Market Efficiency RTEP Proposal Window
Market Efficiency RTEP Proposal Window Status

- Window opened on 8/12/2013
- Closed on 9/26/2013
- 17 individual proposals addressing congestion from Market Efficiency Analysis
- 6 entities

Project Naming Convention
- Project Identification Taxonomy: 2013_1-1A
<table>
<thead>
<tr>
<th>Project ID</th>
<th>Proposing Company</th>
<th>Project Description</th>
<th>Zone</th>
<th>Voltage Level</th>
<th>Expected In-Service date</th>
<th>Estimated Project Costs ($millions)</th>
<th>Identified Constraint Relief</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013_2-1A</td>
<td>Commonwealth Edison (Exelon)</td>
<td>Re-sag transmission line: Zion Energy Center 345 kV to Zion 345 kV</td>
<td>COMED</td>
<td>345 kV</td>
<td>2015</td>
<td>0.9</td>
<td>Zion 345 kV to Zion 345 kV</td>
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<tr>
<td>2013_2-1B</td>
<td>Commonwealth Edison (Exelon)</td>
<td>Upgrade switch on L11323 between Haumesser Rd 138 kV and West Dekalb Tap 138 kV</td>
<td>COMED</td>
<td>138 kV</td>
<td>2015</td>
<td>0.2</td>
<td>Haumesser Road 138 kV to West Dekalb Tap 138 kV</td>
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<tr>
<td>2013_2-1C</td>
<td>Commonwealth Edison (Exelon)</td>
<td>Re-sag transmission line: Loretto 345 kV to Wilton Center 345 kV</td>
<td>COMED</td>
<td>345 kV</td>
<td>2015</td>
<td>6.1</td>
<td>Streator Cayuga Ridge Wind Farm 345 kV to Wilton CTR 345 kV</td>
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<tr>
<td>2013_2-2A</td>
<td>Dominion Virginia Power</td>
<td>Install a Thyristor-controlled series capacitor on Loudoun 500 kV to Meadow Brook 500 kV Line at Loudoun</td>
<td>DOM</td>
<td>500 kV</td>
<td>2017</td>
<td>24.6</td>
<td>AP South</td>
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<tr>
<td>2013_2-2B</td>
<td>Dominion Virginia Power</td>
<td>Install a Thyristor-controlled series capacitor on Morrisville 500 kV to Front Royal 500 kV at Morrisville</td>
<td>DOM</td>
<td>500 kV</td>
<td>2017</td>
<td>20.1</td>
<td>AP South</td>
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<td>2013_2-2C</td>
<td>Dominion Virginia Power</td>
<td>Install a Thyristor-controlled Series Capacitor on Mt. Storm 500 kV to Meadow Brook 500 kV at Mt. Storm</td>
<td>DOM</td>
<td>500 kV</td>
<td>2017</td>
<td>24.7</td>
<td>AP South</td>
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<tr>
<td>2013_2-3A</td>
<td>Duke-ATC</td>
<td>Install a new DARTC 8 345 kV substation; Install a new DARTC 8 to Woodsdale 345 kV line</td>
<td>DEOK</td>
<td>345 kV</td>
<td>2020</td>
<td>25.0</td>
<td>Miami Fort 345/138 kV transformer; Pierce - Beckford 138 kV; Miami Fort - Hebron 138 kV</td>
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<tr>
<td>2013_2-4A</td>
<td>First Energy</td>
<td>Install 600 MVAR series capacitors on Jacks Mt - Keystone 500 kV &amp; Jacks Mt - Conemaugh 500 kV; and 400 MVAR series capacitors on each (2) Jacks Mt - Juniata 500 kV lines</td>
<td>PENELEC</td>
<td>500 kV</td>
<td>2017</td>
<td>54.3</td>
<td>AP South; Hunterstown 230/115 kV; Pruntytown to Mt Storm 500 kV</td>
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<td>2013_2-4B</td>
<td>First Energy</td>
<td>Install 2nd Hunterstown 230/115 kV transformer; Reconduct Hunterstown - Oxford 115 kV line</td>
<td>METED</td>
<td>230 kV</td>
<td>2017</td>
<td>8.0</td>
<td>Hunterstown 230/115 kV</td>
