Installed Reserve Margin (IRM), Forecast Pool Requirement (FPR), and Effective Load Carrying Capability (ELCC) for 2027/2028 BRA

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Markets and Reliability Committee
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Rule Changes Effective with 2027/28 BRA

Demand Response (DR) availability (FERC docket ER25-1525)

- Removed DR performance window (making it 24/7 resource)
- Updated winter performance shape

Two new ELCC classes (FERC docket ER25-1813)

Oil-Fired Combustion Turbine Class

- Moved resources from the Other Unlimited Resource Class to this new class

Waste to Energy Steam Class

- Moved resources from the Steam Class to this new class

Highlights on Data Inputs: Resource Mix

1. **Notice of Intent to Offer (NOI):**
   Planned resources that submitted a Notice of Intent to Offer for the 2027/28 BRA were included in the assumed resource mix
2. **Installed Capacity Ratings (ICAP Ratings):**
   ICAP Ratings reflect any 2027/28 transitional system capability awarded
3. **Announced Deactivations:**
   Resources with announced deactivations scheduled to occur before June 1st, 2028 were removed from the assumed resource mix
4. **Withdrawn Deactivations:**
   Capacity Resources that have withdrawn their deactivation notice or are in the process of reactivating were included in the assumed resource mix

Overall increase of 4,641 MW ICAP in the 27/28 BRA versus the 26/27 BRA

Highlights on Data Input: Load Scenarios

Hourly load profiles were derived using the 2025 PJM load forecast for the 2027/2028 Delivery Year

- Prior FPR/ELCC run also used scenarios from the 2025 PJM Load Forecast but for Delivery Year 2026/27
- Summer extreme loads are lower in 2027/28 than 2026/27
- Winter extreme loads are higher in 2027/28 than 2026/27

2027/28 load profiles resulted in upward pressure on winter risk

Highlights on Data Input: Performance/Availability Data

Performance Data:

- Based on data form June 1st, 2012 through May 31st, 2024

Demand Response Availability:

- Winter Shape is based on the 2025 Demand Response registration data

2027/2028 BRA Aggregate Average Hourly DR Reduction Profile																							
HB	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Winter Shape	78%	77%	77%	78%	80%	83%	93%	96%	100%	101%	102%	103%	102%	103%	100%	99%	97%	95%	94%	92%	91%	87%	84%	82%

Increase in DR Availability and Winter Reduction Capability

2027/28 Assumed Resource Portfolio

ELCC Class	Effective Nameplate (MW)	Installed Capacity (MW)
Onshore Wind	12,862	3,956
Offshore Wind	Small Sample Size	Small Sample Size
Fixed-Tilt Solar	2,901	1,494
Tracking Solar	17,657	11,612
Intermittent Landfill Gas	146	103
Intermittent Hydropower	736	519
Capacity Storage Resource (4, 6, 8, 10 Hour Duration)	5,938	5,938
Solar-Storage Hybrid	Small Sample Size	Small Sample Size
Demand Resource	n/a	8,439

ELCC Class	Effective Nameplate (MW)	Installed Capacity (MW)
Nuclear	n/a	32,181
Coal	n/a	35,964
Gas Combined Cycle *(Single and Dual Fuel)*	n/a	57,560
Gas Combustion Turbine	n/a	10,970
Gas Combustion Turbine Dual Fuel	n/a	13,249
Diesel Utility	n/a	334
Steam	n/a	9,283
Waste to Energy Steam	n/a	719
Oil-Fired Combustion Turbine	n/a	2,852
Hydropower with Non-Pumped Storage	2,057	1,992
Other Unlimited Resource	n/a	450

2027/28 ELCC Class Ratings

ELCC Class	Class Rating
Onshore Wind	41%
Offshore Wind	67%
Fixed-Tilt Solar	7%
Tracking Solar	8%
Intermittent Landfill Gas	48%
Intermittent Hydropower	39%
Capacity Storage Resource (4-Hour Duration)	58%
Capacity Storage Resource (6-Hour Duration)	67%
Capacity Storage Resource (8-Hour Duration)	70%
Capacity Storage Resource (10-Hour Duration)	78%

ELCC Class	Class Rating
Demand Resource	92%
Nuclear	95%
Coal	83%
Gas Combined Cycle	74%
Gas Combustion Turbine	61%
Gas Combustion Turbine Dual Fuel	77%
Diesel Utility	92%
Steam	72%
Waste to Energy Steam	83%
Oil-Fired Combustion Turbine	80%

