



**2016/17 PJM RTEP Long Term Proposal Window
Conastone-Graceton-Bagley Congestion Relief – Project 2**

Submitted by:

**PPL Electric Utilities Corporation (“PPL EU”) and
ATX East LLC**

REDACTED Version for Public Release



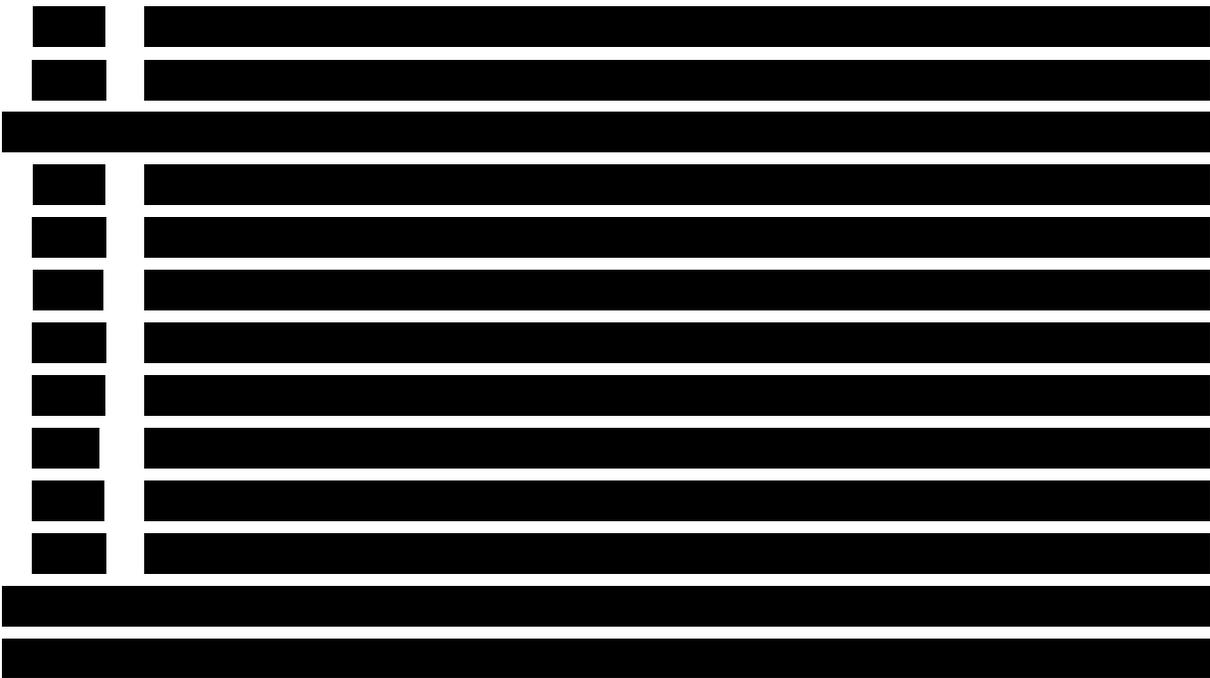


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A. Executive Summary

A.1. Introduction

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A.2. Name of proposing entity

This is a joint proposal submitted by the following Proposing Entities:

PPL Electric Utilities Corporation (“PPL EU”)

2 North 9th Street
Allentown, PA 18101

ATX East, LLC (ATX East)

