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April 2, 2024

ELECTRONIC FILING

Mr. Adam J. Teitzman, Commission Clerk
Office of Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

Re: Docket 20240026-EI; Petition for Rate Increase by Tampa Electric Company

Dear Mr. Teitzman:

Attached for filing on behalf of Tampa Electric Company in the above-referenced docket is the Direct Testimony of David Lukcic and Exhibit No. DL-1.

Thank you for your assistance in connection with this matter.

(Document 8 of 32)

Sincerely,

A handwritten signature in blue ink, appearing to read 'J. Jeffrey Wahlen', with a long horizontal flourish extending to the right.

J. Jeffrey Wahlen

cc: All parties

JJW/ne
Attachment



**BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION**

**DOCKET NO. 20240026-EI
IN RE: PETITION FOR RATE INCREASE
BY TAMPA ELECTRIC COMPANY**

**PREPARED DIRECT TESTIMONY AND EXHIBIT
OF
DAVID LUKCIC**

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OF
DAVID LUKCIC

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1 **BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION**

2 **PREPARED DIRECT TESTIMONY**

3 **OF**

4 **DAVID LUKCIC**

5
6 **Q.** Please state your name, address, occupation, and employer.

7
8 **A.** My name is David Lukcic. My business address is 702 N.
9 Franklin Street, Tampa, Florida 33602. I am employed by
10 Tampa Electric Company ("Tampa Electric" or the "company")
11 as Senior Director Operational Technology & Strategy.

12
13 **Q.** Please describe your duties and responsibilities in that
14 position.

15
16 **A.** As Senior Director Operational Technology & Strategy, I
17 report to the Vice President of Electric Delivery. My areas
18 of oversight include Data Analytics, Distributed
19 Intelligence, Asset Management, Grid Modernization,
20 Operations Technologies, and Data and Technology
21 Governance. I am responsible for several operations areas
22 within the company, including Telecommunications, Meter
23 Operations, Lighting Operations, and Advanced Metering
24 Infrastructure Operations. I lead a total of approximately
25 280 team members.

1 Q. Have you previously testified before the Florida Public
2 Service Commission ("Commission")?

3

4 A. Yes, I have testified or filed testimony in several dockets,
5 including testimony for Tampa Electric in Docket No.
6 20120234-EI, Tampa Electric's Petition to determine the
7 need for the Polk 2-5 combined cycle conversion.

8

9 Q. Please provide a brief outline of your educational
10 background and business experience.

11

12 A. I graduated from the University of South Florida with a
13 bachelor's degree in electrical engineering and an
14 executive master's degree in business administration.

15

16 I have more than 25 years of experience in the energy
17 industry. Prior to becoming the Senior Director of
18 Operational Technology and Strategy in 2022, I led the
19 Automated Metering Infrastructure ("AMI") deployment and
20 built the AMI operational organization. I have worked in
21 both Energy Supply and Electric Delivery and at all three
22 of the company's generation stations, Big Bend, Bayside,
23 and Polk Power Station. My previous roles within the company
24 include meter operations, environmental, capital projects,
25 distribution engineering, and standards.

1 Q. What are the purposes of your direct testimony?

2

3 A. The purposes of my direct testimony are to (1) describe
4 the company's Operations Technology & Strategy ("OT&S")
5 department and the operations technology resources and
6 applications Tampa Electric uses to operate its electric
7 system and provide an outstanding customer experience; (2)
8 explain the progress made in the OT&S area since the
9 company's last base rate case; (3) summarize the OT&S
10 department's plans for the future; (4) explain the
11 company's OT&S capital investments and operations and
12 maintenance ("O&M") expense; and (5) describe the Grid
13 Reliability & Resilience Projects that will be going in
14 service as part of Tampa Electric's subsequent year
15 adjustments ("SYA") for 2026 and 2027.

16

17 Q. Have you prepared an exhibit to support your direct
18 testimony?

19

20 A. Yes. Exhibit No. DL-1, entitled "Exhibit of David Lukcic,"
21 was prepared under my direction and supervision. The
22 contents of my exhibit were derived from the business
23 records of the company and are true and correct to the best
24 of my information and belief. It consists of the following
25 two documents:

1 Document No. 1 List of Minimum Filing Requirement
2 Schedules Sponsored or Co-Sponsored by
3 David Lukcic
4

5 Document No. 2 Operation Technology Capital Expense
6 Summary 2022-2025
7

8 **Q.** Are you sponsoring any sections of Tampa Electric's
9 Minimum Filing Requirement ("MFR") Schedules?
10

11 **A.** Yes, I am sponsoring or co-sponsoring the MFR Schedules
12 listed in Document No. 1 of my exhibit. The contents of
13 my MFR schedules were derived from the business records
14 of the company and are true and correct to the best of my
15 information and belief.
16

17 **OVERVIEW OF THE OT&S DEPARTMENT**

18 **Q.** What is operations technology and how does it differ from
19 information technology?
20

21 **A.** Operations Technology ("OT") consists of hardware,
22 software, and field assets used to monitor and control the
23 company's electric generation units, distribution
24 equipment, meters, and lighting. This technology helps
25 ensure that the company continues to provide reliable and

1 affordable service to our customers. Tampa Electric uses
2 OT to improve efficiency and reliability, to educate
3 customers, and to enable more customer choice. OT is
4 distinct from Information Technology ("IT") as OT focuses
5 on real time functionalities such as control systems,
6 Supervisory Control and Data Acquisitions ("SCADA")
7 systems, and automation tools for the functions previously
8 listed. The company's IT department supports the OT&S
9 department by managing network infrastructure,
10 cybersecurity, data management, and integration between
11 systems. The IT department also provides the necessary
12 expertise to ensure the reliability, security, and
13 efficiency of operational processes.

14
15 **Q.** Please describe the company's OT&S department.

16
17 **A.** The OT&S department manages and maintains the operational
18 technology infrastructure essential for the delivery and
19 management of company services. We provide a range of OT
20 services for Tampa Electric, including Strategic
21 Leadership; Data and Technology Analytics and Governance;
22 Project Management and Operations; Grid Modernization
23 Strategy; Network Operations; Asset Management; and OT
24 Operations.

25

1 Additionally, the OT&S department specifically supports
2 the activities of the company's Energy Supply, Electric
3 Delivery, and Customer Experience departments by providing
4 technology, services, and advice regarding best practices.

5

6 **Q.** Does Tampa Electric's OT&S department provide OT services
7 to the company's affiliates?

8

9 **A.** No.

10

11 **Q.** Does Emera Inc. ("Emera") or any other Emera company
12 provide OT services to Tampa Electric?

13

14 **A.** No.

15

16 **OT APPLICATIONS THAT SUPPORT THE CUSTOMER EXPERIENCE, ELECTRIC**
17 **DELIVERY, AND ENERGY SUPPLY DEPARTMENTS**

18 **Q.** What major OT applications support customer experience
19 activities?

20

21 **A.** The OT&S department oversees and administers several OT
22 systems that support the company's Customer Experience
23 department's initiatives. These include AMI, Data
24 Analytics Platform ("DAP"), Distributed Intelligence
25 ("DI"), Artificial Intelligence and Machine Learning

1 ("AIML"), and Street Light Vision ("SLV").