2027/28 BRA ELCC Class Ratings vs. 2026/27 BRA Ratings

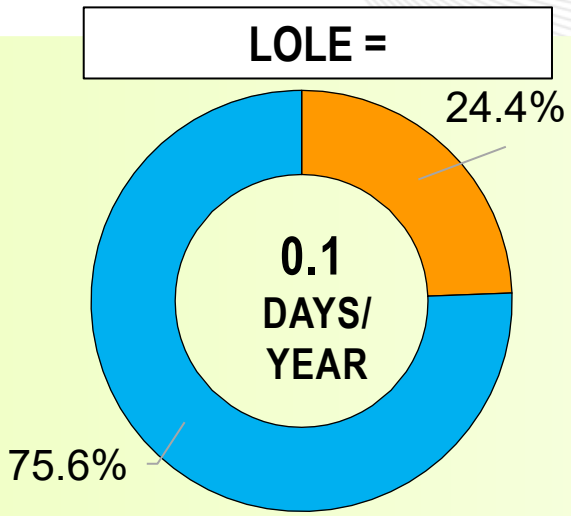
ELCC Class	BRA Rating 2026/27	BRA Rating 2027/28	Change (%)
Onshore Wind	41%	41%	-
Offshore Wind	69%	67%	-2
Fixed-Tilt Solar	8%	7%	-1
Tracking Solar	11%	8%	-3
Intermittent Landfill Gas	50%	48%	-2
Intermittent Hydropower	38%	39%	1
Capacity Storage Resource (4-hr)	50%	58%	8
Capacity Storage Resource (6-hr)	58%	67%	9
Capacity Storage Resource (8-hr)	62%	70%	8
Capacity Storage Resource (10-hr)	72%	78%	6
Demand Resource	69%	92%	23
Nuclear	95%	95%	0
Coal	83%	83%	0
Gas Combined Cycle	74%	74%	0
Gas Combustion Turbine	60%	61%	1
Gas Combustion Turbine Dual Fuel	78%	77%	-1
Diesel Utility	91%	92%	1
Steam	73%	72%	-1
Waste to Energy Steam	n/a	83%	n/a
Oil-Fired Combustion Turbine	n/a	80%	n/a

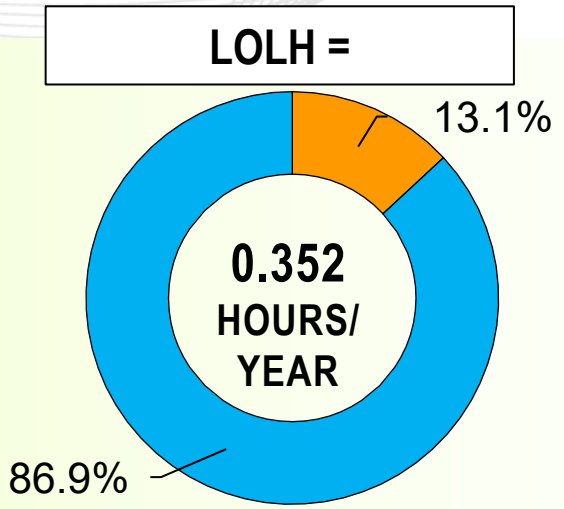
- Increase in DR availability leads to improved rating and complementary benefit to storage.
- Other categories move +/- 3 as summer/winter risk share is relatively consistent with 2026/27 results.

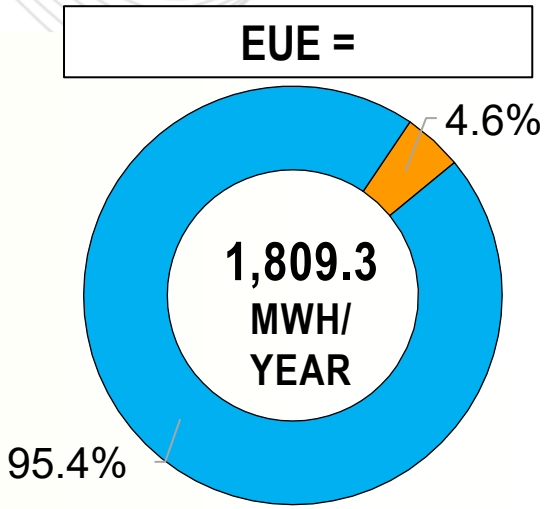
Seasonal Changes in 2027/28 BRA vs. 2026/27 BRA

2027/28
BRA

SEASONAL SHARE OF:







