

**JOINT PRE-FILED SUPPLEMENTAL DIRECT TESTIMONY**

**OF**

**PHILIP J. WALNOCK**

**AND**

**STEPHANIE A. BRIGGS**

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1 **I. Introduction and Qualifications**

2 **Philip J. Walnock**

3 **Q. Mr. Walnock, please state your name and business address.**

4 A. My name is Philip J. Walnock. My business address is 2 North 9<sup>th</sup> Street, Allentown, PA  
5 18101.

6

7 **Q. Are you the same Philip J. Walnock who submitted pre-filed direct testimony in this**  
8 **proceeding on November 18, 2022?**

9 A. Yes.

10

11 **Q. Are you still the Director, Product Portfolio – Field Operations & Metering?**

12 A. Yes.

13

14 **Stephanie A. Briggs**

15 **Q. Ms. Briggs, please state your full name and business address.**

16 A. My name is Stephanie A. Briggs, and my business address is 280 Melrose Street,  
17 Providence, Rhode Island 02907.

18

19 **Q. Are you the same Stephanie A. Briggs who submitted pre-filed direct testimony in**  
20 **this docket on November 18, 2022?**

21 A. Yes.

1 **Q. Are you still the Senior Manager of Revenue and Rates for PPL Services**  
2 **Corporation?**

3 A. Yes.  
4

5 **II. Purpose, Background and Structure of Joint Testimony**

6 **Q. Please describe the purpose of your joint supplemental testimony in this proceeding.**

7 A. The purpose of this supplemental testimony is to provide information on certain topics  
8 identified by the Rhode Island Public Utilities Commission (“Commission”) in a  
9 Memorandum from Commission counsel dated May 12, 2023 (the “Memorandum”) as a  
10 follow-up to the May 10, 2023 Technical Session regarding the contractual arrangements  
11 with the Company’s metering vendor, Landis+Gyr Technology, Inc. (“Landis+Gyr”).  
12

13 **Q. How is your joint supplemental testimony structured?**

14 A. Sections I and II include an Introduction and Qualifications, and the Purpose,  
15 Background, and Structure of the Testimony, respectively. Section III discusses why the  
16 contractual arrangement with Landis+Gyr is the most cost-effective metering solution for  
17 Rhode Island, including a discussion of the history of the Company’s indirect parent  
18 company, PPL Corporation’s (“PPL”), relationship with Landis+Gyr, the key synergies  
19 that result from using the Landis+Gyr technology platform for Rhode Island, and an  
20 overview of the contractual arrangements (Memorandum, Question #1). Section IV  
21 explains why Landis+Gyr’s contractual pricing is reasonable (Memorandum, Question

1 #2) and presents the cost comparisons PPL performed to assess reasonableness. Section  
2 V discusses how the costs under the Software as a Service and Services Agreement  
3 (“SaaS Agreement”) and the AMF Program and TSA Exit Program Statement of Work  
4 (“Statement of Work”) will be tracked separately and allocated between work related to  
5 the Transition Services Agreement (“TSA”) and AMF-specific work (Memorandum,  
6 Questions #3). Section VI presents a calculation of the amount of SaaS Agreement  
7 service fees (“Service Fees”) to be paid to Landis+Gyr over a forecasted 20-year period  
8 and how those Service Fees compare to the Company’s benefit-cost analysis (“BCA”) in  
9 the AMF Business Case (Memorandum, Questions #4, #6). Section VII discusses how  
10 the costs in the Statement of Work and the SaaS Agreement Service Fees tie to the  
11 Company’s illustrative revenue requirement in Schedule SAB/BLJ-1 and its responses to  
12 related data requests (Memorandum, Questions #5). Section VIII discusses the  
13 Company’s procurement process for the other products and services included in the AMF  
14 BCA (Memorandum, Question #7). Section IX is the conclusion.

15  
16 **Q. Are you sponsoring any attachments in support of your joint testimony?**

17 **A.** Yes, the Company is including the following attachments:

- 18 • Attachment A: Rhode Island Energy PowerPoint presentation from the May 10,  
19 2023 Technical Session

- 1 • Attachment B: Excel spreadsheet comparing the Landis+Gyr Service Fees in the
- 2 SaaS Agreement to the BCA and reflected in the illustrative revenue requirement
- 3 in Schedule SAB/BLJ-1 and Data Request PUC 1-14 **CONFIDENTIAL**
- 4 • Attachment C: PPL Electric’s Accounting Policies and Procedures No. 615
- 5

6 **III. Landis+Gyr is the Most Cost-Effective Metering Solution for Rhode Island**

7 **Q. How did Rhode Island Energy determine that the Landis+Gyr solution provided the**

8 **best value for Rhode Island customers?**

9 A. First, as discussed in greater detail later in the testimony, Rhode Island Energy looked to

10 PPL’s long-standing history with Landis+Gyr, which includes a successful

11 implementation and ongoing operations in Pennsylvania and an in-progress deployment

12 in Kentucky. Second, there are notable synergies in aligning Rhode Island Energy with

13 the Landis+Gyr technology platform that reduce costs to Rhode Island customers and

14 mitigate implementation risk. Using another provider would require the Company to

15 develop new systems for a different technology platform, resulting in increased costs and

16 implementation risk. Finally, PPL performed a comparison of the cost to implement

17 AMF in Pennsylvania with the Landis+Gyr costs for Rhode Island and compared those

18 costs to National Grid’s<sup>1</sup> costs in Docket No. 5113. PPL concluded that using the

19 Landis+Gyr solution provided valuable synergies and cost savings for Rhode Island

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<sup>1</sup> The term “National Grid” is used to refer to The Narragansett Electric Company under National Grid USA’s ownership, as distinguished from the rebranded entity that is Rhode Island Energy. When referring to “National Grid USA” as the former owner of Narragansett, this testimony will use that precise term.

1 customers.

2

3 **A. History and Background**

4 **Q. Who is Landis+Gyr?**

5 A. Landis+Gyr is a publicly listed, multinational corporation operating in more than 30  
6 countries and headquartered in Cham, Switzerland. Landis+Gyr makes meters and  
7 related software for electric and gas utilities. Landis+Gyr has served as the preferred  
8 provider of advanced metering solutions for PPL’s affiliate companies since 2014.

9

10 **Q. How long has Landis+Gyr been in the energy management business?**

11 A. Landis+Gyr was established in 1896 and has been an industry leader in energy  
12 management solutions for more than 125 years. Since then, Landis+Gyr has become the  
13 leading global provider of Smart Metering, Grid Edge Intelligence, and Smart  
14 Infrastructure solutions. Landis+Gyr has more than 25 years of experience designing and  
15 delivering licensed, Software as a Service/hosted, and full Managed Services utility  
16 network solutions, which support automated meter reading (“AMR”), advanced metering  
17 infrastructure (“AMI”), Distribution Automation, Demand Response, distributed energy  
18 resources (“DER”), and the emerging Internet of Things (“IoT”) networks, devices, and  
19 applications.

20

21

1 **Q. How many AMF implementations has Landis+Gyr performed?**

2 A. Landis+Gyr has installed more than 300 million devices, of which 150 million are  
3 connected to intelligence devices. In the United States, one in every six meters are on  
4 Landis+Gyr platforms, and more than 23 million meters are managed within  
5 Landis+Gyr’s cloud.

6  
7 **Q. Is there any other Landis+Gyr experience that you would like to highlight?**

8 A. Yes. Landis+Gyr is an acclaimed vendor in the industry. In 2021, Landis+Gyr was  
9 named a Top 10 AI Vendor for DER Integration by Guidehouse Insights in its  
10 Leaderboard Report. In 2022, Frost & Sullivan awarded Landis+Gyr with the 2022  
11 Global AMI Company of the Year Award.

12  
13 **Q. How did PPL select Landis+Gyr as its vendor?**

14 A. Initially, in 2014, PPL Electric Utilities Corporation (“PPL Electric”) conducted an RFP  
15 across the various AMI vendors and, as a result of that RFP process, selected Landis+Gyr  
16 in 2015. PPL Electric completed its AMI deployment from the end of calendar year 2019  
17 into the middle of calendar year 2020. In parallel with Pennsylvania, PPL’s relationship  
18 with Landis+Gyr continued in Kentucky, beginning with a pilot program in 2014 and  
19 moving into an opt-in program in the Louisville Downtown area with some expansion.



1 Landis+Gyr provided many of the AMI components.<sup>2</sup> See Attachment A, Slide 3.  
2 Kentucky is in the process of completing full deployment with more than 150,000 electric  
3 meters deployed to date.

4  
5 **Q. How would you assess Landis+Gyr’s performance in Pennsylvania and Kentucky?**

6 A. PPL has enjoyed a successful track record with Landis+Gyr. In particular, the  
7 Pennsylvania Public Utility Commission has noted that PPL’s AMF deployment in  
8 Pennsylvania was on time and on budget, as detailed in its 2020 Annual Smart Meter  
9 Progress Report.<sup>3</sup>

10

11 **Q. Why did Rhode Island Energy choose Landis+Gyr for the Rhode Island AMF**  
12 **deployment?**

13 A. Leveraging PPL’s experience, the Company’s proposed model for Rhode Island AMF  
14 implementation is based on the Pennsylvania model. There are significant synergies that  
15 result from Rhode Island using the same vendor as PPL’s other affiliates. Additionally,  
16 considering that PPL had conducted an RFP that resulted in the selection of Landis+Gyr,  
17 and since that time PPL has enjoyed a successful track record with Landis+Gyr, using

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<sup>2</sup> See May 10, 2023 Technical Session, Tr. at 18-19.

<sup>3</sup> See PPL Electric Utilities Corporation’s 2020 Annual Smart Meter Progress Report (filed August 31, 2020) and 2021 Annual Smart Meter Progress Report (filed August 31, 2021) at the following link:  
<https://www.puc.pa.gov/pcdocs/1717999.pdf>

1 Landis+Gyr for the Rhode Island AMF deployment provides the Company with  
2 confidence that the deployment will be done properly, efficiently, and cost effectively.

3  
4 **Q. Are there instances in which it is reasonable to use a sole source vendor in lieu of a**  
5 **competitive solicitation?**

6 A. Yes, there are circumstances that lend themselves to a sole source vendor. These include  
7 situations when there is only one known source that can provide the product or service, or  
8 when the products or services required are either unique or special in nature, required to  
9 be compatible with existing equipment systems, or involve limited or proprietary  
10 systems. Although Landis+Gyr is not the only vendor that deploys AMF, Landis+Gyr’s  
11 experience uniquely situates it as one of the top vendors in the industry. Additionally, the  
12 technology platform that has been implemented in Pennsylvania, and is being  
13 implemented in Kentucky, is proprietary to Landis+Gyr, which would make it difficult to  
14 leverage the synergies that exist from the use of the Landis+Gyr AMI technology  
15 platform and integrate it with meters from a different vendor for use in Rhode Island. In  
16 that sense, there is a compatibility issue that makes this the type of situation that lends  
17 itself to a sole source vendor.

18  
19 Further, the Revelo meters that Rhode Island Energy is proposing will provide  
20 capabilities that are unique to Landis+Gyr. These synergies and the continuity of the  
21 Landis+Gyr head-end system, network, and meters discussed below, make Landis+Gyr

1 the right choice for Rhode Island implementation of AMF.

2

3 Further, although Rhode Island Energy did not conduct a separate competitive solicitation  
4 that resulted in the selection of Landis+Gyr as its AMF vendor for Rhode Island, PPL  
5 initially selected Landis+Gyr through a competitive solicitation in 2014.

6

7 **B. Key Landis+Gyr Synergies For Rhode Island**

8 **Q. Please describe the Landis+Gyr solution components that are used in Pennsylvania  
9 and Kentucky and that are being proposed in Rhode Island.**

10 A. The following table shows the Landis+Gyr solution components that are used in  
11 Pennsylvania and Kentucky and the components that are proposed for Rhode Island.

