Fixed Resource Requirement (FRR) Alternative

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FRR Alternative

- Provides an alternative means for an eligible load-serving entity (LSE) to satisfy the unforced capacity obligation of the load in its service area
- How it differs from RPM:
  - LSE does **not** pay RPM locational reliability charges
  - LSE provides FRR plan of capacity resources to satisfy obligation that do **not** receive RPM auction credits
  - “Fixed” rather than “Variable” resource requirement

Provisions of the FRR Alternative described in RAA, Schedule 8.1

FRR Alternative Eligibility

Eligible parties that can select the FRR Alternative:

- Investor-owned utility (IOU)
- Public power entity
- Electric cooperative

Party must be capable of satisfying the capacity obligation for all load in the FRR service area (including expected load growth)

- In states with retail choice, this includes any such load that switches to an alternative retail LSE

FRR Service Area

The service territory of an IOU

or

The service area of a public power entity or electric cooperative

or

A separately identifiable geographic area that is both:

- Bounded by wholesale metering
- For which the FRR entity has or assumes the obligation to provide capacity for all load (including expected growth) within such area

Election of the FRR Alternative

- Initial election of the FRR Alternative due no later than four months prior to the Base Residual Auction (BRA) of the applicable Delivery Year (DY)

  Deadline shortened to two months if election is the result of a State Regulatory Structural Change as defined in the RAA

- Such election is for a minimum term of five consecutive DYs

- Initial FRR plan due no later than one month prior to BRA

  FRR entity shall annually extend and update the plan by no later than one month prior to the BRA for each succeeding DY

Termination of FRR Election

An FRR entity may terminate its FRR election with any DY following the minimum five-year term with written notice to PJM due no later than two months prior to the BRA

Not eligible to re-elect the FRR alternative for five years

Exceptions:

- May terminate FRR election prior to the five-year minimum term if PJM is required to establish a separate VRR curve for an LDA encompassing the FRR service area, where such VRR curve had not been required the first year
- May terminate FRR elective effective with any DY in the event of a State Regulatory Structural Change as defined in the RAA

FRR Plan Requirements

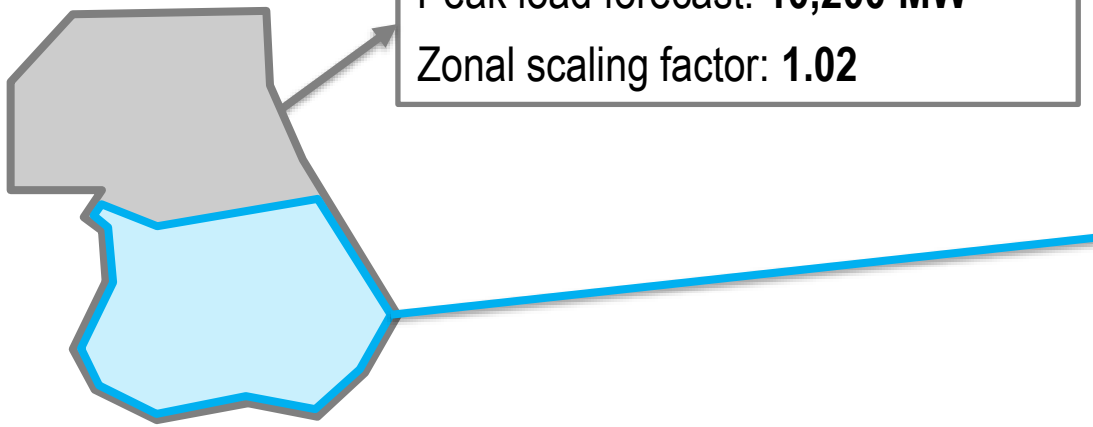
- Unforced Capacity (UCAP) Obligation
- Minimum internal resource requirements, if applicable
- Threshold quantity, if applicable

FRR Plan: UCAP Obligation

The FRR Plan must provide sufficient capacity resources to meet the FRR entity's UCAP obligation

- **UCAP obligation:** The FRR entity's allocated share of the zonal peak load forecast times the forecast pool requirement (FPR)

EXAMPLE



Zone A
W/N summer peak load: **10,000 MW**
Peak load forecast: **10,200 MW**
Zonal scaling factor: **1.02**

FRR Service Area
Obligation peak load: **5,000 MW**
Zonal scaling factor: **1.02**
Share of forecasted peak load: **5,100 MW**
FPR: **1.0902**
UCAP obligation: **5,560 MW**

FRR Plan: Minimum Internal Resource Requirement

If FRR load is located in an LDA for which a separate VRR curve is required, the FRR plan must also provide sufficient capacity resources located inside the LDA to meet the minimum internal resource requirement

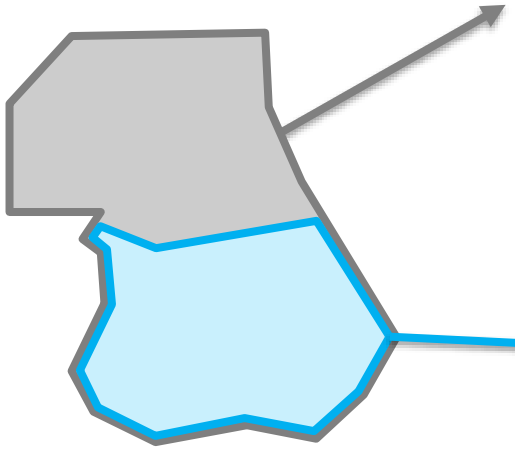
- **Minimum internal resource requirement:**
  Percentage internal resource required * the FRR entity's UCAP obligation
- **Percentage internal resources required:**
  (Reliability requirement - CETL) / (peak load forecast * FPR) for the LDA and DY

Why is this needed?

