



# 2021 Reserve Requirement Study Results

Patricio Rocha Garrido  
Resource Adequacy Planning  
Markets & Reliability Committee  
October 20, 2021

- Study results will re-set the Forecast Pool Requirement (FPR) and Installed Reserve Margin (IRM) for 2022/23, 2023/24, 2024/25 and establish initial IRM and FPR for 2025/26.
- Capacity model built with GADS data from 2016-2020 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 2020/21 (in addition, data from DY 2013/14 was dropped and replaced with data from DY 2014/15)
- PJM and World load models based on 2001-2013 time period and 2021 PJM Load Forecast (released in January).
- Study assumptions were endorsed at June, 2021 PC meeting.
- Load Model selection was endorsed at August, 2021 PC meeting.

# 2021 RRS Results vs 2020 RRS Results

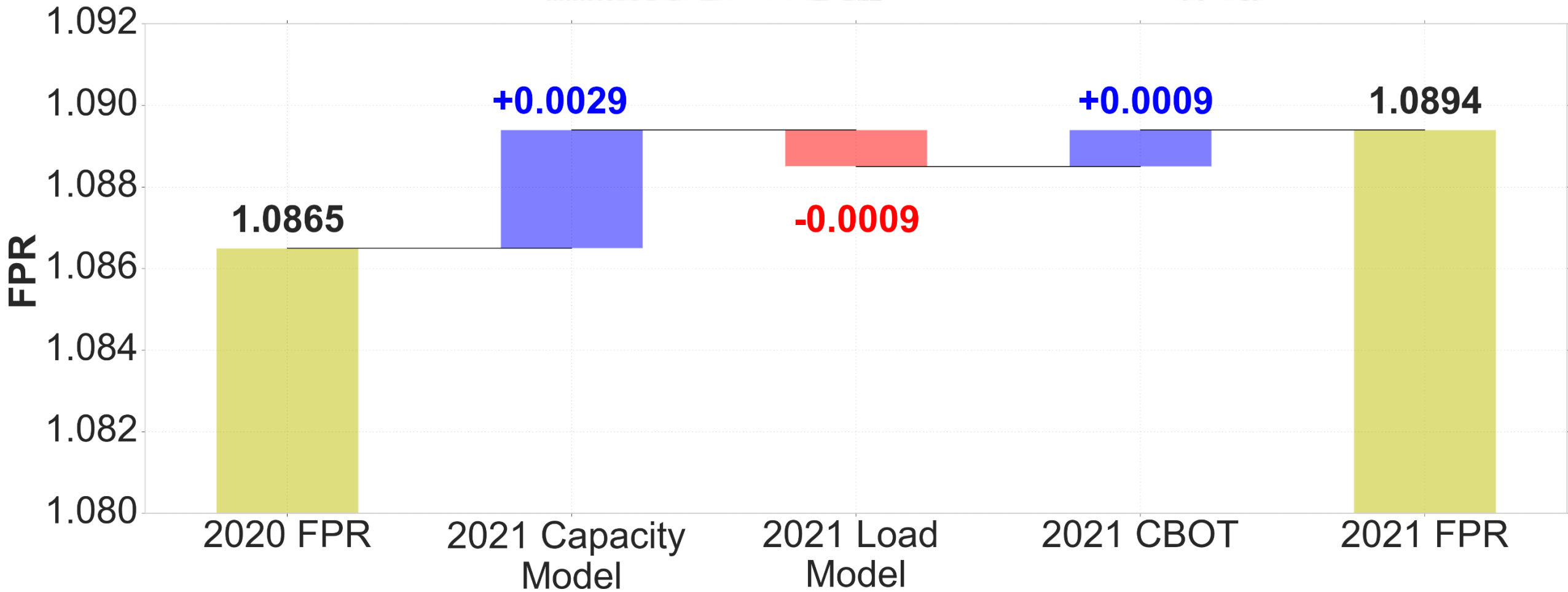
## 2021 RRS Study results:

