Update of COVID-19 Load Impacts

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Impacts

- For days with which there is complete data available (through 5/4), solve the long-term load forecast model with actual weather conditions

- For remaining days, impute a forecast value based on looking at daily forecast distributions and daily weather.

- See Appendix for more information on these methods.

Estimated Impact of COVID-19 on Daily Peak and Energy

Legend:
- Peak
- Energy
- Weekend
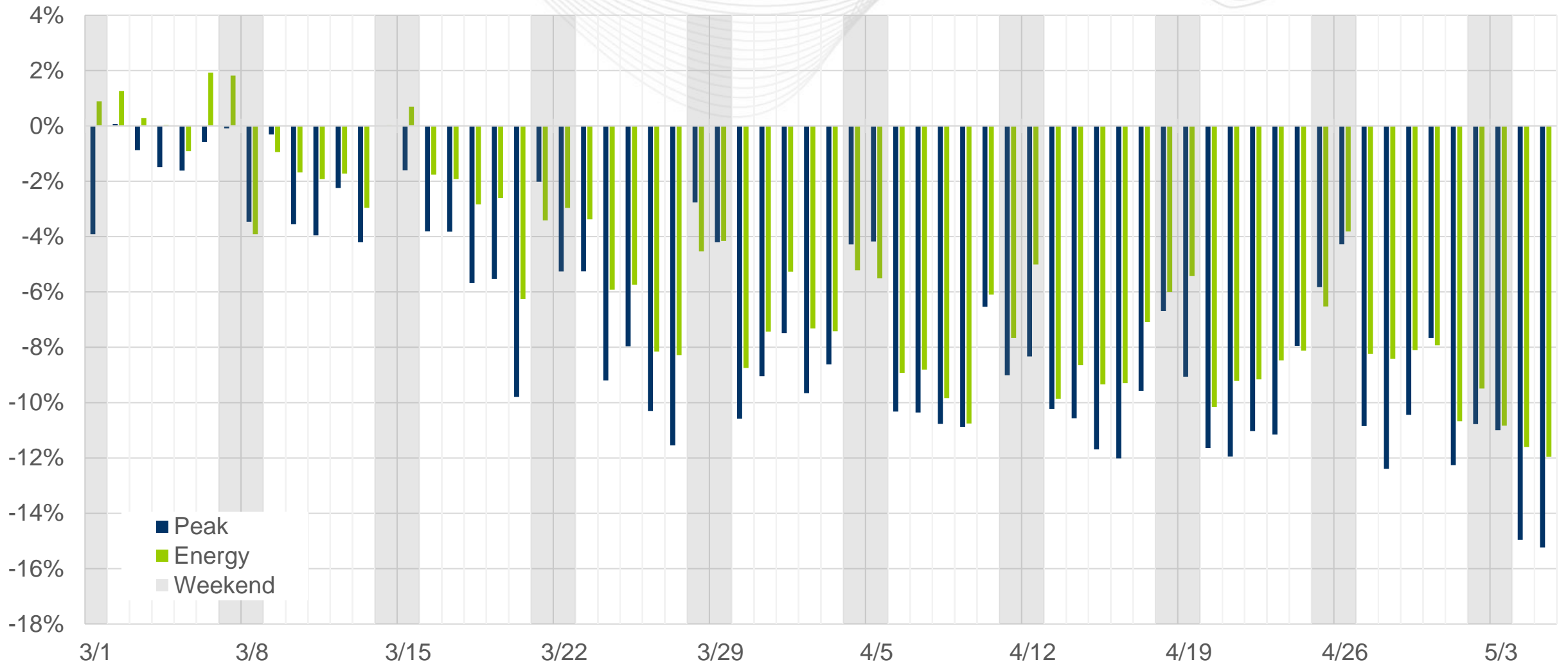
- Estimated Impact of COVID on load
  - Since March 24, weekday peaks have come in 10% less (~9,000 MW) than what we would have anticipated.
    - Weekday peak impacts have ranged from 6.5% to 15.2%
      - Largest estimated impacts were on Tuesday (5/5) and Monday (5/4)

  - Energy has tended to be less affected, with the average reduction since March 24th being 7.9%.

  - Weekends seem to have been impacted by less.

  - Consider these estimates to be a guide not a rule

Forecast Update

- Stakeholders have expressed interest in an updated forecast to reflect COVID-19 impacts

- The forecast in the slides that follow will be used to set the planning parameters for the 2021/22 2nd Incremental Auction.

