

April Forecast Update

Load Analysis Subcommittee May 5, 2020

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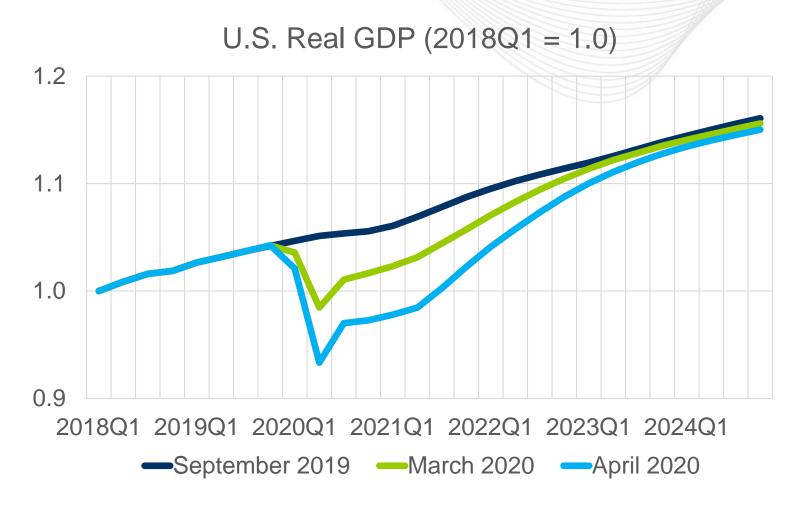


 Stakeholders have expressed interest in an updated forecast to reflect COVID-19 impacts

- 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.



Moody's Analytics Forecast



- 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

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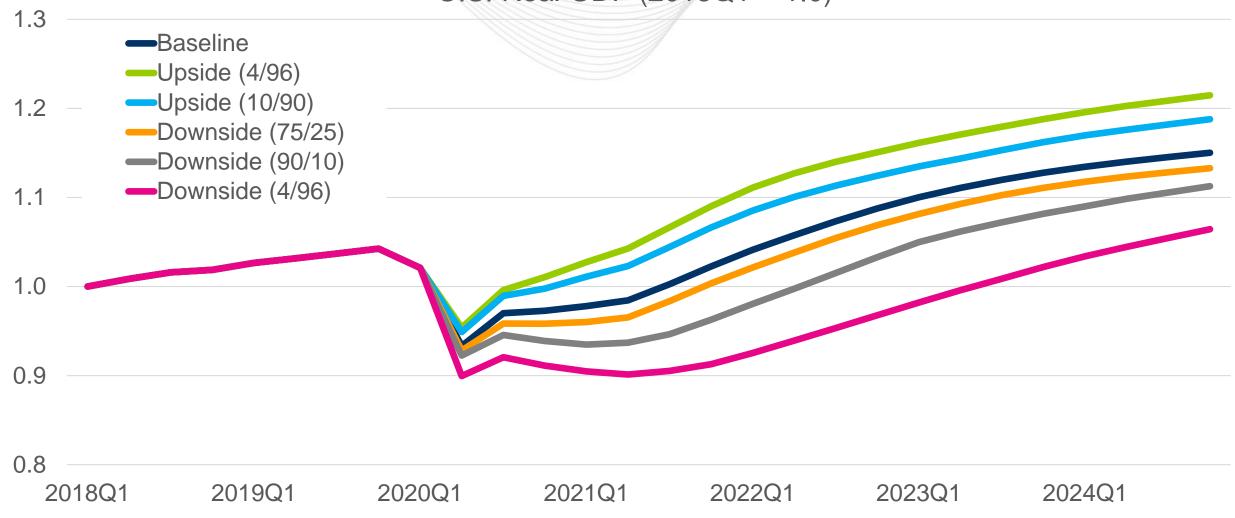


- PJM subscribes to a consensus economic forecast. Last release was on April 10, 2020.
 - Moody's Analytics responses in that survey line up with it's March 2020 forecast.
 - Smaller declines than consensus in 2020.
 - Smaller rebound than consensus in 2021
 - If we instead look at Moody's Analytics April forecast relative to that consensus.
 - Larger declines than consensus in 2020.
 - Smaller rebound than consensus in 2021.