2
3 **Q.** Please describe the applications listed above and how they
4 support the Customer Experience department.

5
6 **A.** Tampa Electric's AMI system includes advanced "smart"
7 meters, communication infrastructure, and data management
8 systems. The smart meters can collect granular, near real-
9 time data that enables new customer programs and features.
10 One illustration of how Customer Experience uses this
11 technology is the Interactive Bill, which features a daily
12 and monthly usage graph and information regarding how
13 weather affected the customer's bill.

14
15 The DAP software operating system allows Tampa Electric to
16 collect and analyze data including transformer loading,
17 events, and alarms and identifies proactive substation
18 transformer maintenance and replacements. The company uses
19 this data to proactively reduce customer outages. The DAP
20 also provides real-time, granular customer data to the call
21 center to help Customer Service Professionals respond to
22 customer questions and enable first call resolution.

23
24 DI consists of applications that reside on the company's
25 meters and enable the company to analyze data at the grid

1 edge. DI uses the following applications: (1) high
2 impedance, which detects faulty equipment on customer and
3 utility assets; (2) high temperature, which identifies
4 faulty customer equipment; (3) location awareness, which
5 improves system accuracy and allows quicker response to
6 customer outages; and (4) active transformer loading and
7 monitoring, which helps the company better understand
8 customer-owned equipment and the impact it has on our
9 system.

10
11 The AIML applications consist of various programs and
12 tools, including natural language models such as ChatGPT,
13 that enable the company to process data quickly and
14 effectively. With AIML, Tampa Electric can automate
15 processes that directly improve customer experience and
16 reliability. The company first used these applications as
17 a limited scope pilot project within Human Resources as an
18 expert advisor for our 2024 Benefits Open Enrollment.

19
20 **Q.** What major OT applications support Electric Delivery
21 activities?

22
23 **A.** The following OT applications support the Electric Delivery
24 department: (1) the Energy Management System ("EMS"); (2)
25 the Advanced Distribution Management System ("ADMS"); (3)

1 AMI; (4) the Work Management System ("WMS"); (5) the
2 Geographic Information System ("GIS"); (6) SLV; (7) the
3 Grid Communication Network project; (8) and the ARCOS
4 Resource Management Platform.

5
6 **Q.** Please describe the EMS, ADMS, and SCADA applications and
7 how they support the Electric Delivery department.

8
9 **A.** EMS is the core application suite for electric grid
10 operations and interfaces with the ADMS system. EMS enables
11 the grid operators within Electric Delivery to better
12 control, optimize, and analyze the transmission and
13 distribution electric grid in real time.

14
15 The SCADA system is used by the Electric Delivery
16 department to retrieve data and alarms across the system
17 and control devices or machines at remote sites. EMS uses
18 SCADA to centrally monitor and control the grid to minimize
19 risk and increase flexibility.

20
21 ADMS is a software platform that enables the company's
22 distribution system operators to control and optimize the
23 distribution network. ADMS works in conjunction with
24 SCADA. ADMS also coordinates and operates smart grid
25 operating technology, including Distributed Energy

1 Resources ("DER") and intelligent distribution controls
2 (e.g., smart switches).

3
4 Together, these systems allow central monitoring and
5 control of the distribution grid and, in conjunction with
6 AMI, CRB, and the Outage Map, provide outage management
7 and outage restoration capabilities. Each of these systems
8 contributes to customer reliability.

9
10 **Q.** Please describe the AMI system and how it supports the
11 Electric Delivery department.

12
13 **A.** AMI supports Electric Delivery by offering the ability for
14 team members to read, disconnect, and reconnect meters
15 remotely, reducing the need to dispatch field workers. This
16 system also enables the company to monitor data in real
17 time and detect outages.

18
19 **Q.** Please describe the WMS and GIS systems and how they
20 support the Electric Delivery department.

21
22 **A.** The company's Electric Delivery department uses the WMS
23 application suite (Workpro) to plan, track, organize, and
24 dispatch field crews to construct, maintain, operate, and
25 repair our transmission and distribution assets. The GIS

1 is a mapping system that stores and manages the geographic
2 coordinates of distribution, transmission, and telecom
3 equipment. The GIS, along with WMS, creates a starting
4 point for designers to plan and engineer work. Together,
5 the WMS and GIS application suites enable Electric Delivery
6 to efficiently plan projects and schedule team members and
7 contractors in the field.

8
9 **Q.** Please describe the SLV application and how it supports
10 the Electric Delivery department.

11
12 **A.** The SLV application allows team members to remotely control
13 and monitor outdoor lighting equipment and supports the
14 company's asset management program, which is described in
15 the direct testimony of Tampa Electric witness Chip
16 Whitworth. The SLV application also provides data analytics
17 that can be used to improve energy efficiency. The SLV
18 technology can also enable advanced "smart city"
19 functionalities such as traffic management, smart parking,
20 and transportation optimization. The Electric Delivery
21 department also uses SLV to support the company's growing
22 smart light-emitting diode ("LED") streetlight operations
23 and to automate and simplify the management of the lighting
24 infrastructure. Finally, SLV's maintenance prediction
25 capabilities allow the company to detect issues early,

1 preventing major outages and reducing downtime.

2

3 **Q.** Please describe the ARCOS Resource Management Platform
4 ("ARCOS") and how it supports the Electric Delivery
5 department.

6

7 **A.** ARCOS is a field scheduling tool used by the Electric
8 Delivery department that allows the company to track crews
9 in the field in both "blue sky" and "gray sky" weather
10 conditions. ARCOS automates and optimizes resource
11 management and emergency response processes. The benefits
12 of ARCOS include efficient resource management, automated
13 callout and scheduling, increased visibility of field
14 crews, and optimized workforce utilization.

15

16 **Q.** What major OT applications support Energy Supply
17 activities?

18

19 **A.** The Energy Supply department uses (1) WORKman; (2) the Lock
20 Out Tag Out ("LOTO") application NiSoft; (3) Data
21 Historian; (4) Power Plant Controllers ("PPC"); and (5)
22 SCADA.

23

24 **Q.** Please describe these five applications and how they
25 support the Energy Supply department.

1 **A.** WORKman helps Energy Supply organize asset information,
2 optimize asset maintenance, efficiently schedule work, and
3 manage materials used at the various Energy Supply work
4 sites.

5
6 Energy Supply uses the LOTO application NiSoft to
7 facilitate the high-energy control procedure of isolating
8 equipment prior to any maintenance or emergency work. The
9 LOTO system supports the company's safety goals by
10 standardizing safety practices, enhancing communication,
11 and reducing equipment damage.

12
13 Energy Supply relies on the Data Historian application to
14 archive operational telemetry for analysis. The
15 operational data is used to analyze and optimize generation
16 system performance.

17
18 The PPC application integrates, monitors, and autonomously
19 controls the operation of the company's solar generation
20 assets.

21
22 Lastly, similar to Electric Delivery, the Energy Supply
23 department uses SCADA to acquire data from the PPC,
24 equipment, and sensors throughout generating units (both
25 combustion turbines and renewables). Team members use SCADA

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to monitor operations and control the generation units.