- Additional forecast updates will be produced in 2020 should RPM timing warrant it.
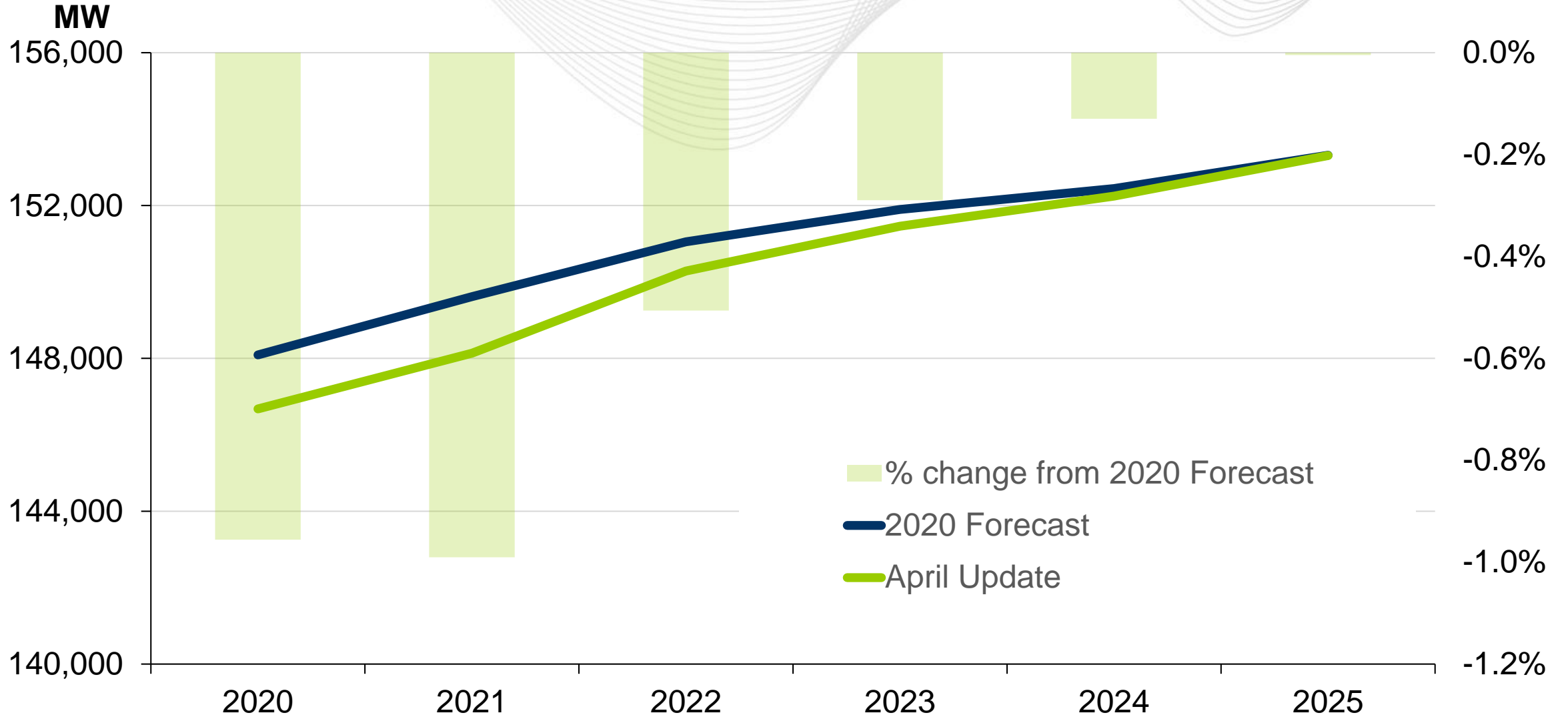
U.S. Real GDP (2018Q1 = 1.0)