Moody's Analytics April 2020 Forecast Scenarios

U.S. Real GDP (2018Q1 = 1.0)



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- Estimation Period: January 2010 through August 2019
- Weather Simulation: 1994 to 2018 (325 Scenarios)
- End Use Data: Based on Itron's 2019 release
 - Calibration 1998-2018 using EIA 861 data
- Economics: April 2020 vintage from Moody's Analytics
- AWS Solar Addbacks & IHS Solar Forecast (zonal & peak allocation by PJM)
- Forecast Adjustments APS, BGE, COMED and Dominion



Refresher – Model Setup

First Model

Est. Non-Wthr Sens Load
Day-type
Economics
End-Use Characteristics



Model Estimation



Forecasted Non-Wthr Sens Load





Weather Simulation



Model Estimation



Non-Wthr Sens Load

Weather

Heat & Cool End-Use Variables

Second Model



Refresher – Driver Variables

Residential

Customers = f(Households)



Use = f(Appliance Saturation, Efficiency, Income per HH, Population per HH)

Commercial

Energy = f(Appliance Saturation, Efficiency, Working Age Population)

Industrial

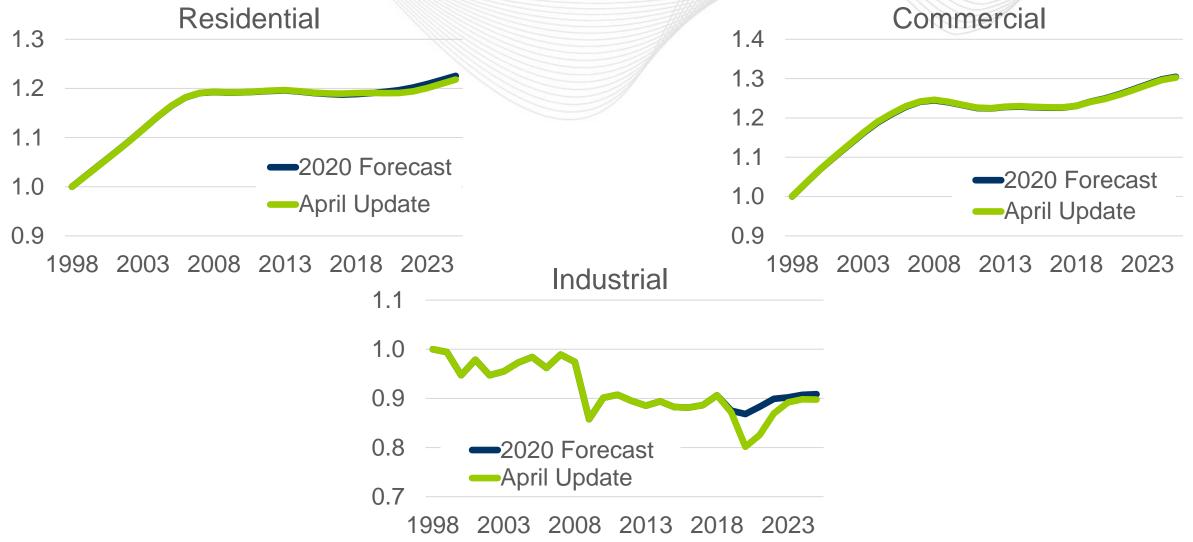
Energy = f(Goods-Producing Output, Electricity Used Per Output)

