Example Calculations for PJM Matrix: Remove DA OR
Generator: Oakmont

- Economic Max = 300 MW
- Offer Curve:
  - $20 @ 100 MW
  - $40 @ 300 MW
  - Slope = $.10/MWh
• **DA LMP** = Day Ahead LMP
• **DA MW** = Day Ahead Scheduled MW
• **DA VALUE** = Day Ahead LMP * Day Ahead MW
• **DA START** = Day Ahead Startup Cost
• **DA NO LOAD** = Day Ahead Hourly No Load Cost
• **DA INC COST** = Incremental cost of generator at DA MW (area under offer curve)
• **DA OFFER** = DA Start + DA No Load + DA INC Cost
### Current: DA OR

#### Currently

- **DA OR** = Min(0, DA OFFER – DA VALUE) = $93,020 - $74,840 = **$18,180**
- **DA Credits** = DA VALUE + DA OR = $74,840 + $18,840 = **$93,020**

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| HE | 1     | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20    | 21    | 22    | 23    | 24    | TOTALS |
|----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| DA LMP | 15    | 16    | 18    | 21    | 18    | 22    | 34    | 44    | 24    | 21    | 20    | 19    | 21    | 22    | 24    | 22    | 30    | 31    | 26    | 18    | 17    | 19    | 22    | 15    |
| DA MW | 0     | 0     | 110   | 100   | 120   | 240   | 300   | 140   | 110   | 100   | 100   | 110   | 120   | 140   | 120   | 200   | 210   | 160   | 100   | 100   | 100   | 120   | 100   |
| DA VALUE | 0     | 0     | 2310  | 1800  | 2640  | 8160  | 13200 | 3360  | 2310  | 2000  | 1900  | 2310  | 2640  | 3360  | 2640  | 6000  | 6510  | 4160  | 1800  | 1700  | 1900  | 2640  | 1500  | 74840 |
| DA START | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 2000  |
| DA NO LOAD | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| DA INC COST | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| DA OFFER | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 93020 |

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• **RT LMP** = Real-Time LMP
• **RT MW** = Real-Time Scheduled MW
• **BAL VALUE** = (Real-Time MW – Day Ahead MW) * Real-Time LMP
• **FOLLOWING (Y/N)** = Following dispatch
• **RT START** = Real-Time Startup Cost
• **RT NO LOAD** = Real-Time Hourly No Load Cost
• **RT INC COST** = Incremental cost of generator at RT MW (area under offer curve)
• **RT OFFER** = Real-Time Start + Real-Time No Load + Real-Time INC Cost
### Current: Balancing Settlement

Currently
- \( \text{BOR} = \max(0, \text{RT OFFER} - \text{BAL VALUE} - \text{DA VALUE} - \text{DA OR CREDITS}) \)

\[
\text{BOR} = $103,360 - $11,486 - $74,840 - $18,180 = \max(0, -$1,146) = $0.00
\]
What’s happening?

- The resource is receiving a DA OR payment but not a BOR payment
  - This means the resource’s “cost” in Day Ahead exceeded the credits it was paid
- The resource is not receiving a RT BOR payment
  - This indicates the credits the resource is being paid exceed its actual operating cost
- The resource is profiting from its DA OR payment by $1,146
**Proposed**

- DA OR = **$0**
- DA Credits = DA VALUE = **$74,840**
Current: Balancing Settlement

Proposed

BOR = Max(0, RT OFFER – BAL VALUE – DA VALUE – DA OR CREDITS)

BOR = $103,360 - $11,486 - $74,840 = Max(0, $17,034) = $17,034
Net Settlement Difference

- Difference in settlement is the $1,146 profit the unit originally received due to its DA OR payment
  - Original DA OR – Proposed BOR = Margin
    $18,180 - $17,034 = $1,146

- DA OR allocated to DA Load + DECs + Exports
- BOR allocated to deviations (in this case)
- Significant shift in cost allocation (under today’s rules)
  - Good thing that’s on our charter!!
What does removing DA OR do?

- **IT DOES NOT CHANGE DA SCHEDULING METHODOLOGY**
  - Resource parameters adhered to. Resources paid MW * MCP, ONLY.
- Removes the ability for a resource to make a profit via its DA OR payment
  - Less uplift overall
- Make whole methodology based on actual incurred costs
- Stronger incentive to follow dispatch
  - Only RT make whole exists. Not following sacrifices that.
- Costs shifted into real-time market where they are incurred
  - Currently a different allocation. Needs to be coordinated with allocation methodology changes.
- Reduction from 2 uplift buckets to allocate down to one
  - Potentially ease allocation discussions