BEFORE THE

PENNSYLVANIA PUBLIC UTILITY COMMISSION

Docket No. R-2024-3046523

Duquesne Light Company

Statement No. 4

Direct Testimony of John C. Hilderbrand, II

Subjects: Distribution System Capital Investment for Reliability and Resilience, Capital Additions, Vegetation Management, and Non-wires Solutions

Date: March 20, 2024

DIRECT TESTIMONY OF JOHN C. HILDERBRAND II

I. INTRODUCTION

Q. Please state your full name and business address.

A. My name is John C. Hilderbrand II. My business address is Duquesne Light Company, 2841 New Beaver Avenue, Pittsburgh, Pennsylvania 15233.

Q. In what capacity are you employed by Duquesne Light Company?

A. I am currently employed by Duquesne Light Company ("Duquesne Light" or the "Company") as Vice President of Operations. In this role, I am responsible for the strategic direction of the Operations team, which includes asset management, system planning & protection, engineering and operations and technology, project management, vegetation management, field operations and maintenance, and work management and performance. Ultimately, I am accountable for ensuring that Duquesne Light's distribution system is safe, reliable and efficient. Prior to my current role, I served as the Managing Director, Engineering and Programs at Duquesne Light. In that role I was responsible for the asset management, engineering, system planning and protection, project management, and vegetation management functions.

Q. Please summarize the roles and responsibilities of each function you oversee.

A. Duquesne Light's Asset Management function's responsibilities include establishing inspection and maintenance program requirements, assessing and

monitoring the condition and performance of transmission and distribution assets, and establishing asset replacement programs. The System Planning and Protection functions include ensuring that the transmission and distribution system is capable of meeting current and future load requirements and establishing the settings and configuration of equipment designed to protect transmission and distribution system assets. The Engineering and Operations Technology group is responsible for developing the designs required for the installation and replacement of assets which includes projects of various sizes across Duquesne Light's system, maintaining the system electrical model to ensure an accurate representation of circuits and associated equipment for the Company's outage management system, and supporting the management of current and future operations technology such as the outage management system. Project Management is responsible for planning and overseeing the design and construction of transmission and distribution infrastructure projects that are designed and constructed by Duquesne Light employees and contractors. The Vegetation Management group manages the Company's comprehensive vegetation management program and oversees the work performed by Duquesne Light's vegetation management contractors. Field Operations includes the groups of Duquesne Light employees responsible for performing maintenance and construction work associated with the Company's transmission and distribution assets as well as providing 24 x 7 first responder staffing to address customer outages and safely restore service. The Operations Center is staffed 24 hours a day to manage the transmission and distribution system and dispatch

troubleshooters and crews to address abnormal conditions and customer outages. The responsibilities of the Work Management and Performance include development and monitoring of the Operations expense and capital work plans, scheduling Field Operations crews to perform planned work, and supporting the Operations group by monitoring and analyzing performance metrics.

Q. Please provide your educational background and describe your professional experience.

A. I have a Bachelor of Science Degree in Electrical Engineering from the University of Pittsburgh and have been a licensed Professional Engineer since 2006. I have 38 years of electric utility experience with 29 years in various levels of management involving many aspects of the distribution and transmission system.

Q. What is the purpose of your direct testimony?

A. The purpose of my testimony is to provide an overview of Duquesne Light's electric distribution system and detail the Company's plans to invest in the electric distribution system to improve the reliability and resilience of the grid. After the introduction, my testimony is organized in five sections. In section II, I provide an overview of the electrical system and system planning process. In section III, I provide an overview of Duquesne Light's historical reliability performance. In section IV, I detail the Company's planned capital additions to replace aging distribution infrastructure or install new infrastructure to meet system reliability and resilience needs. I also detail new tariff Rule 8.1 & Rule 8.2, and modifications

to tariff Rule 17. In section V, I discuss the Company's approach to Vegetation Management. Finally in section VI, I will discuss the Company's plan to implement other non-wires solutions designed to help maintain system reliability and affordability.

Q. Was your testimony prepared by you or under your direct supervision?

A. Yes.

II. OVERVIEW - ELECTRICAL SYSTEM & PLANNING PROCESS

Q. Please describe Duquesne Light's electric distribution system?

A. Duquesne Light provides electric service to more than 600,000 customers located primarily in Allegheny and Beaver counties (including the city of Pittsburgh), a service territory of approximately 817 square miles. Duquesne Light delivers electricity from a variety of generation sources through a transmission and distribution system at the voltages and in the quantity required by our customers. The system includes approximately 7,500 miles of distribution and sub transmission lines, approximately 669 miles of transmission lines, 155 company owned substations, 190 customer-owned substations, approximately 211,880 utility poles, and 106,766 distribution transformers.

The transmission system consists of a network of 345 kV, 138 kV, and 69 kV transmission lines that supply a series of substations. These lines move bulk power from various sources of supply, which are not owned by Duquesne Light, to the places in Duquesne Light's service territory where it is needed. These lines are the

most reliable form of power delivery and are the most electrically efficient. They enable the movement of large quantities of bulk power with minimal energy loss or voltage drop. These transmission lines supply power to several types of substations within our service territory. Substation transformers then convert the transmission voltages to lower (distribution) voltages that are used for distribution to the majority of Duquesne Light's customers. Costs for transmission assets are recovered through Duquesne Light's FERC-approved formula rate.

Once converted down to distribution voltages (typically 23 kV or 4 kV, except in our downtown Pittsburgh network system where there are both 11 kV and 23 kV primary distribution voltages), electricity is delivered to customers through the local distribution system. The local distribution system consists of distribution lines, transformers, switches, breakers, and other electrical equipment that Duquesne Light uses to deliver power from the various substations to the customer.

Q. Does Duquesne Light have a system planning process to ensure its electric system is reliable and able to meet the needs of its customers?

A. Yes. Duquesne Light's planning process encompasses a review of capital additions needed for service restoration, customer commitments, service capacity and reliability, and infrastructure support. This planning process addresses both our annual investment needs for capital additions and replacements as well as necessary investments in our energy delivery and support infrastructure to replace physical infrastructure that is either nearing obsolescence or unable to meet our customers' needs.

In light of evolving customer behaviors and expectations, Duquesne Light's planning process takes into account the changing nature of the distribution system. For instance, as the Company's customers seek to interconnect Distributed Energy Resources ("DERs") to the distribution grid, Duquesne Light's System Planning team studies the grid's capacity to host DERs at our customers' proposed interconnection-points and develops plans by which to facilitate the interconnection process. Similarly, as our customers purchase electric vehicles(:EVs") and charge them at their residences or places of business, Duquesne Light's System Planning team works to ensure that our grid has sufficient capacity to support the increased demand on the system.

Through its system planning efforts, Duquesne Light has identified the continued need to invest in conversion of its legacy 4 kV distribution system to 23 kV. Duquesne Light's 23 kV distribution circuits have higher capacities to allow more customers to be connected, provide a stronger source which more effectively maintains a reliable voltage profile and power quality across the circuit, have additional intelligent distribution devices to allow for remote fault sectionalization and faster restoration, and have demonstrated the ability to accommodate additional DER. Duquesne Light's continued investment in these projects will enable connection of additional customers, provide the capacity for increased customer electrification such as adoption of electric vehicles, as well as promote additional integration of DER. See the Direct Testimony of Sarah J. Olexsak for additional information about how Duquesne Light customers have and are projected to continue to adopt EV's. Duquesne Light's System Planning team works closely

with DLC's Transportation Electrification team to identify areas of past and anticipated EV growth to ensure the electric grid remains reliable and can support the charging of a growing number of EVs.

Q. Has Duquesne Light made any recent changes to its system planning processes?

A. Duquesne Light continues to advance its methods of system planning. Over the past few years, Duquesne Light has increased its electrical modeling efforts and use of distribution power flow software such as CYME. CYME allows Distribution Planning Engineers to perform a comprehensive analysis of a distribution circuit to analyze power flow, voltage, protective device coordination, and DER hosting capacity. With this comprehensive circuit view, the Distribution Planning Engineers can develop projects to improve circuit reliability.

These distribution models and tools are foundational and allow Duquesne Light to perform more advanced studies including time series analysis rather than just evaluating at the peak load periods. These models have been used by Duquesne Light to evaluate methods to increase distribution system utilization and load management programs such as those described in the Direct Testimony of Sarah J. Olexsak. Shifting existing and new loads to non-peak hours of the day may reduce or defer the need for system upgrades and make better use of the Company's existing system assets.