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<td>2013_2-4C</td>
<td>First Energy</td>
<td>Install +240/-150 MVAR SVC designed with 100 MVAR static capacitor bank at Lakeshore substation</td>
<td>ATSI</td>
<td>138 kV</td>
<td>2017</td>
<td>61.7</td>
<td>Cleveland Interface</td>
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<td>Project ID</td>
<td>Proposing Company</td>
<td>Project Description</td>
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<tr>
<td>2013_2-8A</td>
<td>Northeast Transmission Development (LS Power)</td>
<td>Install new Erie West - Ashtabula 345 kV line and new 345/138 kV transformer at Ashtabula</td>
<td>PENELEC/ATSI</td>
<td>345 kV</td>
<td>2018</td>
<td>44.9</td>
<td>Cleveland Interface</td>
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<tr>
<td>2013_2-8B</td>
<td>Northeast Transmission Development (LS Power)</td>
<td>Install new Hunterstown - Cumberland 230 kV line and substation improvements</td>
<td>METED/PPL</td>
<td>230 kV</td>
<td>2018</td>
<td>63.9</td>
<td>Hunterstown 230/115 kV Transformer; Three Mile Island – Jackson 230 kV Line</td>
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<tr>
<td>2013_2-8C</td>
<td>Northeast Transmission Development (LS Power)</td>
<td>Install new series compensation station on the existing Steele-Vienna 230 kV transmission line</td>
<td>DPL</td>
<td>230 kV</td>
<td>2016</td>
<td>10.6</td>
<td>Wye Mills – Longwoods 69 kV Line; Milford – Cool Springs 230 kV Line</td>
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<tr>
<td>2013_2-8D</td>
<td>Northeast Transmission Development (LS Power)</td>
<td>Install a new 500/138 kV substation on the existing Conemaugh Hunterstown 500 kV line; Install a new 138 kV substation: Install a new approximately 6-mile double-circuit transmission line connecting these two new substations.</td>
<td>PN/ME/APS</td>
<td>500 kV</td>
<td>2018</td>
<td>61.7</td>
<td>AP South; Hunterstown 230/115 kV Transformer</td>
</tr>
<tr>
<td>2013_2-8A</td>
<td>Transource Energy</td>
<td>Install a new 500 kV substation with series capacitors to compensate the Mt. Storm – Doubs 500 kV line. Upgrade of control systems for the series capacitors at the Kanawha River station on the Kanawha River – Matt Funk 345 kV line.</td>
<td>AEP</td>
<td>500 kV</td>
<td>2018</td>
<td>39.3</td>
<td>AP South; AEP-DOM Interface</td>
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<tr>
<td>2013_2-8B</td>
<td>Transource Energy</td>
<td>Install a new 138 kV substation in the vicinity of Pleasant Valley substation that connects two of the four 138 kV lines between the Pleasant Valley and Juniper substations. This substation would include a 100 MVAR capacitor bank and a ±350 / ±0 MVAR SVC.</td>
<td>ATSI</td>
<td>138 kV</td>
<td>2018</td>
<td>32.9</td>
<td>Cleveland Interface</td>
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<tr>
<td>2013_2-8C</td>
<td>Transource Energy</td>
<td>Install a new 500 kV substation with series capacitors to compensate the Mt. Storm – Doubs 500 kV line. Upgrade of control systems for the series capacitors at the Kanawha River station on the Kanawha River – Matt Funk 345 kV line. Additionally include series compensation for Mt. Storm-Meadowbrook 500 kV line.</td>
<td>AEP</td>
<td>500 kV</td>
<td>2018</td>
<td>63.3</td>
<td>AP South; AEP-DOM Interface</td>
</tr>
</tbody>
</table>
Market Efficiency Next Steps