1901 Chouteau Avenue, MC 635
St. Louis, MO 63166-6149

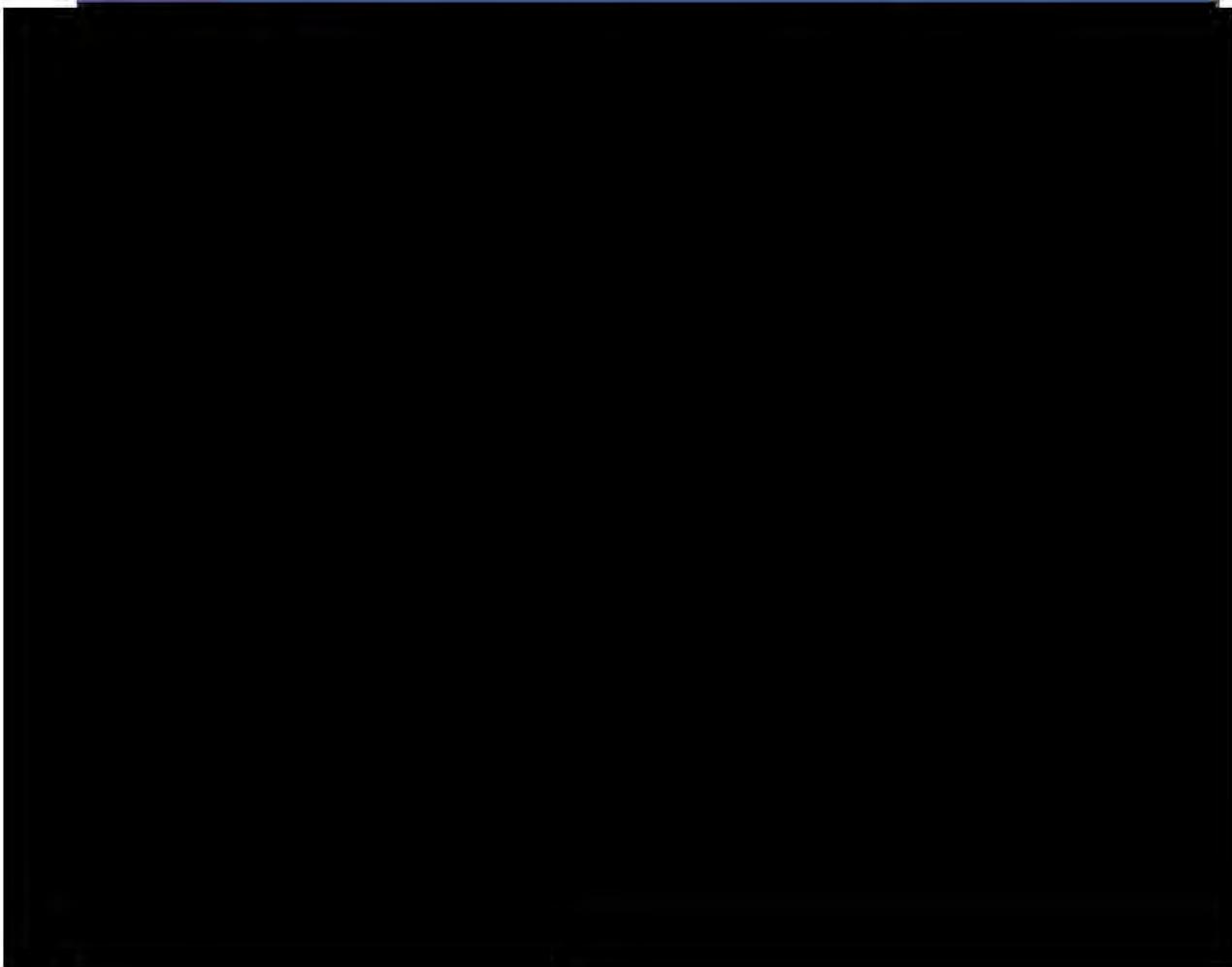
PPL EU and ATX East worked with Stantec Engineering, Contract Land Staff (CLS) and Jingoli Power to form an integrated team of subject matter experts (“Project Team”) to develop this proposal for PJM’s consideration.

A.3. Proposed Congestion Driver(s) Being Addressed

PPL EU and ATX East propose a project to:

- Completely resolve the congestion on ME-2; the Graceton to Bagley 230kV line;
- Resolves over 99.99% of the congestion on ME-1; the Graceton to Conastone 230kV line;
- Partially resolve the congestion on the Conastone – Peach Bottom 500 kV line;
- Partially resolve the congestion on the 5004/5005 Interface for the loss of the Hoptacong – Lackawanna 500 kV line and
- Partially resolve the congestion on the AP South Interface for the loss of the Beddington - Black Oak 500 kV line.