AMF Category		PPL PA	PPL KY	RIE Proposed
<b>Systems</b>	Head End	X	X	X
	MDMS	X		X
	DER Monitor & Manage	X	TBD	TBD
<b>Network</b>	Hardware	X	X	X
	Installation Services	X		X
	Optimization Services	X	X	X
	Steady State Field Network Equipment Maintenance	X	TBD	TBD
<b>Meters</b>	Hardware	X	X	X
	Installation Services	X	X	

12

13

14 **Q. Please elaborate regarding each of these components.**

15 A. The Landis+Gyr head-end system, radio frequency (“RF”) network hardware, RF  
16 network optimization services, and meters are used in Pennsylvania and Kentucky and

1 proposed for Rhode Island. These three components are contiguous, in that they have  
2 direct compatibility across each other. Although it is possible to have a head-end system  
3 and network hardware from one vendor, and meters from another vendor, the result is  
4 less efficient because the components do not speak the same “language.” Thus, it is  
5 typical to use all three components together.<sup>4</sup>

- 6 • Systems: The Landis+Gyr meter data management system (“MDMS”) receives  
7 the raw meter data to ready it for billing, presentment, and supplier and retail  
8 settlement with the independent system operator for New England (“ISO-NE”).  
9 Meter data is passed from the cloud-based head-end system to the MDMS and  
10 then to the customer information system. *See* Slide 8 of Attachment A. The  
11 MDMS that Rhode Island Energy is proposing in Rhode Island is modeled after  
12 the Pennsylvania approach (with the exception that Pennsylvania’s solution is on-  
13 premises, not cloud-based). Rhode Island will have the same customer  
14 information system as Pennsylvania, which includes the existing code scheme.
- 15 • Network: For the network category, Rhode Island Energy is proposing to use the  
16 same type of network equipment that Pennsylvania and Kentucky are using, as  
17 well as the same network optimization services during deployment. In  
18 Pennsylvania, using Landis+Gyr for network installation and optimization  
19 services was a success in aligning Landis+Gyr network equipment and installs to

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<sup>4</sup> *See* Technical Session, Tr. at 39-40.

1 the service level agreements in Pennsylvania and the performance necessary for  
2 the targeted functionalities and capabilities in Rhode Island, examples of which  
3 are captured in the benefit categories listed in Figure 14.1 of the AMF Business  
4 Case, Bates Page 199.

- 5 • Meters: For the meters, the Company is proposing to use the same Landis+Gyr  
6 meter platform in Rhode Island as used in Pennsylvania and Kentucky, with the  
7 difference being that Rhode Island Energy is proposing to use the next generation  
8 Landis+Gyr Revelo AMI 2.0 meters, versus AMI 1.0 meters.

9  
10 **Q. Please describe the synergies Rhode Island Energy will realize by using the**  
11 **Landis+Gyr technology.**

12 A. Using Landis+Gyr as the AMF solution provider will unlock multiple synergies for  
13 Rhode Island Energy. First, Rhode Island Energy will be able to leverage the existing  
14 PPL personnel who are trained, skilled and knowledgeable in the implementation of  
15 AMF and the ongoing operations of the Landis+Gyr solution. One of the key strengths in  
16 using the Landis+Gyr systems in Rhode Island comes from being able to use and  
17 leverage the technology solution PPL has put in place in Pennsylvania already. PPL has  
18 proven experience in delivering a full-scale AMF solution in Pennsylvania that was on  
19 schedule and on budget, with all targeted scope of work completed.

20  
21 Second, PPL has the existing systems and business processes already in place, as well as

1 the architectural design, interface coding, and experience in using the Landis+Gyr  
2 technology platform. This includes having existing forms, documents, and procedures  
3 for AMF deployment that relate to the Landis+Gyr technology. In addition, PPL has  
4 existing operational processes and procedures for functionalities, such as the remote  
5 switch operations, proactive outage management, and meter alerts that can be utilized and  
6 modified for Rhode Island as needed.

7  
8 Finally, Rhode Island Energy will be able to leverage the existing PPL meter asset  
9 management system, along with meter test operations setup and meter engineering  
10 processes and procedures specific for Landis+Gyr technology, the costs of which are  
11 being allocated to TSA Exit and are not included in the AMF Business Case.

12  
13 **Q. Please elaborate regarding these areas of synergy.**

14 A. The following is a more detailed breakdown of the key areas of synergy, resulting in  
15 implementation and on-going operations cost savings as well as reduction of  
16 implementation risk:

- 17 • PPL Services Advanced Metering Operations Department: This group is the  
18 operations center responsible for managing and monitoring all network and meter  
19 end points, as well as operationally ensuring the head-end system, the MDMS, the  
20 network and meters function as needed. Rhode Island Energy will have access to  
21 PPL Services personnel who are trained, skilled and knowledgeable with the

1 Landis+Gyr systems, network, and meter data. Using a solution other than  
2 Landis+Gyr would create the need to stand up a new department or group to  
3 perform these functions.

- 4 • PPL Services Network Services Department: This department is responsible for  
5 the expansion (planning and design), maintenance and repair of the Landis+Gyr  
6 RF network and backhaul services. Rhode Island Energy will have access to PPL  
7 Services personnel who are trained, skilled and knowledgeable with the Landis  
8 +Gyr network and connected telecom solutions. Along with having existing  
9 processes and procedures that can be used for Rhode Island Energy, the team has  
10 developed specialized knowledge in specific field management tools, which  
11 include network optimization, as a result of having operated the  
12 Landis+Gyr solution for several years. Using a solution other than Landis+Gyr  
13 would create the need to stand up a new group that specifically manages the  
14 network for an alternative solution because each provider’s technology, use of the  
15 technology, and naming conventions, among other specifications, differ.

- 16 • The PPL Services Information Technology Department: Rhode Island Energy  
17 will be able to leverage the existing technical architecture, integration mappings,  
18 code scheme, systems processes and technical experiences that exist with the  
19 Landis+Gyr solutions in Pennsylvania. As with the PPL Services Advanced  
20 Metering Operations and Network Services Departments, PPL Services IT  
21 technical personnel are trained, skilled and knowledgeable in the Landis+Gyr

1                   metering systems.

2  
3   **Q.    What are some examples of specific technical processes that exist in Pennsylvania**  
4   **that are capable of being replicated in Rhode Island?**

5   A.    The following is a list of some examples, which are not all inclusive, of the technical  
6   processes and integrations that already exist within Pennsylvania that can be replicated or  
7   modeled in Rhode Island, resulting in lower labor costs:

- 8           • Landis+Gyr head-end system to/from the outage management system;
- 9           • Landis+Gyr head-end system to/from the meter asset management solution;
- 10          • Landis+Gyr MDMS to/from the customer information system;
- 11          • Landis+Gyr MDMS to/from the customer portal;
- 12          • Landis+Gyr MDMS to/from the GIS systems;
- 13          • Landis+Gyr MDMS to/from the data lake; and
- 14          • Landis+Gyr MDMS to/from the Supplier Portal.

15  
16        Having these system interfaces working in Pennsylvania with documented technical  
17        design and system and business processes already in place reduces implementation times  
18        as compared to using a new provider and building these system interfaces from scratch.  
19        Additionally, there is less implementation risk because the interfaces have been done  
20        before.

21



1 **Q. Did the Company quantify the cost savings associated with these synergies?**

2 A. Yes. PPL performed a comparison of the costs to stand up the departments referenced  
3 above in Pennsylvania, as well as a comparison to National Grid’s forecasted costs for  
4 the same resourcing needs in the benefit-cost analysis in Docket No. 5113. In summary,  
5 using the Landis+Gyr solution results in costs savings from these synergies of  
6 approximately \$32 million from Docket No. 5113 and approximately \$9 million of  
7 avoided costs when compared with Pennsylvania. The table below summarizes these  
8 costs.

Synergy Area	Pennsylvania Cost to Implement <sup>5</sup>	Rhode Island Energy Cost to Implement	Docket No. 5113 Cost <sup>6</sup>
PPL Services Advanced Metering Operations Department	\$7 Million	\$0	\$13 Million
PPL Services Network Services Department	\$2 Million	\$0	\$5 Million
The PPL Services Information Technology Department	N/A	N/A	\$14 Million

9

10 **Q. Are these cost savings reflected in the Company’s Benefit-Cost Analysis (“BCA”)?**

11 A. Yes. Although they are not reflected in any specific line item of the BCA, if the Company

<sup>5</sup> Cost to compare amounts exclude inflation.

<sup>6</sup> Cost to compare reflects nominal dollars over 20 years.

1 had to incur the costs to stand up these departments, then the total costs contained in the  
2 BCA would have been higher.

3  
4 **Q. You also mentioned the reduction in implementation risk from using the Landis+Gyr  
5 solution. Has the Company quantified this reduction in risk?**

6 A. Not exactly. The ability to quantify implementation risk is not straight forward. That  
7 said, qualitatively, the Company considers that PPL’s experience with implementing and  
8 operating an existing vendor technology platform versus using an alternative new and  
9 unfamiliar solution invariably creates cost efficiencies, which in turn, reduces the  
10 implementation risk for AMF. Using a different AMF technology solution for Rhode  
11 Island would essentially mean starting from scratch, which would add costs and increase  
12 risk. The Division acknowledged this economic logic and risk reduction in the Joint  
13 Direct Testimony of William F. Watson, PhD and Robin W. Blanton, PE (hereinafter  
14 “Div. Testimony). *See* Div. Testimony at 13-14.

15  
16 **C. Landis+Gyr Contractual Arrangements For Rhode Island**

17 **Q. Please summarize the contractual arrangements with Landis+Gyr.**

18 A. The following is a list of the agreements with Landis+Gyr for AMF-related work:

- 19 • SaaS Agreement, dated as of January 30, 2023, by and between PPL Services  
20 Corporation and Landis+Gyr.
- 21 • Statement of Work, dated as of January 30, 2023 between Rhode Island Energy

1 and Landis+Gyr.

2  
3 **Q. Does the Company have any additional proposals from Landis+Gyr for AMF-**  
4 **related work?**

5 A. Yes, the Company has received the following proposals from Landis+Gyr for the meters  
6 and network hardware, and for network installation services.

- 7
  - Hardware Proposal Letter, dated December 7, 2022, and clarification dated April
  - 8 24, 2023 (together, the “Hardware Proposal Letter”).
  - 9 • Network Installation Services Proposal Letter, dated January 13, 2023.

10 The Company provided copies of the agreements referenced above and proposals in  
11 response to Record Request No. 1 as Supplemental Attachments RR 1-1 through RR 1-4.<sup>7</sup>

12  
13 **Q. Please provide an overview of the SaaS Agreement.**

14 A. The SaaS Agreement covers the third-party hosted software services that Landis+Gyr  
15 will provide to Rhode Island Energy and may provide to other PPL affiliates in the future  
16 in connection with their technology needs and related smart grid program(s). The  
17 services that Landis+Gyr will provide to Rhode Island Energy under the SaaS Agreement  
18 are set forth in the specific Service Orders Nos. 1, 2 and 3, which are Schedule B to the

---

<sup>7</sup> The Company is simultaneously filing the Network Installation Services Proposal Letter as Confidential Attachment RR-1-6 Supplemental, which the Company inadvertently omitted from its original response to RR-1. In addition, the Company’s response to RR-1 included the Mutual Confidentiality Agreement, dated May 3, 2022 between PPL Services Corporation and Landis+Gyr as Supplemental Attachment RR-1-5.

1 SaaS Agreement. These software services largely relate to the head-end system, WiSUN,  
2 MDMS, and network analytics, and include services for the hardware, the operating  
3 system, upgrades and patching, daily system operations and maintenance, monitoring,  
4 back-up and disaster recovery, cyber security, data storage, data availability, and data  
5 access.<sup>8</sup>

6  
7 **Q. Please describe the pricing structure under the SaaS Agreement.**

8 A. Landis+Gyr will charge Rhode Island Energy the Service Fees that are set forth in the  
9 applicable Service Order(s), which are comprised of the annual ongoing operation and  
10 maintenance (“O&M”) costs for the software services related to the head-end system with  
11 WiSUN and MDMS. The Service Fees are calculated based on the deployed endpoints  
12 and charged monthly by Landis+Gyr. The testimony below discusses how the Service  
13 Fees are reflected in the Company’s BCA and illustrative revenue requirement.