- Post Redacted Proposals: November 2013
- Review Results: December 2013 – January 2014
- Recommendations to PJM Board: February 2014
Appendix A: Market Efficiency Proposal Descriptions
Market Efficiency Proposal 2013_2-1A

• Description
  ➢ ComEd Zone
  ➢ Re-sag transmission line: Zion Energy Center 345 kV to Zion 345 kV

• Project Details:
  ➢ Proposed by: Exelon
  ➢ Expected ISD: 2015
  ➢ Estimated Project Cost: $0.915 M

• Posted constraints targeted:
  ➢ Zion 345 kV to Zion 345 kV
• Description
   ComEd Zone
   Upgrade switch on L11323 between Haumesser Rd 138 kV and West Dekalb Tap 138 kV

• Project Details:
   Proposed by: Exelon
   Expected ISD: 2015
   Estimated Project Cost: $0.19 M

• Posted constraints targeted:
   Haumesser Road 138 kV to West Dekalb Tap 138 kV
• Description
  ➢ ComEd Zone
  ➢ Re-sag transmission line: Loretto 345 kV to Wilton Center 345 kV

• Project Details:
  ➢ Proposed by: Exelon
  ➢ Expected ISD: 2015
  ➢ Estimated Project Cost: $6.1 M

• Posted constraints targeted:
  ➢ Streator Cayuga Ridge Wind Farm
    345 kV to Wilton Center 345 kV
Market Efficiency Proposal 2013 2-2A

• Description
  ➢ Dominion Zone
  ➢ Install a Thyristor-controlled series capacitor on Loudoun 500 kV to Meadow Brook 500 kV Line at Loudoun

• Project Details:
  ➢ Proposed by: Dominion Virginia Power
  ➢ Expected ISD: 2017
  ➢ Estimated Project Cost: $24.57 M

• Posted constraints targeted:
  ➢ ApSouth
Market Efficiency Proposal 2013 2-2B

- **Description**
  - Dominion Zone
  - Install a Thyristor-controlled series capacitor on Morrisville 500 kV to Front Royal 500 kV at Morrisville

- **Project Details:**
  - Proposed by: Dominion Virginia Power
  - Expected ISD: 2017
  - Estimated Project Cost: $20.07 M

- **Posted constraints targeted:**
  - ApSouth
Market Efficiency Proposal 2013_2-2C

- **Description**
  - Dominion Zone
  - Install a Thyrister-controlled series capacitor on Mt. Storm 500 kV to Meadow Brook 500 kV at Mt. Storm

- **Project Details:**
  - Proposed by: Dominion Virginia Power
  - Expected ISD: 2017
  - Estimated Project Cost: $24.73 M

- **Posted constraints targeted:**
  - ApSouth
Market Efficiency Proposal 2013  2-3A

• Description
  ➢ DEOK Zone
  ➢ Install a new DATC 8 345 kV substation; Install a new DATC 8 to Woodsdale 345 kV line

• Project Details:
  ➢ Proposed by: Duke-ATC
  ➢ Expected ISD: 2020
  ➢ Estimated Project Cost: $25 M

• Posted constraints targeted:
  ➢ Miami Fort 345/138 kV transformer; Pierce – Beckjord 138 kV; Miami Fort – Hebron 138 kV
Market Efficiency Proposal 2013_2-4A

- **Description**
  - PENELEC Zone
  - Install 600 MVAR series capacitors on Jacks Mtn - Keystone 500 kV & Jacks Mtn - Conemaugh 500 kV; and 400 MVAR series capacitors on each (2) Jacks Mtn - Juniata 500 kV lines

- **Project Details:**
  - Proposed by: First Energy
  - Expected ISD: 2017
  - Estimated Project Cost: $54.28 M

- **Posted constraints targeted:**
  - AP South; Hunterstown 230/115 kV; Pruntytown to Mt Storm 500 kV
Market Efficiency Proposal 2013 2-4B