Additionally, Duquesne Light has implemented an Operational Data Management System ("ODMS") which provides consolidation and analytic capabilities for aggregated customer load and voltage data. Duquesne Light has begun to use this

tool for detailed load allocation, improving the accuracy of its distribution circuit models. The tool's analytics are also identifying overloaded equipment where Duquesne Light didn't previously have visibility, such as distribution transformers.

Q. Is Duquesne Light planning any changes to its system planning process in 2025?

A. Duquesne Light is planning to continue to expand it analytical capabilities in 2025 including furthering its development of electrical models, using additional functions of the CYME distribution power flow software, and continuing to evolve the analytics of the ODMS to provide greater insights into opportunities to improve the reliability of Duquesne Light's electrical grid. Using these capabilities, Duquesne Light plans to continue to evaluate and incorporate load management programs into its system planning process.

Additionally, Duquesne Light is at the beginning of a journey to develop Comprehensive System Planning ("CSP") capabilities. CSP brings together data and needs from multiple sources to identify and prioritize projects to maximize the benefits through integrated decision making. Duquesne Light is evaluating how different data sources, including but not limited to, asset condition, capacity, load growth, operational performance, extreme weather, and community vulnerabilities can be evaluated through an integrated analysis to develop projects which deliver the largest benefits relative to costs. Duquesne Light will continue to expand its CSP capabilities in 2025 and the years beyond.

III. HISTORICAL RELIABILITY PERFORMANCE

Q. Has Duquesne Light been able to maintain high levels of reliability since its last base rate proceeding?

A. Yes. The Company has maintained high levels of reliability. The Company measures its reliability performance based on three system and customer reliability metrics: System Average Interruption Frequency Index ("SAIFI"), System Average Interruption Duration Index ("SAIDI") and Customer Average Interruption Duration Index ("CAIDI"). The Company consistently performed well against the standards set by the Commission.

Q. Please summarize Duquesne Light's reliability metrics in recent history (e.g., over the past five years of benchmarked data).

A. Over the past five years of benchmarked data (i.e., 2019 through the third quarter of 2023 utilizing a combination of the Pennsylvania Public Utilities Commission's annual *Electric Service Reliability in Pennsylvania* report for 2019 through the third quarter of 2023 and large Electric Distribution Companies' ("EDCs'") individual Quarterly Electric Reliability Reports for the third quarter of 2023 (Docket No. M-2023-3039027)), Duquesne Light has been, on average over the approximately five-year period, either the top-performing large EDC or the second top-performing large EDC in the Commonwealth, depending on the specific reliability metric.

For the SAIDI reliability metric over the 2019 through third quarter of 2023 period, Duquesne Light was the top-performing (*i.e.*, #1) of the Commonwealth's seven large EDC's over the five-year period (*i.e.*, the arithmetic mean of 2019 through third quarter 2023 performance). With respect to individual years' performances,

Duquesne Light was the #1 large EDC in 2019, 2020, and 2023, the #3 large EDC in 2022, and the #4 large EDC in 2021. Duquesne Light performed better than the Standard value of 182 in each of the five years and better than the Company's Benchmark of 126 in 2019, 2020, and 2023. This information is summarized in the following table.

Table 1 – SAIDI Performance Among Large Pennsylvania EDCs, 2019-3rd Quarter 2023

	2019	2020	2021	2022	2023-3	Mean
Duquesne Light	106	111	173	134	76	120
Benchmark	126	126	126	126	126	126
Standard	182	182	182	182	182	182
PA Large EDC "2"	253	190	233	211	260	229
PA Large EDC "3"	205	122	164	71	112	135
PA Large EDC "4"	252	214	277	364	338	289
PA Large EDC "5"	178	179	129	133	131	150
PA Large EDC "6"	150	116	170	143	172	150
PA Large EDC "7"	196	241	242	364	322	273
Rank (Duquesne Light)	1	1	4	3	1	1
Percentile (Duquesne Light)	0%	0%	50%	33%	0%	0%

For the SAIFI reliability metric over the 2019 through third quarter of 2023 period, Duquesne Light was the second top-performing (*i.e.*, #2) of the Commonwealth's seven large EDC's over the five-year period (*i.e.*, the arithmetic mean of 2019 through third quarter 2023 performance). With respect to individual years' performances, Duquesne Light was the #1 large EDC in 2020 and 2023, the #2 large EDC in 2019, and the #3 large EDC in 2021 and 2022. Duquesne Light performed better than the Company's Benchmark and Standard values of 1.17 and

1.40, respectively, in each of the five years. This information is summarized in the following table.

Table 2 – SAIFI Performance Among Large Pennsylvania EDCs, 2019-3rd Quarter 2023

	2019	2020	2021	2022	2023-3	Mean
Duquesne Light	1.01	0.84	0.93	0.93	0.68	0.88
Benchmark	1.17	1.17	1.17	1.17	1.17	1.17
Standard	1.40	1.40	1.40	1.40	1.40	1.40
PA Large EDC "2"	1.15	1.27	1.35	1.32	1.28	1.27
PA Large EDC "3"	1.23	0.90	0.88	0.71	0.81	0.91
PA Large EDC "4"	1.26	1.58	1.84	1.83	1.76	1.65
PA Large EDC "5"	1.12	0.97	1.00	0.99	0.85	0.99
PA Large EDC "6"	0.85	0.84	0.91	0.87	0.87	0.87
PA Large EDC "7"	1.19	1.12	1.26	1.32	1.18	1.21
Rank (Duquesne Light)	2	1	3	3	1	2
Percentile (Duquesne Light)	17%	0%	33%	33%	0%	17%

For the CAIDI reliability metric over the 2019 through third quarter of 2023 period, Duquesne Light was the top-performing (*i.e.*, #1) of the Commonwealth's seven large EDC's over the five-year period (*i.e.*, the arithmetic mean of 2019 through third quarter 2023 performance). With respect to individual years' performances, Duquesne Light was the #1 large EDC in 2019, 2020, and 2023, the #3 large EDC in 2022, and the #4 large EDC in 2021. Duquesne Light performed better than the Standard value of 130 in 2019 and 2023 and better than the Company's Benchmark of 108 in 2019. This information is summarized in the following table.

Table 3 – CAIDI Performance Among Large Pennsylvania EDCs, 2019-3rd Quarter 2023

	2019	2020	2021	2022	2023-3	Mean
Duquesne Light	106	132	187	146	112	137
Benchmark	108	108	108	108	108	108
Standard	130	130	130	130	130	130
PA Large EDC "2"	164	150	173	160	203	170
PA Large EDC "3"	189	135	187	99	138	150
PA Large EDC "4"	147	136	151	199	192	165
PA Large EDC "5"	129	185	129	134	155	146
PA Large EDC "6"	176	137	187	162	197	172
PA Large EDC "7"	165	216	192	276	273	224
Rank (Duquesne Light)	1	1	4	3	1	1
Percentile (Duquesne Light)	0%	0%	50%	33%	0%	0%

Duquesne Light attributes its strong reliability performance over the 2019 to 3rd Quarter 2023 period to the Company's ongoing T&D System Capacity and Reliability plant additions and vegetation management efforts.

Q. Please summarize Duquesne Light's reliability metrics for 2023.

A. **Table 4 – Duquesne Light 2023 Reliability Metrics**

	SAIDI	SAIFI	CAIDI
2023	63	0.57	110
Benchmark	126	1.17	108
Standard	182	1.40	130

The Company experienced a total of 13 Storm Days in 2023. The company had 6 PUC Reportable Storms in 2023, which occurred in the months of March, April, July, and August. The Company had two Major Event Exclusions in 2023.

Q. What steps is the Company taking to further improve its service reliability and reduce outages?

A. Duquesne Light must continue to invest in its distribution system to maintain and enhance its reliability and resilience. The Company's plant additions to this end are made in accordance with our planning process described above. Additionally, Duquesne Light must continue to maintain vegetation around its distribution assets to improve service reliability and reduce outages. The Company's vegetation management efforts are described in Section VI.

In addition to Duquesne Light's traditional transmission and distribution plant investments and vegetation management activities, the Company is investing in technology designed to help improve reaction time to service interruptions. Specifically, Duquesne Light has invested in an Outage Management System ("OMS"). Duquesne Light went live with the OMS system in December 2023, and the system is being used by the operations center to manage outages, send initial outage notifications, and prepare for implementation of additional capabilities in mid-2024. Those additional capabilities include expanding the use of the OMS to include field operations personnel, adding functionality to enhance outage communications, and a new public outage map to better inform and serve our customers. This project is described in the "Plant Additions" section of this testimony, under the category of "IT Programs and Projects".

