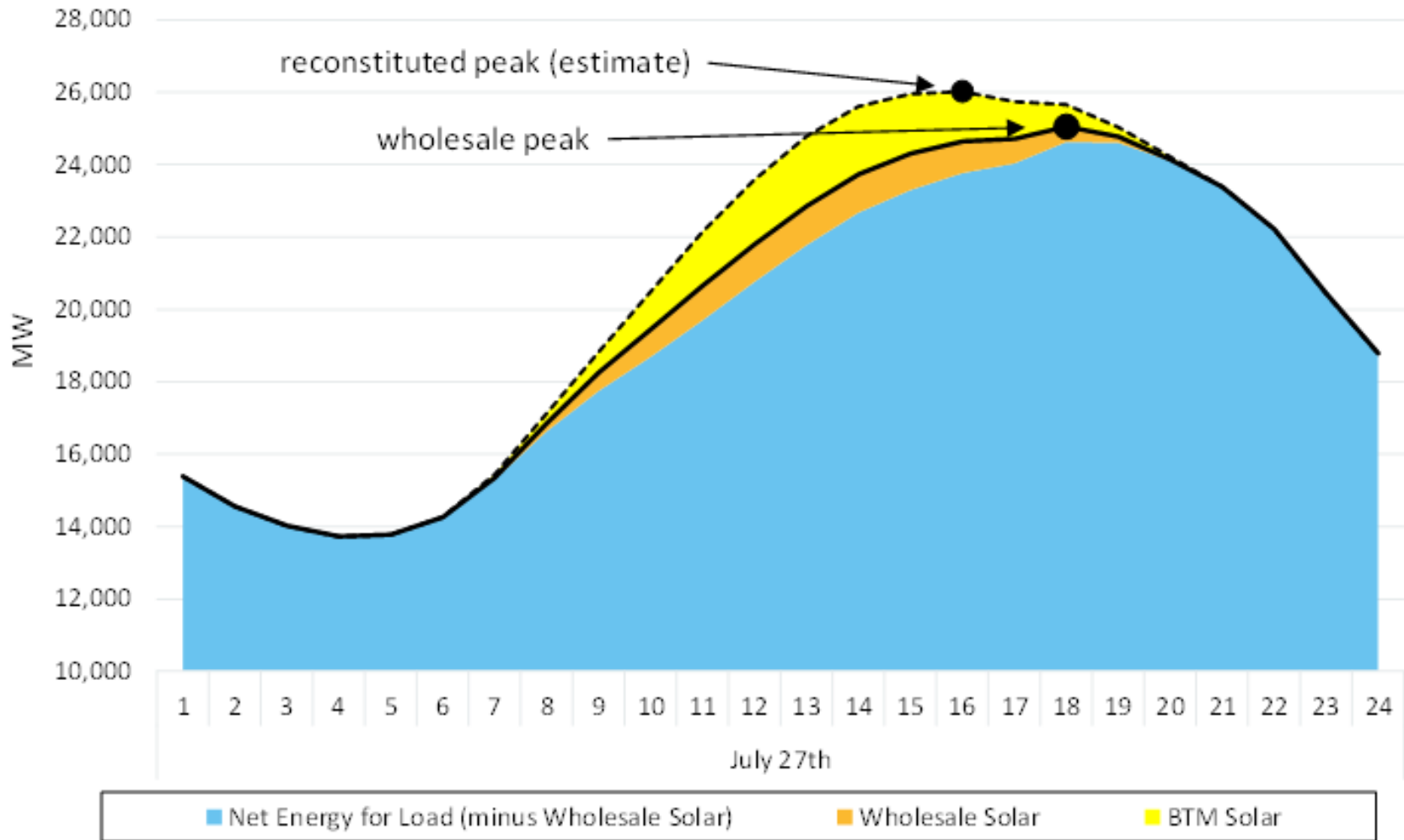
Average Hourly Load



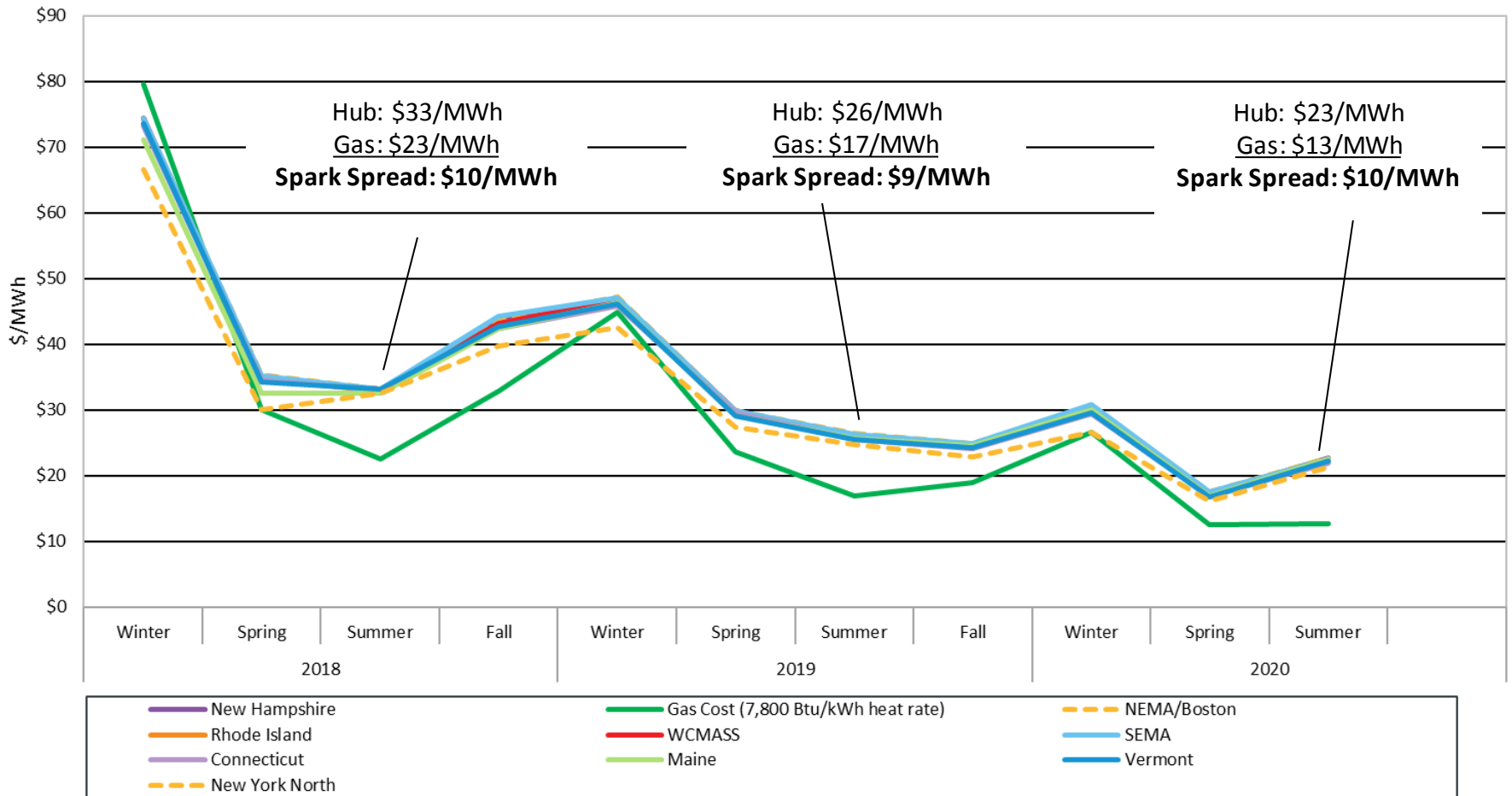
Load Duration Curves



Behind-the-meter solar has a significant impact on summer peak load levels and load shape