These flowgates were identified in the problem statement of the 2016/17 RTEP Long Term Proposal Window. Chart A.3.1, Flowgate Congestion Totals below shows the congestion for the base case (“BC”) and project case (“PC”) on the Graceton – Bagley 230kV line, Conastone - Graceton 230kV line, Conastone – Peach Bottom 500 kV line, 5004/5005 Interface for the loss of Hoptacong – Lackawanna 500 kV line, and the AP South Interface for the loss of Beddington - Black Oak 500 kV line.



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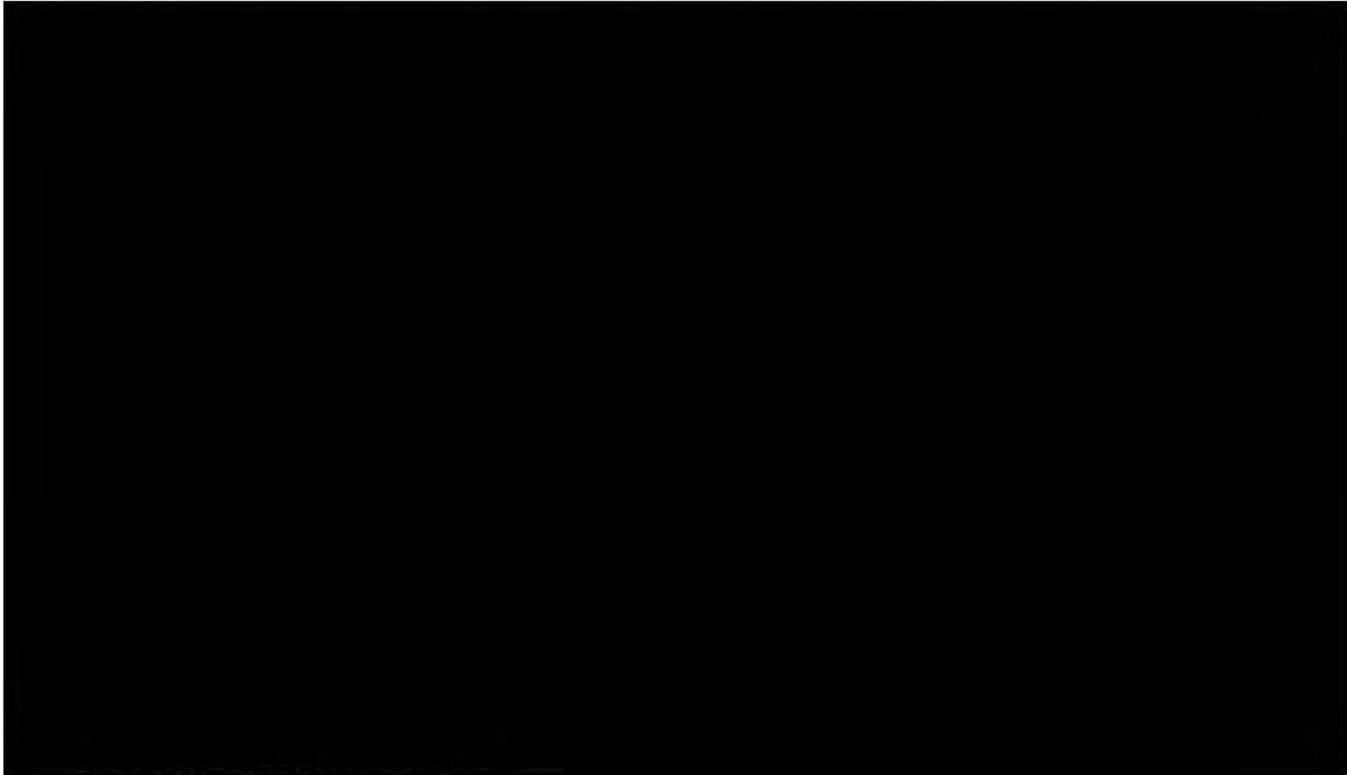


Chart A.3.1 – PJM Congestion Totals

A.4. Additional Violations Caused/Not Addressed

The proposed project does not cause any reliability violations.

A.5. PJM Zones or Neighboring Balancing Authority

The proposed project is located within the Baltimore Gas and Electric (“BG&E”) zone in MD and the Philadelphia Electric Company (“PECO”) zone in PA. The vast majority of the project is located within the BGE zone in Maryland.

