2020 Reserve Requirement Study (RRS) Assessment Results

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Resource Adequacy Planning
Members Committee
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Acronyms

IRM – Installed Reserve Margin

RRS – Reliability Requirement Study

EFORd – Effective Forced Outage Rate on Demand

DY – Delivery Year

BRA – Base Residual Auction

FPR – Forecast Pool Requirement (IRM converted to units of unforced capacity for use in the RPM auctions)

CBOT – Capacity Benefit of Ties (reduction in IRM due to external capacity assistance)

2020 Reserve Requirement Study

- Study results will re-set the IRM and FPR for 2021/22, 2022/23, 2023/24 and establish initial IRM and FPR for 2024/25.
  - The Study results will be used in the 2022/23, 2023/24 and 2024/25 BRAs
- Capacity model based on GADS data from 2015-2019 time period for all weeks of the year except the winter peak week.
  - For the winter peak week, the capacity model is created using historical actual RTO-aggregate outage data from time period DY 2007/08 – DY 2019/20.
- PJM and World load models based on 2002-2014 time period and 2020 PJM Load Forecast (released in January).
- Study assumptions were endorsed at June, 2020 PC meeting.
- Load Model selection was endorsed at July, 2020 PC meeting.

2020 RRS Results vs 2019 RRS Results

2020 RRS Study results:

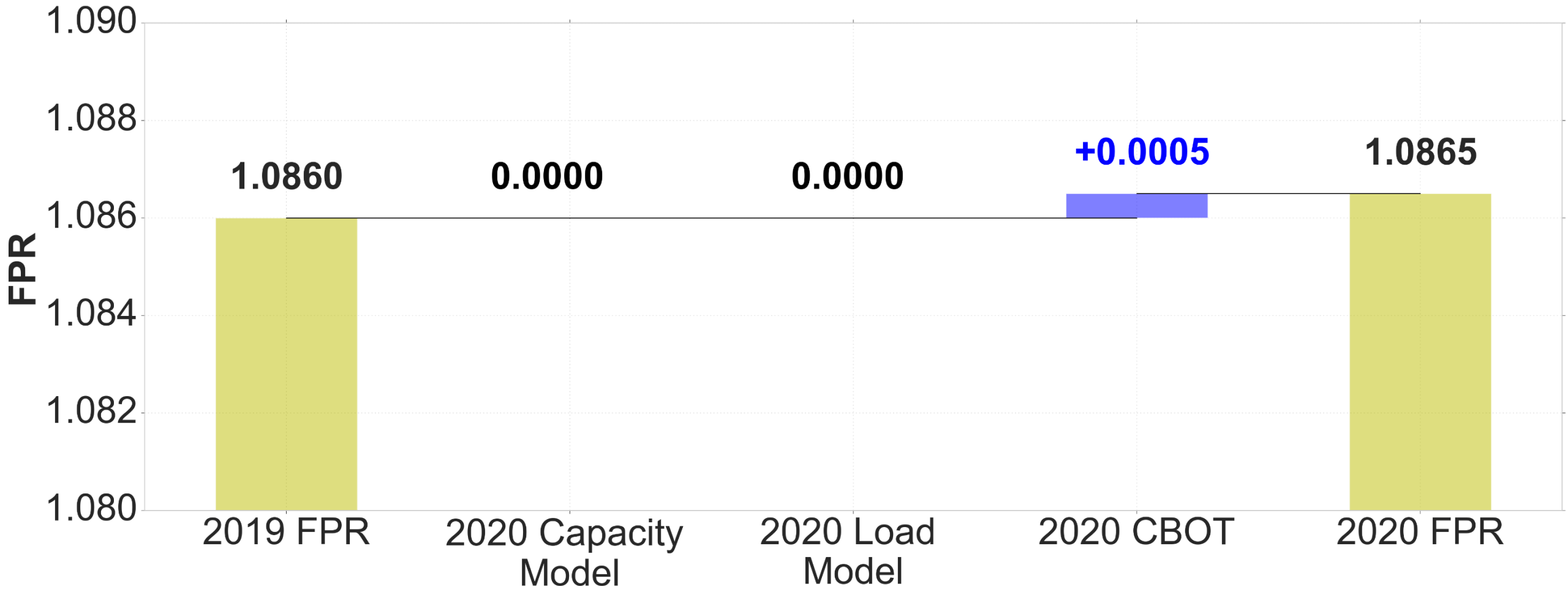
RRS Year	Delivery Year Period	Calculated IRM	Recommended IRM	Average EFORd	Recommended FPR*
2020	2021 / 2022	14.73%	**14.7%**	5.22%	**1.0871**
2020	2022 / 2023	14.51%	**14.5%**	5.08%	**1.0868**
2020	2023 / 2024	14.42%	**14.4%**	5.04%	**1.0863**
2020	2024 / 2025	14.39%	**14.4%**	5.03%	**1.0865**