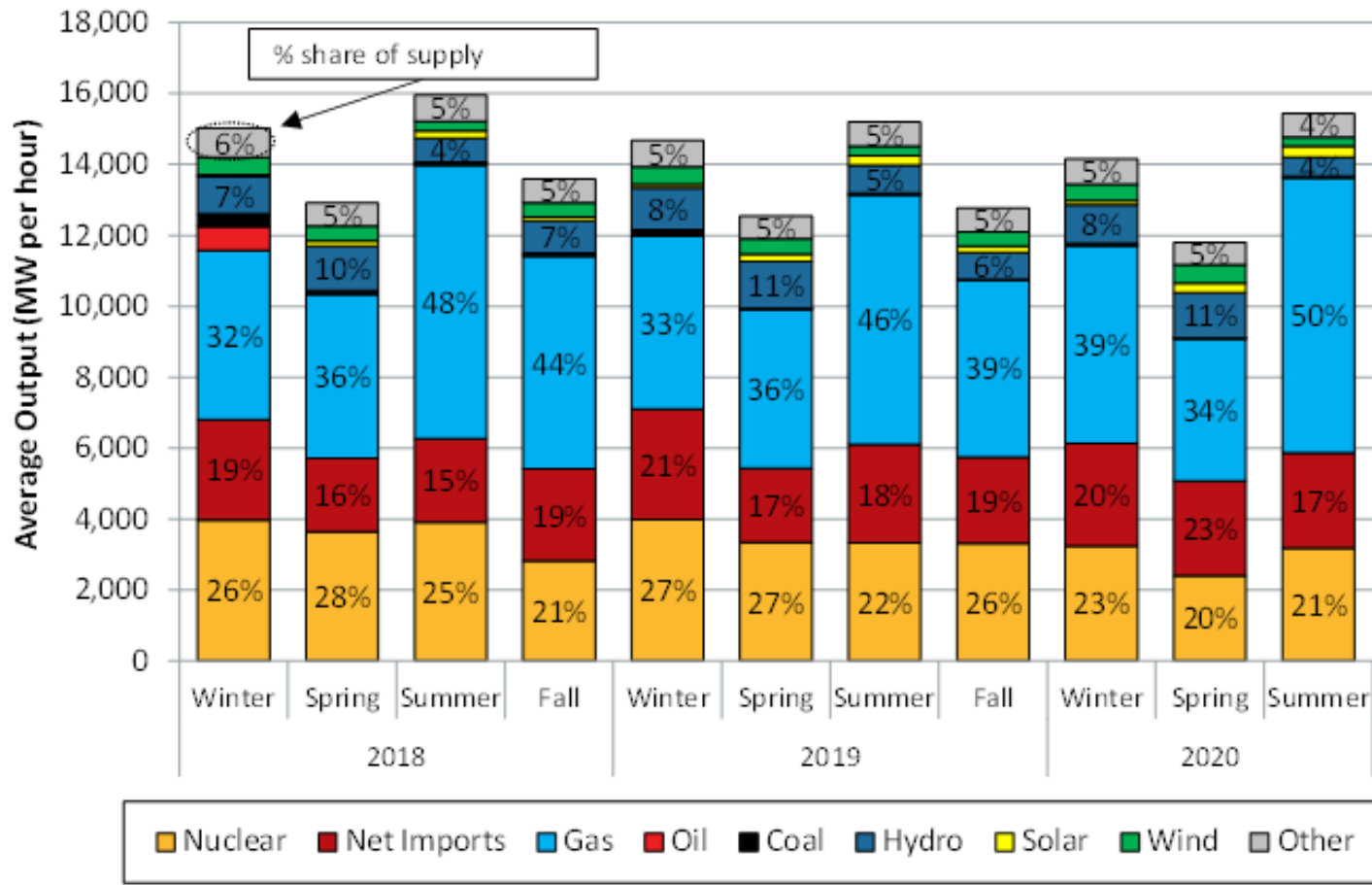


Lower gas prices drove lower energy prices; similar margins for baseload gas generators