A.6. Project Responsibility

The Proposing Entities (PPL EU and ATX East) intend to jointly construct, operate and maintain the project. If PJM awards the project to PPL EU and ATX East, the ownership of the Project will be divided as follows:

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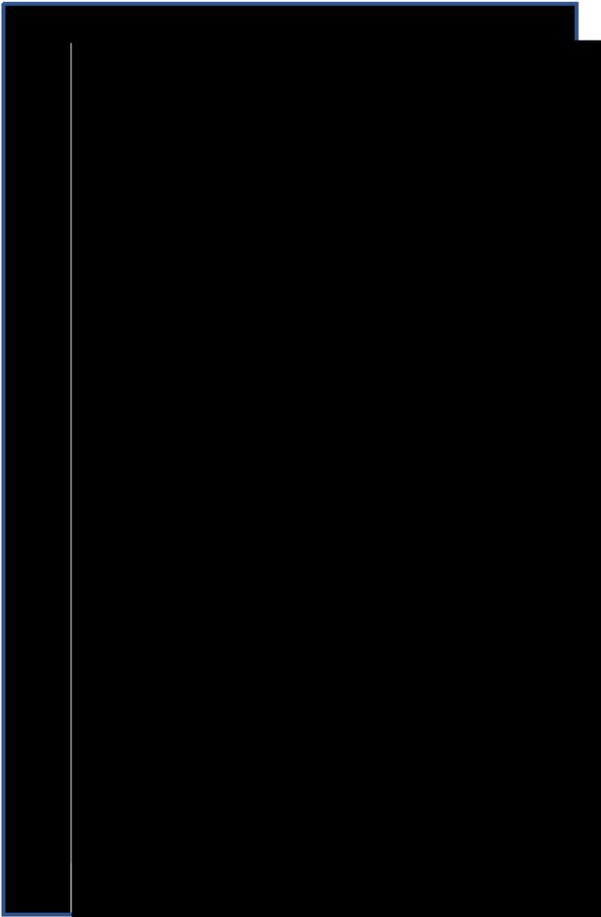


As further discussed in Section G of this proposal, each proposing entity will maintain legal responsibility for the operation and maintenance of their transmission facilities. However, ATX East will contract with PPL EU to coordinate and perform all operations and maintenance activities for all greenfield transmission components to be constructed on the proposed project on behalf of ATX East.

A.7. Description of Proposed Solution

PPL EU and ATX East propose a project to completely resolve the congestion on the Graceton to Bagley 230kV kV line as identified in the problem statement of the 2016/17 PJM RTEP Long Term Proposal Window. The Proposing Entities propose to construct the following greenfield components and propose that the following brownfield components be constructed by the incumbents (Baltimore Gas & Electric and Philadelphia Electric Company). Reference Figure A.7 below for the proposed location of each component:

- **Component 1 (Greenfield):** Build a new 230/115 kV substation called Baldwin. The substation will have two 230/115 kV transformers. The transformers will connect to the 115 kV main busses of a 4 position breaker and a half 115 bus arrangement. The 115 kV breaker and a half arrangement will serve to loop in both Windy Edge – Five Fork 115 kV lines. The 230/115 kV transformers will be directly tied into the Baldwin – Raphael Road 230 kV lines.
- **Component 2 (Greenfield; purple line):** A new double circuit 230 kV line from Peach Bottom to Otter Point.
- **Component 3 (Greenfield; yellow line):** A new double circuit 230 kV line from Raphael Road to Baldwin.
- **Component 4 (Brownfield; red line):** Rebuild the sections of 115 kV lines 110512 and 110511 between Windy Edge and Baldwin





- **Component 5 (Brownfield; red line):** Reconductor the sections of existing double circuit 230 kV line (2315 and 2337) between Raphael Road and Northeast.
- **Component 6 (Brownfield; orange line):** Reconductor the sections of existing double circuit 230 kV line (2360 and 2361) between Raphael Road and Otter Point.
- **Component 7 (Brownfield):** Add two new positions at the 230 kV Otter Point substation.
- **Component 8 (Brownfield):** Add two new positions at the 230 kV Raphael Road Substation.
- **Component 9 (Brownfield):** Add two new positions at the 230 kV Peach Bottom substation.