In light of increasing storm activity in recent years, the Company is also taking steps to improve storm prediction and response. Duquesne Light has revised its

incident response structure to provide incident response roles to all employees and has implemented a Multi-Year Training and Exercise Plan ("MYTEP") to support readiness efforts. The Company has also invested in partnerships with local public safety organizations across its service territory. Additionally, the Company has partnered with an outside contractor to combine analysis of weather patterns with historic weather impacts to the Company's distribution system in order to prepare and proactively respond to impending storm events. The above efforts have resulted in Duquesne Light receiving a "StormReady" designation from the National Weather Service, only the second EDC in the United States of America to receive this designation.

Finally, Duquesne Light regularly reviews its equipment and design standards and has made some recent changes which further improve service reliability and reduce outages. Duquesne Light has begun to use cutout-mounted vacuum reclosers ("TripSaver") on its distribution. The TripSaver devices are installed instead of traditional fuses. Traditional fuses are a protective device which will open the circuit for any downstream faults and will result in an outage until the fuse can be replaced. TripSavers are automatic reclosing devices and will restore downstream customers after temporary faults. Duquesne Light's construction standards require that equipment poles be upsized one class which provides additional strength. Duquesne Light is also piloting the use of fiberglass cross-arms which provide additional strength and are easier to install than traditional wooden cross-arms. The upsizing of pole class and fiberglass cross-arms provide extra strength and support improved reliability since they are less susceptible to damage during disturbances.

IV. PLANT ADDITIONS

Q. Please summarize the process used by Duquesne Light to determine which plant additions are necessary and when they must be added.

A. Duquesne Light identifies the need and priority for plant by assessing system capacity and performance and asset conditions to determine what plant additions are required to meet customer needs and to provide reliable service to our customers. When the need to add or replace assets is identified, Duquesne Light engineers develop reasonable solutions to address the need. Alternatives are evaluated on their technical and financial merits, and the alternative with the greatest customer value consistent with Duquesne Light's materials, design, and construction standards is recommended.

A Company management team reviews these recommended plant additions and challenges the underlying technical and financial facts and assumptions. This review process ensures the appropriate analytical rigor is applied and that each plant addition is considered within the context of all other capital needs.

Approved plant additions are included in an integrated work plan that is used by Duquesne Light planners, engineers, schedulers, and project managers to sequence and schedule the plant additions made during any given year. As projects are completed, field supervisors perform project reviews to assure the scope of work has been completed.

Q. Please explain how Duquesne Light seeks to balance plant additions with customer affordability?

A. Duquesne Light strives to provide affordable electric distribution service for our customers by (1) making plant additions only when the Company believes that it is prudent to do so by the virtue of our planning process, (2) striving to maximize efficiency in our design and construction processes, and (3) considering cost and value when procuring materials and services that meet our materials, design, and construction standards. The Company also considers alternatives to traditional distribution facility investments (also called "non-wires alternatives") as potentially cost-effective electric delivery solutions.

Q. Please explain how the modifications to Tariff Rule 17 and addition of Tariff Rule 8.1 and Rule 8.2 support Duquesne Light's plans to balance plant additions and customer affordability?

A. Duquesne Light has seen an increase in customer load and generation interconnection requests. Many developers for large, greater than 500kW, generation projects have requested a preapplication review to provide high-level information about the ability for Duquesne Light's grid to accommodate the proposed generation without submitting a full interconnection application. Rule 8.1 is responsive to the requests of large generation project developers to provide additional information for generation project developers to assess the feasibility of

their project. The preapplication review does not establish a place in the application queue nor reserve any hosting capacity.

Duquesne Light has seen an increase in project developers making inquiries about the feasibility and timeline to connect new commercial, industrial, and data center loads to its transmission and distribution system. A load study deposit for new loads of 300 kW or potential projects to increase an existing service by 300 kW or larger, as proposed in Rule 8.2, will allow Duquesne Light to provide a high-level estimate of timeline and costs associated with the request. Any unused portion of this deposit will be returned to the developer.

Duquesne Light has an obligation to provide reliable service and adequate voltage to its customers. Customer facilities can have a significant impact on the quality of the power on the grid. The proposed changes to Rule 17 are to help ensure that an individual customer's use of electric service does not cause power quality issues that impair the service to other customers or interfere with the proper operation of the Company's facilities.

Q. Please explain the reasons why Duquesne Light invests in its distribution system.

A. Duquesne Light makes plant additions in order to provide safe and reliable service to our customers. Plant additions, including those planned through the end of the FPFTY, are necessary for five primary reasons and categorized accordingly as follows: (1) Transmission and Distribution ("T&D") Service Restoration, (2) T&D Customer Commitments, (3) T&D System Capacity and Reliability, (4) T&D

Support, and (5) IT Projects and Programs. The value of the plant additions in these five functional categories during the HTY, FTY, and FPFTY is summarized in Exhibit JCH-1.

Q. Please explain Duquesne Light's anticipated Plant Additions for the time period of 2023, 2024, and 2025.

A. Duquesne Light plans to make $921 million of additions to Distribution Plant for the time period of 2023, 2024, and 2025. In addition to this amount, Duquesne Light plans to make $239 million of additions to Transmission Plant during the same time period. The Company is not claiming any Transmission Plant additions in its rate base claim in this proceeding. Supporting these additions to both Distribution Plant and Transmission Plant, the Company plans to make $98 million and $139 million of additions to General Plant and Intangible Plant, respectively, for the period of 2023, 2024, and 2025. The value of plant additions in these accounting categories during the HTY, FTY, and FPFTY is summarized in Exhibit JCH-2

Q. How do these Distribution Plant addition values compare with those of recent years (*e.g.*, 2020, 2021, and 2022)?

A. Duquesne Light's anticipated Distribution Plant additions for 2023, 2024, and 2025 are summarized in the table below. The table illustrates that the Company's Distribution Plant additions range between $178.9 million in 2020 and $397 million

in 2025. The Watson Substation project, which I describe later in my testimony, is the primary reason for the higher level of distribution plant additions in 2025.

Table 5 - Plant Additions 2020-2025

	2020	2021	2022	2023	2024	2025
				HTY	FTY	FPFTY
$ Millions	Actual	Actual	Actual	Actual	Forecast	Forecast
Intangible	$ 12.7	$ 106.6	$ 33.4	$ 80.2	$ 30.3	$ 28.4
Transmission	53.9	49.4	64.3	67.0	62.2	109.8
Distribution	178.9	211.4	187.4	293.1	230.9	397.2
General	10.2	26.1	21.1	30.7	28.5	38.8
Total	$ 255.7	$ 393.6	$ 306.3	$ 471.0	$ 351.9	$ 574.1

Q. Please explain T&D Service Restoration as a primary reason for making plant additions.

A. Duquesne Light customers expect their electric service to be restored promptly if it is interrupted. T&D Service Restoration includes plant additions to replace equipment that has failed and either resulted in a service interruption to Duquesne Light customers or presented a significant risk of an imminent service interruption. Plant additions in the category include additions to replace equipment failures related to storms, adverse weather condition, animal contacts, and equipment that fails due to reaching the end of its service life. This category also includes plant additions in response to outages caused by people and/or their equipment including motor vehicle accidents.

Forecasts of capital additions needed for Service Restoration are estimated based on previous years' experience.

Q. Please summarize the types of plant additions that are included in the January 1, 2023 through December 31, 2025, projections for T&D Service Restoration.

A. The T&D Service Restoration category includes funding to address overhead and underground facilities. Duquesne Light projects to make approximately $151 million of plant additions in the T&D Service Restoration category during the time period of 2023, 2024, and 2025.

Q. Please explain T&D Customer Commitments as a primary reason for making plant additions.

A. Duquesne Light serves residential, commercial, industrial, and lighting customers. All customer classes rely on us to provide service for new or remodeled homes and businesses, and also to upgrade existing services to meet new capacity requirements they may have as a result of additional load such as information technology infrastructure, air conditions, and modernization. The T&D Customer Commitments category also includes plant additions associated with the relocation of Company facilities that are requested by governmental agencies due to highway improvements or other rights-of-way interferences. Projects that result in these requests include road widening, bridge repairs, sewer and water main replacements/upgrades, or other infrastructure improvement.