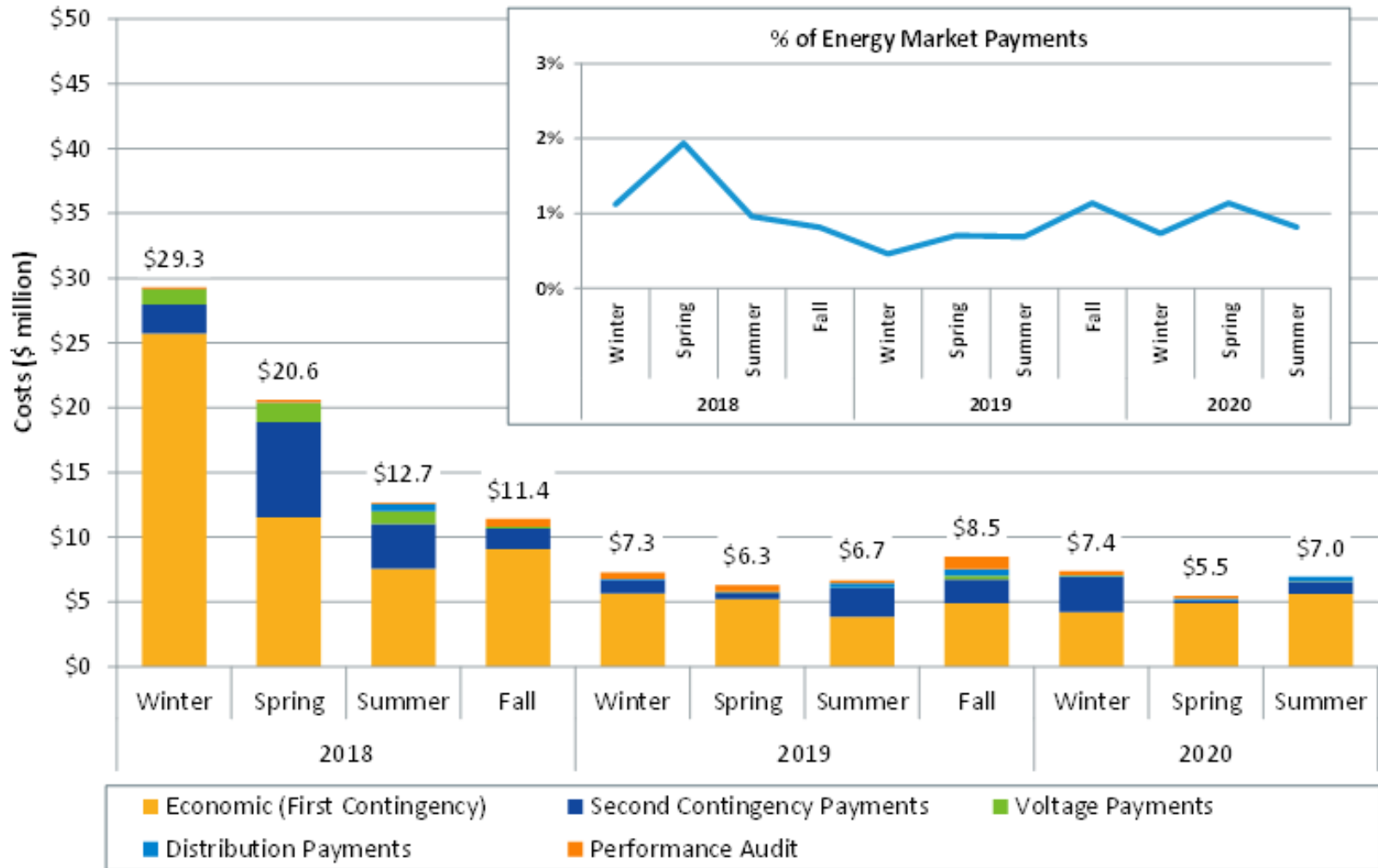


Like prior years, natural gas production increased significantly from Spring to Summer

