

Proposed Package Matrix (Beacon)

| Design Component | Proposed Solution Option | Discussion |
|------------------------|--|---|
| 1 – Signal type | B (Reg A and D are dependently produced so that different classes of resources can supplement each other when needed) & D (Reg A and D are dependently produced to optimize system control) | Maintain 15-min energy neutrality but better utilize RegA/RegD resource benefits |
| 2 - Characteristics | N (Conditional neutrality over 15 minutes) | Maintain 15-min neutrality except in extreme circumstances – no planned phase-out |
| 3 – Product type | Status quo (Combined/bi-directional, symmetric) | |
| 4 – Requirement level | B (Regulation limit should be increased proportionally to reflect load that's been added to PJM since original static values were determined. (EKPC)) | PJM should re-define requirements to make sure system reliability can be maintained under all allowable combinations of RegA/RegD resources. More RegA to carry more RegD |
| 5 – Static/ dynamic | E (Dynamic regulation requirement, with more regulation procured during hours of historical control challenge) | See comment to 4 above; could develop hourly pattern by month/season |
| 6 – Op characteristics | Status quo (Neutrality, ramp limitation) | Neutrality is the only option for energy limited resources to manage their state of charge in PJM |
| 7 – X-axis | Status quo (% of performance adjusted MW against the requirement) | Could re-evaluate % based on observed system benefits w/o other simultaneous changes |
| 8 – Y-axis | Status quo (Benefits Factor from 2.9 to 0) | Could re-evaluate max BF based on observed system benefits w/o other simultaneous changes |

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| 9 – Static/ dynamic | Status quo (Static; predefined excursion hours) | With high penetration of RegD, PJM operators will have greater certainty regarding raw MW available |
| 10 – Effective MW calc | Status quo (Offer MW * BF * PerfScore; Block (rectangle)) | Further changes could complicate/negate other changes |
| 11- Procurement floor | B (Floor at BF = 1) | Don't procure more RegD if not benefit to system |
| 12 – Treatment of SS/\$0 offers | Status quo (Self Schedule and \$0 offer will be subject to a tie breaker based on performance score for BF assignment) | |
| 13 – LOC sched. | Status quo (Cheapest of price or most expensive of cost schedule) | Not a factor contributing to current issues |
| 14 – Qual. testing | Status quo | Not a factor contributing to current issues |
| 15 – Type specific test/score | Status quo (None) | Not a factor contributing to current issues |
| 16 – Perf score comp/weight | Status quo (Units measured on a composite performance score = 1/3 accuracy + 1/3 delay + 1/3 precision (deviation)) | Not a factor contributing to current issues |



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| 17 – Min part. | Status quo (Maintain a 40% historic performance score (average across last 100 operating hours)) | Not a factor contributing to current issues |
| 18 – Min price | Status quo (None) | Not a factor contributing to current issues |
| 18A – Change in cleared commit - PS | Status quo (Self de-selection does not have an impact on performance score) | Not a factor contributing to current issues |
| 19 – Subst. factor | Status quo (Mileage ratio is applied to the performance credit) | Not a factor contributing to current issues; use of Benefits Factor does not comply with Order 755 |
| 20 – Settlement components | Status quo (5-minute pricing, hourly settlement) | Not a factor contributing to current issues |
| 21 - Mileage | Status quo (All movement regardless of direction (same or opposite direction of ACE)) | Not a factor contributing to current issues |
| 22 – Offer components | Status quo (Performance and Capability) | Not a factor contributing to current issues |
| 23 – Clearing timing | Status quo (30 minutes before, one hour commitments) | Not a factor contributing to current issues |
| 24 – Commit process | Status quo (None) | Not a factor contributing to current issues |