A.8. Description of Project Consideration

This project should be considered by PJM only as a whole.

A.9. Overview of Cost and Cost Commitment

PPL EU and ATX East have endeavored to develop a cost-effective solution that resolves the congestion drivers on the Conastone-Graceton-Bagley 230 kV line, while providing additional value to the ultimate customers using the transmission system. The parties have estimated the cost to develop, design, construct and commission the proposed transmission project at approximately \$178.3 million nominal (in-service) dollars. This includes the estimated cost of all the proposed upgrades by the incumbent TO(s).



A.10. Additional Benefits

In developing the proposed project, PPL EU and ATX East recognized that a project that simply upgrades or parallels the existing, congested transmission lines is not adequate for the following reasons:

- It will push congestion to the next line segments that are electrically downstream, which PJM is not monitoring in PROMOD; and
- The affected lines are presently being upgraded by the incumbent (anticipated in-service date of June 1, 2017) and any new project that involves a further additional rebuild or reconductor of these lines will result in the current upgrade investment becoming a stranded asset for the incumbent utility;
- A solution that parallels the existing line will require new right-of-way to be acquired by the incumbent utility and will create



PPL EU and ATX East **strongly encourage PJM to perform an analysis that monitors the additional flowgates which are identified in Section D of this proposal.** By including these additional flowgates in the analysis, the additional congestion created in the 230 kV and 115 kV systems will become apparent. In contrast, this analysis will highlight the more comprehensive solution proposed by PPL EU and ATX East not only mitigates the current congestion drivers but also will reduce any future congestion in the 230 kV or 115 kV voltage systems and creates a much more robust solution.

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B. Company Evaluation Information

This section is required to be completed by those proposing entities who are seeking Designated Entity status.

B.1. Name and Address of Entity

PPL Electric Utilities Corporation (“PPL EU”)

2 North 9th Street
Allentown, PA 18101

Primary Contact: Stephanie Raymond - Vice President
Telephone: 610-774-2146
E-Mail: SRaymond@pplweb.com

Secondary Contact: Joshua Trott
Telephone: 610-774-4506
E-Mail: JTrott@pplweb.com

ATX East, LLC (ATX East)

1901 Chouteau Avenue, MC 635
St. Louis, MO 63166-6149

Primary Contact: Sean Black – Director, Transmission Business Development
Telephone: 314-554-3844
E-Mail: sblack2@ameren.com

Secondary Contact: Kathy Thole – Manager, Transmission SBC and Development Support
Telephone: 314-554-2947
E-Mail: KThole@ameren.com

B.2. Pre-qualification submittal identification number

PPL EU (13-12):

PPL EU has been pre-qualified as a Designated Entity for transmission projects in PJM under section 1.5.8 (a) of the PJM Amended and Restated Operating Agreement. The pre-qualification information is contained in the document originally submitted to PJM dated December 22, 2016 entitled “PJM Developer Qualification Application”. This document is on file with PJM and is posted on PJM’s website, with a PJM pre-qualification ID of 13-12. The latest update of this document was submitted to PJM on December 22, 2016. PJM confirmed the pre-qualified status in a letter dated January 11, 2017.



ATX East (14-01):

Ameren Corporation and its Affiliate ATX East have been pre-qualified as a Designated Entity for transmission projects in PJM under section 1.5.8 (a) of the PJM Amended and Restated Operating Agreement. The pre-qualification information is contained in the document originally submitted to PJM dated March 5, 2014 entitled “Designated Entity Pre-Qualification Filing by Ameren”. This document is on file with PJM and is posted on PJM’s website, with a PJM pre-qualification ID of 14-01. The latest update of this document was submitted to PJM in September, 2016. PJM confirmed the pre-qualified status in a letter dated October 27, 2016.