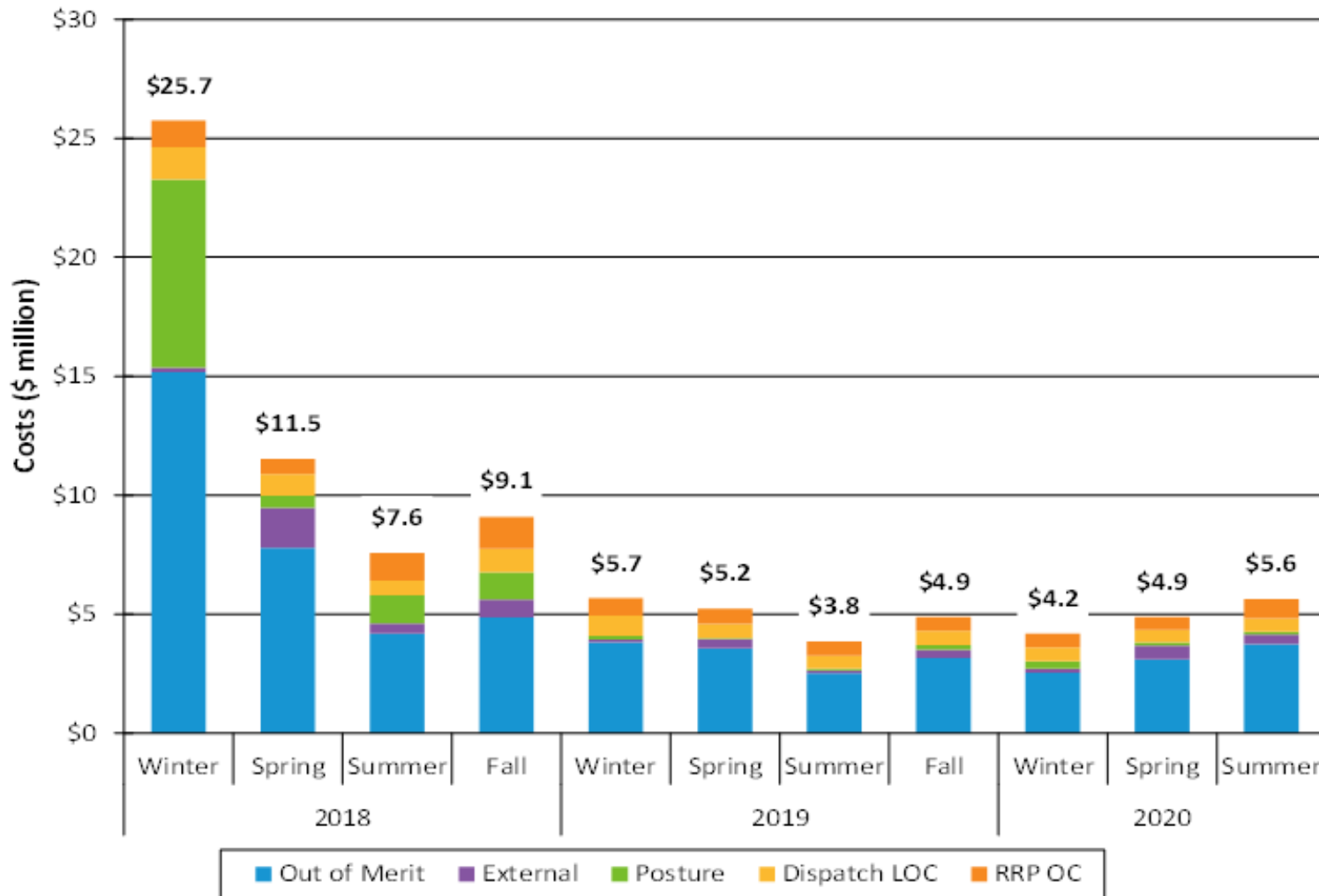
Share of Electricity Generation by Fuel Type



Small increase in NCPC payments from prior year driven by increase in out-of-merit real-time commitments