Legend: September 2019 — March 2020 — April 2020
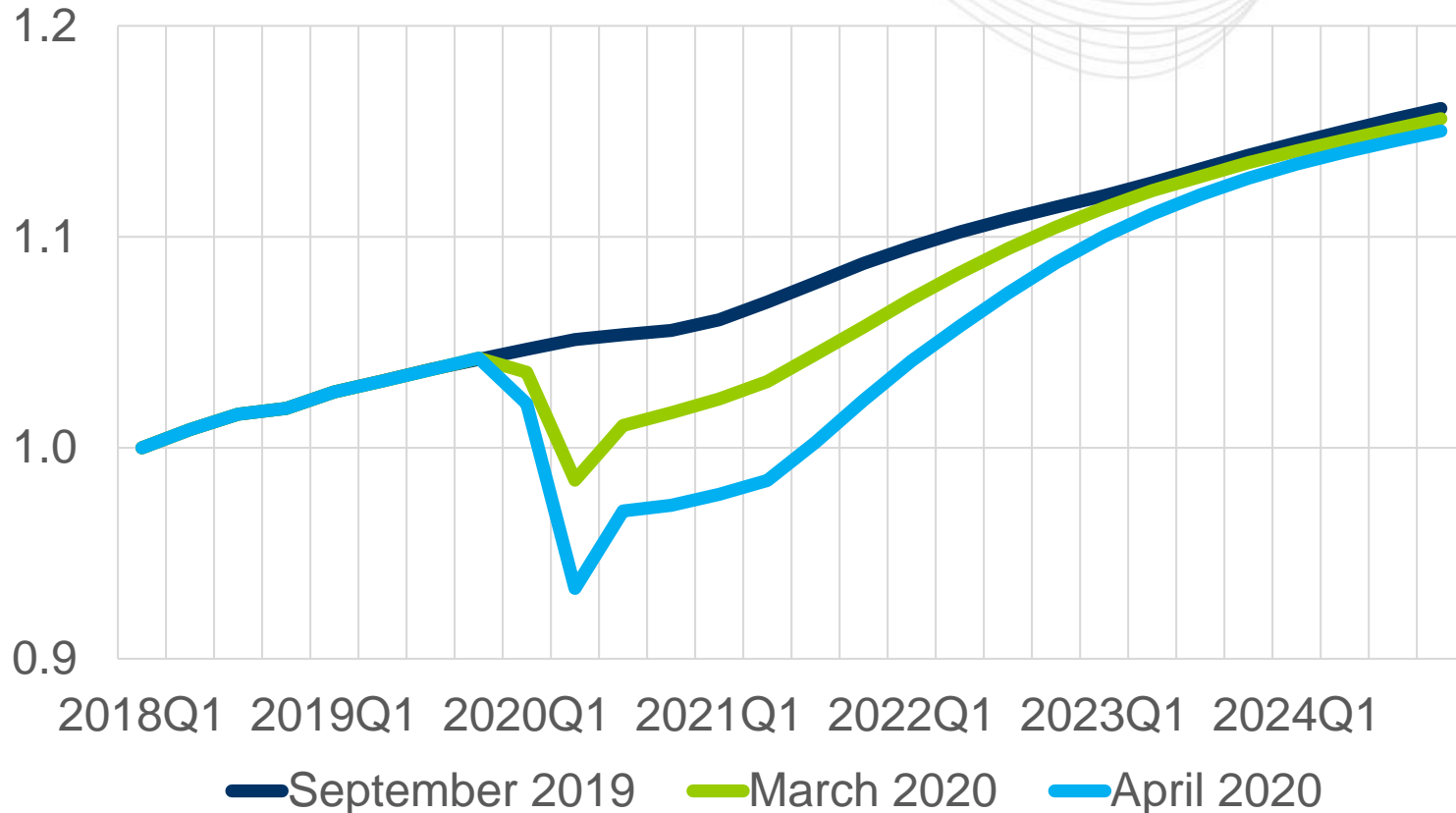
- Economic forecast has been revised downward since the vintage used in the 2020 Load Forecast

- Still evolving situation. March was first to significantly reflect COVID19 impacts and April was revised down even further.

- Economic rebound/recovery will be dependent on progression of COVID cases as well as medical advancements such as a vaccine.

- Potential full recovery by mid 2023

https://www.inquirer.com/business/recovery-economy-zandi-moodys-virus-covid-19-jobs-prediction-20200423.html

RTO Summer Peak Forecast

- ***Share update with Planning Committee (5/12)***

- Investigate potential modeling changes
  - Particularly the Commercial model

- Update forecast as necessary to meet RPM needs

Appendix

1. Solve the long-term load forecast model for each day using actual weather conditions. This provides an estimate of what the load would have been for each day without any COVID-19 related actions.

2. Compute the MW difference between the actual load on each day and the estimated load under actual weather conditions computed in Step 1.

3. Divide the result from Step 2 by the result from Step 1 to compute the estimated impact of COVID-19 on load.

1. Estimated load for April 2 from forecast model assuming actual weather conditions = 91,922 MW

2. Behind the meter solar at time of peak for April 2 = 242 MW

3. Actual load on April 2 = 82,867 MW

4. Estimated MW impact of COVID-19 measures = -8,813 MW

5. Estimated percent impact of COVID-19 measures = -8,813/90,873 = -9.6%

- Long-term forecast model produces a daily load distribution for each calendar day based on a range of historical weather patterns.

- For each calendar day, we computed a "best fit" curve that relates PJM load to an RTO-wide average daily temperature.

- The actual weather for each day was fitted to the curve to produce the expected load given knowledge of actual weather.

- The difference between the actual load and the estimated load given the actual weather provides an estimated percent impact of COVID-19 measures.