



**2016/17 PJM RTEP Long Term Proposal Window**  
**Conastone-Graceton-Bagley Congestion Relief – Project 1**

**Submitted by:**

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

**REDACTED Version for Public Release**







[Redacted]

C.7. Total Estimated Cost of Project ..... 65

D. Analytical Assessment..... 67

E. Cost ..... 75

    E.1. Estimated Project Costs and Cash Flows ..... 75

    E.2. Proposed Capital Structure and Requested Return on Equity ..... 77

    E.3. Estimated AFUDC..... 77

    E.4. Estimated Annual Operation and Maintenance (O&M) Costs ..... 77

[Redacted]

F. Project Schedule ..... 78

G. Operations/Maintenance ..... 79

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

H. List of Appendices ..... 86

## A. Executive Summary

### A.1. Introduction

[Redacted text block]



## 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 9<sup>th</sup> Street  
Allentown, PA 18101

### **ATX East, LLC (ATX East)**

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

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

PPL EU and ATX East propose a project to:

- Completely resolve the congestion on ME-1; the Graceton to Conastone 230kV line;
- Completely resolve the congestion on ME-2; the Graceton to Bagley 230kV line; and
- Partially resolve the congestion on the AP South Interface for the loss of the Bedington - 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 and AP South Interface for the loss of Beddington - Black Oak 500 kV line.

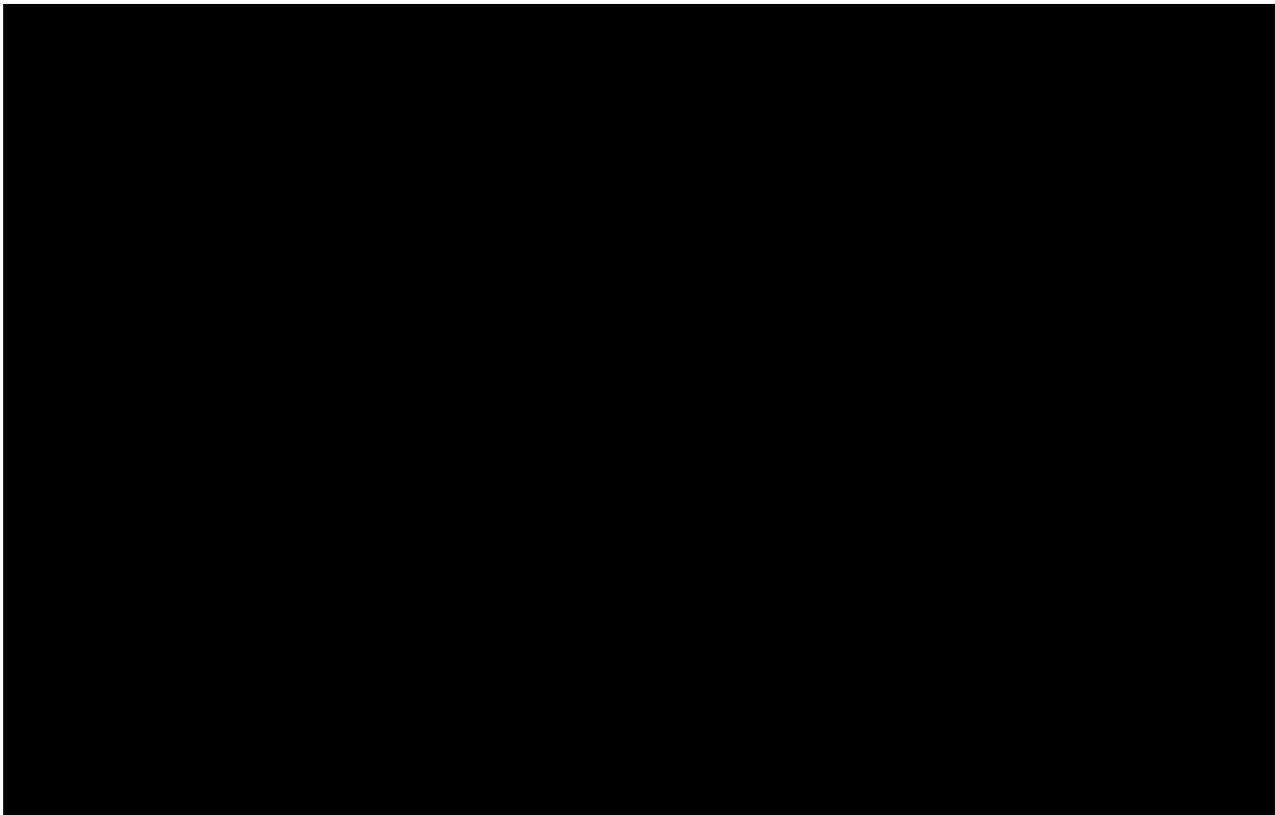
[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]