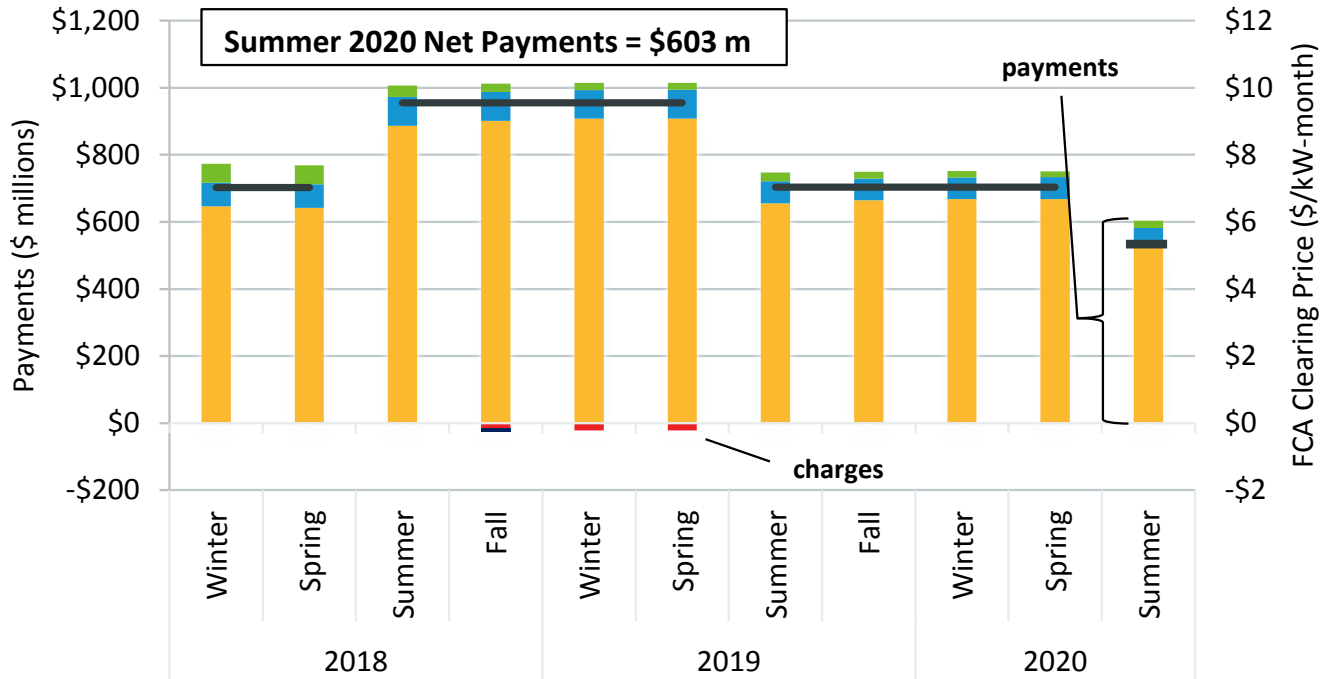


Economic NCPC payments continue to remain relatively low over a 2-year period



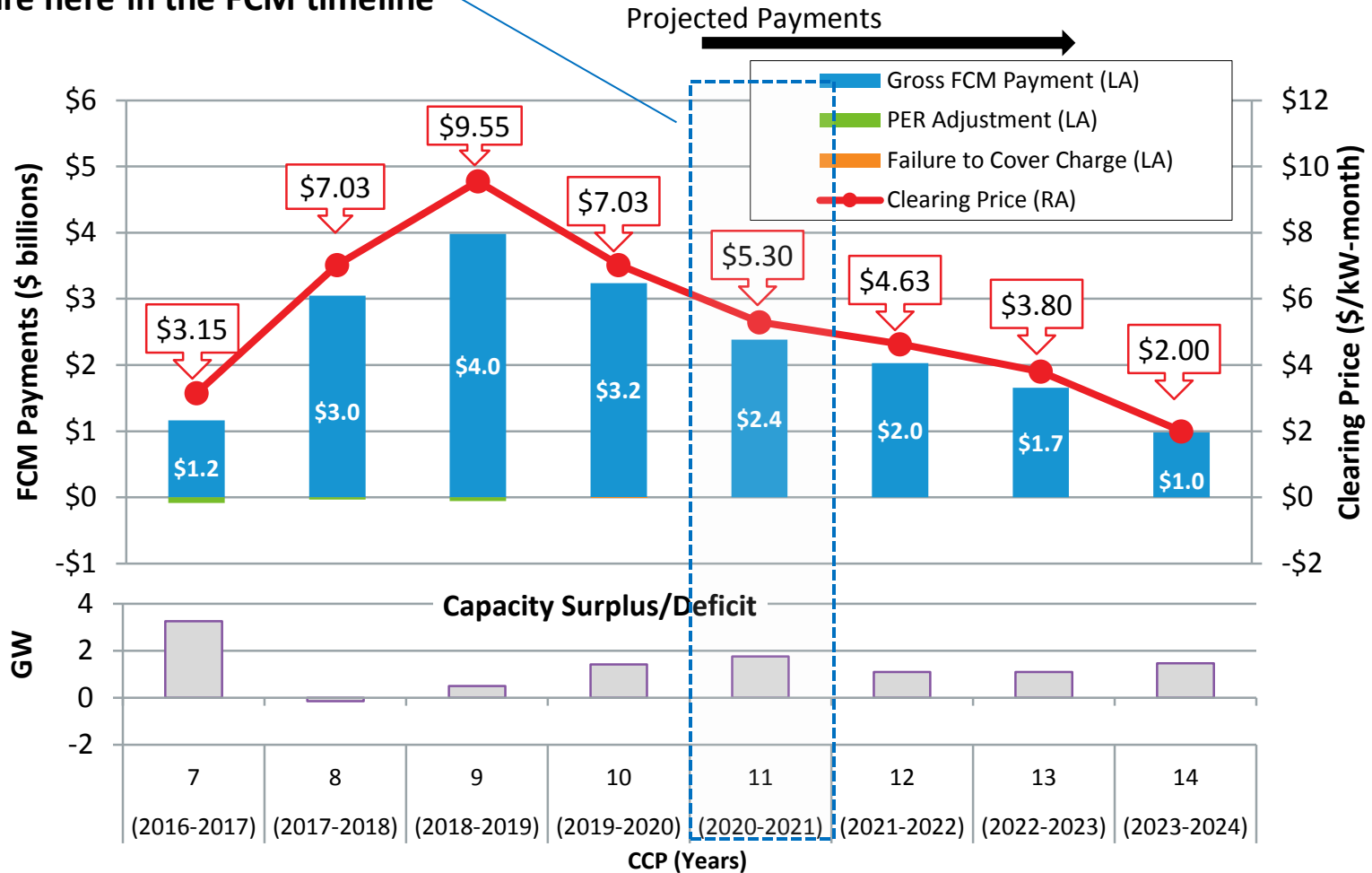
First quarter of FCA11; lower clearing prices