2026/27
BRA

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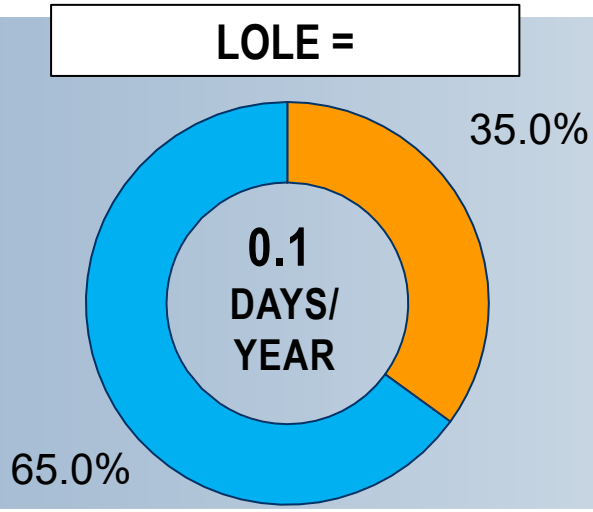

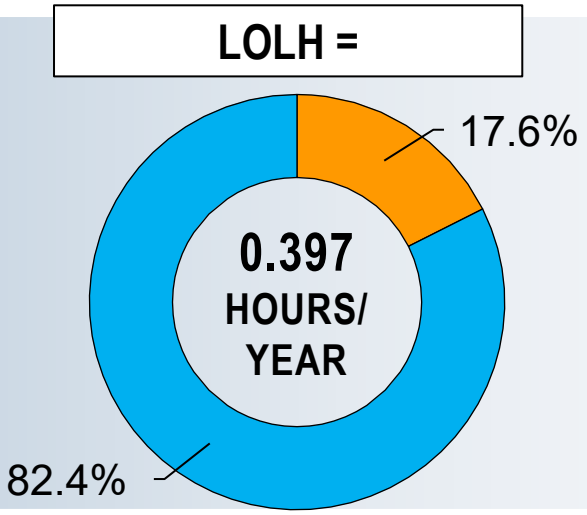

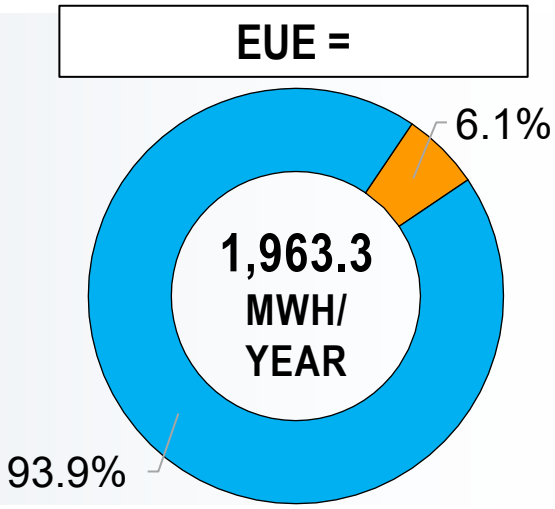

Winter Summer

IRM, AUCAP and FPR

- 2027/2028 Installed Reserve Margin (IRM) equals ***20.0%.***
- Calculation of the Accredited UCAP factor is the ratio of Unforced Capacity (UCAP) to Installed Capacity (ICAP) in the model.

  *This ratio is **0.7717***

The FPR is then:

- (1 + IRM) x Pool-Wide Average Accredited UCAP Factor
- (1 + 0.20) x 0.7717 = **0.9260**

2027/28 BRA IRM and FPR vs. 2026/27 BRA

PARAMETER	26/27 BRA Value	27/28 BRA Value	Change	Key Factors
ICAP (MW)	193,738	198,379	4,641	Additional Transitional CIRs for existing units plus additional wind and solar units
"Solved Load" (MW)	160,682	163,224	2,542	Increase in ICAP coupled with DR rule changes
CBOT (%)	1.5%	1.5%	-	
Installed Reserve Margin (IRM)	19.1%	20.0%	+0.9%	More system risk due to higher winter loads
Accredited UCAP (MW)	149,149	153,095	3,946	Increase in ICAP coupled with DR rule changes
Pool-Wide Average UCAP Factor	0.7699	0.7717	0.018	DR rule changes
Forecast Pool Requirement (FPR)	0.9170	0.9260	0.009	More system risk due to higher winter loads

Requested Action

	Delivery Year	IRM	FPR
Endorsement of the following parameters:	2027/2028	20.0%	0.9260

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FPR, IRM, & ELCC for 27/28 BRA

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