Q. What major OT applications enable the company to comply with legal and regulatory requirements?

A. All the applications discussed above help the company comply with legal and regulatory requirements. For example, AMI provides bill ready data that is validated and vetted through the Meter Data Management System to ensure customers receive timely, accurate bills. SLV quickly detects and reports streetlight outages, and contributes to increased public safety because restoration occurs more quickly. ADMS notifies the company's systems and customers of outages and outage restorations, resulting in quicker restorations. GIS is the core connectivity and field asset model that feeds data to multiple other applications, including ADMS.

SUCCESSSES SINCE TAMPA ELECTRIC'S LAST BASE RATE PROCEEDING

Q. You previously described several applications and technologies that the OT&S department uses to support Customer Experience, Electric Delivery, and Energy Supply. Which of these technologies went into service after the company's last base rate case in 2021?

1 **A.** The following applications were placed into service since
2 2021: AMI, DAP, DI, AIML, SLV, ARCOS, and the 3.21 version
3 update to ADMS.

4
5 **Q.** How did these projects benefit the company and its
6 customers?

7
8 **A.** The benefits of each project are explained below.

9
10 AMI

11 Tampa Electric's use of AMI technology reduced bill
12 estimations and allows quicker restoration of disconnected
13 customers. The company's bill estimation rate for AMI
14 meters is 0.1 percent and over 98 percent of AMI meters
15 are reconnected remotely, which avoids the expense of
16 dispatching technicians ("truck rolls") to the premise.

17
18 DAP

19 Tampa Electric uses DAP to provide customer usage data
20 through a web portal. As I previously explained, the DAP
21 application also allows the company to monitor usage
22 metrics, meter events, and alarms. The use of this
23 technology results in fewer outages and reduces the need
24 for truck rolls.

25

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DI

DI improves the safety of customers by providing the company with awareness of high meter temperature and high impedance, which may indicate a dangerous situation such as a failing connector or a bad connection on customer equipment in the early stage of failure. These items are not normally identified until after failure, and failures can cause unplanned outages, potential energized wire down situations, prolonged unplanned customer outages, or poor power quality. DI also improves reliability for customers by alerting the company to situations that may cause unplanned outages. Finally, DI gives the company more accurate mapping of our physical network, which helps reduce outage restoration times.

AIML

As discussed above, the AIML applications were implemented as a limited scope pilot project for the company's most recent benefits Open Enrollment process. The application absorbed all the open enrollment 2024 health insurance plans to train the system to automatically answer employee questions instead of an HR representative. This was done to improve efficiency. This project created a platform that will allow us to automate and enhance business processes, which will result in more consistent, quicker responses,

1 enhanced service to customers, and potentially savings in
2 O&M expense.

3
4 SLV

5 This application provided the company with automation and
6 increased visibility into the lighting network, which
7 resulted in a 75 percent reduction in truck rolls for move-
8 in and move-out tickets. SLV also provided a 38 percent
9 reduction in truck rolls during Hurricane Idalia by giving
10 us better visibility into the operation and condition of
11 the lighting system.

12
13 ADMS

14 The ADMS Upgrade project provides additional functionality
15 to improve customer outage estimated time to restore
16 ("ETR") calculations and reporting.

17
18 ARCOS

19 The ARCOS upgrade provided the company with gains in
20 service, economics, and reliability. The direct benefits
21 included improved accuracy in crew callouts, real time
22 personnel and crew updates, and increased visibility of
23 circuit information and status.

1 **PREPARING FOR THE FUTURE**

2 **Q.** How is the OT&S department planning for the future?

3
4 **A.** The company is planning a group of projects, known as the
5 "Grid Reliability and Resilience Projects." These
6 projects will build on Tampa Electric's existing grid
7 modernization strategy and will provide new and enhanced
8 functionality. Additionally, they will help the company
9 adapt to changes in how our customers use and, in some
10 cases, produce electricity. One of these projects is a
11 Grid Communication Network Project, which is a high
12 bandwidth, low latency network. The Grid Communication
13 Network project will handle the surge of data from the
14 many devices, such as smart switches, which enable remote
15 monitoring, control, and automation of power distribution
16 and capacitor banks. These devices play a crucial role in
17 optimizing the performance and efficiency of the
18 distribution system.

19
20 **OT&S CAPITAL INVESTMENTS AND BUDGET**

21 **Q.** The company's last rate case was resolved via the 2021
22 Stipulation and Settlement Agreement ("2021 Agreement")
23 approved by the Commission in Order No. PSC-2021-0423-S-
24 EI, dated November 10, 2021. How much capital did the
25 company invest in the OT&S area during the three-year

1 term of the 2021 Agreement from 2022 through 2024?

2
3 **A.** For the period 2022 through 2024, the company invested
4 approximately \$257.6 million, of which \$228.9 million will
5 be recovered through base rates. Document No. 2 of my
6 Exhibit summarizes the company's OT&S capital investments
7 over this period.

8
9 **Q.** What capital projects are included in the company's OT&S
10 capital spending during the period 2022 through 2024 and
11 what was the capital investment for each project?

12
13 **A.** The OT&S capital investment in 2022 through 2024 is shown
14 in the following table.

15
16 **2022-2024 Major Capital Projects**

	Total
Other	60,153,819
Blanket - Lighting	48,623,384
DAP	27,370,247
OT Application	22,192,038
Lighting - Growth	15,581,296
Grid Reliability and Resilience Projects	21,246,304
Blanket - Meter	13,695,381
AMI	11,704,918
ADMS	5,275,120
ES Capital Maintenance/Improvement Project/Program	1,288,501
Meter Operations	765,696
Lighting - Operations	608,823
ED Capital Maintenance/Improvement Project/Program	200,000
BLSN	158,172
Total	228,863,698

17
18
19
20
21
22
23
24 **Q.** How much did the company invest for the AMI project during
25 the period 2022 through 2024?

1 **A.** Tampa Electric incurred \$11.7 million in costs associated
2 with AMI during the period 2022 through 2024. Tampa
3 Electric's conversion to AMI meters from Advanced Meter
4 Reading ("AMR") meters was approved by the Commission as
5 part of the 2021 Agreement. The company completed the
6 conversion in 2021 and has continued to enhance the AMI
7 system since that time. AMI benefits customers because it
8 makes meter data available in close to real time and allows
9 Tampa Electric to analyze system capacity, loading of
10 assets, and other operating conditions more quickly. AMI
11 also makes it possible to create new rate programs for
12 customers or provide them with their data to help explain
13 usage patterns or billing.

14

15 BLANKET LIGHTING PROJECTS

16 **Q.** Please describe the Blanket - Lighting projects and why
17 they are needed.

18

19 **A.** These projects include the purchase and replacement of
20 streetlights across the service territory. The purchases
21 are needed to accommodate growth, respond to customer
22 requests, and ensure continued support of the lighting
23 network.

24

25 **Q.** What steps will the company take to ensure these projects

1 are completed at the lowest reasonable cost?

2

3 **A.** Tampa Electric selects a vendor from a group of qualified
4 contractors for each project. The contracting pool was
5 selected through a bidding process. This selection is based
6 on both cost and the quality of work offered by each vendor.
7 The company also negotiates pricing to ensure the purchases
8 are in line with the industry.

9

10 **Q.** What benefits will the Blanket - Lighting projects provide
11 to customers?