Heat, Cool, Other End-Use Indexes

*Updated Variables

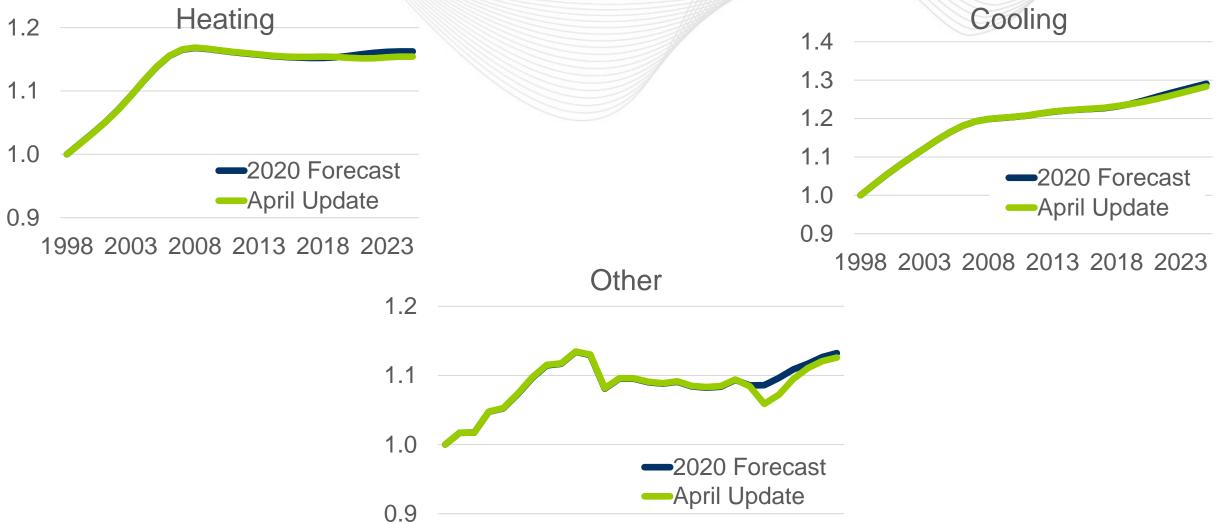


Residential, Commercial, and Industrial





Heating, Cooling, and Other End-Use Indices

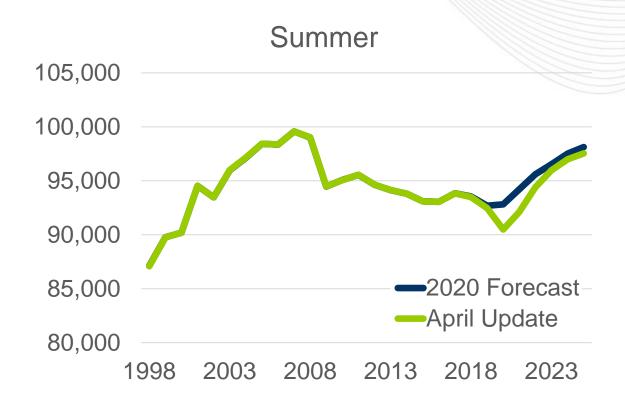


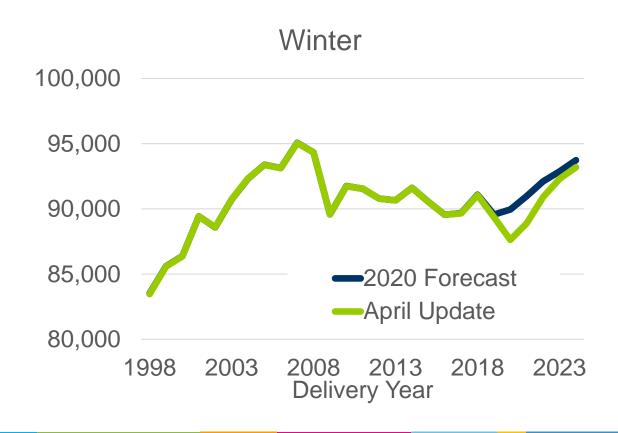
1998 2003

2008 2013 2018 2023



