Transmission Expansion Advisory Committee
Market Efficiency Update

November 11, 2014
Market Efficiency Long Term Proposal Window
• Identify enhancements or expansion that could relieve PJM transmission constraints stemming from the 2014 Market Efficiency Analysis for which no reliability based project has already been identified.

• Perform and compare market simulations with and without proposed enhancements or expansions to evaluate if the Benefit/Cost Ratio is at least 1.25 using the criteria as defined in Schedule 6, Section 1.5.7 of the PJM Operating Agreement and PJM Manual 14B, Attachment E.

• Perform high level reliability analysis of proposed Market Efficiency enhancements or expansions to ensure the proposed enhancement or expansion does not create any reliability issues.
• Stakeholder feedback received on initial base congestion results
  ➢ PJM incorporated appropriate changes
• Updated PROMOD case files and necessary documents provided at following link
  ➢ Includes descriptions of changes from original posted case files
• PJM identified recommended facilities for which proposals may be submitted
  ➢ Recommended facilities provided in 2014 Market Efficiency Congestion Results file at
    following link:
  ➢ PJM to identify if any facilities may have potential low cost or simple solutions
• Additional feedback since window opened will result in new base congestion, recommended facilities, and updated PROMOD files
Market Efficiency Criteria

• Market Efficiency Criteria for facilities recommended for proposals:
  
  ➢ Annual simulated congestion frequency of at least 25 hours in 2019 and 2022 study years.
  ➢ Lower voltage facilities: Minimum of $1 million congestion in 2019 and 2022 study years.
  ➢ Regional facilities: Minimum of $10 million congestion in 2019 and 2022 study years.
  ➢ Facilities below these thresholds are not anticipated to pass the Benefit/Cost Criteria because of the expected cost of an upgrade. Congestion for 2025 study year is considered more speculative and therefore will be monitored in future analysis.

• RPM Criteria:
  
  ➢ PJM will accept proposals to address the following corridor for which has had consistent capacity import limitations and thermal overloads.
    ▪ Roseland-Cedar Grove-Clifton 230 kV corridor
Supplemental Projects

- Several submitted supplemental projects may fix Market Efficiency congestion.
- Supplemental projects may be re-designated if pass B/C and still in Engineering/Design phase.
  - Projects must be submitted during proposal window.
- Supplemental projects will be added to base case if in construction phase.
Next Steps

Long Term Proposal Window

- Update base congestion results and list of recommended facilities (November)
- Add notes for potential low cost upgrades, if any (November)
- Develop ARR mapping file (December)
- Create B/C user spreadsheet (December)

Proposal window will NOT be extended
Market Efficiency Facilities Recommended for Long term Proposal Window
Market Efficiency Facilities: Regional

Constraint: AP SOUTH Interface I/o Black Oak-Bedington
- Area: Reactive Interface
- Congestion:
  2019: $112.4 million
  2022: $130.5 million

Constraint: AEP-DOM Interface I/o Black Oak-Bedington
- Area: Reactive Interface
- Congestion:
  2019: $22.6 million
  2022: $34.5 million
Constraint:
Miami Fort to Willey 138 kV Line

- Area: DEOK
- Congestion:
  2019: $22.7 million
  2022: $35.8 million
Constraint:
Worcester to Ocean Pines 69 kV Line

- Area: DPL
- Congestion:
  2019: $23.7 million
  2022: $26.8 million
- Potential Upgrade:
  S0837: Rebuild the Worcester - Ocean City 69 kV circuit '6724'
Constraint: Safe Harbor to Graceton 230 kV Line

- **Area:** PPL-BGE
- **Congestion:**
  - 2019: $28 million
  - 2022: $21.1 million
- Congestion will be impacted by below upgrade:
  - B0497: Install a second Conastone - Graceton 230 kV circuit and replace Conastone 230 kV breaker 2323/2302 will impact congestion
  - Upgrade will be added to base case and results will be updated
Market Efficiency Facilities: METED - PPL