12

13 **A.** The benefits include meeting customer demand, public
14 safety, reliability, and integration with smart city
15 technology as I described previously in my direct
16 testimony.

17

18 **Q.** Will these projects require new employees?

19

20 **A.** No.

21

22 OTHER PROJECTS

23 **Q.** Please describe the projects in the "Other" category and
24 why they are needed.

25

1 **A.** Projects in the "Other" category include various telecom
2 and analytics projects. These projects are needed to
3 support routine customer growth and operations.

4
5 **Q.** What steps will the company take to ensure these projects
6 are completed at the lowest reasonable cost?

7
8 **A.** These projects were competitively bid with standard project
9 practices.

10
11 **Q.** What benefits will the Other projects provide to customers?

12
13 **A.** The benefits include the ability to support continued
14 reliability and standard field operations.

15
16 **Q.** Will these projects require new employees?

17
18 **A.** No.

19
20 GRID RELIABILITY AND RESILIENCE PROJECTS

21 **Q.** What are the Grid Reliability and Resilience Projects?

22
23 **A.** The Grid Reliability and Resilience Projects are
24 comprised of six interrelated components including: (1)
25 Control Systems OT; (2) Back Office IT; (3) Field Devices;

1 (4) Substation; (5) DER Infrastructure; and (6) the Grid
2 Communication Network Project. My testimony addresses the
3 first five components of the Grid Reliability and
4 Resilience Projects first, and then I will provide
5 additional detail about the Grid Communication Network
6 component separately.

7
8 **Q.** Why are these five components needed?

9
10 **A.** These five components are designed to address changes to
11 the grid, including increased digitalization,
12 decentralization, and decarbonization, an increase in
13 distributed generation (e.g., roof top solar), increasing
14 use of electric vehicles by residential customers and
15 commercial fleets, and growth in other distributed
16 technologies such as battery storage. Through the adoption
17 of intelligent field devices, identification of electric
18 vehicles ("EV"), and management of distributed energy
19 resources ("DER"), these projects enable the company to
20 meet rising customer demand and enhance reliability by
21 reducing the frequency, duration, and impact of outages,
22 both sustained and momentary. Overall, these efforts are
23 crucial for meeting customer demand, building a resilient
24 grid and adapting to changes in how our customers use, and
25 sometimes produce, energy.

1 **Q.** What is the Control Systems OT component?

2

3 **A.** The Control Systems OT component monitors and controls
4 assets in the field. In an increasingly decentralized grid,
5 the number of controllable grid devices is growing
6 exponentially, and the importance of the company's
7 monitoring and control capabilities is also growing. The
8 company can use these devices to diagnose system conditions
9 and respond through automation and remote action. The
10 Control Systems OT work will support the company's
11 objectives to build an adaptable grid, improve operational
12 performance, and reduce the frequency and duration of
13 customer outages. The Control Systems OT component will
14 work in concert with controllable field assets and our
15 high-speed telecommunications network to achieve
16 reliability improvements.

17

18 **Q.** What is the Back Office IT component?

19

20 **A.** The Back-Office IT component includes system
21 implementation, software licensing, interfaces, data
22 migration, and new configurations for back-office systems
23 such as GIS and WMS. These enhancements will have several
24 benefits. First, they will revolutionize Tampa Electric's
25 planning, building, and grid management while enhancing

1 customer programs and billing. Second, these consolidated
2 systems will replace obsolete and end-of-life systems,
3 streamline core processes, facilitate data exchange, and
4 support field installation of other program components.
5 Finally, these upgrades will boost work efficiency,
6 throughput, and adaptability to the evolving grid.
7

8 **Q.** What is the Field Devices component?
9

10 **A.** The Field Devices component involves deploying a variety
11 of detection and operational devices along the company's
12 circuits to provide the company with greater monitoring
13 and control over the system. These Field Devices will
14 improve reliability by taking automatic action to mitigate
15 adverse grid events or by providing operators with greater
16 control for fault location and isolation, switching, and
17 voltage management. More granular control of distribution
18 circuits is a necessary capability as distributed
19 generation, storage, and electric vehicles with bi-
20 directional charging capabilities (known as "vehicle to
21 grid") inject power and create bi-directional power flows
22 or voltage fluctuations. These Field Devices will mitigate
23 the outage impacts of faults, minimize the duration of
24 outages through fault location and isolation, and provide
25 data back to operators for improved system diagnostics.

1 Some examples of Field Devices are equipment such as
2 reclosers, regulators, line sensors, and automatic lateral
3 switches.

4
5 **Q.** What is the Substation component?

6
7 **A.** The Substation component modernizes and replaces obsolete
8 and end-of-life equipment to prepare for bi-directional
9 power flows, including system protection and optimization
10 of circuit level actions. Replacing electro-mechanical or
11 other end-of-life equipment at our substations with SCADA-
12 enabled gear increases the company's ability to remotely
13 monitor assets and operate fault detection, service
14 restoration, and voltage optimization control protocols.
15 These Substation activities will improve the reliability,
16 system control, power flow efficiency, and operational
17 efficiency of substation operations.

18
19 **Q.** What is the DER Infrastructure component?

20
21 **A.** The DER Infrastructure component implements monitoring and
22 controls that will coordinate DER and EV on our system.
23 These controls improve the efficiency of the bulk power
24 generation and transmission system by upgrading existing
25 infrastructure like wires and transformers that are

1 overloaded from DER, developing standards for smart
2 inverters that will connect the grid with customer devices,
3 and developing interconnections to integrate DER
4 information into the Distributed Energy Resources
5 Management System ("DERMS"). This component will establish
6 interconnection standards, improve customer awareness, and
7 develop smart technologies to collectively strengthen the
8 grid's capacity to seamlessly integrate DER and EV.

9
10 **Q.** What steps will the company take to ensure these five
11 components of the Grid Reliability and Resilience Projects
12 are completed at the lowest reasonable cost?

13
14 **A.** As explained in the direct testimony of Mr. Whitworth,
15 Tampa Electric plans to aggregate the Grid Reliability and
16 Resilience Projects so that the company can optimize
17 capital spending, maximize functionality, and achieve
18 greater efficiency in resource deployment. This
19 coordinated approach enables centralized project
20 management, reduces redundancy, and enhances resource
21 efficiency.

22
23 **Q.** What benefits will these five components of the Grid
24 Reliability and Resilience Projects provide to customers?

25

1 **A.** The Grid Reliability and Resilience Projects not only
2 promise tangible benefits such as enhanced reliability and
3 reduced O&M expense, but also facilitate customer-focused
4 programs to improve fault detection, minimize downtime,
5 and expedite restoration. The Grid Reliability and
6 Resilience Projects will also facilitate the integration
7 of DER and enhance grid management, leading to reduced
8 energy losses and increased efficiency, especially during
9 peak load conditions. These benefits are also described in
10 greater detail in the direct testimony of Mr. Whitworth.

11
12 **Q.** Will these five components of the Grid Reliability and
13 Resilience Projects require new employees?

14
15 **A.** Yes, the company expects that new employees will be
16 necessary to support these projects. The company does not
17 expect, however, that these positions will be necessary in
18 the 2025 test year.

19
20 GRID COMMUNICATION NETWORK PROJECT

21 **Q.** What is the Grid Communication Network Project and why is
22 it needed?