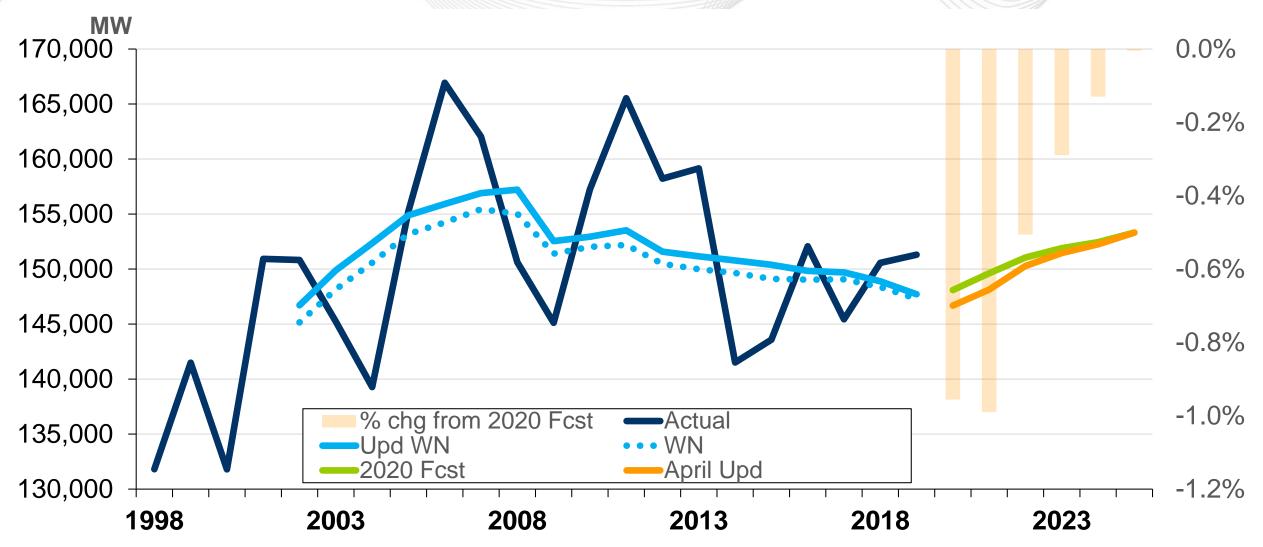
Non-Weather Sensitive Load

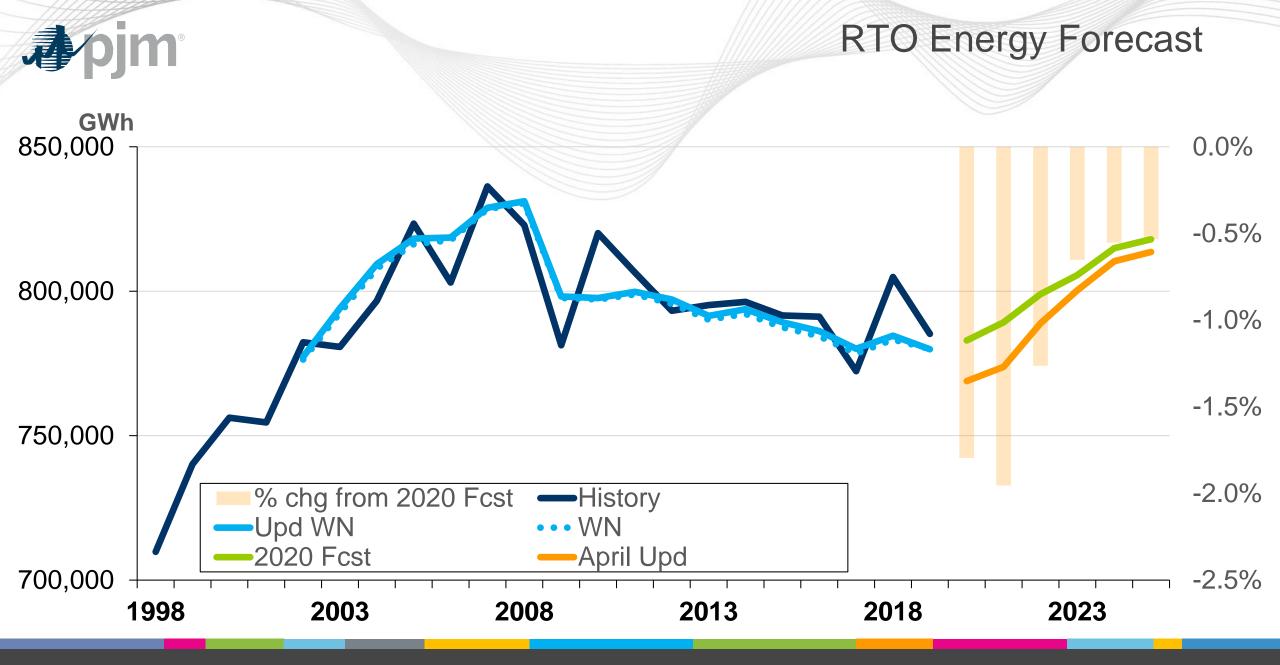






RTO Summer Peak Forecast







- Share update with Planning Committee (5/12)
- Investigate potential modeling changes
 - Particularly the Commercial model
- Update forecast as necessary to meet RPM needs