FCA 11 prices: \$7.03/kW-month for all New England resources, New York imports, and Quebec imports; \$3.38/kW-month for New Brunswick imports



First quarter of FCA11; lower clearing prices (cont.)

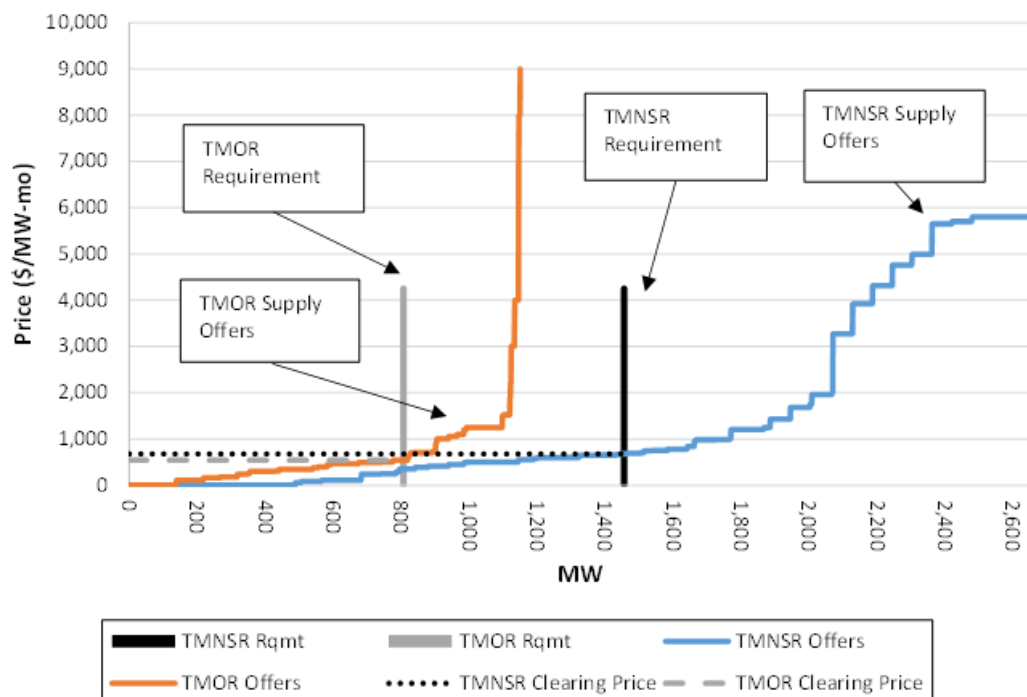
We are here in the FCM timeline



Seasons: Winter: Dec-Feb **Spring: Mar-May** Summer: Jun-Aug Fall: Sep-Nov

Winter 2020/21 FRM auction structurally competitive (no pivotal suppliers); prices lower than prior winter

Supply Curves, Requirements and Clearing Prices, System-Wide TMOR & TMNSR



Offer RSI for TMNSR (system-wide) and TMOR (zones)

Procurement Period	Offer RSI TMNSR (System-wide)	Offer RSI TMOR (ROS)	Offer RSI TMOR (SWCT)	Offer RSI TMOR (CT)	Offer RSI TMOR (NEMA)
Summer 2018	112	214	438	N/A	34
Winter 2018-19	127	244	N/A	N/A	21
Summer 2019	90	204	N/A	N/A	N/A
Winter 2019-20	120	254	N/A	N/A	N/A
Summer 2020	84	234	N/A	N/A	N/A
Winter 2020-21	102	253	N/A	N/A	N/A