23
24 **A.** Tampa Electric currently operates numerous field devices
25 on its distribution system including AMI meters, Fault

1 Location Isolation System Restoration ("FLISR") systems,
2 and other similar devices. The company also plans to
3 install additional devices through the Grid Reliability
4 and Resilience Projects over the next several years. The
5 existing radio-based SCADA system used to communicate with
6 the company's existing field devices, however, lacks any
7 additional bandwidth to support these future projects. The
8 Grid Communication Network Project addresses this need for
9 data transmission and communication through construction
10 of a PLTE, or a private cellular network, which includes
11 radios, antennae, and server core systems. This project is
12 necessary to provide communications to existing devices
13 and to the new Grid Reliability and Resilience Project
14 devices using 4G and 5G frequency bands.

15
16 The Grid Communication Network Project supports the
17 company's grid modernization strategy and Grid Reliability
18 and Resilience Projects in two primary ways.

19
20 First, the Grid Communication Network is the most cost-
21 effective means to seamlessly and quickly gather the data
22 generated by the company's existing and future field
23 devices, to make full use of those devices, and to improve
24 the customer experience.

25

1 Second, the Grid Communication Network provides the most
2 efficient pathway to manage the proliferation of EV
3 charging equipment and customer-owned renewable generation
4 on the company's system.

5
6 In short, the Grid Communication Network Project provides
7 the communication backbone for future grid reliability and
8 resilience initiatives and will help ensure overall grid
9 stability.

10
11 **Q.** What alternatives to this project did you consider?

12
13 **A.** The company considered several alternatives to the Grid
14 Communication Network Project.

15
16 First, the company considered expanding its existing fiber
17 network. This option is not as cost-effective as building
18 out a PLTE cellular network due to the significant costs
19 necessary to expand the existing fiber optic network to
20 connect to the growing fleet of smart devices and because
21 it would be very costly to maintain.

22
23 The company also considered using a public LTE network.
24 The company decided against this option because reliance
25 on an unsecured, public LTE network may expose the company

1 to security risks and limit the potential for migration of
2 Tampa Electric services to a near-future 5G platform.

3
4 Finally, the company determined that it could not move
5 forward with the existing radio-based SCADA system because
6 all channels are already at capacity. In fact, the existing
7 communications volume on the system is already resulting
8 in communication delays. Due to these constraints,
9 remaining with the existing system would also mean that
10 the company could not move forward with the Grid
11 Reliability and Resilience Projects at a pace and cost that
12 would bring the best value to our customers.

13
14 **Q.** What steps will the company take to ensure the Grid
15 Communication Network Project is completed at the lowest
16 reasonable cost?

17
18 **A.** In 2022, Tampa Electric engaged an expert, third-party
19 consultant, Burns & McDonnell ("BMD"), to conduct a
20 detailed analysis of existing and future field network
21 options to complete buildout of a PLTE network. The scope
22 of services for this analysis included the development of
23 a comprehensive list of use cases, business requirements,
24 Total Cost of Ownership ("TCO") estimates, and technical
25 requirements for the cellular communications

1 infrastructure for this network. These specifications were
2 then incorporated into a request for proposals for the
3 provision of the required equipment and services.
4

5 The BMD analysis:

- 6 • Identified the existing technology platforms currently
7 in service on Tampa Electric's system that would benefit
8 from a PLTE network, as well as potential future
9 technologies that would benefit from the network.
- 10 • Identified the potential benefits of a PLTE network and
11 the projects it would enable, which allows Tampa
12 Electric to prioritize the deployment of these future
13 projects.
- 14 • Provided a TCO based on a 3-year deployment of the PLTE
15 network, and a 20-year deployment of technologies
16 enabled by the network.
- 17 • Provided a cost-benefit analysis showing a four-to-five
18 year payback for Tampa Electric's initial investment.

19
20 **Q.** What benefits will this project provide to customers?
21

22 **A.** The Grid Communication Network Project will benefit
23 customers in three major ways.
24

25 First, this project enables communication with current and

1 future smart distribution equipment and allows the company
2 to automate devices, both of which will improve reliability
3 and reduce long-term O&M costs.

4
5 Second, the Grid Communication Network enables the
6 company's access to new data streams that are required to
7 operate the grid safely and reliably in a decentralized
8 world where EV and DER are installed at customer locations
9 across the system.

10
11 Third, the Grid Communication Network is scalable and will
12 help the company identify bi-directional flows, EV
13 penetration, and DER penetration to determine where needed
14 capital improvements will be most effective.

15
16 DAP PROJECT

17 **Q.** What is the DAP Project?

18
19 **A.** As I previously explained, DAP enables long term data
20 storage of AMI meter data and facilitates analysis of that
21 data for business insights and intelligence.

22
23 **Q.** What alternatives to this project did you consider?

24
25 **A.** Tampa Electric considered foregoing this project, but that

1 would leave the company without the data analytics
2 capabilities DAP offers and would not allow the company to
3 fully use the existing AMI meters.
4

5 **Q.** What steps did the company take to ensure the project was
6 completed at the lowest reasonable cost?
7

8 **A.** Tampa Electric used a competitive bid process to complete
9 this project, as well as strong project management and cost
10 control.
11

12 **Q.** What benefits will this project provide to customers?
13

14 **A.** The DAP system provides several benefits to customers.
15 First, DAP gives Tampa Electric's customers greater control
16 over their energy bills by providing them with information
17 regarding their daily energy usage and average daily
18 temperature through the company's new Interactive Bill.
19 Second, the DAP system provides the company's customer
20 service professionals with additional data that can help
21 them resolve customer calls regarding high bills. Third,
22 DAP improves the company's home energy audit program by
23 providing the home energy auditors with additional data
24 they can use to assess home energy consumption. Fourth, DAP
25 improves billing accuracy. Finally, the project will

1 potentially lead to cost savings by helping the company
2 optimize capital investments and identify operational
3 efficiencies.

4
5 **Q.** Will the DAP Project require new employees?

6
7 **A.** Yes. This project will require a Data Analyst and a Data
8 Director to support this project. We expect to fill these
9 positions in the next year.

10
11 OT APPLICATION PROJECTS

12 **Q.** Please describe the OT Application projects and why they
13 are needed.

14
15 **A.** OT applications enable the operational control of our power
16 plants and grid systems; network communication and
17 management of operational data; and collection and analysis
18 of sensor data, which helps the company understand the
19 condition and performance of our grid. OT applications also
20 facilitate the maintenance and operation of the grid
21 assets. These systems are required to operate our grid
22 safely, reliably, cost-effectively and in compliance with
23 all legal obligations.

24
25 **Q.** What steps will the company take to ensure the projects

1 are completed at the lowest reasonable cost?

2

3 **A.** Tampa Electric evaluates alternatives and best practices
4 in the industry to select a cost-effective solution.

5

6 **Q.** What benefits will the OT Application projects provide to
7 customers?

8

9 **A.** Each OT application serves a specific function in the
10 electric grid and provides benefits to our customers
11 related to that OT application's function. I previously
12 described the functions and benefits of our OT applications
13 such as the Work and Asset Management System, ADMS, and EMS
14 in my direct testimony.

15

16 BLANKET METER PROJECTS

17 **Q.** Please describe the Blanket - Meter projects and why they
18 are needed.