**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 entirely within the Baltimore Gas & Electric zone.

### 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:

[REDACTED]

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 [REDACTED]

[REDACTED]

### A.7. Description of Proposed Solution

PPL EU and ATX East propose a project to completely resolve the congestion on the Graceton to Conastone 230kV line and the Graceton to Bagley 230kV 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 and propose that the following brownfield components be constructed by the incumbent (Baltimore Gas & Electric). 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 consist of two 230/115 kV transformers. It will be arranged as a breaker and a half on the 230 kV and 115 kV sides with the transformers connecting to the main buses at both the 230 kV and 115 kV voltage level.
- **Component 2 (Greenfield; blue line):** Build a new double circuit 230 kV line between Conastone and Baldwin.
- **Component 3 (Greenfield; yellow line):** Build a new double circuit 230 kV line between Baldwin and Raphael Road.
- **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):** Add two new positions at 230 kV Conastone substation.
- **Component 7 (Brownfield):** Add two new positions at 230 kV Raphael Road 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 \$138.5 million in-service (nominal) dollars. This includes a fully developed cost estimate for all of the proposed upgrades to be constructed 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.

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 alleviate any future congestion in the lower voltage systems and creates a much more robust solution.

[Redacted text block]

[Redacted text block]

[Redacted text block]

[Redacted text line]

[Large redacted text block]

[Redacted text block]



## 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 9<sup>th</sup> Street  
Allentown, PA 18101

**Primary Contact:** Stephanie Raymond - Vice President  
Telephone: 610-774-2146  
E-Mail: [SRaymond@pplweb.com](mailto:SRaymond@pplweb.com)

**Secondary Contact:** Joshua Trott  
Telephone: 610-774-4506  
E-Mail: [JTrott@pplweb.com](mailto: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](mailto:sblack2@ameren.com)

**Secondary Contact:** Kathy Thole – Manager, Transmission SBC and Development Support  
Telephone: 314-554-2947  
E-Mail: [KThole@ameren.com](mailto: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’s Qualified Transmission Developer Application. A copy of the PPL financial statements can be accessed through the following link: [PPL 2016 10K](#)

**B.3.b. ATX East**

[Redacted]

[Redacted]

[Redacted]



[Redacted text block]

- [Redacted list item]

[Redacted text block]

[Redacted text block]

[Redacted text block]

[Redacted text block]

[Redacted]

- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]

[Redacted text block]



[Redacted text block]

[Redacted text block]

[Redacted text block]

[Redacted text block]

[Redacted text block]

[Redacted text block]

[Redacted text block]

[Redacted text block]

[Redacted text block]

[Redacted text block]

[Redacted text block]

[Redacted text block]

[Redacted text block]

[Redacted text block]

[Redacted text block]

[Redacted text block]

[Redacted text block]

[Redacted text block]

[Redacted text block]

[Redacted text block]

[Redacted text block]

[Redacted text block]

[Redacted text block]

[Redacted text block]

## C. Proposed Project Constructability Information

### C.1. Component Scope

[Redacted content]

[Redacted text block]

[REDACTED]

[Redacted text block]

[Redacted]

[Redacted]