Constraint:
Brunner Island to Yorkana 230 kV Line

- Area: METED-PPL
- Congestion:
  - 2019: $28.2 million
  - 2022: $29 million
Constraint:
Frackville to Siegfried 230 kV Line

- **Area**: PPL
- **Congestion**:
  - 2019: $13 million
  - 2022: $14.5 million
- Congestion may be impacted by below upgrade that is under construction
  - S0148: New substation at Sunbury may eliminate the contingency causing congestion
  - Upgrade will be added to base case and results will be updated
Constraint:
Crescent 345 kV Transformer

- Area: DUQ
- Congestion:
  - 2019: $8.9 million
  - 2022: $30.7 million
- Congestion will be impacted by below upgrade:
  - Operate with the Crescent 345/138 kV #3 autotransformer in-service by replacing 8 over duty 138 kV breakers at Crescent, 3 138 kV breakers at Beaver Valley, install #1 section 345 kV breaker for 331 circuit at Crescent
  - Upgrade will be added to base case and results will be updated
Constraint:
Dravosburg to West Mifflin 138 kV Line

- Area: DUQ
- Congestion:
  2019: $4 million
  2022: $5.9 million
Constraint:
Woodville to 15USAP 138 kV Line

- Area: DUQ
- Congestion:
  - 2019: $1.8 million
  - 2022: $4.7 million
Constraint:
Taneytown to Carroll 138 kV Line

- Area: APS
- Congestion:
  2019: $24.6 million
  2022: $13.6 million
Constraint:
Cordova to Nelson 345 kV Line

- Area: ComEd
- Congestion:
  - 2019: $9.7 million
  - 2022: $12.4 million
- Potential Upgrade:
  - S0704: Reconductor 0.4 miles of 345 kV line 15503 from Cordova to Nelson and replace breaker leads at Nelson
Constraint:
Lorreto to Wilton CTR 345 kV Line

- Area: ComEd
- Congestion:
  - 2019: $2.8 million
  - 2022: $8 million
Constraint: Fieldale to Thornton 138 kV Line

- **Area:** AEP
- **Congestion:**
  - 2019: $2.1 million
  - 2022: $8.5 million
- **Notes:**
  - Circuit from Fieldale-Thornton-Franklin would need to be upgraded
Constraint:
Charlottesville to Proffit DP 230 kV Line

- Area: DOM
- Congestion:
  2019: $1.4 million
  2022: $2.9 million
Constraint:
Sub 56 (Davenport) to East Calamus 161 kV Line

- Area: M2M
- Congestion:
  - 2019: $3.5 million
  - 2022: $19.3 million
Constraint: Bunsonville to Eugene 345 kV Line

- Area: M2M
- Congestion:
  - 2019: $4.6 million
  - 2022: $12.9 million
- AMEREN and AEP upgrade in 2015 anticipated to remove this congestion
- Upgrade will be added to base case and results will be updated
Constraint:
Racine to Pleasant Prairie 345 kV Line

- Area: M2M
- Congestion:
  2019: $1.6 million
  2022: $3.2 million
- ATC uprating line expected in February 2015
- Upgrade will be added to base case and results will be updated
Constraint:
Roseland-Cedar Crove-Clifton 230 kV corridor

- Area: PSEG
- Capacity import limitations and thermal overloads at the CETL for following modeled LDAs
  - PS
  - PS North
2014 Market Efficiency Acceleration Candidates

• Study of approved RTEP projects for accelerations and modifications
  ➢ Compare congestion for near term vs. future topology
  ➢ Estimate economic impact of accelerating planned upgrades

• No previously approved RTEP projects subject to B/C acceleration analysis
  ➢ Approved projects with impact are either already under construction or can’t be advanced

• Investigating if ISD of Crescent transformer can be advanced
  ➢ Operate with the Crescent 345/138 kV #3 autotransformer in-service by replacing 8 over dutied 138 kV breakers at Crescent, 3 138 kV breakers at Beaver Valley, install #1 section 345 kV breaker for 331 circuit at Crescent
  ➢ Listed as Market Efficiency congested facility
Questions?

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