19

20 **A.** These projects include the purchase and replacement of
21 failed electric meters across the company's service
22 territory. The purchases are needed to accommodate growth
23 and provide continued support for the communication
24 network.

25

1 **Q.** What steps will the company take to ensure these projects
2 are completed at the lowest reasonable cost?

3

4 **A.** Tampa Electric selected a vendor through an RFP process
5 that involved multiple meter vendors. The company
6 negotiated a multi-year agreement with the selected vendor
7 that includes negotiated pricing and pricing discounts.

8

9 **Q.** What benefits will the Blanket - Meter projects provide to
10 customers?

11

12 **A.** As I previously explained, AMI meters have improved
13 networking capabilities to provide faster and more reliable
14 responses to customers for switching and data analysis.

15

16 **Q.** Will the project require new employees?

17

18 **A.** No.

19

20 LIGHTING GROWTH PROJECTS

21 **Q.** Please describe the Lighting Growth projects and why they
22 are needed.

23

24 **A.** Tampa Electric's LS-2 customized lighting tariff allows
25 customers to request custom lighting installations like

1 solar powered or decorative lighting. The projects in the
2 Lighting Growth category are necessary to satisfy customer
3 lighting service requests.

4
5 **Q.** What steps will the company take to ensure these projects
6 are completed at the lowest reasonable cost?

7
8 **A.** These projects use fixed pricing established through
9 competitive bids.

10
11 **Q.** What benefits will the Lighting Growth projects provide to
12 customers?

13
14 **A.** These projects allow customers to satisfy their lighting
15 needs in a cost-effective, hassle-free manner by using
16 Tampa Electric's expertise.

17
18 **Q.** Will the project require new employees?

19
20 **A.** No.

21
22 THE ADMS 3.12 UPGRADE PROJECT

23 **Q.** What is the ADMS 3.12 upgrade project?

24
25 **A.** As I mentioned earlier, ADMS includes functions that

1 integrate SCADA, advanced network applications, and outage
2 management to enhance the outage restoration process and
3 optimize the performance of the distribution grid. The ADMS
4 functions implemented through this upgrade include real
5 time distribution power flow; fault location, isolation,
6 and service restoration ("FLISR"); Volt/Volt-ampere
7 Reactive ("VAR") optimization; and the ability to support,
8 monitor, and control DER such as customer-owned solar and
9 batteries. The ADMS solution will put Tampa Electric in a
10 position to provide power that's safer, more reliable, and
11 more efficient.

12
13 **Q.** Why was the ADMS 3.12 upgrade project needed?

14
15 **A.** As I previously explained, this ADMS upgrade will provide
16 several new features that will improve grid operations and
17 provide benefits for our customers.

18
19 **Q.** What alternatives to this project did you consider?

20
21 **A.** Tampa Electric also considered upgrading distinct
22 components of ADMS over a longer time horizon. This option
23 would have introduced integration risks and increased the
24 long-term cost of completing the work.

25

1 **Q.** What steps did the company take to ensure the project was
2 completed at the lowest reasonable cost?

3

4 **A.** In April 2017, Tampa Electric engaged in a Request for
5 Information ("RFI") process with five vendors to solicit
6 information regarding ADMS solutions available in the
7 marketplace. Tampa Electric also engaged an external
8 utility expert to ensure that the RFI process was
9 comprehensive and would result in a structured and fair
10 result for both Tampa Electric and the bidding vendors.
11 The final RFI consisted of 880 requirements that were sent
12 to six vendors. Tampa Electric evaluated the bids, selected
13 the top two vendors, and asked those vendors to visit Tampa
14 Electric and provide a more detailed demonstration of their
15 proposed solutions. In addition to the demonstration, Tampa
16 Electric sent functional experts to Alabama Power and
17 Arizona Power to evaluate the vendors' products in a real-
18 world use situation. Based on the combined scoring of the
19 initial RFI and the on-site demonstrations, Tampa Electric
20 selected General Electric ("GE") Alstom as the preferred
21 provider.

22

23 **Q.** What benefits will this project provide to customers?

24

25 **A.** The ADMS 3.12 upgrade project provides additional

1 functionality to improve customer outage estimated time to
2 restore ("ETR") calculations and reporting. The
3 integration of ADMS with AMI data allows the company to
4 identify customer outages and achieve faster restoration.
5 It also improves the company's ability to adjust and
6 coordinate field devices that improve reliability and power
7 quality. Finally, implementation of the ADMS 3.12 upgrade
8 allows the company to develop DER management capabilities.

9
10 **Q.** Will the project require new employees?

11
12 **A.** Yes. During 2021 and 2022, the OT&S department added two
13 modeling technicians team members, two ADMS Engineers, and
14 two IT support employees. The company expects to add one
15 employee working with DERMS to support ADMS in 2027.

16
17 METER OPERATIONS PROJECT

18 **Q.** Please describe the Meter Operations Project, why it is
19 needed, and how it will benefit customers.

20
21 **A.** The Meter Operations Project is a meter firmware upgrade.
22 Firmware is a set of embedded software instructions that
23 govern the operation of a metering device, including
24 managing the collection, processing, and transmission of
25 data such as electricity consumption. The meter firmware

1 includes algorithms for accurate data acquisition, real-
2 time processing, and communication with external systems.
3 This meter firmware upgrade significantly benefits
4 customers through various enhancements, including remote
5 monitoring and management, and will allow the company to
6 swiftly address issues and minimize downtime without
7 physically accessing the meters. Regular updates also
8 ensure compatibility with new technologies. This upgrade
9 also included bug fixes and stability improvements which
10 contribute to more reliable service, fewer disruptions,
11 and an enhanced customer experience. We expect to complete
12 the project in 2025.

13
14 **Q.** What steps will the company take to ensure the project is
15 completed at the lowest reasonable cost?

16
17 **A.** Tampa Electric used existing employees to complete this
18 project and distributed the firmware "over the air" using
19 the existing AMI network. This avoids the expense of
20 sending employees out into the field.

21
22 **Q.** Will the project require new employees?

23
24 **A.** No.

25

1 ELECTRIC DELIVERY CAPITAL MAINTENANCE IMPROVEMENT PROJECTS

2 **Q.** Please describe the Electric Delivery Capital Maintenance
3 Improvement Projects ("ED Capital Maintenance Improvement
4 Projects") and why they are needed.

5
6 **A.** Tampa Electric monitors the condition and performance of
7 grid assets to evaluate risks to reliable performance. When
8 the company identifies a common risk of failure in many
9 similar or identical assets, such as 69 kV relays or
10 transmission insulators, Tampa Electric develops an asset
11 class mitigation plan to proactively address the identified
12 risk across the entire group of assets.

13
14 **Q.** What steps will the company take to ensure the ED Capital
15 Maintenance Improvement Projects are completed at the
16 lowest reasonable cost?

17
18 **A.** Proactive work is safer and lower cost than reactive
19 maintenance. Performing work systematically for a group of
20 assets allows the company to achieve larger economies of
21 scale through bundling and bidding of work, which ensures
22 that we obtain the lowest reasonable cost.

23
24 **Q.** What benefits will the ED Capital Maintenance Improvement
25 Projects provide to customers?