14  
15 **Q. Please provide an overview of the Landis+Gyr Statement of Work.**

16 A. The Landis+Gyr Statement of Work is a broad document that covers: (1) work related to  
17 the transition of certain services, including customer meter-related services, resource,  
18 operations, and systems provided by National Grid USA under the TSA to Rhode Island  
19 Energy (collectively referred to as “TSA Exit”); and (2) other work related to AMF

---

<sup>8</sup> See Company’s response to PUC 6-5 for additional details.

1 program implementation and deployment. AMF-specific work includes the cloud set up  
2 for the initial installation of the Landis+Gyr head-end system and MDMS,<sup>9</sup> as well as  
3 services for project management, implementation planning, solution design, interface  
4 configuration, and testing. With respect to the AMF program, the Statement of Work is  
5 designed to align Rhode Island Energy’s AMF systems with Pennsylvania’s current AMI  
6 architecture and functions as closely as possible. The AMF Functionality Roadmap in  
7 Figure 6.1 of the AMF Business Case aligns with the key project activities set forth in  
8 Section 1.2.5 of the Statement of Work.

9  
10 **Q. Please describe the pricing structure under the Landis+Gyr Statement of Work.**

11 A. Rhode Island Energy will pay Landis+Gyr the “milestone fees,” which are captured in  
12 Section 5 (Payment Milestones) of the Statement of Work (*See* pages 39-41 of  
13 Supplemental Attachment RR 1-4). Milestone fees are based on a fixed price and paid  
14 upon Landis+Gyr’s completion of the work specified for each milestone. The Statement  
15 of Work allocates the costs between the TSA Exit and AMF milestones payments based  
16 on technical requirements and whether they apply to TSA Exit or AMF functionality.  
17 How these AMF milestone payments are reflected in the Company’s BCA and illustrative  
18 revenue requirement is discussed later in this supplemental testimony; none of the TSA  
19 Exit milestone payments are included in the Company’s revenue requirement for the

---

<sup>9</sup> *See also* Technical Session, Tr. at 91-98 (Mr. Walnock explaining the interrelationship between the software, network, and meters as provided for under the SaaS Agreement and Statement of Work).

1 proposed AMF project.

2

3 **Q. Please provide an overview of the Hardware Proposal Letter.**

4 A. The Hardware Proposal Letter covers the solution components and the unit pricing for the  
5 meter hardware and network equipment that Landis+Gyr will provide to Rhode Island  
6 Energy. The network hardware consists of the gateways and routers that make up the RF  
7 network. Rhode Island Energy is in the process of negotiating the contract with  
8 Landis+Gyr for the meters.

9

10 **Q. Please provide an overview of the Network Installation Services Proposal Letter.**

11 A. The Network Installation Services Proposal Letter covers the network solution  
12 components and unit pricing for the AMI Field Area Network equipment installation  
13 consisting of gateways and routers, as well as certain make-ready services and materials,  
14 and network maintenance support during implementation.

15

16 **IV. Landis+Gyr’s Contract Pricing Is Reasonable**

17 **Q. Did PPL assess the reasonableness of the Landis+Gyr contract pricing?**

18 A. Yes.

19

20 **Q. Please explain.**

21 A. Prior to entering in any contractual agreements with Landis+Gyr, PPL first validated the

1 cost estimates for each of the Landis+Gyr components by identifying the AMF  
2 requirements and scope of work for Rhode Island Energy and then comparing those cost  
3 estimates to those included in the Docket No. 5113 proposal. The Docket No. 5113 BCA  
4 served as a primary cost comparison because PPL was aware that National Grid proposed  
5 the same Landis+Gyr technology solution in Rhode Island that Rhode Island Energy  
6 proposed in its AMF Business Case. In addition, PPL performed cost comparisons with  
7 the Pennsylvania AMF implementations, specifically on the level of effort and time to  
8 complete certain tasks, such as, on average, how many meters can be exchanged in a day  
9 as well as how many pieces of network equipment can be installed in a day. PPL  
10 conducted cost comparisons for the following Landis+Gyr components: (1) SaaS  
11 Agreement ongoing costs (i.e., Service Fees) for the cloud-based head-end system and  
12 MDMS as compared to the Pennsylvania on-premises solution; (2) software delivery  
13 costs, which includes the initial installation of the head-end system, MDMS, and Grid  
14 Analytics in the Statement of Work as compared to the Pennsylvania on-premises  
15 solution; (3) meter hardware costs as set forth in the Hardware Proposal Letter; (4)  
16 network hardware costs, as set forth in the Hardware Proposal Letter; and (5) network  
17 installation services, as set forth in the Network Installation Services Proposal Letter.<sup>10</sup>  
18 Slide 11 of Attachment A illustrates PPL’s approach to the project cost estimates using  
19 these comparisons.

---

<sup>10</sup> Technical Session Tr. at 174-180.

1 **Q. Please explain how PPL compared the ongoing SaaS costs for the cloud head-end**  
2 **system and MDMS.**

3 A. PPL compared the cost of the Landis+Gyr proposed cloud head-end system and MDMS  
4 with retail settlement under the SaaS Agreement to the current Pennsylvania on-premises  
5 solutions with the same functionality to yield a like-for-like compare. PPL used 2026 as  
6 the basis for the cost comparison because that is when all the meters are targeted to be  
7 installed. PPL broke out the ongoing costs for the head-end system and MDMS with  
8 retail settlement into four categories that comprise the ongoing costs for which PPL  
9 Electric currently pays with their on-premises solution and that will be included in the  
10 ongoing SaaS costs with Landis+Gyr for Rhode Island: (1) labor/resourcing at the BCA  
11 hourly rate, minus the proposed resource need for the cloud-based solution; (2) annual  
12 maintenance costs for the Pennsylvania on-premises solution at the current payment rate  
13 and adjusting for inflation through 2026 (using the historical core consumer price index  
14 (“CPI”) for annual escalation that has occurred and a 2 percent annual inflation rate for  
15 years 2023, 2024 and 2025); (3) the software license costs for Pennsylvania’s on-  
16 premises solution adjusted using the same inflation escalator approach as above; and (4)  
17 the infrastructure cost for servers, storage, back-up services and security, service, storage,  
18 and backup.

19

20

21



1 **Q. What did this cost comparison show?**

2 A. Overall, when comparing costs and equalizing final costs based on the number of meter  
3 end points (i.e., approximately 1.45 million meters in Pennsylvania and approximately  
4 500,000 meters for Rhode Island), the Rhode Island Energy proposed cloud costs closely  
5 align with the Pennsylvania on-premises costs, with a cost difference of less than 0.5  
6 percent, after taking into consideration the like-for-like comparison and the  
7 enhancements discussed below.

8

9 **Q. Are there any additional enhancements related to this cost comparison that Rhode**  
10 **Island Energy will receive that are not available in Pennsylvania?**

11 A. Yes. There are two important enhancements that Rhode Island Energy will have over  
12 Pennsylvania that are reflected in the cloud head-end system and MDMS costs. First,  
13 Rhode Island Energy is proposing near-real time data at 15-minute intervals every 15-20  
14 minutes and yielding end-to-end from the meter to the customer portal every 30-45  
15 minutes.<sup>11</sup> In Pennsylvania, the 15-minute interval processing time comes back to the  
16 head-end system from the meters every 4-6 hours. The near real-time data functionality is  
17 a driver of the higher costs associated with enhanced processing speeds. The other key  
18 enhancement is a fully integrated disaster recovery solution via a Service Level

---

<sup>11</sup> See Company response to Data Requests DIV 6-2 through 6-5.

1 Agreement and Support Services with Landis+Gyr (Schedule A to the SaaS Agreement),  
2 in which Landis+Gyr is responsible to ensure the continuous operation of the system.

3 Overall, the cost comparisons are within 0.5 percent, and when coupled together with the  
4 enhanced capabilities of a cloud-based solution, PPL concluded that the Landis+Gyr  
5 solution was the best value proposition for Rhode Island.

6  
7 **Q. Please explain how PPL compared the costs for the software delivery services.**

8 A. To assess the reasonableness of the Landis+Gyr software delivery costs specific to the  
9 head-end system, MDMS, and Grid Analytics, PPL validated the Pennsylvania costs and  
10 compared those costs with the Rhode Island Energy proposed costs, and then adjusted the  
11 Pennsylvania costs for inflation (using the core CPI) from the contract signing in July  
12 2015 to the Rhode Island Energy contract signing in January 2023.

13  
14 **Q. What did this cost comparison show?**

15 A. Without adjusting for inflation, Rhode Island Energy’s software delivery costs were \$2  
16 million higher than Pennsylvania’s costs; however, Pennsylvania’s costs were based on  
17 2015 pricing. The core CPI increased 22.9 percent between July 2015 and the end of  
18 2022, whereas the software delivery costs for Rhode Island Energy as compared to  
19 Pennsylvania were 21.42 percent higher. Overall, the cost for software delivery services  
20 for Rhode Island Energy, after adjusting for inflation of 2015 pricing, was approximately  
21 \$100,000 less than the cost for Pennsylvania.

1 **Q. Please explain how PPL compared the meter hardware costs.**

2 A. PPL compared the total weighted average unit cost per meter in the Docket No. 5113  
3 BCA to the pricing set forth in the Landis+Gyr Hardware Proposal Letter. The cost  
4 comparison took the total meter costs divided by the proposed units to be purchased  
5 through implementation.

6  
7 **Q. What did this cost comparison show?**

8 A. Rhode Island Energy’s pricing for the meters is slightly higher than Docket No. 5113, by  
9 1.7 percent; however, the Docket No. 5113 costs are based on 2018 pricing and prior to  
10 the global supply chain challenges brought on by the COVID-19 pandemic as compared  
11 to Rhode Island Energy’s pricing in 2022. If adjusted for inflation (using the core CPI),  
12 the meter costs proposed in Docket No. 5113 would actually be 13.7 percent higher than  
13 the Hardware Proposal Letter. Thus, the Company considers the Landis+Gyr pricing for  
14 Rhode Island to be competitive and reasonable.

15

16 **Q. Please explain how PPL compared the network hardware costs.**

17 A. Like the meter hardware costs, PPL compared the overall weighted average unit cost for  
18 the network hardware in the Docket No. 5113 BCA to the pricing set forth in the  
19 Landis+Gyr Hardware Proposal Letter. The total weighted average unit cost for the  
20 network hardware is calculated by taking the total cost of network hardware and dividing  
21 it by the total network equipment.

1 **Q. What did this cost comparison show?**

2 A. Rhode Island Energy’s weighted average network hardware costs are 47 percent less  
3 than the costs estimated in Docket No. 5113.

4

5 **Q. How did PPL compare the cost of the network installation services?**

6 A. PPL compared the total weighted average unit installation cost set forth in the Network  
7 Installation Services Proposal Letter with the cost in Pennsylvania. The total average unit  
8 installation cost is the total cost of network installations divided by total units (e.g.,  
9 gateways and routers) to be installed.

10

11 **Q. What did this cost comparison show?**

12 A. Rhode Island Energy’s total weighted average unit installation cost is 9.3 percent higher  
13 than Pennsylvania’s weighted average unit installation cost from 2015 pricing. After  
14 adjusting for inflation (using the core CPI) Pennsylvania’s cost would be 9.5 percent  
15 higher. Thus, the Company considers the Landis+Gyr pricing set forth in the Network  
16 Installation Services Proposal Letter competitive and reasonable.

17

18 **Q. What did PPL and Rhode Island Energy conclude based on these various cost  
19 comparisons?**

20 A. PPL and Rhode Island Energy concluded that the proposed AMF Business Case presents  
21 the best value for Rhode Island customers. Leveraging PPL’s successful relationship

1 with Landis+Gyr in Pennsylvania and Kentucky provides efficiencies and cost savings  
2 for Rhode Island, reduces implementation risk, and offers increased project certainty.  
3 The total implementation cost estimate of \$167,896,002 is slightly less than the BCA  
4 estimate in Docket No. 5113 for years 1 through 4 (inclusive of capital and O&M).  
5 Additionally, the PPL cost comparisons with Pennsylvania demonstrate that the  
6 Landis+Gyr proposed costs are competitive, especially when considering the impacts of  
7 inflation since 2015 and the fact that Rhode Island Energy is receiving the next wave of  
8 AMF technology that surpasses the current capability in Pennsylvania and Kentucky.  
9 These factors, taken together, demonstrate the reasonableness of the Landis+Gyr pricing.