Q. Please summarize the types of plant additions that are included in the January 1, 2023 through December 31, 2025, projections for T&D Customer Commitments.

A. The T&D Customer Commitments category includes various sized projects to install overhead, underground, or substation equipment. Duquesne Light expects to make approximately $164 million dollars of plant additions in the T&D Customer Commitment category during 2023, 2024, and 2025.

Q. Please explain T&D System Capacity and Reliability as a primary reason for making plant additions.

A. Duquesne Light's customers expect our electric system to provide the equipment capacity to assure reliability and voltage stability. Plant additions to the Duquesne Light electric system are required to ensure it continues to meet those customer expectations as customer load grows, location of load shifts within the Company's service territory, and the Company's asset conditions change. The types of plant additions required to ensure service capacity and reliability include substation upgrades, new substations, new circuits, circuit extensions and conversion to meet our customer's voltage and load requirements, and the installation of new equipment to replace deteriorated, obsolete, or failed equipment.

Forecasts of plant additions needed to ensure T&D System Capacity and Reliability are identified through analysis of inspection and maintenance program results,

reliability data analysis, reviews of customer requests, and engineering reviews of load growth in particular areas.

Q. Please summarize the types of plant additions that are included in the January 1, 2023 through December 31, 2025, projections for T&D System Capacity and Reliability.

A. The T&D System and Capacity and Reliability category includes plant additions of substations, overhead, and underground assets. Duquesne Light projects approximately $782 million dollars of plant additions in the T&D System Capacity and Reliability category. Included in this category are the Pole Replacement Program and the Watson Substation Project. Approximately $470 million of plant additions are related to programs and projects included in the Company's current Long Term Infrastructure Improvement Plan ("LTIIP") for the years 2023, 2024, and 2025.

Q. Please describe the Company's major T&D System Capacity and Reliability plant additions through the FPFTY that are not included in the current LTIIP.

A. Plant Additions in T&D System Capacity and Reliability that are not included in the current LTIIP include transmission asset plant additions, capital spare equipment plant additions, third party attachment make ready work plant additions, and distribution plant additions that are not DSIC-eligible. Also, the Watson Substation project includes distribution plant additions included in the LTIIP as well as transmission plant additions.

Q. Please describe the Pole Assessment, Repair, and Replacement Program.

A. This program includes the replacement and repair or reinforcement of poles and any associated supporting equipment for distribution class voltages. Transmission poles that fail inspection are replaced under a separate program. As required by Duquesne Light's Inspection and Maintenance ("I&M")1 plan, the Company inspects distribution poles on a 12-year cycle. The I&M plan also provides for the replacement of poles as necessary and appropriate based on the condition of the pole. The Company anticipates making approximately $62 million of plant additions in the period from 2023 through 2025 as a result of this program.

Q. Please describe the Watson Substation project

A. The Watson Substation project will construct a new bulk substation in the Uptown neighborhood of Pittsburgh and connect it to existing circuits using underground transmission and distribution lines. The Watson Substation is necessary for several reasons, including: additional capacity, reliability improvements, resiliency gains, location near upgraded underground infrastructure, and community electrical flexibility. The addition of Watson Substation will provide another feed to Pittsburgh's downtown network, thereby adding redundancy to the network circuits. It will also add tie points to nearby stations and circuits which will minimize the impact of unplanned outages. Since Watson substation will be much closer to the load it serves, it will connect with existing distribution and subtransmission circuits over shorter lengths, with new cable, in mostly new and rebuilt duct and manholes. This new equipment will maintain reliability and reduce

unplanned outages. Establishing the Watson Substation will improve resiliency by establishing tie circuits between substations. The establishment of Watson Substation will also establish the capability of future conversion of downtown 11 kV circuits to 23 kV as well as future conversion of 4 kV circuits to 23 kV in the uptown and surrounding areas. The Company anticipates making approximately $206 million of transmission and distribution plant additions in the period from 2023 through 2025 as a result of this project.

Q. You mentioned that the T&D System Capacity and Reliability category included $470 million in LTIIP programs and projects. Please explain.

A. Duquesne Light filed an LTIIP for the calendar years 2023 through 2028 that was approved by the Commission on November 10, 2022, by Order entered November 10, 2022, at Docket No. P-2022-3032805. The Company recovers some costs associated with its LTIIP through its DSIC. As explained in the testimony of Mr. Davis (DLC Statement No. 1) and Mr. Ogden (DLC Statement No. 14), the Company is proposing to roll current DSIC charges into base rates and to reset the DSIC rate to zero. In addition to the $470 million of LTIIP programs and projects included in the System Capacity and Reliability Category, DLC projects approximately $172 million in plant additions associated with other LTIIP programs and projects included in the Customer Commitment category associated with unreimbursed highway relocations and in the Service Restoration category.

Q. Please explain T&D Support as a primary reason for making plant additions.

A. Providing safe and reliable service and meeting the critical needs of Duquesne Light customers requires more than an electric distribution system. Assets to support the workforce that operates and maintains the electric distribution system and provide other services to the Company's customers are also needed. The T&D Support category includes plant additions such as new vehicle purchases needed to replenish Duquesne Light's fleet, upgrades to existing facilities, and the construction of new facilities to support the Company's workforce.

Forecasts of plant additions for T&D Support are based on the analysis of needs for items such as facility upgrades, new facilities, and vehicle replacement.

Q. Please summarize the types of plant additions that are included in the January 1, 2023, through December 31, 2025, projections for T&D Support.

A. Plant additions in the T&D Support category include additions to vehicle, metering, facility, communications, and tools and testing equipment plant. Duquesne Light anticipates making $135 million of plant additions in the T&D Support category in the years 2023, 2024, and 2025. Included in this category is a project to modernize Duquesne Light's Operations Cetner.

Q. Please explain the project to modernize Duquesne Light's Operations Center.

A. The project to modernize the Company's Operations Cetner was substantially completed in 2023. This project included expanding the size of the Operations Center and implementing state of the art technology that included new ergonomic

operator consoles, a digital map board, modern lighting, a new HVAC system, a network of situational awareness tools throughout the space, and a new training area. The renovations also serve as a foundation for future technologies including the Company's new Outage Management System which I describe in my testimony. Approximately $6.8 million of plant additions are included in the Support Category associated with this project.

Q. Please explain IT Programs and Projects as a primary reason for making plant additions.

A. IT assets are required to support the workforce and business processes needed to meet our customers critical needs. The IT Programs and Projects category includes plant additions for corporate applications, cyber security, and a project to implement an outage management system.

Q. Please summarize the types of plant additions that are included in the 2023, 2024, and 2025 projections for IT Programs and Projects.

A. Forecasts of plant additions for IT Programs and Projects are based on analyses of future needs for items such as hardware and software upgrades or supplements to meet business requirements that allow Duquesne Light to serve our customers' needs. The Company anticipates $165 million of plant additions in the IT Programs and Projects category in 2023, 2024, and 2025.

Q. Please describe the OMS Project.

A. Duquesne Light's new outage management system ("OMS") went into production in 2023 and is being used in parallel with our current outage management process and tools. During this time Duquesne Light's operations center is learning about the new tool and the changes to existing processes while leveraging some of the enhanced outage analysis functionality in day-to-day operations. This new system will help to consolidate the multiple applications that are being used today to group outages, track customers, manage outage crews, track estimated time of restoration, and other outage functions into one system. The consolidation of these systems will greatly reduce the complexity as well as aid Duquesne Light's operations center employees in restoration efforts by reducing the amount of time required to identify outage locations. With Duquesne Light's previous system, the operation center would receive individual trouble tickets with potential circuits and devices that would need to be analyzed and grouped manually. They then rely on the use of paper maps to try to determine the outage location and size. Utilizing our new OMS, trouble calls are automatically grouped together based on their electrical connectivity providing the operations center with the affected circuit and outage extent. The implementation of the additional OMS capabilities in mid-2024 will bring a number of benefits for our customers, including a new outage map, improved interactive voice response ("IVR") interaction, additional outage related messaging, and overall, more information surrounding any power outages that are experienced. With these improvements to digitize Duquesne Light's existing outage management process, the Company believes that it should be able to

decrease the time and resources required to restore electric distribution service to our customers following an outage. The Company anticipates placing approximately $33 million of plant additions in service in the period from 2023 through 2025 as a result of the OMS Project.