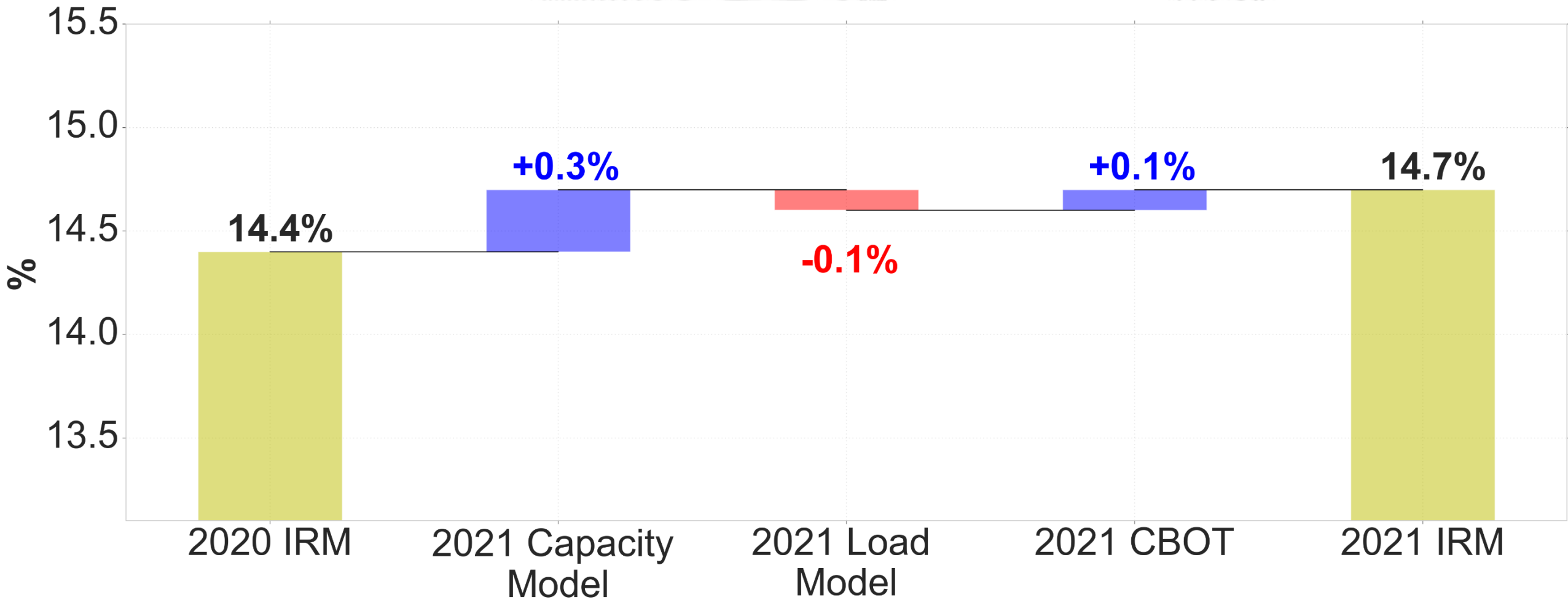
RRS Year	Delivery Year Period	Calculated IRM	Recommended IRM	Average EFORD	Recommended FPR*
2021	2022 / 2023	14.93%	<b>14.9%</b>	5.08%	<b>1.0906</b>
2021	2023 / 2024	14.76%	<b>14.8%</b>	5.04%	<b>1.0901</b>
2021	2024 / 2025	14.68%	<b>14.7%</b>	5.02%	<b>1.0894</b>
2021	2025 / 2026	14.66%	<b>14.7%</b>	5.02%	<b>1.0894</b>

## 2020 RRS Study results:

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

\* FPR = (1 + IRM)\*(1 - Average EFORD)





- The 2021 Load Model puts downward pressure on both the FPR and the IRM
- The 2021 Capacity Benefit of Ties (CBOT) puts upward pressure on both the FPR and the IRM
  - The CBOT decreased to 1.47% (2021 RRS) from 1.54% (2020 RRS)
- The 2021 Capacity Model is driving the increase in the IRM and FPR.
  - Specifically, the removal of ELCC Resources from the model which had two impacts:
    - The 2,500 MW ambient derating in the summer now represents a larger share of the total summer ICAP (1.41% in the 2021 RRS vs 1.28% in the 2020 RRS). Therefore, the effective forced outage rate in the summer peak period is greater in the 2021 RRS.
    - The PJM average unit size increased to 175 MW (in 2021 RRS) from 159 MW (in 2020 RRS)

- Based on the previous slide, it can be concluded that, **relative to the 2020 RRS**, the removal of ELCC Resources from the 2021 RRS is playing a key role in the FPR's mild increase.
- Regarding the above conclusion, the following clarification is important to note:
  - **The removal of the ELCC Resources from the 2021 RRS is an improvement in the way the RRS is run.** This should be taken into consideration when interpreting the comparison to last year's study results.

- The 2021 RRS Report has been posted alongside this presentation
- There are no major changes/additions/deletions to the report's structure relative to the 2020 RRS Report



- **October, MRC: Request for endorsement**
- November, MC: Request for endorsement
- December, PJM Board: Request for final approval

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

2021 RRS Study results:

RRS Year	Delivery Year Period	Calculated IRM	Recommended IRM	Average EFORd	Recommended FPR*
2021	2022 / 2023	14.93%	<b>14.9%</b>	5.08%	<b>1.0906</b>
2021	2023 / 2024	14.76%	<b>14.8%</b>	5.04%	<b>1.0901</b>
2021	2024 / 2025	14.68%	<b>14.7%</b>	5.02%	<b>1.0894</b>
2021	2025 / 2026	14.66%	<b>14.7%</b>	5.02%	<b>1.0894</b>

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

## SME / Presenter:

Patricio Rocha Garrido,  
[patricio.rocha-garrido@pjm.com](mailto:patricio.rocha-garrido@pjm.com)

## 2021 Reserve Requirement Study



### Member Hotline

(610) 666 – 8980

(866) 400 – 8980

[custsvc@pjm.com](mailto:custsvc@pjm.com)