10  
11 **V. The Statement of Work and SaaS Agreement Costs Are Appropriately Allocated**

12 **Q. Please explain how the Company allocated costs between TSA Exit and AMF-**  
13 **specific work.**

14 A. The Company started with a bottom-up approach to develop each technical requirement  
15 for systems implementation, leveraging Pennsylvania’s requirements as a starting point.  
16 The Company then stepped through each requirement one-by-one and assigned each  
17 requirement to either TSA Exit or AMF functionality.

18  
19 The MDMS platform, however, is the one system that has shared TSA Exit and AMF  
20 functionality. The Company explained the allocation methodology for these costs in its  
21 responses to Data Requests PUC 3-22 and 3-25. As the Company explained in its

1 response to Data Request PUC 3-22, the allocation of the MDMS costs in the Statement  
2 of Work is based on the total number of functionality requirements assigned to TSA Exit  
3 and which requirements are specific to AMF. These numbers are then converted to  
4 percentages, which are applied to the total costs for software delivery, i.e., cloud setup.  
5 The total percentage of the MDMS costs allocated to AMF is 44 percent. This means  
6 that 44 percent of the total MDMS functional requirements are specific to AMF  
7 functionality, whereas 56 percent of the functional requirements apply to TSA Exit  
8 functionality (split 36 percent for AMR and 20 percent for retail settlement with ISO-  
9 NE).<sup>12</sup>

10  
11 **Q. Please explain how costs for the MDMS are allocated in the SaaS Agreement.**

12 A. Service Order No. 2 to the SaaS Agreement splits out the Service Fees for software  
13 services for MDMS functionality related to TSA Exit (identified as “MDMS for AMR”)  
14 and MDMS functionality related to AMF (identified as “MDMS for AMI”) and then  
15 further broken down by type (i.e., Production/Disaster Recovery for electric and gas),  
16 depending on whether the Company moves forward with AMF. Confidential Attachment  
17 B provides a breakdown of these costs to illustrate the total costs that will be paid to  
18 Landis+Gyr over a 20-year period, which reflects the net difference between the “MDMS  
19 for AMR” pricing and “MDMS for AMI pricing” that represents the AMF-specific costs

---

<sup>12</sup> See also Confidential Attachment PUC 3-22-1 and Attachment PUC 3-22-2 (describing the functional requirements for the MDMS, including an identification of those designed exclusively to support AMF and those that will be needed for operating the electric and gas businesses with or without AMF).

1 for MDMS. Implementation of the MDMS is covered under the Statement of Work, and  
2 those costs are allocated between TSA Exit and AMF as described above.

3  
4 **Q. How will the Company track TSA Exit and AMF costs to ensure they remain**  
5 **separate?**

6 A. The Company will record on its books the allocation of costs, between TSA Exit and  
7 AMF, based on the functional requirement appropriateness and Service Orders as  
8 described above. Additionally, the Company has set up separate accounting numbers to  
9 charge TSA Exit costs and AMF costs, respectively. Accounting and project  
10 management personnel are closely monitoring work performed under each milestone set  
11 forth in the Statement of Work to ensure charges are charged to the correct work order  
12 and paid out in accordance with the Statement of Work. This methodology is consistent  
13 with generally accepted utility practice for assigning costs. In the illustrative revenue  
14 requirement provided on Schedule SAB/BLJ-1 and in the actual costs that the Company  
15 proposes to include in the AMF Factor, the Company will seek recovery only for the  
16 AMF costs that have been allocated and charged to the AMF functionality accounting  
17 work order referenced above. This methodology is reasonable to ensure that costs that  
18 have been allocated to TSA Exit and charged to that specific accounting work order will  
19 not be included in the proposed AMF Factor.

20

1 **Q. How is the Company accounting for costs under the SaaS Agreement and Statement**  
2 **of Work?**

3 A. Service Fees under the SaaS Agreement are comprised of the annual O&M costs for the  
4 software services related to the head-end system, WiSUN and MDMS, and will,  
5 therefore, be treated as expense (“OpEx”) for accounting purposes.

6  
7 The Statement of Work is for the implementation of the head-end system and MDMS,  
8 which are capital (“CapEx”) for accounting purposes. The only exception is the training  
9 costs, which are treated as OpEx. Any actual training costs will be reflected in the O&M  
10 costs in the Company’s proposed AMF Factor for cost recovery.

11

12 **Q. What accounting rules is the Company following to assign costs in the SaaS**  
13 **Agreement and Statement of Work to either OpEx or CapEx?**

14 A. The treatment of costs as either OpEx or CapEx is based on the generally accepted  
15 electric utility accounting practices within the Federal Energy Regulatory Commission  
16 (“FERC”) prescribed Uniform System of Accounts, 18 C.F.R. 352, and PPL Electric’s  
17 Accounting Policies and Procedures No. 615 for computer hardware and software costs,  
18 which is provided as Attachment C.

19

20

21



1 **VI. SaaS Agreement Service Fees to be Paid to Landis+Gyr**

2 **Q. Please detail the costs that will be paid to Landis+Gyr over the 20-year period under**  
3 **the SaaS Agreement and related Service Orders.**

4 A. Confidential Attachment B captures the forecasted 20-year costs by Service Order under  
5 the SaaS Agreement and a direct comparison of the Service Fees estimated in the BCA to  
6 the final forecasted contract prices contained in each Service Order. This includes a  
7 summary of the costs of the head-end system with Wi-SUN, (which is identified as  
8 “Command Center with WiSun” in Service Order No. 1), the MDMS (identified as  
9 “MDMS AMR” and “MDMS AMI” by type for gas and electric in Service Order No. 2),  
10 and Grid Analytics costs (Analytics/AGA in Service Order No. 3). On the subsequent  
11 tabs, the Service Order costs are further broken down by production, disaster recovery,  
12 and lower (development) environment. The file includes the forecasted costs by each  
13 Service Order number, a summary of the costs to be paid, along with a direct comparison  
14 of the AMF on-going costs from the BCA estimates to the forecasted contract prices  
15 contained in each Service Order. All Service Fees under the SaaS Agreement and  
16 reflected in Confidential Attachment B are OpEx.

17

18 **Q. How do the forecasted 20-year costs compare to the Company’s BCA?**

19 A. Overall, when comparing the BCA estimates to the contract Service Orders, the Service  
20 Orders combined are \$12.2M less over the 20-year period.

21

1 **Q. How is the Company accounting for the Service Fees?**

2 A. The Service Fees will be treated as OpEx in accordance with FERC accounting  
3 guidelines and PPL’s Accounting Policies and Procedures, as explained above.  
4

5 **Q. Does the SaaS Agreement include any licenses?**

6 A. The Service Fees under the SaaS Agreement include a nonexclusive right and license for  
7 the Company to access and use the Cloud Software, SaaS Services, Documentation, and  
8 Landis+Gyr Materials (as each term is defined in the SaaS Agreement), including in  
9 operation with other software, hardware, systems, networks and services. As explained  
10 in the Company’s response to Data Request PUC 6-5, the Company had used the term  
11 “license fee” in its detailed O&M costs provided in response to Data Request PUC 1-14.  
12 However, the description of a “license fee” is a misnomer in that the annual costs are  
13 referred to as “Service Fees” in the applicable Service Order(s), attached as Schedule B  
14 to the SaaS Agreement. There are no separate license fees. Rather, all the items  
15 identified as license fees in Data Request PUC 1-14 should have been described as  
16 Service Fees and have been included in the 20-year costs provided in Confidential  
17 Attachment B to this supplemental testimony.  
18  
19  
20  
21

1 **VII. AMF Revenue Requirement**

2 **Q. Please explain how the costs under the SaaS Agreement were reflected in the**  
3 **Company’s illustrative revenue requirement provided in Schedule SAB/BLJ-1 and**  
4 **its response to Data Request PUC 1-14.**

5 A. As described above, the Service Fees under the SaaS Agreement are annual O&M  
6 expenses for the ongoing SaaS operations, while the Statement of Work, with the  
7 exception of training, is capitalized for the implementation of the cloud setup.  
8 For the Service Fees in the SaaS Agreement, Confidential Attachment B to this  
9 supplemental testimony illustrates the 20-year costs that were forecasted in the BCA for  
10 each Service Order (Section labeled “RIE AMF BCA”). These costs were reflected in  
11 Attachment PUC 1-14, in the Full Description column as (1) “Network Model  
12 Analytics/AGA – SaaS”; (2) “Annual License (Saas – Headend”; (3) “Annual License  
13 (SaaS) & Support – WiSun”; and (4) “Annual License (SaaS) – MDMS.” The  
14 Company’s response to Data Request PUC 6-5 maps these services descriptions from  
15 Attachment PUC 1-14 to the applicable Landis+Gyr Service Fee in the SaaS Agreement,  
16 together with the functionality it supports.<sup>13</sup>

---

<sup>13</sup> See Table 1 in the Company’s response to PUC 6-5.

1 **Q. Do the total amount of the Service Fees tie to the amounts on Attachment PUC 1-**  
2 **14?**

3 A. Yes, the total amount for each Service Fee on Attachment PUC 1-14 ties to the respective  
4 total amount by Service Fee for the original BCA estimates on Confidential Attachment  
5 B; however, Attachment PUC 1-14 is based on a Recovery Year while Confidential  
6 Attachment B is based on a Calendar Year, so the individual years will not tie out due to  
7 the timing differences. The total of these Service Fees and all other Outside Services  
8 O&M costs included on Attachment PUC 1-14 are identified as “921 - Outside Services”  
9 and reflected in the revenue requirement on Schedule SAB/BLJ-1, Pages 1 and 2, Line 8.  
10 Confidential Attachment B to this supplemental testimony also illustrates the calculated  
11 20-year Service Fees by Calendar Year based on the actual Service Order with  
12 Landis+Gyr and includes detailed schedules which break down the Service Fees by type  
13 of service. This more detailed break-down of Service Fees represents similar Service  
14 Fees that were included on Attachment PUC 1-14 and ultimately to O&M costs in the  
15 Company’s illustrative revenue requirement provided in Schedule SAB/BLJ-1. In the  
16 revenue requirements schedules that the Company has proposed be submitted with the  
17 AMF Factor filings, the Company would include a detailed O&M cost schedule like  
18 Attachment PUC 1-14, which can include a breakdown of the Service Fees by type  
19 similar to Confidential Attachment B.

1 **Q. Please explain how the costs under the Statement of Work were reflected in the**  
2 **Company’s illustrative revenue requirement provided in Schedule SAB/BLJ-1 and**  
3 **its response to Data Request PUC 1-11.**

4 The Statement of Work costs were reflected in the illustrative capital revenue  
5 requirement on Schedule SAB/BLJ-1, Pages 1 and 2, Line 2, “303-Intangible Software.”  
6 In the Company’s response to Data Response PUC 1-11, specifically Attachment PUC 1-  
7 11, the Company provided a listing of the specific software investments included as  
8 capital costs in the revenue requirement for intangible software. The capital costs for the  
9 Statement of Work are included in the Full Description column on Attachment PUC 1-11,  
10 as (1) “Network Model Analytics/AGA”; (2) “Software as a Service (Saas) Vendor –  
11 Headend (Implement)”; (3) “Software as a Service (SaaS) – WiSun (Implement)”; and  
12 (4) “Software as a Service (SaaS) Vendor – MDMS (Implement).”  
13

14 **Q. Do the total capital costs for the Statement of Work tie to Attachment PUC 1-11?**

15 A. Yes, the total of the 20-year costs for these investments on Attachment PUC 1-11 is same  
16 as the total of these costs in the BCA; however, Attachment PUC 1-11 presents a  
17 Recovery Year, and the BCA is Calendar Year so the individual years will not tie out due  
18 to the timing differences.  
19  
20

1 **Q. How will any training costs in the Statement of Work be reflected in the revenue**  
2 **requirement?**

3 A. As discussed above, the training costs are an O&M expense. In the revenue requirement  
4 that the Company has proposed be submitted with the AMF Factor filings, the Company  
5 would include any training costs associated with the Statement of Work in an O&M cost  
6 schedule like Attachment PUC 1-14, in a separate category from the Service Fees  
7 described above.