V. VEGETATION MANAGEMENT

Q. Please describe the Company's vegetation management program.

A. Duquesne Light professionally manages a comprehensive vegetation program utilizing industry best management practices to provide safe and reliable distribution service. This program is specifically designed for the management of vegetation along Duquesne Light's rights-of-way ("ROW") for the dependable operation of its distribution (4 kV and 23 kV) system and includes: (i) select tree pruning and removal within or along the ROW, (ii) hazard tree assessment and the removal of defective, dead, or diseased trees within or along the ROW, and (iii) the selective mechanical and/or chemical control of incompatible tall-growing brush within the ROW. Specific methods for line clearance are chosen based on the type of work involved while achieving it in a professional, economical, and environmentally sound manner. This year-round operation ensures that the safety and reliability of approximately 7,500 distribution circuit miles complies with regulatory standards. The present frequency of vegetation management activities for the distribution system ranges between four to six years.

Q. What level of cost is the Company projecting for its vegetation management program for the FPFTY?

A. In total, the Company plans to spend $29.8 million, comprising both expense and capital costs, for its vegetation management program in the FPFTY. The Company is planning $12.0 million of vegetation management expense in the FPFTY for pruning and selective mechanical and/or chemical control of incompatible tall growing brush within the ROW. Additionally, the Company plans to make $17.9 million of vegetation management capital expenditures in the FPFTY related to tree removals and other ROW clearing.

Q. Is this an increase from prior years?

A. Yes, the Company's projected spending for its vegetation management activities in the FPFTY does represent an increase from prior years. Duquesne Light is required to manage vegetation within or along 1,300 miles of distribution circuits annually, and these activities result in a mixture of both expense for pruning-type activities and capital for removal-type activities. Depending on the vegetation management needs of the specific distribution circuit-miles maintained in a given calendar year, the mixture of pruning-type (i.e., expense) vs. removal-type (i.e., capital) activities may fluctuate in a given calendar year. For this reason, looking at the total cost of vegetation management activities, defined as the sum of both the pruning-type (i.e., expense) and removal-type (i.e., capital) costs, provides the most meaningful view of the true cost of the Company's vegetation management

program. The following table provides time-series data for the Company's vegetation management costs.

Table 6– Vegetation Management Costs 2020-2025

	2020	2021	2022	2023	2024	2025	'20-'25
	-	-	-	HTY	FTY	FPFTY	-
$ Millions	Actual	Actual	Actual	Actual	Forecast	Forecast	CAGR
Expense	$9.9	$8.4	$9.3	$7.5	$11.6	$12.0	3.8%
Capital	$9.0	$7.7	$10.7	$12.6	$11.1	$17.9	14.8%
Total	$18.9	$16.1	$20.0	$20.2	$22.7	$29.8	9.6%

With specific respect to vegetation management capital, it is worth noting that the one-time removal-type (i.e., capital) activities serve to reduce ongoing pruning-type (i.e., expense) activities in later years, thereby reducing the multiyear total cost of Duquesne Light's vegetation management activities for the Company's customers. Ultimately, Duquesne Light's vegetation management capital should reduce over time as fewer removal-type activities remain on or near the Company's ROWs, and the ongoing pruning-type activities should be lower than current levels since fewer vegetation units remain to be pruned.

Q. Why are the Company's vegetation management costs increasing for the FPFTY?

A. While the Company's planned FPFTY vegetation management costs of $29.8 million is an increase from prior years, this fact is more a function of the size, quantity, and cost of the vegetation-units of the specific circuits along which Duquesne Light plans to manage vegetation in the FPFTY than it is a reflection of either (1) a change in total circuit-miles to be maintained, which remain fixed at the Company's required 1,300 distribution circuit-miles per year, or (2) a change to the specifications in accordance with which Company's manages vegetation along its circuits.

Duquesne Light utilizes unionized line clearance qualified contractors to perform utility vegetation management. The union contract expired in December 2023 and was renegotiated for 2024 through 2026, resulting in increased costs to perform vegetation management work.

Duquesne Light's total vegetation management cost is also a function of the number of vegetation-units (i.e., trees) along the 1,300 distribution circuit-miles per year that the Company manages. Duquesne Light's vegetation management contractors walk the distribution circuit-miles that the Company intends to manage each year and conduct an inventory of the different vegetation-units that will be managed. In this manner, the Company creates an annual work plan and associated cost forecast for the 1,300 distribution circuit-miles that it will maintain in a given calendar year. Since 2020, Duquesne Light has increased its focus on removal-type (i.e., capital) vegetation management activities as a means by which to improve the reliability of

the Company's electric distribution service for the benefit of our customers. Specifically, Duquesne Light has been working to expand the removal of vegetation units to the full width of the Company's ROW. Additionally, in cooperation with landowners adjacent to the Company's ROWs, Duquesne Light has removed trees alongside of, as opposed to within, the Company's ROWs to reduce the risk of certain trees falling into the ROWs and causing a service interruption. Furthermore, Duquesne Light has identified specific areas of steep terrain and dense foliage requiring targeted tree removals to reduce the risk to reliable service. This focus on expanding the width of Duquesne Light's managed corridors has increased the number of removal-type (e.g., capital) vegetation units that the Company has encountered in managing vegetation within and along its annual requirement of 1,300 distribution circuit-miles, and this fact is reflected in Duquesne Light's increased cost of removal-type (i.e., capital) vegetation management. These capital costs ultimately should decrease to lower levels once the Company has completed expanding the width of its managed corridors.

Q. What impact will the Company's FPFTY vegetation management program have on its reliability of service?

A. As discussed above, Duquesne Light expects to be removing more vegetation-units in the FPFTY than it did in the HTY and FTY. As each vegetation-unit along the Company's circuits poses a potential threat to reliability, Duquesne Light's plan to remove more vegetation-units in the FPFTY is anticipated to result in a commensurately increased level of risk-reduction for the Company with respect to

vegetation-driven electric distribution service interruptions experienced by its customers, all else equal.

VI. NON-WIRES SOLUTIONS

Q. Please summarize the Company's Behavioral Load Management Pilot.

A. The Company is proposing a Behavioral Load Management Pilot that aims to motivate residential customers to voluntarily decrease their electricity consumption, in a method of their choosing, during peak demand periods. Participants will receive monetary incentives for their reduced usage.

Q. Why is the Company proposing a Behavioral Load Management Pilot?

A. The Company is proposing the Pilot to investigate possible non-wires solutions designed to help maintain system reliability and affordability. Driven by EV adoption, data centers, other commercial developments, the system peak demand is expected to increase by approximately 6.5% within the next 10 years and cause the number of circuits that are at or near capacity (≥90%) to increase from 25% to 31% (see Exhibit SO-6: Load Management Plan). This increase in demand could require system upgrades to certain circuits. By pursuing non-wires solutions to effectively manage system peaks, the Company may reduce or defer the need for system upgrades and optimize the utilization of the Company's current system assets. By boosting capacity on existing system assets, the Company can enhance transfer capability during outages, thereby decreasing the likelihood of transformer overloading by minimizing usage during peak demand periods. As discussed in the

Direct Testimony of Sarah J. Olexsak, the Company is proposing two pilots to help with load management of EVs directly. However, as stated in the Load Management Plan (St. No. 6 Olexsak Testimony Exhibit SO-6: Load Management Plan), the Company expects to need multiple solutions to effectively manage load growth. The Behavioral Load Management Pilot presents an additional solution by addressing residential usage in a broader context.

Q. What are the objectives of the Behavioral Load Management Pilot?

A. The Pilot's objectives include: (1) evaluating if a scaled program could positively influence grid planning and be counted on as a cost-effective load management tool, (2) investigating how different incentive amounts and structures impact customer participation and responses, and (3) assessing the dependability of load shed and its potential impacts at scale.

Q. Please describe the Behavioral Load Management Pilot.

A. The Behavioral Load Management Pilot is a cost-effective pilot that aims to recruit eligible customers and incentivize them to reduce their electricity usage when demand on the grid is expected to be high, referred to here as a *Peak Event*. A Peak Event will occur in the summer months between June and September. Customers will be notified in advance of a Peak Event and asked to voluntarily reduce their usage during a given time frame, typically between 3-9PM. Customers will be asked to participate in called Peak Event up to 5 events per year, and can reduce their usage by however they choose; no additional technology is required and no

direct control of customer appliances, thermosets, etc. is utilized. Usage reductions may come from a variety of efforts including adjusting thermostat settings, turning off non-essential appliances, or taking other energy-saving measures. The Company will review participating customers' energy usage during the Peak Event and compare it to the customer's historical usage as established by their individual baseline. Customers receive a monetary incentive based on their reduction in energy usage. Participation is entirely voluntary accordingly customers may choose to not participate in a Peak Event. If the customer does not reduce their energy usage, they will not receive a monetary incentive.