1 **A.** Tampa Electric's ED Capital Maintenance Improvement
2 Projects improve reliability for our customers by
3 mitigating failures. These projects also benefit
4 customers by providing reduced costs associated with
5 equipment replacement. Specifically, these projects enable
6 them to plan the procurement and installation of equipment,
7 which reduces cost compared to reactive repair or
8 replacement.

9
10 **Q.** Will these projects require new employees?

11
12 **A.** No.

13
14 ENERGY SUPPLY CAPITAL MAINTENANCE IMPROVEMENT PROJECTS

15 **Q.** Please describe the Energy Supply Capital Maintenance
16 Improvement Projects ("ES Capital Maintenance Improvement
17 Projects") and why they are needed.

18
19 **A.** Just as with our transmission and distribution grid, Tampa
20 Electric also monitors the condition and performance of our
21 generation assets, including motors, pumps, pipes, etc.
22 These projects facilitate this monitoring and allow the
23 company to proactively replace components before they fail,
24 to identify opportunities to improve unit efficiency and
25 performance, and to improve safety.

1 **Q.** What steps will the company take to ensure the ES Capital
2 Maintenance Improvement Projects are completed at the
3 lowest reasonable cost?
4

5 **A.** Proactive work is safer and lower cost than reactive
6 maintenance. Performing work systematically for a group of
7 assets allows Tampa Electric to achieve larger economies
8 of scale through bundling and bidding work, which ensures
9 that we obtain the lowest reasonable cost.
10

11 **Q.** What benefits will the ES Capital Maintenance Improvement
12 Projects provide to customers?
13

14 **A.** Tampa Electric's ES Capital Maintenance Improvement
15 Projects ensure proactive mitigation of failures, which
16 improves reliability, and proactive procurement and
17 planning of the capital work which reduces cost. Where
18 applicable, the team ensures we comply with all regulatory
19 requirements as well.
20

21 **Q.** Will these projects require new employees?
22

23 **A.** No.
24
25

1 LIGHTING OPERATIONS PROJECTS

2 **Q.** Please describe the Lighting Operations (Smart Street
3 Light) projects and why they are needed.

4
5 **A.** These projects are installations of intelligent lighting
6 systems to fulfill customer requests. These smart lighting
7 fixtures enhance safety and security, provide data insights
8 and analytics, and offer customization and flexibility to
9 meet specific community needs.

10
11 **Q.** What steps will the company take to ensure these projects
12 are completed at the lowest reasonable cost?

13
14 **A.** For each project, Tampa Electric completes a cost analysis
15 to determine the budget and allocate sufficient resources.
16 The company then completes a vendor selection and
17 negotiation process to secure favorable terms and pricing.

18
19 **Q.** What benefits will the Lighting Operations projects provide
20 to customers?

21
22 **A.** The benefits of these projects include enhanced safety,
23 reliability, and integration with smart technology.

24
25 **Q.** Will the Lighting Operations (Smart Street Light) projects

1 require new employees?

2

3 **A.** No.

4

5 BRIGHT LIGHTS, SAFE NIGHTS ("BLSN")

6 **Q.** What is the BLSN Project?

7

8 **A.** The BLSN project supports the local community's safety.
9 The City of Tampa partnered with Tampa Electric to provide
10 leased lighting services within high crime areas and on
11 roadways or intersections with more vehicle incidents to
12 enhance safety.

13

14 **Q.** What steps did the company take to ensure the BLSN Project
15 was completed at the lowest reasonable cost?

16

17 **A.** Tampa Electric negotiated labor rates for cost control
18 and did not begin work until after the design was approved
19 by the customer. Designs were developed to an IES standard
20 to assure the right light levels were provided at each
21 location, which minimizes potential for rework by
22 ensuring that safety and compliance requirements are met
23 prior to installation.

24

25 **Q.** What benefits will the BLSN Project provide to customers?

1 **A.** City of Tampa reported that the project resulted in a
2 reduction of crime or vehicular incidents and reduced
3 officer overtime as there were fewer incidents to respond
4 to.

5
6 **Q.** Will the project require new employees?

7
8 **A.** No.

9
10 **Q.** What major capital projects are planned in the OT area for
11 2025?

12
13 **A.** The major capital projects planned for 2025 are included
14 in the following table. Additional detail is included in
15 Document No. 2 of my exhibit.

16

2025 Major Capital Projects	
	2025
Grid Reliability and Resilience Projects	65,871,743
DAP	18,075,079
Blanket - Lighting	16,069,585
OT Application	11,312,970
Other	4,188,739
Blanket - Meter	3,867,678
ED Capital Maintenance/Improvement Project/Program	2,900,685
Meter Operations	2,815,381
AMI	2,038,651
ES Capital Maintenance/Improvement Project/Program	665,000
Lighting - Growth	550,000
Lighting - Operations	500,000
Grand Total	128,855,509

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25

1 Q. Are any of the projects, or groups of projects, planned
2 for 2025 continuations of projects the OT&S department
3 undertook in 2022 through 2024?
4

5 A. Yes. The following is a list of projects or groups of
6 projects that are continuations of the work the the OT&S
7 department undertook during 2022 through 2024.

- 8 • Blanket - Lighting
- 9 • OT Application
- 10 • Grid Reliability and Resilience Projects (including
11 Grid Communication Network Project)
- 12 • Other
- 13 • Blanket - Meter
- 14 • ED Capital Maintenance/Improvement
- 15 • Meter Operations
- 16 • AMI
- 17 • ES Capital Maintenance/Improvement
- 18 • Lighting - Growth
- 19 • Lighting - Operations

20
21 I previously described the need for these projects, how
22 they benefit customers, and the steps the company takes to
23 complete these projects at a reasonable cost in my
24 discussion of our capital investments in the years 2022
25 through 2024. Our planned investments in these areas in

1 2025 are necessary and prudent for the reasons I previously
2 described.

3

4 DAP PROJECTS

5 **Q.** Please describe the DAP projects and why they are needed.

6

7 **A.** The DAP projects planned for 2025 will build on the
8 existing DAP system and provide new capabilities, including
9 the ability to receive and process near-real time data.
10 This will support customer programs, such as the
11 Interactive bill, and safety programs, such as the
12 detection of downed energized conductors. It will support
13 more efficient dispatching due to access to current state
14 demand and generation data. Tampa Electric will be able to
15 receive and analyze DI data to support advanced analytics
16 such as detection of EV charging activities and location
17 of "ghost meters," or meters without a known installation
18 location. Finally, these projects provide the company the
19 ability to monitor new characteristics of the distribution
20 system, including transformer phase imbalances and actual
21 transformer and circuit loading characteristics. This will
22 allow the company to identify and resolve abnormal
23 conditions.

24

25 **Q.** What steps will the company take to ensure these projects

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are completed at the lowest reasonable cost?

A. The company will use existing AMI technology to save costs. The company will also use its procurement process along with competitive bids to ensure projects are completed at a reasonable cost.

Q. What benefits will the DAP projects provide to customers?

A. The DAP projects will allow the company to improve its unit dispatching and generation decisions, which will lead to more efficient operations and the potential for reduced fuel costs. These projects will improve employee and customer safety by enabling the detection of serious issues that could cause injury or death, such as back-feeding onto the distribution system or downed energized conductors. These projects also will enable and support customer programs such as improvements to the Interactive Bill and new time-of-use programs.