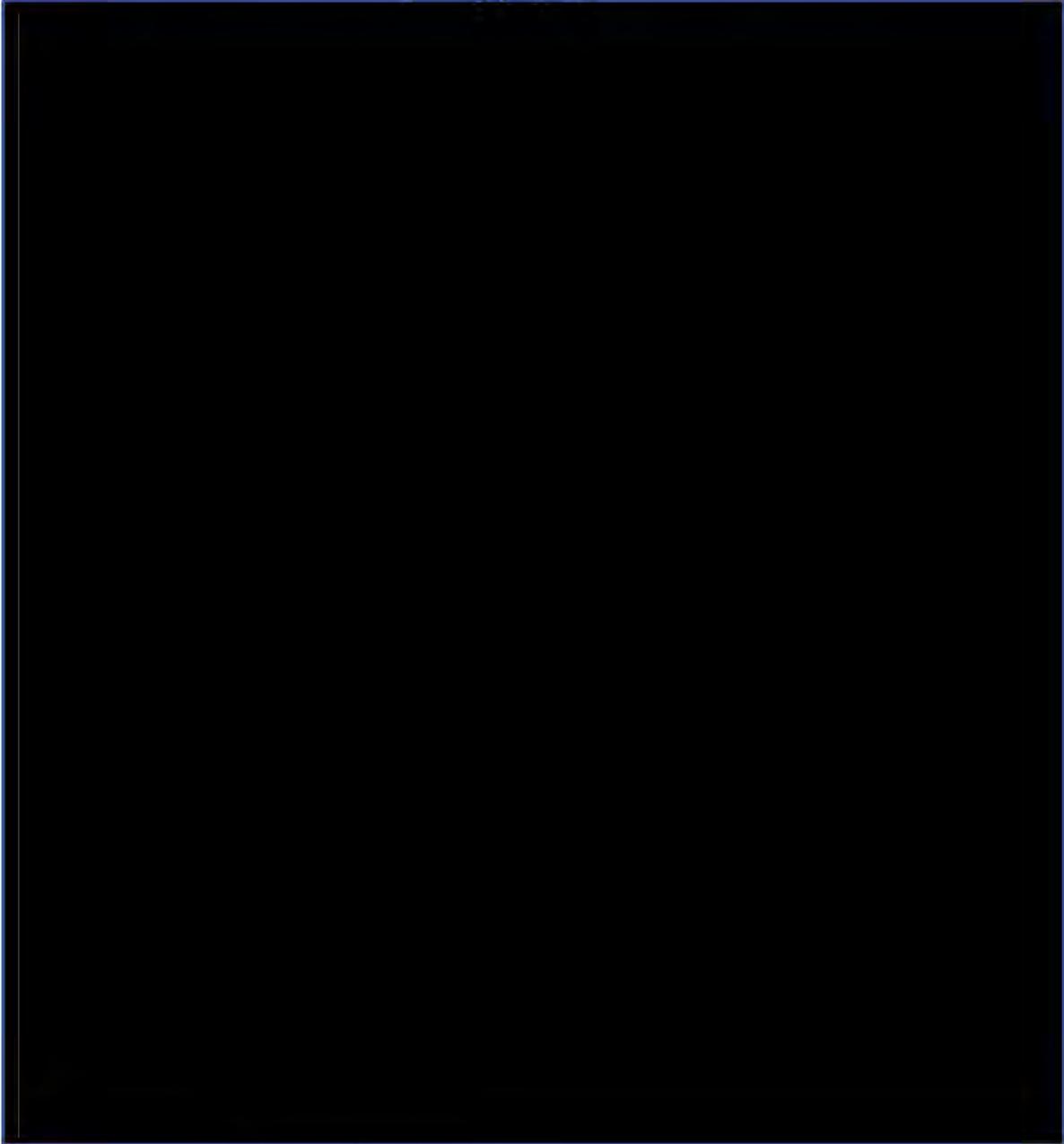
[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted text block]



[Redacted text block consisting of multiple lines of blacked-out content]

[REDACTED]

[Redacted text block]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[Redacted text block]

[REDACTED]

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

[REDACTED]

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

[REDACTED]

[REDACTED]

[Redacted text block]

[REDACTED]

[REDACTED]

[REDACTED]

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

[REDACTED]

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

[REDACTED]

- [REDACTED]

[REDACTED]

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[Redacted text block]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