SPECIAL TOPIC

DNE Wind Generator Must Offer Compliance



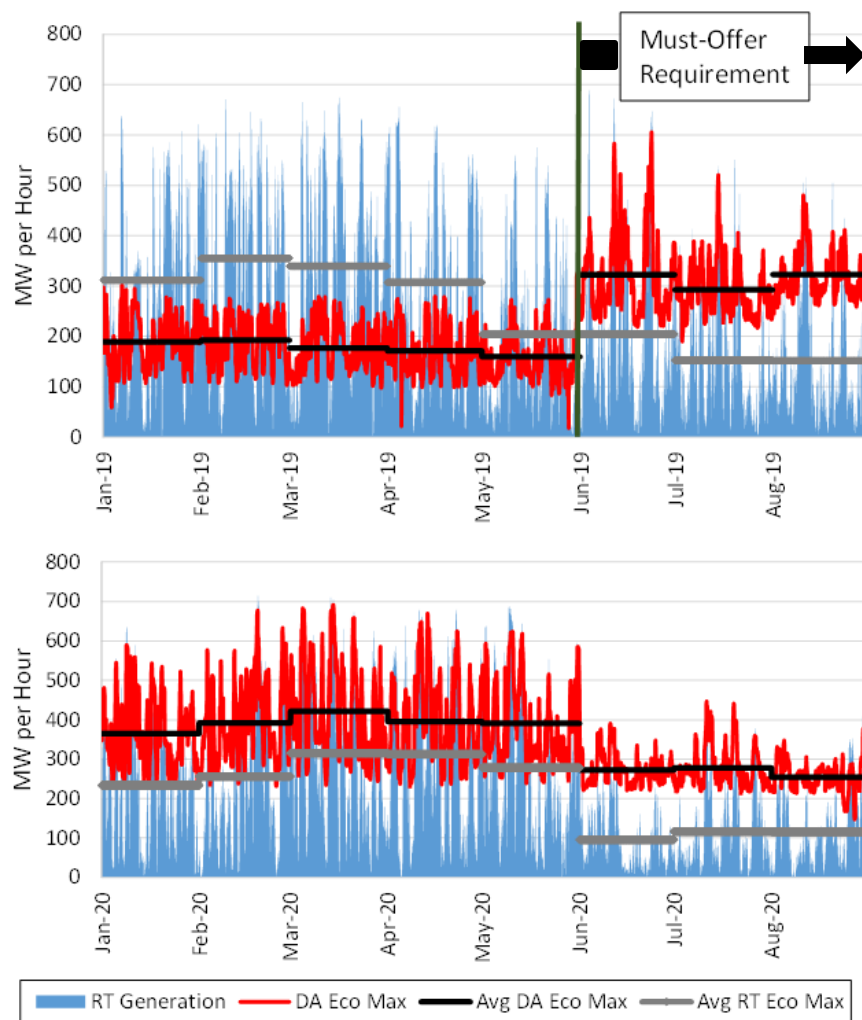
DNE Wind Generator Must Offer Compliance

- In June 2019, the ISO implemented day-ahead energy market offer requirements for “do not exceed” (DNE) dispatchable generators with CSOs.
 - DNE generators with CSOs are now required to offer the full hourly amount of expected real-time generation into the day-ahead market.
- The IMM reviewed day-ahead offers and clearing of wind generators affected by the requirement to determine if:
 - Offer quantities have reasonably reflected actual hourly production in real-time.
 - Offer prices have changed since implementation.
 - An increase in day-ahead offered generation has led to increased clearing for these generators.
 - There has been a small impact on virtual supply clearing at wind generator nodes (as virtual supply has historically filled the gap left by wind generators under-clearing in the day-ahead market).

Overall, wind generation offer behavior is consistent with Tariff requirements

- DNE wind generators increased quantity of energy offered in the day-ahead market.
- Offers reasonably reflect the expected level of peak real-time production but overestimate the potential production in off-peak hours.
- Since June 2019, cleared offers have averaged 70% of real-time production; previously it was 41%.
- Cleared virtual supply at wind nodes has decreased from 25% to 18% of real-time wind production (not shown).

Wind Generator DAM Offers and Actual Production



Questions