B.3. Additional Company Information

B.3.a. PPL EU

Refer to PPL EU Qualified Transmission Developer Application. A copy of PPL financial statements can be accessed through the following link: [PPL 2016 10K](#)

B.3.b. ATX East

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C. Proposed Project Constructability Information

C.1. Component Scope

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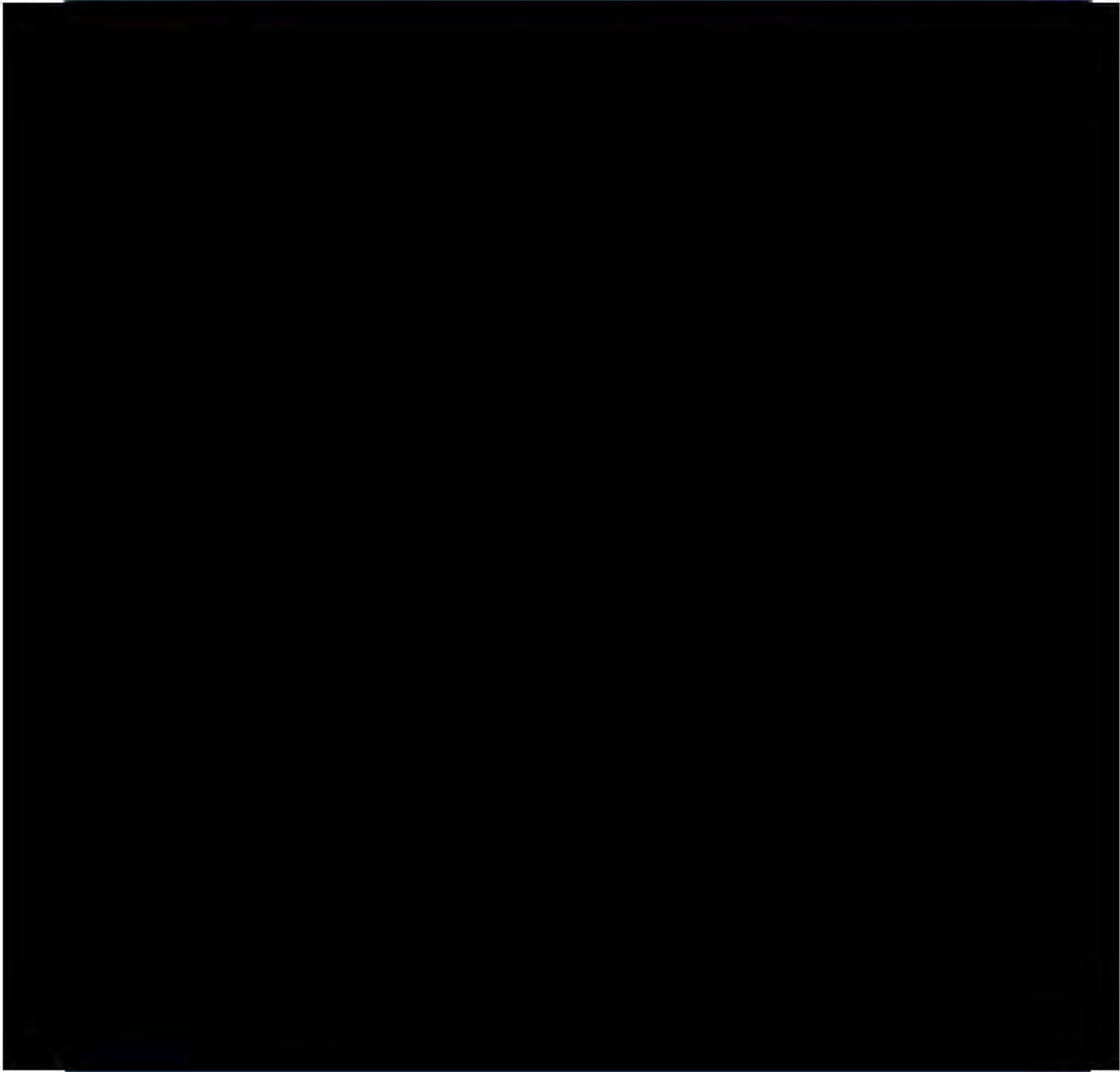
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C.6. Proposed Project Division of Responsibility

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C.7. Total Estimated Cost of Project