Q. How will the Company conduct customer outreach on the Pilot?

A. The Company will conduct outreach and education on the Pilot through a variety of channels. The Company will include information about the pilot and the enrollment process on its website. It will conduct outreach via email to customers who previously expressed interest in participating in customer panels and surveys. The Company will also conduct social media and digital advertising campaigns to bring further attention to the Pilot. In addition to wide-reaching communication initiatives, the Company plans to launch a focused campaign to promote enrollment on specific circuits, especially those facing greater constraints or anticipated constraints. This strategy aims to channel the Pilot's value into areas of the system with the highest potential benefits and facilitate the assessment of Pilot impacts at the circuit level.

Q. How will the Company select circuits for the focused campaigns?

A. Circuits will be chosen and given priority through the Company's internal grid planning evaluations, which identify and prioritize circuits approaching the threshold of the current infrastructure's capacity. The Company's focused campaign will begin with customers on targeted circuits based on system capacity margins. Due to variations in the number and type of customers on each circuit, the Company will adjust this approach as necessary to provide an adequate number of residential customers for assessing the Pilot's impact.

Q. What customers will be eligible to participate?

A. The Pilot will be available to residential customers, including those enrolled in the Customer Assistance Program, and will target a maximum of 7,500 participants enrolled each year. The Company will pursue a goal of having 30% of the total participants coming from the circuits that are part of the focused campaigns. To participate, customers must have an Account in good standing[1], and cannot be enrolled in the EV TOU Distribution Rate Pilot (Rider No. 4), the Residential Managed Charging Pilot (Rider No. 7), or the Net Metering Rider (Rider No. 21). Participating customers will be required to comply with the Behavioral Load Management Rider (Rider No. 23).

[1] Good standing, signifies that the Account is active, does not have a past due balance or an outstanding payment arrangement at the time of enrollment, and has demonstrated a timely payment history.

Q. How will the Company decide when to call a Peak Event?

A. A Peak Event will be called when electricity demand is expected to be particularly high. Since system peaks historically correlate with high outdoor temperatures and increased air-conditioning, the Peak Event selection criteria will be based on weather including high temperature, humidity, and heat index forecasts. In addition, PJM Demand Response Events and distribution grid needs, as identified by the Company, will be a factor. Peak Events will be limited to weekdays and non-holidays and occur between June 1st and September 30th.

Q. How will Peak Events be executed and communicated with customers?

A. When the Company decides that a Peak Event will be called, all enrolled customers will be notified in advance by phone call, email, text, or mobile app alert informing them of the upcoming event. On the day of the event, customers will receive a notification by 10AM confirming the Peak Event and establishing the window of time that they should reduce their usage. The window will be no longer than 6 hours and will typically occur between 3-9PM. A final reminder message will be sent immediately before the Peak Event starts. Following the Peak Event, the customers will have access to a summary of their electricity savings as well as the incentive they have earned.

Q. How will customer baselines representing typical usage be established and compared to Peak Event performance?

A. After a Peak Event, the electricity usage (kWh) of each participant will be totaled for the hours of the event using meter interval data. This total will be compared to a participant's baseline consumption which is meant to represent their typical usage. To establish the baseline for a particular Peak Event, the Company will first look at the 15 previous days that are not weekends, holidays, or prior Peak Events. For each of the 15 days, the kWh usage, and the Heat Index for the hours of the Peak Event will be compiled. The days with the 5 highest kWh values are averaged to determine the participant's baseline. If any of the 5 days did not have similar weather to the Peak Event (within 10% of the Heat Index), they will be excluded from the average. If there are no days of similar weather, the baseline is set equal to the kWh for the highest load day. If a participating customer used less total electricity (kWh) during a Peak Event than their baseline, they would earn an incentive on the difference. The Company will retain the right to change baseline calculation based on pilot findings annually before June 1st.

Q. How will customers be incentivized to participate?

A. The Company will provide pilot participants with dollars on a per kWh saved (performance-based incentive) during Peak Events versus their baseline. The incentive amount will be $1.00/kWh[2] saved. After the annual pilot period ends (September 30th), customers will receive a digital gift card for the total amount

[2] The incentive value is determined through benchmarking, such as comparing it to a similar BG&E program that offers $1.25/kWh and estimating the incentive value required to ensure the pilot's cost-effectiveness based on the anticipated behavior and estimated demand/consumption reductions resulting from the Pilot.

they earned from the year's Peak Events. It is estimated that the average customer may reduce their usage by 4kWh each event. As measured, over the course of a Summer and assuming the maximum of 5 Peak Events are called, the average customer could earn $18/year. The Company will retain the right to change incentive amount (plus/minus 25%) based on customer behavior, response rate, and market conditions to further test the impact of the incentive value on customer behavior.

Q. How will the Company evaluate the effectiveness of this pilot?

A. The effectiveness of the Pilot will be evaluated in several ways including the following:

- Customer Engagement: Assess the level of participation and engagement of the customers in the Pilot.
- Energy Consumption Reduction: Evaluate the overall reduction in energy consumption achieved through the Pilot.
- Peak Demand Reduction: Measure the Pilot's impact on reducing peak electricity demand on (1) the specific circuits that are part of the focused campaign efforts and from all Pilot participants as derived from changes in consumption.
- Reliability and Resilience: Consider the impact of the Pilot on grid reliability and resilience during peak demand periods.
- Cost Effectiveness: Assess the cost-effectiveness consistent with the National Standard Practice Manual for DERs applying protocols applicable

to Demand Response programs. The primary focus will be on the Total Resource Cost Test and the Utility Cost Test.

Throughout the Pilot, customer behavior and savings will be analyzed to identify patterns and trends across different customer demographics and Personas that may influence the success of a Peak Event. Opportunities that are identified for improvement in the Pilot design, operational process, and customer engagement approaches may be adopted as the Pilot progresses.

Q. Will the Company report on the effectiveness of the Pilot?

A. Yes. The Company proposes biannual reporting beginning in June 2027. The Evaluation and Assessment Plan for Behavioral Load Management Pilot plan is attached as Exhibit JH-X:

Q. What are the estimated projected costs for this pilot?

A. The total estimated cost for the Pilot over a 5-year period, from 2025-29 is $1,075,000. Following the second year and every two years thereafter, the pilot will undergo an assessment to determine its success, and a decision will be made regarding its continuation. Costs and key assumptions are summarized in the table below. The two main line items are the incentive payments and a 3rd party implementation contractor that will support the automation of communication, calculating baselines, and determining savings. A contractor will be chosen through a competitive RFP process.

Table 7: Behavioral Load Management Pilot Estimated Cost

Item Description	Type	2025	2026	2027	2028	2029	TOTAL
Implementation Contractor	O&M	$ 65,000	$ 65,000	$ 65,000	$ 65,000	$ 65,000	$ 325,000
Incentive Payments	O&M	$ 150,000	$ 150,000	$ 150,000	$ 150,000	$ 150,000	$ 750,000
		$ 215,000	$ 215,000	$ 215,000	$ 215,000	$ 215,000	$ 1,075,000
Key Assumptions:							
Number of Participants		7,500	7,500	7,500	7,500	7,500	
Events Called/Year		5	5	5	5	5	
Average kWh Saved/Event/Participant		4.00	4.00	4.00	4.00	4.00	
Incentive Level ($/kWh Saved)		$1.00	$1.00	$1.00	$1.00	$1.00	

Q. How will the Company recover its costs for the Behavioral Load Management Pilot?

A. Costs will be recovered through base distribution rates (St. No. 8 O'Brien Testimony).

Q. How will customers benefit from this pilot?

A. By actively participating in peak events, customers earn monetary incentives. This provides a tangible reward for their efforts. As customers reduce their energy consumption during peak events, they may see a decrease in their overall energy bills due to increased awareness. Customers will become more conscious of their electricity usage habits, leading to long-term changes in behavior and increased energy efficiency.

Q. The commission's policy statement on Alternative Distribution Ratemaking Mechanisms, 52 PA. Code §§ 69.3301 and 69.3302, identifies a number of factors the commission may consider when evaluating an Alternative

Distribution Rate Mechanism. Has the Company considered these factors with respect to the Behavioral Load Management Pilot?