8

9 **VIII. Procurement Process for Other Products and Services**

10 **Q. Are there any other products and services for which Landis+Gyr is not the vendor?**

11 A. Yes, PPL has three services areas in which RFPs have been or are being conducted: (1)  
12 meter installation services, which includes pre-sweep verifications, meter installations,  
13 meter base repairs, call center operations, and warehouse and logistics services; (2)  
14 project management office (“PMO”) services; and (3) information technology (“IT”)  
15 hybrid services. Cost estimates for these services are included in the confidential BCA  
16 file and accompanying BCA narrative provided as Attachment H to the AMF Business  
17 Case.

18

19

20

1 **Q. Please describe the status of the pending RFPs for the meter installation services,**  
2 **PMO services, and the IT hybrid services.**

3 A. For the meter installation services, PPL has received bids from four separate bidders and  
4 is in the final stages of the evaluation to make a primary selection. The Company  
5 anticipates that approximately 90 percent of the new meters will be installed by a third-  
6 party provider. The remaining 10 percent of the meters are planned to be installed by  
7 Rhode Island Energy personnel. The PMO services RFP is still in progress for external  
8 resourcing and anticipates receiving bids back in mid-June. This RFP is for staff  
9 augmentation services to directly support PPL and Rhode Island Energy with AMF  
10 deployment.

11  
12 In addition, Tata Consultancy Services Limited (“TCS”) was chosen as the system  
13 integrator for PPL Services Corporation as part of the IT hybrid services RFP conducted  
14 in late 2021 as outlined in the Company’s response to Data Request PUC 6-3. The  
15 Company’s response to Data Request PUC 6-3 details how costs for the IT delivery  
16 services will be allocated between TSA Exit Work and AMF. Only costs for AMF  
17 implementation are included in the Company’s proposed revenue requirement.

18  
19  
20

1 . **Q. Is the Company planning a sole source procurement for any other services or**  
2 **related activities?**

3 A. No, the Company does not anticipate selecting a sole source vendor for any other services  
4 or related activities.

5

6 **IX. Conclusion**

7 **Q. Does this conclude your testimony?**

8 A. Yes, it does.





**Rhode Island Energy**<sup>™</sup>  
a PPL company

# **Advanced Meter Functionality RI Public Utility Commission Technical Session**

May 10, 2023



**Rhode Island Energy**<sup>™</sup>  
a PPL company

## Agenda

- PPL's history with Landis+Gyr (L+G)
- PPL's Landis+Gyr Synergies for RIE
- Status of AMF key agreements, proposals and RFP's
- AMF components, solutions and roles
- Rhode Island Energy AMF advantages over PPL PA and KY
- Approach to validating proposed costs
- Implementation cost review with resourcing/provider
- AMF spend to date
- Summary take-aways
- Q&A

# PPL's History with Landis+Gyr



- PPL Pennsylvania and PPL Kentucky's AMI relationship with Landis+Gyr initiated 2014-2015.



- PPL Pennsylvania and PPL Kentucky have and are using Landis+Gyr for AMI Systems, Network, and Hardware.

AMF Category		PPL PA	PPL KY	RIE Proposed
<b>Systems</b>	Head End	X	X	X
	MDMS	X		X
	DER Monitor & Manage	X	TBD	TBD
<b>Network</b>	Hardware	X	X	X
	Installation Services	X		X
	Optimization Services	X	X	X
	Steady State Field Network Equipment Maintenance	X	TBD	TBD
<b>Meters</b>	Hardware	X	X	X
	Installation Services	X	X	

## PPL's Key Landis+Gyr Synergies for Rhode Island



- **Leverage the existing PPL Services AMI Systems Operations department** that is trained, skilled and knowledgeable with the Landis+Gyr platform and meters. This will save costs during implementation and steady state operations, eliminating the need to stand-up a new group with new processes (driven from a different AMF solution) specifically for RIE.
- **Leverage the existing PPL Services Network department** that is trained, skilled, and knowledgeable with the Landis+Gyr radio frequency network and Landis+Gyr platform. This will save costs during implementation, optimization, and steady state operations, eliminating the need to stand-up a new group with new processes (driven from a different AMF solution) specifically for RIE.
- **PPL Information Technology can leverage the existing technical architecture, integrations, system processes, and experiences** specific to the Landis+Gyr technology stack, reducing implementation risk and enabling cost efficiencies for both implementation and ongoing steady state operations.
- **Implementation risk reduction** driven from prior experience and knowledge in the full-scale installation of the Landis+Gyr AMF technology solution. PPL PA delivered on schedule and on budget with all targeted scope completed.

## PPL's Key Landis+Gyr Synergies for Rhode Island Cont'd



- **Leverage the existing PPL meter technology setup specific to Landis+Gyr for meter asset management, meter test operations, and meter engineering.** Meter asset management, and meter test operation, and meter engineering are being provided under TSA Exit.
- **Leverage and scale existing PA and KY AMF implementation and steady state business processes specific to the Landis+Gyr technology,** making the necessary RIE specific adjustments. Examples include the forms, documents, and procedures for deployment, and functionalities like remote connect and disconnect of service, proactive outage management, and meter alerts for both implementation and steady state operations.
- **Long-term efficiencies aligning RIE with PA and KY AMF** for PPL standardization and consistency.

*Overall, **not using the Landis+Gyr technology solution increases costs and risks associated with a new unfamiliar AMF solution.***



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## Status Outline on Landis+Gyr Agreements and Proposals

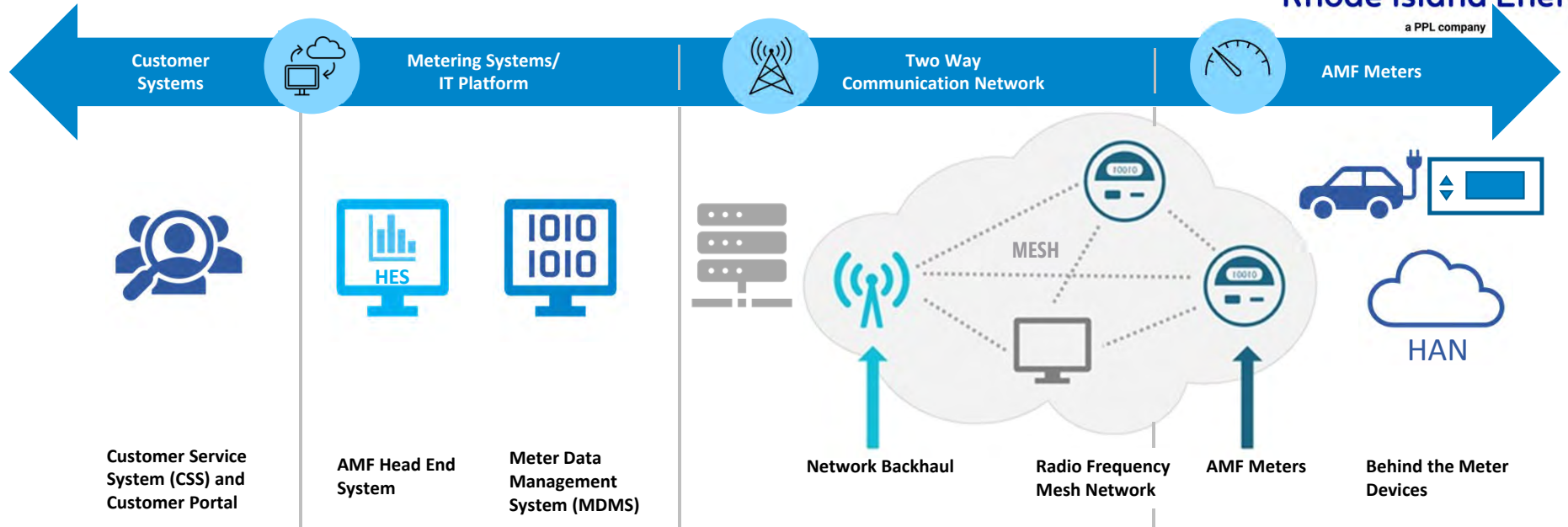
- Landis+Gyr software delivery and SaaS Agreement
  - Final agreement will include PPL enterprise terms and conditions, along with a Rhode Island Energy specific delivery statement of work, and service order pricing.
  - Covers both Transition Services Agreement (TSA) Exit and AMF functionalities.
  - The meter data management system (MDMS) covers both non-AMF (TSA Exit) and proposed AMF terms, scope and pricing.
    - TSA Exit functionality includes retail settlement, load profiling, and storing of meter data from the electric and gas commercial and residential meter reading systems.
    - AMF pricing includes the shifting of electric AMR to electric AMF data.
    - PPL's architecture includes existing code scheme for MDMS.
  - The head-end system, along with Wi-SUN functionality, is included in pricing for AMF only.
  - Grid Analytics, which is a small component of the overall cost, is also included in pricing for AMF only.
  - The following are key contingencies for AMF functionality and pricing:
    - Regulatory approval, including any modifications to RIE's proposed plan.
    - Successful installation of the new AMF meters.
  - Cost compare of completed PA actuals to RIE proposed.
- Landis+Gyr meter and network hardware equipment proposal
  - Includes meter and network equipment costs by specific equipment type.
  - Proposing to include network installation and optimization services.
  - Landis+Gyr is the preferred provider, based on cost reviews, driven by PPL synergies and subject matter expertise.
  - Contract discussions are in progress for separate contract.

# Status Outline on Pending AMF Request for Proposals



- Meter Installation Services
  - Includes meter installations and associated project management, pre-sweeps, meter base repairs, call center operations, and inventory and warehouse management.
  - RFP process has been completed and vendor selection is underway.
  - Stand-alone contract will be needed for terms and conditions, statement of work, and pricing.
- Project Management Office Services
  - RFP is in progress for external resourcing.
  - Stand-alone contract will ne needed for terms and conditions, statement of work, and pricing.