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D. Analytical Assessment

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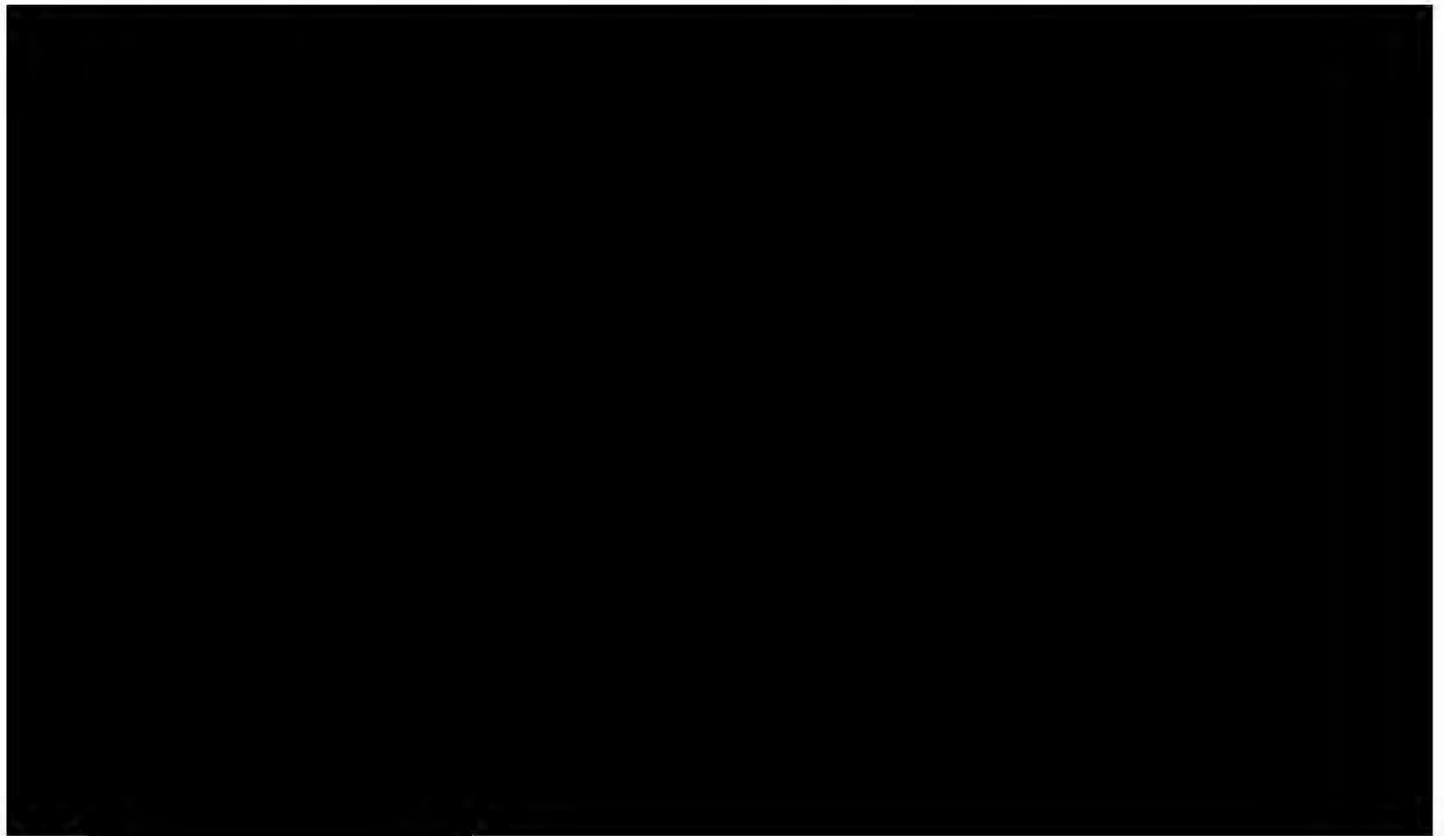
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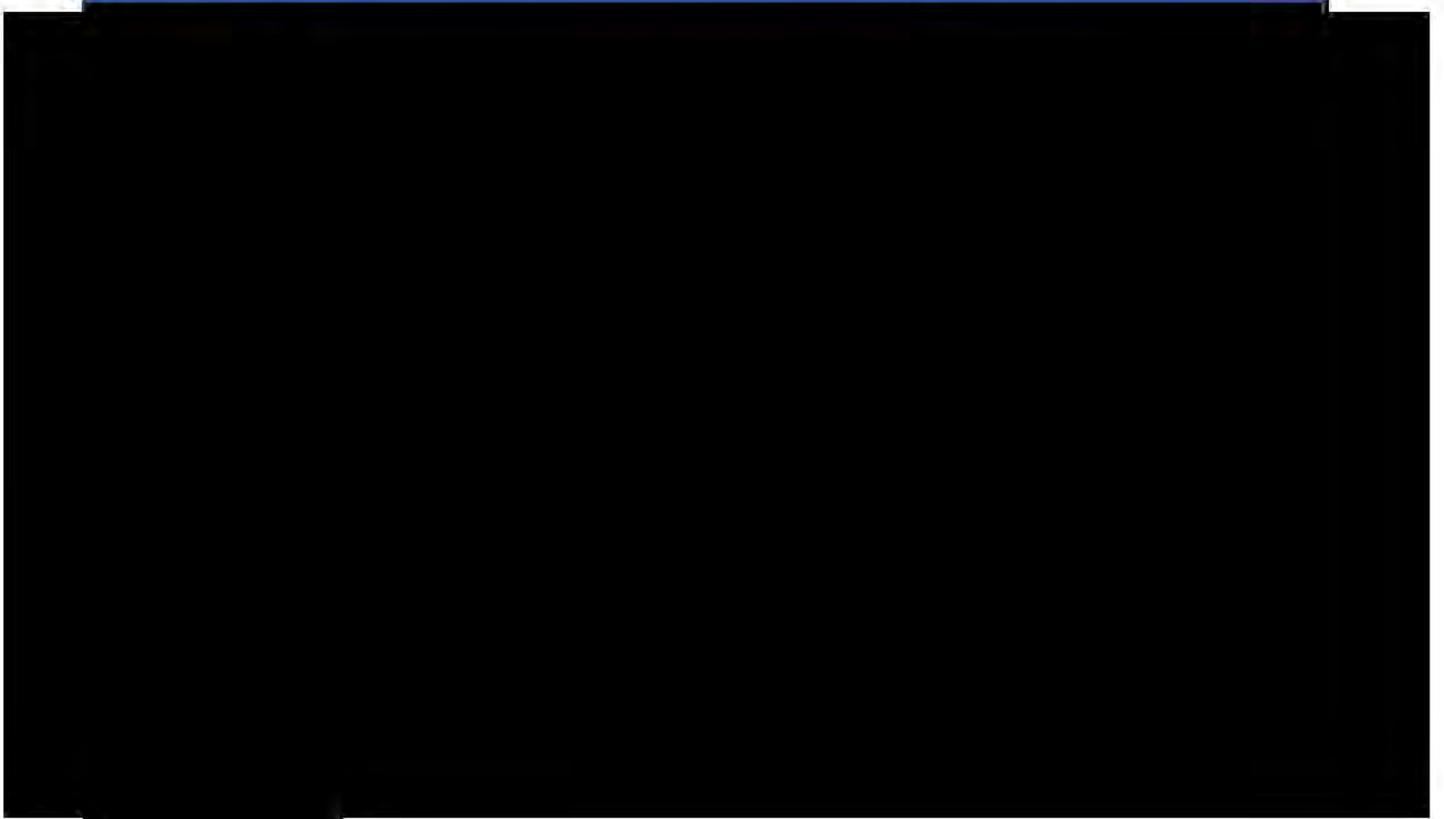
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E. Cost

E.1. Estimated Project Costs and Cash Flows

The overall project cost estimate and annual cash-flow developed by PPL EU and ATX East is summarized below in the format requested by PJM. The total project cost estimate is \$150.3 million in 2017 dollars¹ and \$178.3 million in nominal (in-service) dollars.

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¹ The estimated 2017 cost excludes AFUDC and Escalation but includes estimated project contingency.



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E.2. Proposed Capital Structure and Requested Return on Equity

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E.3. Estimated AFUDC

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E.4. Estimated Annual Operation and Maintenance (O&M) Costs

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