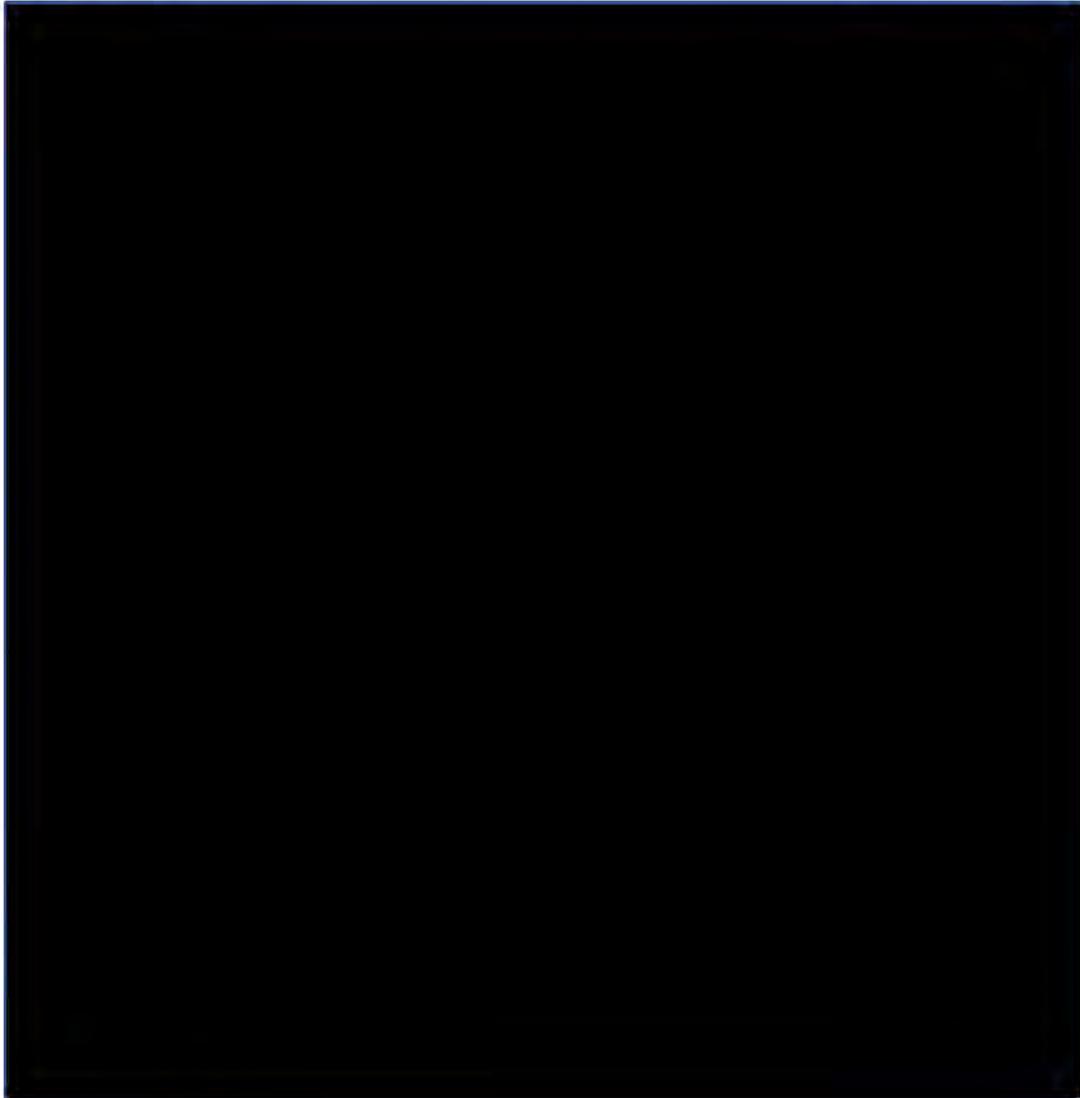
[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]



[Redacted]

[Redacted text block containing multiple paragraphs of blacked-out content]



[Redacted text block]

[Large redacted text block]

[Redacted text block]

[Redacted text block]

## D. Analytical Assessment

[Redacted text block]

[Redacted text]

[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]

[Redacted text block]

[Redacted text]

[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]

[Redacted text block]

[Redacted text block]

[Redacted text block]

[Redacted]

- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]

[Redacted]

[Redacted]

- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]

[Redacted]

[Redacted text block]

[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]

[Redacted text block]

[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]

[Redacted text block]

[Redacted text block]

[Redacted text block]

[Redacted text block]

[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]

[Redacted text block]

[Redacted text block]

[Large redacted text block]

[Redacted text block]

[Redacted text block]

[Redacted text block]



[Redacted text block]

[Redacted text block]



[Redacted text block]

[Redacted text block]

[Redacted text]

[Redacted]	[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]	[Redacted]
[Redacted]	[Redacted]	[Redacted]	[Redacted]

[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]



[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

## 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 \$118 million in 2017 dollars<sup>1</sup> and \$138.5 million in nominal (in-service) dollars [Redacted]

[Redacted]

---

<sup>1</sup> The estimated 2017 cost excludes AFUDC and Escalation but includes estimated project contingency.

[Redacted text block]

[Redacted text block]

[Large redacted text block]

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

[Redacted]

- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]

[Redacted]

[Redacted]

### E.3. Estimated AFUDC

[Redacted]

[Redacted]



[Redacted text block]

[Redacted text block]

[Redacted text block]

## F. Project Schedule

A Level 1 project schedule is attached as Appendix I.

[Redacted text block]



The proposed project in-service date is May 31, 2022.

[Redacted text block]

[Redacted text block]

[Redacted text block]

[Redacted text block]

### G. Operations/Maintenance

[Redacted text block]

[Redacted content]