• Description
  ➢ METED Zone
  ➢ Install 2nd Hunterstown 230/115 kV transformer; Reconductor Hunterstown - Oxford 115 kV line

• Project Details:
  ➢ Proposed by: First Energy
  ➢ Expected ISD: 2017
  ➢ Estimated Project Cost: $8 M

• Posted constraints targeted:
  ➢ Hunterstown 230/115 kV
Market Efficiency Proposal 2013_2-4C

- **Description**
  - ATSI Zone
  - Install +240/-150 MVAR SVC designed with 100 MVAR static capacitor bank at Lakeshore substation

- **Project Details:**
  - Proposed by: First Energy
  - Expected ISD: 2017
  - Estimated Project Cost: $61.7 M

- **Posted constraints targeted:**
  - Cleveland Interface
**Market Efficiency Proposal 2013 2-6A**

- **Description**
  - PENELEC/ATSI Zone
  - Install new Erie West - Ashtabula 345 kV line and new 345/138 kV transformer at Ashtabula

- **Project Details:**
  - Proposed by: Northeast Transmission Development (LS Power)
  - Expected ISD: 2018
  - Estimated Project Cost: $44.9 M

- **Posted constraints targeted:**
  - Cleveland Interface
• Description
  ➢ METED/PPL Zone
  ➢ Install new Hunterstown - Cumberland 230 kV line and substation improvements

• Project Details:
  ➢ Proposed by: Northeast Transmission Development (LS Power)
  ➢ Expected ISD: 2018
  ➢ Estimated Project Cost: $63.9 M

• Posted constraints targeted:
  ➢ Hunterstown 230/115 kV Transformer; Three Mile Island – Jackson 230 kV Line
• Description
  - DPL Zone
  - Install new series compensation station on the existing Steele-Vienna 230 kV transmission line

• Project Details:
  - Proposed by: Northeast Transmission Development (LS Power)
  - Expected ISD: 2016
  - Estimated Project Cost: $10.6 M

• Posted constraints targeted:
  - Wye Mills – Longwoods 69 kV Line; Milford – Cool Springs 230 kV Line
Market Efficiency Proposal 2013 2-6D

• Description
  - PENELEC/METED/APS Zones
  - Install a new 500/138 kV substation on the existing Conemaugh-Hunterstown 500 kV line; Install a new 138 kV substation: Install a new approximately 6-mile double-circuit transmission line connecting these two new substations

• Project Details:
  - Proposed by: Northeast Transmission Development (LS Power)
  - Expected ISD: 2018
  - Estimated Project Cost: $61.7 M

• Posted constraints targeted:
  - AP South; Hunterstown 230/115 kV Transformer
• Description
  - AEP Zone
  - Install a new 500 kV substation in with series capacitors to compensate the Mt. Storm – Doubs 500 kV line. Upgrade of control systems for the series capacitors at the Kanawha River station on the Kanawha River – Matt Funk 345 kV line
• Project Details:
  - Proposed by: TRANSOURCE
  - Expected ISD: 2018
  - Estimated Project Cost: $39.3 M
• Posted constraints targeted:
  - AP South; AEP-DOM Interface
Market Efficiency Proposal 2013 2-9C

- **Description**
  - AEP Zone
  - Same as project 2013_2-9A but with additional series compensation for Mt. Storm-Meadowbrook 500 kV Line.

- **Project Details:**
  - Proposed by: TRANSOURCE
  - Expected ISD: 2018
  - Estimated Project Cost: $63.3 M

- Posted constraints targeted:
  - AP South; AEP-DOM Interface
• Description
  - AEP Zone
  - Install a new 138 kV substation in the vicinity of Pleasant Valley substation that connects two of the four 138 kV lines between the Pleasant Valley and Juniper substations. This substation would include a 100 MVAr capacitor bank and a +350 / -0 MVAr SVC

• Project Details:
  - Proposed by: TRANSOURCE
  - Expected ISD: 2018
  - Estimated Project Cost: $32.87 M

• Posted constraints targeted:
  - Cleveland Interface