

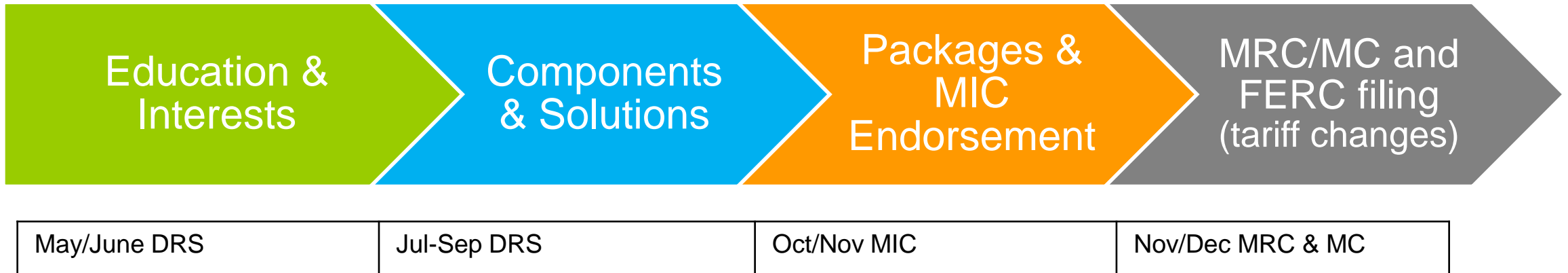
# Price Responsive Demand (PRD) review for CP requirements

MRC

December 7, 2017



- PRD developed (2010 – 2012) prior to CP rules
- PJM received and approved PRD plans (~550 MW) for the first time in January 2017 for 2020/2021 Delivery Year
- Some key DR rules were updated with the implementation of CP but PRD rules were not reviewed or updated
  - PRD currently not required to reduce load in the winter
  - PRD penalty rates and methodology not updated to CP Performance Assessment Hour/Interval approach



File endorsed changes by January – allow PRD plans that are approved in January to be terminated (or reduced) by PRD Provider if impacted by changes that are accepted by FERC before BRA

| Proposals   | Support |
|---|---------|
| Status Quo – do not need to reduce load in winter with event based penalty structure (similar to DR rules prior to CP changes).   |         |
| PJM proposal – require PRD to reduce load in the winter like other CP resources. Leverage existing load reduction and capacity nomination rules already approved by FERC for DR. Update to CP penalty rates/methodology.          | 83%     |
| Calpine proposal – same as PJM but uses PJM Performance Assessment Interval to trigger performance assessment & penalties (PJM proposal uses combination of PAI and LMP>PRD curve to trigger performance assessment & penalties). | 63%     |

***2 proposals ensure PRD has annual capability like all other CP resources***



# Proposal Comparison Summary

| Component  | Status Quo  | PJM proposal   | Calpine proposal                |
|--|---|--|---------------------------------|
| Auction/FRR Plan credit requirement                                | Credit based on base capacity rate  | Credit based on CP rates   | Same as PJM                     |
| Nominated capacity amount (PRD registration)                       | Based on summer load reduction capability only  | Based on minimum of summer and winter load reduction capability (same as DR)   | Same as PJM                     |
| Event Compliance Penalty Rate                                      | Similar to daily commitment compliance penalty rate but for 1 year and on event basis (multiple hours)                          | Use CP non-performance hourly or interval penalty provisions/rates (same as DR)  | Same as PJM                     |
| load reduction measurement   | Adjusted PLC compared to summer adjusted MESL. Not required to reduce load in winter if summer load is higher than winter load. | Use PLC and WPL compared to Summer and Winter Firm Service Level (same as DR). Required to reduce load on annual basis | Same as PJM                     |
| add back (PJM unrestricted load for forecast and customer PLC/WPL) | Emergency events and 5 CPs  | All hours where RT LMP > PRD curve   | Same as PJM                     |
| Trigger to assess CP Penalty                                       | LMP at or above PRD curve AND maximum emergency gen action  | Performance Assessment Interval where RT LMP > PRD energy curve  | Performance Assessment Interval |
| Over performance/bonus payments                                    | Not applicable  | Eligible for bonus (same as DR)  | Same as PJM                     |

- OATT
  - DD Sec 10A - revised PRD credit requirements effective 2021/2022 Delivery Years and general formatting revisions
  - Attachment Q - credit requirements
- RAA
  - Article 1(Definitions) - added definition of FSL; revised MESL definition; and general clean-up of citations in various terms
  - Schedule 6.1 - revised PRD rules
  - Schedule 8-1-G - added PRD committed by FRR entities in addition to FRR Capacity Performance Resources
- Manual 11
  - 12.2.4 – update PRD rules for performance assessment trigger
- Manual 18
  - 3A.1 – 6 – overall PRD updates
  - 4.8 – PRD credit requirements
  - 8.4A - CP non-performance update for PRD
  - 9.1, 9.4 – PRD non-performance charge/bonus payment, LSE PRD credit, PRD test failure charge/credit
  - 11.8 – Non-performance charge/bonus.
- Manual 19
  - Attachment A (Load Drop estimate guidelines) – updated for PRD