2019 RRS Study results:

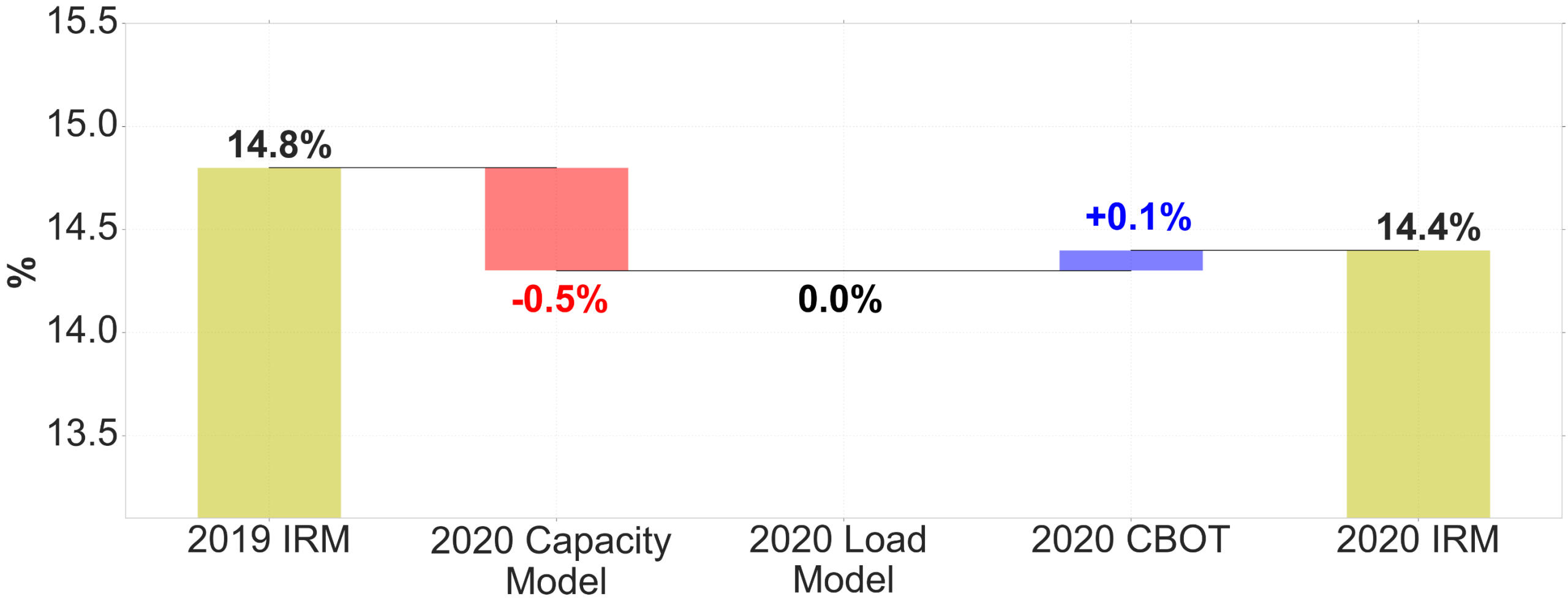
RRS Year	Delivery Year Period	Calculated IRM	Recommended IRM	Average EFORd	Recommended FPR*
2019	2020 / 2021	15.46%	**15.5%**	5.78%	**1.0882**
2019	2021 / 2022	15.14%	**15.1%**	5.56%	**1.0870**
2019	2022 / 2023	14.89%	**14.9%**	5.42%	**1.0867**
2019	2023 / 2024	14.84%	**14.8%**	5.40%	**1.0860**

*** FPR = (1 + IRM)*(1 - Average EFORd)**

2020 FPR – Waterfall Chart



2020 IRM – Waterfall Chart



Explanation of Changes

- The 2020 Capacity Model is driving the decrease in the IRM.
  - The PJM Average EEFORd in the **2020 RRS (for DY 2024) is 5.78%**
  - The PJM Average EEFORd in the **2019 RRS (for DY 2023) was 6.03%**
  - The lower PJM Average EEFORd in the 2020 RRS is caused by a lower average EEFORd of the generation classes more heavily represented in the study (i.e. combined cycle units and gas turbines).
- The 2020 Capacity Benefit of Ties (CBOT) puts upward pressure on both the IRM and the FPR
  - The CBOT decreased from **1.6% (2019 RRS) to 1.5% (2020 RRS)**

2020 RRS Report – Changes / Additions / Deletions/

- No major changes or deletions
- Additions:
  - The report this year has multiple references to the main change in the assumptions for the 2020 RRS:
    - Wind and solar resources are now excluded from the 2020 RRS Capacity Model
    - Instead, their capacity value is calculated via the Effective Load Carrying Capability (ELCC) study
  - A new subsection was added to describe the relationship between the RRS and ELCC

Next Steps

- November - MC: Distribution of final report and request for endorsement of recommended IRM and FPR values on Slide 4.

- December - PJM Board: Final Approval

Requested MRC Action

- Endorsement of the Recommended IRM and FPR values in the table below

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2020	2023 / 2024	14.42%	**14.4%**	5.04%	**1.0863**
2020	2024 / 2025	14.39%	**14.4%**	5.03%	**1.0865**

The Planning Committee (PC) and the Resource Adequacy Analysis Subcommittee (RAAS) endorsed these results.

Contact

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Reserve Requirement Study

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