# AMF Components, Solutions and Project Roles



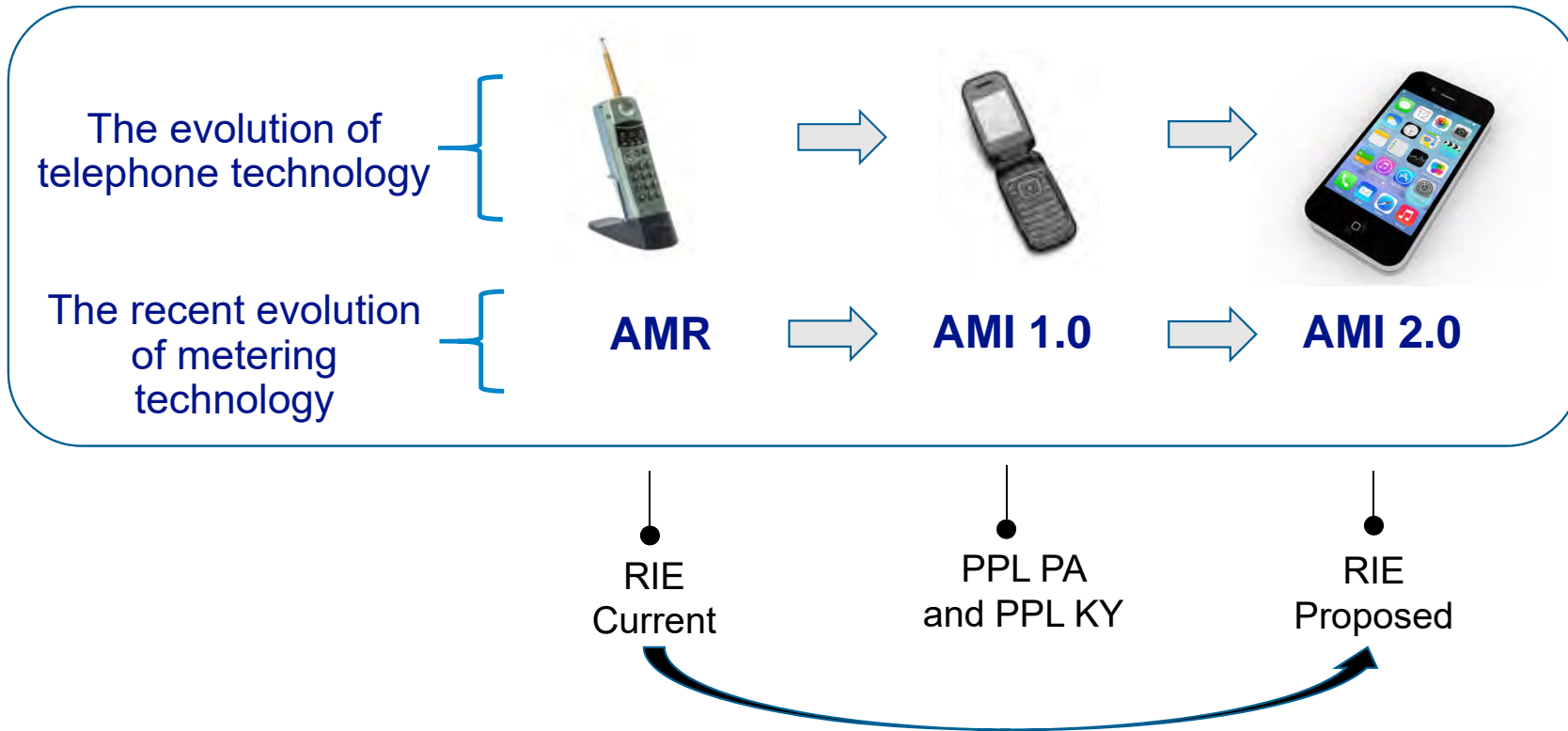
	PPL IT	L+G Cloud-Based SaaS	Cellular Service	L+G RF Mesh	L+G Revelo Meter	Behind the Meter: Revelo-enabled
<b>Ownership</b>	PPL Services	PPL Services	Third Party	Rhode Island Energy	Rhode Island Energy	PPL/RIE/TBD
<b>Installation</b>	PPL Services/System Integrator	Landis+Gyr/System Integrator	Third Party	Landis+Gyr	RIE/Meter Install Vendor	PPL/RIE/TBD
<b>Project Oversight</b>	PPL Services	PPL Services	PPL Services	PPL Services	RIE/PPL Services	RIE/PPL Services
<b>Steady-State Operations</b>	PPL Services	Landis+Gyr	Third Party	TBD/Landis+Gyr	RIE/PPL Services	PPL/RIE/TBD





# Recent AMF Evolution Parallels Telephone Evolution

Technology evolution for Telephones parallel that for Metering where each have advanced due to improved connectivity, storage, computing and sensing.



## RIE AMF Advantages over PPL PA and PPL KY



### Operational Advantages:

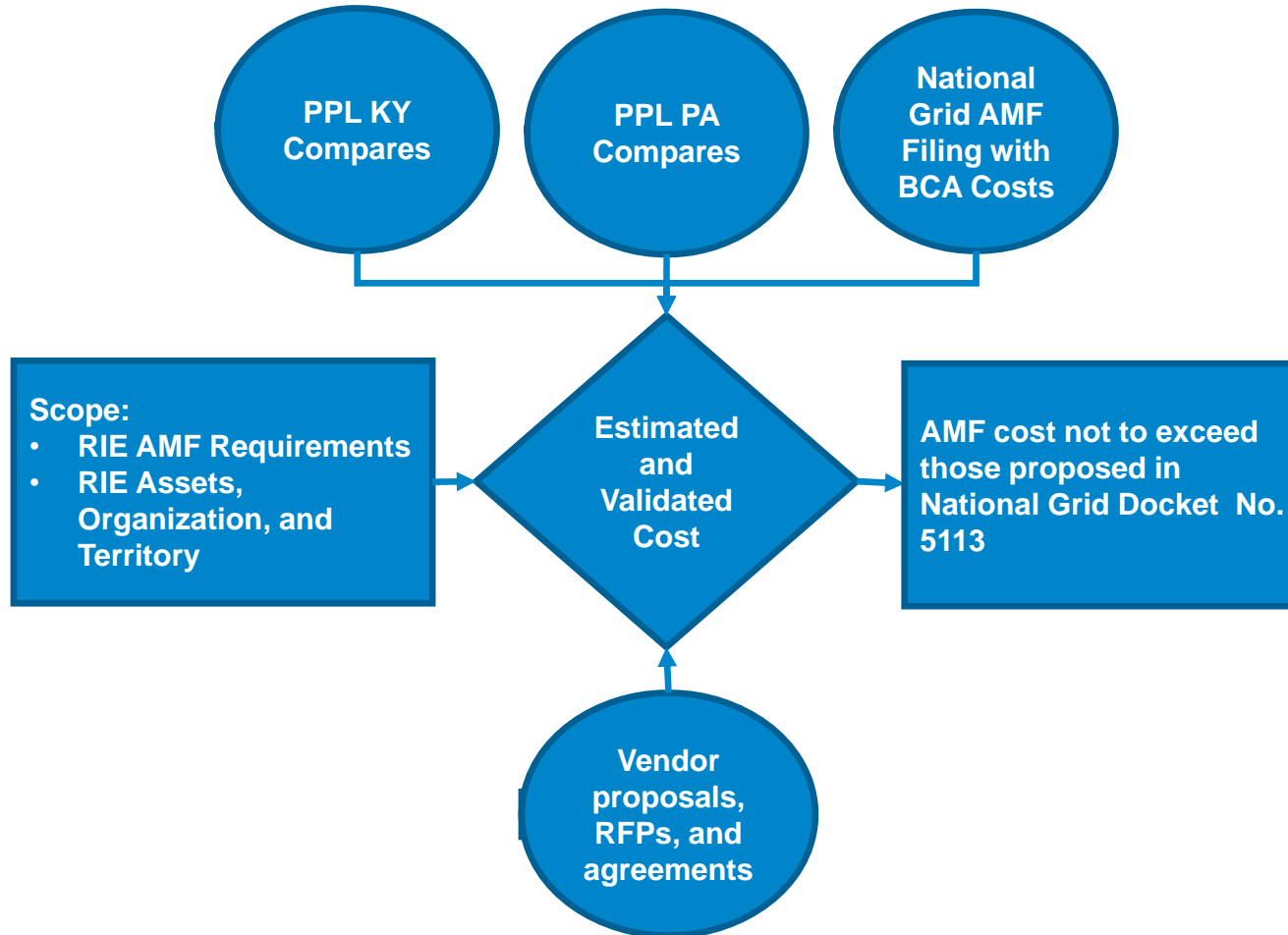
- ✓ Network is 4X faster / greater capacity which allows for near real-time processing - accommodates 15-minute interval data processed every 15-20 minutes (vs every 4-6 hours in PA).
- ✓ Wi-SUN on the RF network provides interoperability, broadening opportunity for others to participate.
- ✓ Enhanced phase and grid anomaly detection is aided by millisecond resolution network time.
- ✓ Higher resolution and more frequent voltage measurements allow operators to better regulate and optimize grid voltage.
- ✓ Better DER / EV integration with higher resolution current and voltage streaming and better harmonic measurement capability.
- ✓ Future meter firmware and data enhancements are possible with more CPU RAM and faster CPU speeds.
- ✓ App-ready meters offer the potential for new service offerings to benefit the grid.

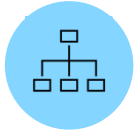
### Customer Advantages:

- ✓ Improved awareness of usage at the device level in real-time provides an understanding of impact on consumption from behavior adjustments.
- ✓ Meters with Wi-Fi can be paired with apps to provide a variety of new services: meters could analyze device-level energy and instruct large loads like an EV chargers to engage when rates are low, making TVR more feasible.
- ✓ Providing added comfort when away because non-intrusive load monitoring offers an understanding of when various appliances are running.
- ✓ Meter software makes it possible to offer home energy management that can integrate with smart home devices such as Amazon Alexa or Google Home.
- ✓ High-quality energy data can provide an understanding of electrical panel issues and where upgrades are needed.
- ✓ Easier decisions on using DER energy versus selling it are possible from enhanced forward and reverse energy register information and added channels.



## Approach Used for Cost Estimation





## Overview Costs – Implementation



<u>AMF Component</u>	<u>Provider or Resource</u>	<u>Implementation (Yr 1-4)</u>	
		<u>Capital</u>	<u>Expense</u>
METER - TOTAL	multiple	\$94,997,561	\$3,182,575
NETWORK - TOTAL	multiple	\$12,697,229	\$329,522
SYSTEMS - TOTAL	multiple	\$36,738,024	\$5,558,008
PROGRAM - TOTAL	multiple	\$10,029,733	\$4,363,350
<b>TOTAL SUM</b>		<b>\$154,462,548</b>	<b>\$13,433,454</b>

Note: Amounts may not add exactly due to rounding

### Highlights:

- Total Implementation cost estimate is \$167,896,002, slightly less than National Grid’s filing (Docket No. 5113).
- PPL vendor cost estimates are from 2022 compared to National Grid’s primarily 2018; Core CPI increased approximately 13+% from start of 2019 through mid-2022.
- RIE is proposing the same Landis+Gyr AMF technology solution that National Grid initially proposed for Rhode Island and is deploying in New York and recently approved in Massachusetts.



## Systems Costs – Headend & MDM – Implementation



<u>AMF Component</u>	<u>Provider or Resource</u>	<u>Implementation (years 1-4)</u>	
		<u>Capital</u>	<u>Expense</u>
Project Management	PPL	\$2,800,056	\$0
Headend	Landis+Gyr	\$8,681,270	\$3,636,715
Headend	System Integrator	\$3,355,090	\$0
Meter data management	Landis+Gyr	\$3,082,660	\$1,405,551
Meter data management	System Integrator	\$1,356,995	\$0
<b>SYSTEMS HE + MDM - TOTAL</b>		<b>\$19,276,071</b>	<b>\$5,042,266</b>

Note: Amounts may not add exactly due to rounding

### Highlights:

- Cost compare completed against PPL PA total on premise to proposed cloud solution; yielded comparable costs using meter end points equalizing.
- RIE enhancements compared to PPL PA:
  - RIE proposed solution will enable faster interval processing: PA every 4-6 hours compared to RIE near real-time every 15-20 minutes.
  - RIE would have a fully integrated disaster recovery solution.



## Systems Costs – multiple – Implementation Cont'd



AMF Component	Provider or Resource	Implementation (years 1-4)	
		Capital	Expense
Customer Engagement	PPL	\$3,652,000	\$192,445
Customer Engagement	Vendors - other	\$0	\$63,036
Analytics	Vendor - other	\$2,167,102	\$0
Analytics	PPL / System Integrator	\$1,218,090	\$0
Analytics	Landis+Gyr	\$391,538	\$260,261
Middleware	PPL / System Integrator	\$1,998,095	\$0
Middleware	Vendor - other	\$758,468	\$0
ADMS & OMS	PPL / Vendor - other	\$1,794,902	\$0
Cybersecurity	PPL / System Integrator	\$2,578,228	\$0
CSS	PPL / Vendor - other	\$1,682,264	\$0
Deploy Mgmt. Software	System Integrator	\$886,855	\$0
Deploy Mgmt. Software	Meter Installation Vendor	\$334,411	\$0
<b>SYSTEMS - TOTAL</b>		<b>\$17,461,954</b>	<b>\$515,742</b>

Note: Amounts may not add exactly due to rounding



## Network Costs – Implementation



<u>AMF Component</u>	<u>Provider or Resource</u>	<u>Implementation (years 1-4)</u>	
		<u>Capital</u>	<u>Expense</u>
Network Installations	Landis+Gyr	\$6,611,125	\$0
Network Hardware	Landis+Gyr	\$4,891,727	\$0
Project Management	Landis+Gyr	\$1,190,003	\$0
Network Telecom Backhaul	Vendors - others	\$0	\$329,522
Network Lab Setup	Rhode Island Energy / PPL	\$4,375	\$0
<b>NETWORK-TOTAL</b>		<b>\$12,697,229</b>	<b>\$329,522</b>

Note: Amounts may not add exactly due to rounding

### Highlights:

- Radio frequency (RF) network design completed to correctly size and cost estimate; includes near real time specification for 15-minute intervals every 15-20 minutes.
- Reduce implementation risk using Landis+Gyr as the provider responsible for installation and optimization of their Network technology via a milestone delivery approach.
- Overall total weighted average network hardware unit price is approximately 47% less than National Grid's in Docket No. 5113 BCA.
- Project Management is specific to vendor oversight of network installations; PPL oversees both activities.