A. Yes, each is addressed below.

1. *How the ratemaking mechanism and rate design align revenues with cost causation principles as to both fixed and variable costs.*

2. Customers that participate in the Behavioral Load Management Pilot will be billed at standard rates for all residential customers, namely on Rate Schedules RS, RH, and RA. The Company's residential rates are based on cost causation principles. Potential incentives earned as a result of curtailing demand will not disrupt the principles of cost causation. *How the ratemaking mechanism and rate design impact the fixed utility's capacity utilization.*

    a. The incentive is derived from reduction in usage during times when the system is expected to be at its peak. This may lower the utility's capacity utilization at peak times and potentially shift usage to times of lower demand.

3. *Whether the ratemaking mechanism and rate design reflect the level of demand associated with the customer's anticipated consumption levels.*

    a. The expected level of demand reduction resulting from lower usage during peak events is estimated to be cost-effective at incentive levels proposed.

4. *How the ratemaking mechanism and rate design limit or eliminate interclass and intraclass cost shifting.*

a. The Pilot is limited to residential customers only. No cost shifting between or among rate classes are expected as a result of the pilot..

5. *How the ratemaking mechanism and rate design limit or eliminate disincentives for the promotion of efficiency programs.*

a. Participating residential customers are incentivized based on the reduction in their usage during Peak Events which aligns with efficiency programs. The rates for which participating customers are billed are volumetric, therefore the pilot does not disincentivize energy efficiency.

6. *How the ratemaking mechanism and rate design impact customer incentives to employ efficiency measures and distributed energy resources.*

7. The Pilot would encourage residential customers to employ efficiency measures since they are incentivized based on usage reduction during Peak Events. The pilot is expected to impact customers with distributed energy resources.*How the ratemaking mechanism and rate design impact low-income customers and support consumer assistance programs.*

a. Low-income customers and CAP customers are eligible to participate. There are no additional purchase or technology requirements to participate, making the Pilot more easily accessible, and customers can benefit from the incentives.

8. *How the ratemaking mechanism and rate design impact customer rate stability principles.*

a. The customer's rate stability remains the same as the incentive payment is essentially a discount to the customer's Energy Charge which.is linked to current residential rates. The incentive and structure of the Pilot is transparent as described in the proposed Rider No. 23 – Behavioral Load Management Pilot.

9. *How weather impacts utility revenue under the ratemaking mechanism and rate design.*

a. Peak Events and incentive payments will correlate to hours and days when outdoor temperatures and humidity are high.

10. *How the ratemaking mechanism and rate design impact the frequency of rate case filings and affect regulatory lag.*

a. This Pilot design will not impact the frequency of rate case filings or regulatory lag.

11. *If or how the ratemaking mechanism and rate design interact with other revenue sources, such as Section 1307 automatic adjustment surcharges, 66 Pa.C.S. § 1307 (relating to sliding scale of rates; adjustments), riders such as 66 Pa.C.S. § 2804(9) (relating to standards for restructuring of electric industry) or system improvement charges, 66 Pa.C.S. § 1353 (relating to distribution system improvement charge).*

a. Not applicable

12. *Whether the alternative ratemaking mechanism and rate design include appropriate consumer protections.*

a. The Pilot is an optional Program and provides the opportunity for an incentive payment. T. There is no penalty to customers for failure to curtail and participation is voluntary.

13. *Whether the alternative ratemaking mechanism and rate design are understandable to consumers.*

a. In addition to the outreach and education described above, the program was designed to create a simple discount that the customer could equate to the Energy Charge.t

14. *How the ratemaking mechanism and rate design will support improvements in utility reliability.*

a. By pursuing non-wires solutions to effectively manage system peaks, the Company may reduce or defer the need for system upgrades and optimize the utilization of the Company's current system assets. By boosting capacity on existing system assets, the Company can enhance transfer capability during outages, thereby decreasing the likelihood of transformer overloading by minimizing usage during peak demand periods.

15. *In any distribution rate filing by a fixed utility under 66 Pa.C.S. § 1308 (relating to voluntary changes in rates) that proposes an alternative ratemaking mechanism and rate design, the fixed utility shall explain how these factors impact the distribution rates for each customer class.*

a. TBD

VIII. CONSOLIDATED TAX SAVINGS ADJUSTMENT ("CTA")

Q. In Mr. Simpson's Exhibit MLS-2, he calculates the CTA to be $5.3 million. Has Duquesne Light used at least 50 percent of that amount to support reliability or infrastructure related plant additions?

A. Yes. Duquesne Light projects placing approximately $549.9 million of Distribution Plant additions in service in the period from 2024 through 2026, $82.3 million of which are attributable to LTIIP Initiatives. This leaves $467.6 million of Distribution Plant additions projected to be placed in service in excess of the Company's LTIIP plant in the period from 2024 through 2026. This $467.6 million amount is much greater than 50% of the $5.3 million amount that Mr. Simpson identifies as the CTA.

IX. CONCLUSION

Q. Are the plant additions and other programs described in your testimony necessary?

A. Yes. The plant additions and other programs described herein are necessary to meet the needs of Duquesne Light's customers.

Q. Has the Company included any plant additions related to its LTIIP in its rate base claim in this proceeding?

A. As explained in the Direct Testimony of Mr. Davis, DLC Statement No. 1, and Mr. Ogden DLC Statement No. 14, the Company is proposing to roll its LTIIP-related plant additions and other Distribution System Improvement Charge ("DSIC") eligible rate base into base rates at this time and not recover further costs through the DSIC until such time as the Company's DSIC-eligible rate base investment exceeds the levels identified for the FPFTY.

Q. Does this conclude your direct testimony?

A. Yes, it does. I reserve the right to supplement my testimony through the course of this proceeding.

Exhibit JCH-1

Duquesne Light Company

January 1, 2023 through December 31, 2025 Projected Plant Additions (by Category)

($)

	2023 *HTY*	2024 *FTY*	2025 *FPFTY*	2024-2025 *TOTAL*	2023-2025 *TOTAL*
TRANSMISSION & DISTRIBUTION					
Service Restoration	$ 45,363,320	$ 53,039,527	$ 52,804,107	$ 105,843,634	$ 151,206,954
Customer Commitments	66,444,271	49,689,016	47,583,099	97,272,114	163,716,386
Programs	111,873,126	88,469,638	121,815,847	210,285,485	322,158,612
Projects	122,746,181	83,803,259	253,360,536	337,163,794	459,909,975
System Capacity and Reliability	234,619,308	172,272,897	375,176,383	547,449,279	782,068,587
Support	44,343,186	43,430,658	47,302,988	90,733,645	135,076,831
Sub-Total	**$ 390,770,084**	**$ 318,432,098**	**$ 522,866,576**	**$ 841,298,673**	**$ 1,232,068,757**
INFORMATION TECHNOLOGY					
IT Projects and Programs	80,248,286	33,475,927	51,245,578	84,721,505	164,969,791
TOTAL	**$ 471,018,370**	**$ 351,908,024**	**$ 574,112,153**	**$ 926,020,178**	**$ 1,397,038,548**

Exhibit JCH-2

Duquesne Light Company

Duquesne Light Company
January 1, 2023 through December 31, 2025 Projected Plant Additions (by FERC Account)

($)

	2023	2024	2025	2024-2025	2023-2025
	HTY	*FTY*	*FPFTY*	*TOTAL*	*TOTAL*
INTANGIBLE PLANT					
301 - Organization	$ (157)	$ -	$ -	$ -	$ (157)
302 - Franchise & Consent	-	-	-	-	-
303 - Miscellaneous Intangible Plant	80,233,977	30,266,631	28,367,231	58,633,862	138,867,840
Sub-Total	$ 80,233,820	$ 30,266,631	$ 28,367,231	$ 58,633,862	$ 138,867,683
TRANSMISSION PLANT					
350 - Land & Land Rights	$ 39,151	$ 296,354	$ 72,852	$ 369,206	$ 408,357
352 - Structures & Improvements	142,750	1,293,493	-	1,293,493	1,436,243
353 - Station Equipment	10,794,865	25,466,604	31,743,961	57,210,565	68,005,430
354 - Towers and Fixtures	468,689	7,559,211	10,602,283	18,161,494	18,630,183
355 - Poles and Fixtures	21,364,479	1,440,711	573,530	2,014,241	23,378,719
356 - Overhead Conductors & Devices	13,402,790	21,985,877	22,476,954	44,462,832	57,865,621
357 - Underground Conduit	2,496,666	4,170,761	9,252,671	13,423,432	15,920,098
358 - Underground Conductors & Devices	(168)	29,975	35,061,198	35,091,173	35,091,005
359 - Road and Trails	18,261,995	-	-	-	18,261,995
382 - Regional Trans - Computer Hardware	-	-	-	-	-
383 - Regional Trans - Computer Software	-	-	-	-	-
Sub-Total	$ 66,971,216	$ 62,242,986	$ 109,783,449	$ 172,026,435	$ 238,997,651

