



2020 Reserve Requirement Study (RRS) Assessment Results

Patricio Rocha Garrido
Resource Adequacy Planning
Markets & Reliability Committee
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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)

- 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

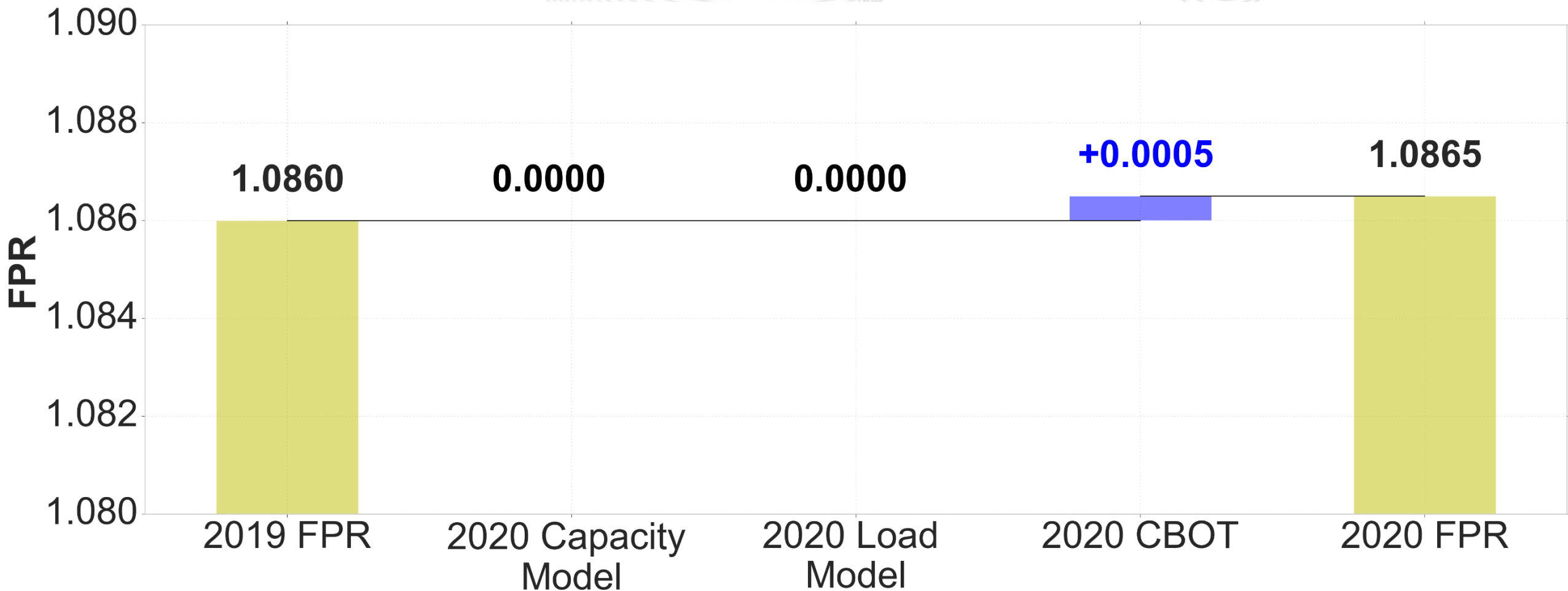
2020 RRS Study results:

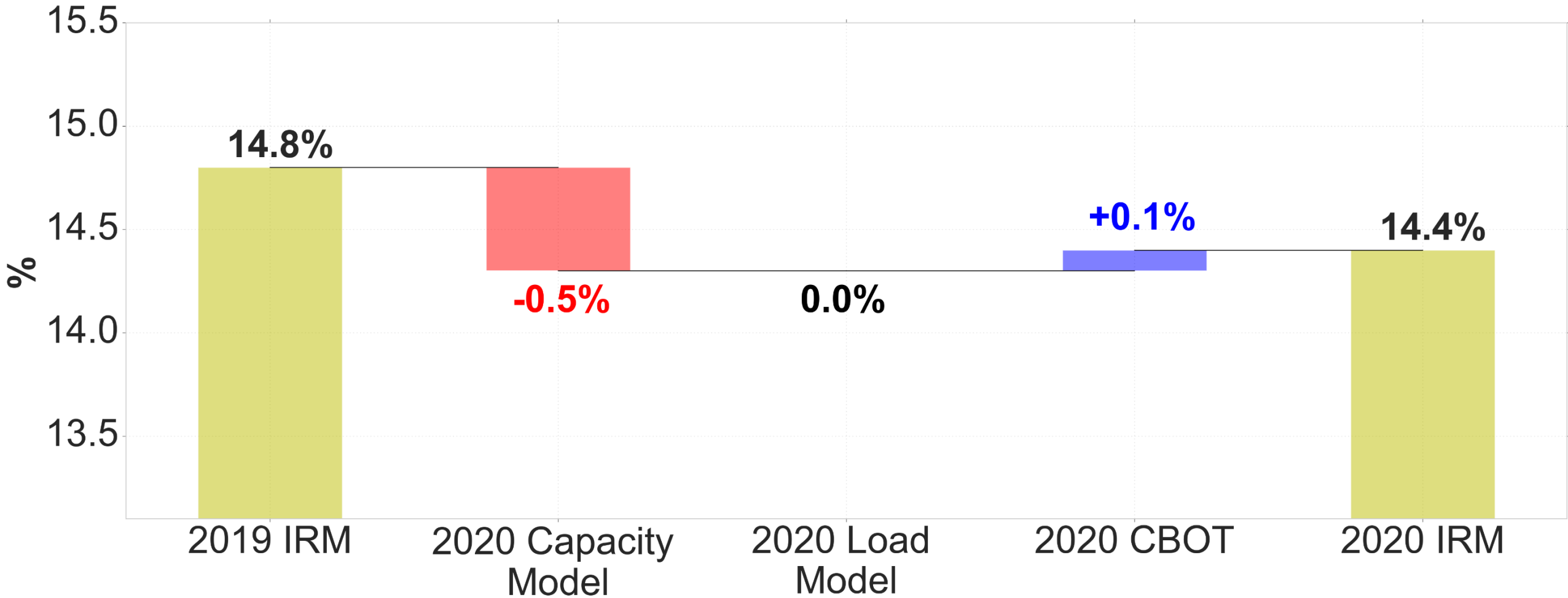
RRS Year	Delivery Year Period	Calculated IRM	Recommended IRM	Average EFORD	Recommended FPR*
2020	2021 / 2022	14.73%	14.7%	5.22%	1.0871
2020	2022 / 2023	14.51%	14.5%	5.08%	1.0868
2020	2023 / 2024	14.42%	14.4%	5.04%	1.0863
2020	2024 / 2025	14.39%	14.4%	5.03%	1.0865

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)





- 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)**

- 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

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

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

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

Presenter:
Patricio Rocha Garrido,
patricio.rocha-garrido@pjm.com

Reserve Requirement Study



Member Hotline

(610) 666 – 8980

(866) 400 – 8980

custsvc@pjm.com