- Ensures internal committed capacity plus the available transfer capability can meet the LDA's reliability requirement
- Allocates an appropriate share of the minimum internal requirement between RPM and FRR if only a portion of the LDA load is served under FRR

FRR Plan: Minimum Internal Resource Requirement

Continuing the example, assume Zone A is an LDA that requires a minimum internal resource requirement.



Zone A

Zonal peak load forecast: **10,200 MW**

FPR: **1.0902**

LDA reliability requirement: **12,000 MW**

LDA CETL: **4,000 mw**

Percentage internal resources required: **~72%**

(12,000 MW – 4,000 MW) / (10,200 MW * 1.0902)

FRR Service Area

UCAP obligation: **5,560 MW**

Percentage internal resources required: **~72%**

Minimum internal resource requirement: **4,000 MW**

FRR Plan: Threshold Quantity

An FRR entity may not sell surplus capacity into RPM unless they commit an additional megawatt quantity of capacity resources in their FRR plan above the UCAP obligation:

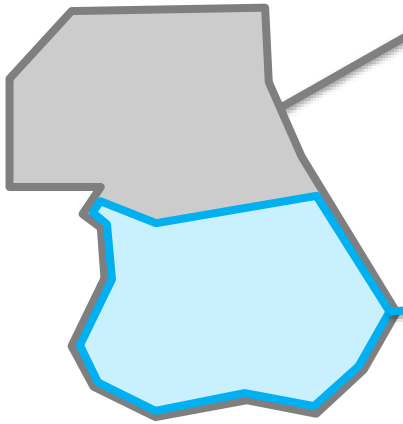
- **Threshold quantity:** UCAP obligation plus the lesser of:
  - 3% of the FRR entity's UCAP obligation **or**
  - 450 MW

If threshold quantity is met, the FRR entity may sell capacity in excess of that quantity into RPM up to a sales cap amount

- **RPM sales cap:** lesser of:
  - 25% of the FRR entity's UCAP obligation **or**
  - 1,300 MW

FRR Plan: Threshold Quantity

Continuing with our example, the following threshold quantity would be required if the FRR entity intended to sell excess capacity into RPM:



Zone A
Zonal peak load forecast: **10,200 MW**
FPR: **1.0902**
LDA reliability requirement: **12,000 MW**
LDA CETL: **4,000 MW**
Percentage internal resources required: **~72%**

FRR Service Area
UCAP obligation: **5,560 MW**
Minimum internal resource requirement: **4,000 MW**
Threshold quantity: **5,726.8 MW** (additional 166.8 MW)
RPM sales cap: **1,300 MW**

FRR Plan: Eligible Capacity Resources

Capacity Performance resources (including seasonal resources)

- DR requires that a DR sell offer plan be submitted no later than 15 business days prior to the FRR plan deadline
- EE Resources require an M&V Plan be submitted no later than 30 days prior to the FRR plan deadline
  - An FRR entity's UCAP obligation and minimum internal resource requirement is increased by the UCAP megawatt value of any EE resource committed in the FRR plan to avoid double counting EE (which is already reflected in peak load forecast)
- Planned resources require collateral be posted prior to the FRR plan deadline
- The FRR plan may not include capacity that cleared in any RPM auction for the relevant DY

Capacity Resources Located in an FRR Service Area but not Committed to the FRR Plan

- Generation and DR located in an FRR service area that are not committed to the FRR plan are eligible to participate in RPM
  - Subject to RPM sales cap if owned by the FRR entity

- EE resources located in an FRR service area that are not committed to the FRR plan may not participate in RPM due to the misalignment of the location of the EE measure and the location of the necessary add-back

FRR Deficiency and Performance Charges

FRR commitment insufficiency charge

- Applies when the FRR plan for a succeeding DY does not satisfy the FRR entity's Preliminary UCAP obligation or minimum internal resource req.
  - Applies to remaining DYs of the minimum FRR term
- **Insufficiency charge** = Shortfall MW * (2 * Cost of New Entry$_{\$/MW\text{-}Year}$)

FRR capacity resource deficiency charge

- Applies during the DY for any daily shortage of resources to meet the FRR entity's final UCAP obligation or minimum internal resource req.
- **Deficiency charge** = Shortfall MW * (1.2 * WARCP)
  - WARCP: Weighted average resource clearing price from all RPM auctions for the LDA encompassing the FRR service area

FRR Deficiency and Performance Charges

Capacity performance assessments

- Assessed during performance assessment intervals
- FRR entity may elect physical or financial penalties prior to each DY

Also may be subject to performance charges for:

- Generation rating test failures
- Load management test compliance shortfalls
- Transmission upgrade delay penalties