DISTRIBUTION PLANT					
360 - Land & Land Rights	$ (139)	$ 112,299	$ 86,461	$ 198,760	$ 198,621
361 - Structures & Improvements	(486,459)	6,554,196	1,980,930	8,535,126	8,048,667
362 - Station Equipment	21,900,265	24,873,989	59,293,689	84,167,677	106,067,942
363 - Storage Battery Equipment	-	-	-	-	-
364 - Poles, Towers and Fixtures	42,635,793	38,595,453	58,215,277	96,810,730	139,446,523
365 - Overhead Conductors and Devices	68,377,622	46,948,772	62,782,246	109,731,018	178,108,640
366 - Underground Conduit	3,986,366	16,043,969	51,493,263	67,537,232	71,523,598
367 - Underground Conductors and Devices	97,479,941	20,974,851	83,401,640	104,376,491	201,856,432
368 - Line Transformers	28,817,962	41,932,171	42,999,463	84,931,634	113,749,596
369 - Services	3,731,691	12,581,104	13,001,644	25,582,747	29,314,438
370 - Meters	13,835,546	8,124,361	11,708,595	19,832,956	33,668,502
370.1 - Meter Communications Equipment	-	-	-	-	-
371 - Install Customer Premise	1,793,538	3,227,698	1,287,877	4,515,575	6,309,112
372 - Leased Property On Customers Premises	-	-	-	-	-
373 - Street Lighting and Signaling Systems	11,069,541	10,945,612	10,899,801	21,845,413	32,914,955
Sub-Total	$ 293,141,666	$ 230,914,475	$ 397,150,886	$ 628,065,361	$ 921,207,027
GENERAL PLANT					
389 - Land & Land Rights	$ 828	$ -	$ -	$ -	$ 828
390 - Structures & Improvements	15,445,970	14,524,097	18,973,678	33,497,776	48,943,746
LH - Leasehold Improvements	-	-	-	-	-
391.1 - Office furniture	(11,049)	-	-	-	(11,049)
391.2 - Office equipment	6,385,786	3,771,769	2,398,669	6,170,438	12,556,224
392 - Transportation equipment	8,753,452	8,452,000	10,348,435	18,800,435	27,553,887
393 - Store equipment	(1,362)	-	-	-	(1,362)
394 - Tools, shop and garage equipment	3,027,102	522,774	523,546	1,046,320	4,073,422
395 - Laboratory equipment	-	-	-	-	-
396 - Power operated equipment	-	-	-	-	-
397 - Electric communications equipment	(2,929,060)	1,213,292	6,566,260	7,779,552	4,850,492
398 - Miscellaneous equipment	-	-	-	-	-
Sub-Total	$ 30,671,668	$ 28,483,932	$ 38,810,588	$ 67,294,520	$ 97,966,188
TOTAL	$ 471,018,371	$ 351,908,024	$ 574,112,153	$ 926,020,178	$ 1,397,038,548

Evaluation and Assessment Plan

for

Behavioral Load Management Pilot

Dated: March 20, 2024

Contents

Introduction

Duquesne Light Company (the "Company") hereby submits this Evaluation and Assessment Plan ("Evaluation Plan") for its proposed Behavioral Load Management Pilot (the "Pilot"). The Company will submit the results of the Evaluation Plan ("Evaluation Report") at the conclusion of the second year of the Pilot and biannually thereafter.

Evaluation and Assessment Overview

Each Evaluation Report will consist of the following:

- **Executive Summary:** A concise overview of the key findings from the Pilot, encompassing successes, challenges, opportunities for improvement, and a recommendation regarding the continuation of the Pilot.

- **Pilot Implementation:** Insights into how the Pilot was executed, covering aspects such as customer recruitment strategies, the process and timing of Peak Events, calculations for customer baselines, and any operational changes made.

- **Pilot Results:** An examination of the evaluation methodology employed, the results obtained, and the significant findings derived from the assessment.

- **Recommended Path Forward:** Provide an explanation of the recommended steps for the Pilot's future, offering justification for continuation, summarizing planned enhancements, or outlining the decision to discontinue the Pilot.

Data Sources and Methodology

To craft its Evaluation Report, the Company will leverage diverse data sources. These sources will facilitate an assessment of the Pilot's outcomes, as well as an evaluation of the design and implementation methods that contributed to these results. Data sources will include:

- **Customer Surveys:** In support of the Evaluation Report, the Company will conduct surveys among Pilot participants. These surveys aim to gather insights into participants' experiences, decision-making processes when engaging in a Peak Event, their comprehension of the Pilot, and the actions they took to curtail their energy consumption.
- **Pilot Materials:** The Company will share and evaluate the Pilot materials it produced to educate customers and disseminate information about the Pilot. Additionally, the Company will provide samples of the messaging used to communicate with prospective participants and active participants.
- **Meter Data:** The Company will utilize interval meter data to assess participation level and compare usage and demand reductions of each Peak Event vs established baselines.
- **Company Spend:** Third party support and implementation costs along with detail of incentive payments that will be utilized to assess the performance of the Pilot and aid in decisions to continue or modify the Pilot.

Evaluation Approach

The Behavioral Load Management Pilot is structured to motivate residential customers to reduce their electricity usage during Peak Events; times when grid demand is anticipated to be high and adds stain to the system. In addition to wide-reaching communication initiatives, the Company plans to launch a focused campaign to promote enrollment on specific circuits, especially those facing greater constraints or anticipated constraints. Through this Pilot, the company seeks to gain insights into customer reactions to load management prompts, assess the implementation and effectiveness of behavioral load management solutions, and utilize data to inform its ongoing load management strategy.

Objectives

The Pilot's objectives include:

- Evaluating if a scaled program could positively influence grid planning and be counted on as a cost-effective load management tool
- Investigating how different incentive amounts and structures impact customer participation and responses, and
- Assessing the dependability of load shed and its potential impacts at scale.

Evaluation Components

The Pilot's evaluation components include:

- Report on the number of customers who enrolled, including by:
    - Year and month
    - Five-digit zip code
    - Location/circuit
    - Housing type
    - Income Identifier
- Report on Peak Event participation, including by:
    - Event date/time
    - Location/circuit
    - Percentage of active participants
    - Load curves
    - Average energy/demand change
    - Dollar amount of incentives
- Report on customer satisfaction with Pilot.
- Report on success of enrolling and facilitating customer participation and engagement, the challenges encountered and how they were addressed or plan to be addressed.
- Describe how Pilot results have been used or plan to be used to estimate longer-term grid impacts and benefits.
- Describe the Recommended Path Forward by outlining the suggested course of action for the Pilot. The decision to continue with the Pilot will hinge on customer involvement, consumption and demand reductions in comparison to implementation costs. An

evaluation of cost-effectiveness will be conducted, considering the anticipated effects of the Pilot over an extended operational period (5+ years). Cost-effectiveness will be assessed consistent with the National Standard Practice Manual for DERs applying protocols applicable to Demand Response programs. The primary focus will be on the Total Resource Cost Test and the Utility Cost Test. Should initial assessments indicate insufficient cost-effectiveness, the Company may put forth specific plans to modify the Pilot's implementation, aiming to enhance outcomes and warrant continuation of the Pilot.

KPIs, Targets and Data Sources

In addition to the evaluation components described above, the Company has established and will report on the below KPIs and targets.

KPI	2025 Target	2026 Target	Measurement/Data Source
Enrolled Customers	5,000	6,500	Count of enrolled participants on 9/30
Percent Enrolled on Targeted Circuits	20%	30%	Percentage of enrolled customers on circuits that were part of a focused campaign
Number of Peak Events	≤ 10	≤ 5	Count of Peak Events called
Date of DUQ Transmission Peak included in Peak Events	Yes	Yes	Per PJM, date of DUQ 1CP was included in the Peak Events
Participant Satisfaction	75%	75%	Pilot participant survey