## Meter Costs – Implementation



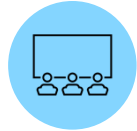
<u>AMF Component</u>	<u>Provider or Resource</u>	<b>Implementation (years 1-4)</b>	
		<u>Capital</u>	<u>Expense</u>
Meter Hardware	Landis+Gyr	\$68,180,106	\$0
Meter Installations	Meter Installation Vendor	\$18,629,438	\$0
Pre-sweeps	Meter Installation Vendor	\$4,400,186	\$0
Project Management	Meter Installation Vendor	\$3,385,531	\$0
Meter base repairs	Meter Installation Vendor	\$0	\$3,022,075
Ancillary Equipment	Rhode Island Energy	\$0	\$160,500
Meter Shipment QA/QC	Rhode Island Energy	\$402,300	\$0
<b>METER - TOTAL</b>		<b>\$94,997,561</b>	<b>\$3,182,575</b>

Note: Amounts may not add exactly due to rounding

### Highlights:

- RIE overall total weighted average meter unit price is slightly higher, +1.7%, than National Grid’s total meter unit price in Docket No. 5113 confidential BCA.
- Project Management is specific to vendor oversight of meter installations; PPL oversees both activities.





## Program Costs – Implementation



<u>AMF Component</u>	<u>Provider or Resource</u>	<b>Implementation (years 1-4)</b>	
		<u>Capital</u>	<u>Expense</u>
Project Management	Rhode Island Energy / PPL	\$4,134,376	\$0
Project Management	PMO Vendor	\$5,895,357	\$0
Change Management	Rhode Island Energy / PPL	\$0	\$2,318,351
Change Management	PMO Vendor	\$0	\$2,039,999
Change Management	Landis+Gyr	\$0	\$5,000
<b>PROGRAM - TOTAL</b>		<b>\$10,029,733</b>	<b>\$4,363,350</b>

Note: Amounts may not add exactly due to rounding

### Highlights:

- PMO Vendor RFP is in progress.
- BCA Estimates were based on PA experience on resources and skills needed for implementation coupled with industry hourly rate estimates.



**Rhode Island Energy**<sup>™</sup>  
a PPL company

## AMF Costs Incurred to April 30, 2023

<u>AMF Component</u>	<u>Forecasted</u>		<u>Actual</u>	
	<u>Capital</u>	<u>Expense</u>	<u>Capital</u>	<u>Expense</u>
Network	\$786,367			
Systems	\$7,210,989		\$716,256	
<b>TOTAL</b>	<b>\$7,997,356</b>		<b>\$716,256</b>	

### Highlights:

- Project timeline anticipated project costs ‘at-risk’ for work to be completed prior to an anticipated ruling.
- Referring to the testimony of Walnock & Reder, Bates 46 of 84, states: “The Company will be performing work associated with Systems, Meters, RF Network Equipment and Planning functions totaling approximately \$8 million prior to receipt of regulatory approval for the AMF Business Case.”
- The handling of these costs have been contemplated, as outlined in the cost recovery section of the business case, in the event AMF is not regulatory approved.



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## Summary Take-Aways

- PPL has a successful history with Landis+Gyr established through prior AMI deployments. Extending the relationship to Rhode Island provides efficiency synergies, reduces implementation risk and offers increased project certainty.
- The Rhode Island AMF Business Case components have been fully vetted and reviewed for a best value approach; founded on proposals, RFPs, and agreements that are in process.
- Rhode Island Energy is receiving the next wave of AMF technology that leapfrogs capability in PPL PA and KY offering potential to unleash new benefits and services with continued scale potential.
- Proposed AMF 2.0 components include solutions provided by Landis+Gyr and others that will be owned by PPL/RIE, installed by 3<sup>rd</sup> parties and Landis+Gyr with PPL/RIE oversight and ultimately operated by PPL/RIE and Landis+Gyr.
- Landis+Gyr proposed costs are competitive, especially given the impacts of inflation.

THE NARRAGANSETT ELECTRIC COMPANY  
d/b/a Rhode Island Energy  
RIPUC Docket No. 22-49-EL  
In Re: Advanced Metering Functionality Business Case  
SaaS Agreement Calculations Spreadsheet  
Attachment B

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SaaS Agreement Calculations Spreadsheet

**CONFIDENTIAL**

The Company provided SaaS Agreement Calculations Spreadsheet as an Excel version.

As permitted by the Public Utilities Commission Rule 810-RICR-00-00-1-1.3(H)(3) and Rhode Island Gen. Laws § 38-2-2(4)(A), -(B), the Company is seeking confidential treatment of the SaaS Agreement Calculations Spreadsheet.

**PPL Electric Utilities Corporation**  
**Financial Department**  
**Accounting Policies and Procedures**

**Section:** Asset Accounting

**Last Update/Reviewed:** 12/31/2022

**Subject:** Accounting for Computer  
Software

**Contact:** Annie Minor

**Number:** 615

**I. Purpose**

The policy is to provide guidelines for determining the accounting treatment for computer software costs purchased and/or developed for Company internal use.

**Applicability**

Applicable to all PPL EU domestic business lines and Service Groups that utilize BMI projects to account for capital and expense expenditures.

**II. Definitions**

See **Appendix A** for specific references from accounting guidance. FERC has adopted the GAAP guidance for accounting for internal-use computer software.

**Accounting Practice**

Purchased Software:

All software purchased separately from hardware and having a useful life consistent with the depreciable life established in the most recently approved depreciation study and a cost in excess of \$5,000 shall be capitalized in accordance with ASC 350-40. Software will be recorded in FERC Account 303, Miscellaneous Intangible Plant, and amortized by charging FERC Account 404, Amortization of Limited-Term Plant, and crediting FERC Account 111, Accumulated Provision for Amortization of Utility Plant. Retirements of software will be recognized according to instructions for FERC Account 303 and ASC 350-40.

Internally Developed Software:

All software developed internally and having a useful life consistent with the depreciable life established in the most recently approved depreciation study and

a cost in excess of \$50,000 shall be capitalized in accordance with the guidelines set forth in ASC 350-40 and recorded per the rules stated above for purchased software.

Note: Internally developed software generally consists mainly of labor. However, it is not limited to internal IT labor only but rather may also include external/contract labor and insignificant purchased software costs. The use of contractors or minor purchases of software on a project do not prevent the proper classification of internally developed software (i.e., the project is still subject to the \$50,000 threshold for internally developed software).

#### Hosted Software Agreements/Software as a Service (SaaS):

In connection with the licensing of software products, cloud/hosted software agreements are arrangements in which the Company does not take possession of the software. Instead, the software application resides on the vendor's or a third party's hardware, and the Company accesses and uses the software on an as-needed basis over the internet or via a dedicated line. Fees associated with hosted arrangements will be expensed as incurred, unless all of the following criteria are met:

- a. The license fees cover a multi-year term and are prepaid in full.
- b. The Company has the contractual right to take possession of the software at any time during the hosting period without significant penalty (defined below).
- c. It is feasible for the Company to either run the software on its own hardware or contract with another party unrelated to the vendor to host the software.

The term "without significant penalty" contains two distinct concepts:

- a. The ability to take delivery of the software without incurring significant costs (i.e. costs greater than \$100,000 or 10% of the license cost).
- b. The ability to use the software separately without significant diminution in utility or value.

If the above criteria is met for capitalization, the fees for the product must be split into license fees (capital), hosting fees (O&M) and maintenance and support (O&M).

Hosting arrangements that do not meet the criteria above are service contracts and do not constitute a purchase of or convey a license to software and thus all fees should be expensed. Other costs associated with the software project will either be expensed or capitalized as described below in the Accounting for Related Costs section—provided

that there is a commitment that long-term benefits are to be gained from the capitalized costs. Long term benefits must be evidenced by a hosted arrangement contractual agreement with a term consistent with the depreciable software life established in the most recently approved depreciation study. Projects involving hosting arrangements should be discussed in advance with Asset Accounting. See **Appendix B** for a guide on determining if costs associated with a SaaS arrangement should be capital or expense.

For hosting arrangements where PPL has determined that the Company has the contractual right and ability to take delivery of software without incurring significant penalty, Asset Accounting will inquire on a quarterly basis as to whether there have been significant changes to circumstances which would impact such assertions. For technologies which undergo a significant change in circumstances regarding right or ability to take delivery without significant penalty, accounting judgments related to such technologies will be applied on a prospective basis for any new software implementation/enhancement/upgrade efforts undertaken.

**Implementation Costs of Hosting Arrangements:** In August 2018, the FASB issued ASU 2018-15, which provided definitive guidance on how implementation costs of a computing arrangement (i.e., hosting arrangement), which is a service contract should be recorded and reported. Under the new guidance, the implementation costs of a hosting arrangement that is considered a service contract will be capitalized as a prepayment and those costs will be amortized over the term of the underlying hosting arrangement. This amortization will be recorded as "Other operating and maintenance" expense. This guidance was effective as of 1/1/2020.

While ASU 2018-15 will impact the treatment of implementation costs of a hosting arrangement, which is considered a service contract for SEC purposes, there has been no change to the treatment of these costs for FERC reporting purposes. For FERC reporting, PPL Electric will continue to capitalize these costs as property, plant and equipment and record depreciation expense over the useful life for software assets, as defined in the most recent service life study. As such, PPL Electric will have a FERC to GAAP difference. Adjustments to reflect new SEC presentation requirements are recorded quarterly beginning in 2020. See link at the end of policy to a full version of the Whitepaper document on the implementation of the new cloud accounting guidance.

An entity (customer) shall determine the term of the hosting arrangement that is a service contract as the fixed noncancellable term of the hosting arrangement plus all of the following: (ASC 350-40-35-14)

- a. Periods covered by an option to extend the hosting arrangement if the entity (customer) is reasonably certain to exercise that option
- b. Periods covered by an option to terminate the hosting arrangement if the entity (customer) is reasonably certain not to exercise that option
- c. Periods covered by an option to extend (or not to terminate) the hosting arrangement in which exercise of the option is controlled by the vendor.

Upgrades/Enhancements to Software:

Upgrades and enhancements made when software is originally purchased will be capitalized as part of the software cost in accordance with ASC 350-40. Upgrades and enhancements made after the initial purchase or development will be capitalized in accordance with ASC 350-40 if they represent modifications to the original asset to enable the software to perform tasks that it was previously incapable of performing.

Accounting for related costs:

Guidance on capitalization of costs incurred for computer **hardware/software** is provided below:

1. Costs incurred during the **preliminary stages** of a hardware/software project should be expensed as incurred include the following:
  - a. initial development of scope
  - b. documenting high-level business requirements and performance/system requirements (used in the evaluation of alternatives)
  - c. conceptual formulation of alternatives
  - d. evaluation of alternatives
  - e. determination of existence of needed technology
  - f. final selection of alternatives/vendors
  - g. initial development of cost estimates
2. Costs incurred during the **application stage** to develop software should be capitalized. Capitalization of costs shall begin when a.) the preliminary project stage is completed and b.) management, with the relevant authority, implicitly or explicitly authorizes and commits to funding a computer software project and it is probable that the project will be completed and the software will be used to perform the function intended. Examples of authorization include the execution of a contract with a third



party to develop the software. Application stage costs include the following:

- a. design activities including documentation of process changes required (to-be process documentation), detailed application requirements, analysis of system functionality and identification of required changes/customizations (gap-analysis), functional design documents, visualization or prototyping of solution, business rules, configuration requirements/rules, data requirements and reporting requirements
- b. build activities including documentation of technical requirements, development, coding, software configuration, interfaces, and installation to hardware
- c. testing including the development of user stories, use cases, testing scenarios and test scripts, and defect management
- d. implementation activities

Costs shall include the actual cost of purchased hardware and software, consultant fees, travel expenses and payroll costs of the Information Technology Department. User (i.e., line of business) department costs may be charged to a project, but are limited to charges incurred by persons actively working on the project. Examples of employee activities include, but are not limited to design, coding and testing during the application development stage. Charges of persons serving on steering or advisory committees are excluded from capital costs.

3. Costs to develop or obtain software to access or **convert old data** using new systems should be capitalized. However, the actual cost of data conversion (purging or cleansing existing data, reconciling or balancing old data versus the data in the new system) should be expensed as incurred.
4. **Perpetual license fees** can be capitalized along with the costs to purchase software.
5. All **training** costs should be expensed as incurred.
6. Documentation of as-is business processes should be expensed as incurred.
7. Business process reengineering (not specific to the implementation of specific technology solution) should be expensed as incurred.

Meals related to Company business and incurred as part of the capitalized activities described above may be charged to the capital project. Meals

related to Company business and incurred as part of the expensed activities described above must be expensed. Meals, golf outings, room rentals, food for celebrations and other expenses incurred as employee recognition for participation on a capital project shall be charged to a below-the-line expense account.

8. In some cases, software contract fees may include **multiple-arrangements**, such as training for the software, maintenance fees for routine maintenance work to be performed by the third party, data conversion costs, reengineering costs, and rights to future upgrades and enhancements. Costs should be allocated among all individual elements.
9. Capitalization shall cease no later than the point at which a computer software project is substantially complete and ready for its intended use. Substantially complete is generally defined as when all substantial testing is completed and automated systems are operational. The post go-live period for software projects is 60 days, after which capitalization should cease. During the 60-day post go-live period, costs that may be capitalized are those that are fixing or addressing issues with the product that went live and should not include completely new work efforts (such as a new module), change management costs or training costs. While the project may be held open to ensure invoices are paid, the invoices should not include services or costs incurred after the 60-day post go-live period. New efforts on the software should be captured with a new project number. In addition, costs incurred to operate and maintain software shall be expensed.
10. **Maintenance** costs, including the first year of maintenance, should be expensed as incurred.
11. **Upgrades and enhancements** to existing software (modifications that result in the software being able to perform tasks that it was previously incapable of performing) should be expensed or capitalized in accordance with the rules listed above. Upgrades without additional functionality should be expensed. Costs that cannot be separated on a reasonably cost-effective basis between maintenance and relatively minor upgrades and enhancements should be expensed (i.e. security patches or bug fixes). The threshold for software upgrades/modifications to be capitalized is \$5,000. Note: PPL does capitalize enhancements made to software after the initial software in-service in order to fix issues immediately after the go-live date or to modify the software to make it functional for our particular needs. After post go-live issues have been addressed, work performed to correct issues and perform routine maintenance is expensed.

12. When a software project will not be completed, no further costs may be capitalized and the project should be canceled and a 1219 entry prepared to reclassify the costs to expense.

## **V. Procedures**

### Procedure To Be Followed In Capitalizing Software:

Refer to IT Chapter 4001 procedure for specific procedures.

### Classification/Amortization of Capitalized Software:

After a software project is completed and placed in service, the costs of the project are recorded as intangible plant in Account 10607 - Complete Construction Not Classified - General and Intangible. When unitized, the costs are transferred from 10607 into 10107 - General and Intangible - Plant In Service.

The accumulated amortization is credited to Account 11117 - Accumulated Provision for Amortization of Electric Utility Plant-General. When a software project is completely amortized, Plant Accounting retires the project by crediting the original cost of the project to Account 10107 and charging Account 11117.

## **VI. Responsibility**

PPL Electric Utilities is responsible for following guidelines as defined in the policy, which includes filling out the "Capital Computer Software Project Authorization".

Asset Accounting is responsible for reviewing project set up and ensuring capital additions and retirements are recorded accurately to/from the Continuing Property Records.

## **VII. Related Publication**

- FASB ASC 350-40, Internal Use Software (Intangibles – Goodwill and Other) (formerly SOP 98-1, Accounting for the Costs of Computer Software Developed or Obtained for Internal Use)
- FASB Accounting Standards Update No. 2015-05, Customer's Accounting for Fees Paid in a Cloud Computing Arrangement

## Links

Reference the *Cloud Accounting White Paper* on the Finance SharePoint site:  
[https://pplcorp.sharepoint.com/:w:/r/sites/PropertyAcctg/Capital/Accounting%20Guidance/File%20Memos/Implementation%20of%20ASU%202018-15%20\(Cloud%20Computing\)%20White%20Paper%20-%20Final.docx?d=wbcbc534cc68e46ebb287f2907227fd5c&csf=1&web=1&e=mxVKFt](https://pplcorp.sharepoint.com/:w:/r/sites/PropertyAcctg/Capital/Accounting%20Guidance/File%20Memos/Implementation%20of%20ASU%202018-15%20(Cloud%20Computing)%20White%20Paper%20-%20Final.docx?d=wbcbc534cc68e46ebb287f2907227fd5c&csf=1&web=1&e=mxVKFt)

***Prepared By: Annie Minor 12/28/2022***

***Reviewed By: Robert Phillips 2/8/2023***

## **Appendix A**

Appendix A provides specific references and exact language from Financial Accounting Standards Board ASC 350-40, Internal Use Software (Intangibles – Goodwill and Other) (formerly SOP 98-1, Accounting for the Costs of Computer Software Developed or Obtained for Internal Use). Appendix A is included here in support of the guidance provided above in Policy 615 and for easy reference.

### **Preliminary Project Stage**

Internal and external costs incurred during the preliminary project stage shall be expensed as they are incurred. (ASC 350-40-25-1)

Activities include (ASC 350-40-55-3):

1. Conceptual formulation of alternatives
2. Evaluation of alternatives
3. Determination of existence of needed technology
4. Final selection of alternatives.

### **Application Development Stage**

Internal and external costs incurred to develop internal-use computer software during the application development stage shall be capitalized. (ASC 350-40-25-2)

Activities include (ASC 350-40-55-3):

1. Design of chosen path, including software configuration and software interfaces
2. Coding
3. Installation to hardware
4. Testing, including parallel processing phase.

Costs include (ASC 350-40-30-1):

- a. External direct costs of materials and services consumed in developing or obtaining internal-use computer software:
  1. Fees paid to third parties for services provided to develop the software during the application development stage
  2. Costs incurred to obtain computer software from third parties
  3. Travel expenses incurred by employees in their duties directly associated with developing software.
- b. Payroll and payroll-related costs (for example, costs of employee benefits) for employees who are directly associated with and who devote time to the internal-use computer software project, to the extent of the time spent directly on the project. Examples of employee activities include but

are not limited to coding and testing during the application development stage.

Timing (ASC 350-40-25-12):

Capitalization of costs shall begin when both of the following occur:

- a. Preliminary project stage is completed.
- b. Management, with the relevant authority, implicitly or explicitly authorizes and commits to funding a computer software project and it is probable that the project will be completed and the software will be used to perform the function intended. Examples of authorization include the execution of a contract with a third party to develop the software, approval of expenditures related to internal development, or a commitment to obtain the software from a third party.

Capitalization shall cease no later than the point at which a computer software project is substantially complete and ready for its intended use, that is, after all substantial testing is completed. (ASC 350-40-25-14)

The process of data conversion from old to new systems may include purging or cleansing of existing data, reconciliation or balancing of the old data and the data in the new system, creation of new or additional data, and conversion of old data to the new system. Data conversion often occurs during the application development stage. (ASC 350-40-05-8)

Costs to develop or obtain software that allows for access to or conversion of old data by new systems shall also be capitalized. (ASC 350-40-25-3)

Actual data conversion costs, except as noted in paragraph 350-40-25-3, shall be expensed as incurred. (ASC 350-40-25-5)

Training costs are not internal-use software development costs and, if incurred during this stage, shall be expensed as incurred. (ASC 350-40-25-4)

### **Post implementation-Operation Stage**

Internal and external training costs and maintenance costs during the post implementation-operation stage shall be expensed as incurred. (ASC 350-40-25-6)

Activities include (ASC 350-40-55-3):

1. Training
2. Application maintenance.

### **Impairment**

When it is no longer probable that the computer software project will be completed and placed in service, no further costs shall be capitalized, and guidance in paragraphs 350-40-35-1 through 35-3 on impairment shall be applied to existing balances. (ASC 350-40-25-13)

## Hosting Arrangements

Hosting Arrangement - In connection with the licensing of software products, an arrangement in which an end user of the software does not take possession of the software; rather, the software application resides on the vendor's or a third party's hardware, and the customer (i.e., PPL) accesses and uses the software on an as-needed basis over the Internet or via a dedicated line. (ASC 350-40 Master Glossary)

The guidance in this Subtopic applies only to internal-use software that a customer (i.e. our Company) obtains access to in a hosting arrangement if **both** of the following criteria are met (ASC 350-40-15-4):

1. The customer has the contractual right to take possession of the software at any time during the hosting period without significant penalty. The term without significant penalty contains two distinct concepts:
  - a. The ability to take delivery of the software without incurring significant costs.
  - b. The ability to use the software separately without significant diminution in utility or value.
2. It is feasible for the customer to either run the software on its own hardware or contract with another party unrelated to the vendor to host the software.

Hosting arrangements that do not meet both criteria are service contracts and do not constitute a purchase of, or convey a license to, software. (ASC 350-40-15-4)

## Upgrades and Enhancements

Upgrades and enhancements are defined as modifications to existing internal-use software that result in additional functionality—that is, modifications to enable the software to perform tasks that it was previously incapable of performing. Upgrades and enhancements normally require new software specifications and may also require a change to all or part of the existing software specifications. (ASC 350-40-05-9)

In order for costs of specified upgrades and enhancements to internal-use computer software to be capitalized in accordance with paragraphs 350-40-25-8 through 25-10 (*see immediately below*), it must be probable that those expenditures will result in additional functionality. (ASC 350-40-25-7)

Internal costs incurred for upgrades and enhancements shall be expensed or capitalized in accordance with paragraphs 350-40-25-1 through 25-6 (see *preliminary project and application development stages above*). (ASC 350-40-25-8)

Internal costs incurred for maintenance shall be expensed as incurred. (ASC 350-40-25-9)

Entities that cannot separate internal costs on a reasonably cost-effective basis between maintenance and relatively minor upgrades and enhancements shall expense such costs as incurred. (ASC 350-40-25-10)

External costs incurred under agreements related to specified upgrades and enhancements shall be expensed or capitalized in accordance with paragraphs 350-40-25-1 through 25-6 (see *preliminary project and application development stages above*). If maintenance is combined with specified upgrades and enhancements in a single contract, the cost shall be allocated between the elements as discussed in paragraph 350-40-30-4 (see *immediately below*) and the maintenance costs shall be expensed over the contract period. However, external costs related to maintenance, unspecified upgrades and enhancements, and costs under agreements that combine the costs of maintenance and unspecified upgrades and enhancements shall be recognized in expense over the contract period on a straight-line basis unless another systematic and rational basis is more representative of the services received. (ASC 350-40-25-11)

### **Multiple-Element Arrangements Included in Purchase Price**

Entities may purchase internal-use computer software from a third party. In some cases, the purchase price includes multiple elements, such as training for the software, maintenance fees for routine maintenance work to be performed by the third party, data conversion costs, reengineering costs, and rights to future upgrades and enhancements. Entities shall allocate the cost among all individual elements. The allocation shall be based on objective evidence of fair value of the elements in the contract, not necessarily separate prices stated within the contract for each element. Those elements included in the scope of this Subtopic shall be accounted for in accordance with the provisions of this Subtopic. (ASC 350-40-30-4)



**Appendix B:**  
**Steps to Capitalize a SaaS\*/Cloud Asset**