Q. When will these projects be placed into service?

A. Tampa Electric expects to complete some DAP projects in 2024 and others in 2025.

1 AMI PROJECTS

2 **Q.** Please describe the AMI Projects and why they are needed.

3
4 **A.** The AMI project builds on our existing AMI infrastructure
5 by transitioning our AMI and lighting networks to a common
6 platform. This will allow the same team members to manage
7 both AMI meters and lighting. This project also will
8 examine potential future use cases for automation, AI, and
9 ML for AMI and lighting.

10
11 **Q.** What steps will the company take to ensure these projects
12 are completed at the lowest reasonable cost?

13
14 **A.** The company will use the existing streetlight network to
15 save costs, and the company will select vendors and
16 contractors through our competitive procurement processes.

17
18 **Q.** What benefits will the AMI projects provide to customers?

19
20 **A.** Using the same platform for the AMI and lighting networks
21 improves speed and efficiency in serving customer
22 disconnection, reconnection, and billing needs.

23
24 **Q.** When will these projects be placed into service?

25

1 **A.** Tampa Electric expects to complete the AMI projects in
2 2025.

3

4 **Q.** What is the total capital investment in OT for the above-
5 described projects between 2022 and 2025?

6

7 **A.** The total capital investment for the above-described
8 projects is \$478.6 million, of which \$357.7 million is in
9 rate base expenditures, from 2022 to 2025.

10

11 **SUBSEQUENT YEAR ADJUSTMENT**

12 **Q.** Please list the SYA project for which you are responsible
13 in this proceeding.

14

15 **A.** I am responsible for explaining the Grid Reliability and
16 Resilience Projects that are included in the company's
17 proposed 2026 SYA and 2027 SYA. I will describe the three
18 components which go into service during 2025 and 2026. In
19 August 2025, the Grid Communication Network component goes
20 into service. In September 2026, the Customer Information
21 Device Expansion components go into service, and in
22 December 2026, the Grid Communication Network Hardware,
23 Work Management, and Control Systems components go into
24 service.

25

1 GRID COMMUNICATION NETWORK - 2026 SYA

2 **Q.** Please describe the Grid Communication Network investment
3 in the SYA and why it is necessary.

4
5 **A.** The Grid Communication Network investment in the 2026 SYA
6 consists of acquiring the license for a 3x3 MHz band in
7 the 900 MHz spectrum to provide private and secure 4G and
8 5G communications to field devices. It is expected to cost
9 \$27.6 million and to be in service in August 2025.

10
11 This component is a standards-based technology that
12 provides a communications network to connect devices on
13 the grid. The networks have been designed for
14 cybersecurity, resiliency, reliability, and performance
15 and control. This component also reduces the reliance on
16 public carriers, reducing operating expenses and creating
17 a private, converged network where we can prioritize and
18 manage our own network traffic ensuring efficient and
19 reliable communication within the grid system.

20
21 **Q.** How will this component benefit customers?

22
23 **A.** I previously described the benefits of the Grid
24 Communication Network Project in my discussion of the
25 company's capital investments in the years 2022-2024. In

1 short, the Grid Communication Network Project will provide
2 high-speed communication between the Control Systems and
3 Field Device components to improve power quality and
4 reliability performance.

5
6 CUSTOMER INFORMATION DEVICE EXPANSION - 2026 AND 2027 SYA

7 **Q.** Please describe the Customer Information Device Expansion
8 and why it is necessary.

9
10 **A.** The Customer Information Device Expansion work falls into
11 the Back Office IT component of the Grid Reliability and
12 Resilience Projects. This consists of reconstructed data
13 models for lighting and non-meter devices, integrations
14 with existing systems, and revamped business processes for
15 device billing to better facilitate billing, unlock growth
16 opportunities in customer programs, and improve
17 operational efficiencies across utility services. They are
18 expected to cost \$24.3 million and to be in service in
19 September 2026. As a result, this component is contained
20 in both the 2026 SYA amount and the 2027 SYA amount.

21
22 This component changes the billing approach for non-meter
23 devices, eliminating reliance on workarounds, and prepares
24 the utility for growth in decentralized energy resources
25 and customer engagement.

1 **Q.** How will these components benefit customers?

2

3 **A.** The Customer Information Device Expansion component
4 enhances billing transparency, enables the ability to set
5 up an online marketplace for devices (lights, surge
6 protection, etc.) and helps to streamline business
7 processes such as reconnects and disconnects. This leads
8 to greater efficiency in the handling of devices on the
9 system, creating an optimal customer experience.

10

11 GRID COMMUNICATION NETWORK HARDWARE, BACK OFFICE IT SYSTEMS,
12 AND CONTROL SYSTEMS - 2026 AND 2027 SYA

13 **Q.** Please describe the Grid Communication Network Hardware,
14 Back Office IT Systems and Control Systems components and
15 why they are necessary.

16

17 **A.** The Grid Communication Network Hardware, Back Office IT
18 Systems, and Control Systems components that the company
19 plans to place in service in 2026 consist of line sensor
20 software, Private LTE implementation, a Work Management
21 System (WMS), and Distribution Planning Software Upgrades.
22 These components are expected to cost \$120.6 million and
23 to be in service in December 2026. As a result, these
24 components are contained in both the 2026 SYA amount and
25 the 2027 SYA amount.

1 This work will better facilitate advanced grid monitoring,
2 enhance operational efficiency, and improve the accuracy
3 of distribution planning and design. It will also improve
4 grid management and maintenance workflows, provide a robust
5 communication network for real-time data transmission, and
6 leverage real-time data for more precise planning and
7 operational decisions, significantly enhancing the
8 utility's operational capabilities and service
9 reliability.

10
11 **Q.** How will these components benefit customers?
12

13 **A.** As previously mentioned, the Grid Communication Network
14 Hardware, Back Office IT Systems, and Control Systems not
15 only create tangible benefits such as enhanced reliability
16 and reduced O&M expense, but also facilitate customer-
17 focused programs to improve fault detection, minimize
18 downtime, and expedite restoration. These projects will
19 also facilitate the integration of DER and enhance grid
20 management, leading to reduced energy losses and increased
21 efficiency, especially during peak load conditions. These
22 benefits are also described in greater detail in the direct
23 testimony of Mr. Whitworth.
24
25

1 **2025 OT&S O&M EXPENSE BUDGET**

2 **Q.** What is the level of O&M expense projected for the OT&S
3 area in 2025?

4
5 **A.** The level of O&M expense for the OT&S area in 2025 is a
6 component of the Electric Delivery budget, which is
7 described in the direct testimony of Mr. Whitworth.

8
9 **Q.** What steps has the company taken to reduce O&M expenses
10 in OT&S?

11
12 **A.** OT&S continuously evaluates effective ways to reduce O&M,
13 including methods such as workflow automation, data
14 driven decision making, and business process
15 optimization.

16
17 **Q.** What is the average number of team members within the
18 OT&S area in 2022 through 2024?

19
20 **A.** The average number of team members within the OT&S
21 department was 197 in 2022, 202 in 2023, and 234 in 2024.

22
23 **Q.** How many team members do you expect to employ in the 2025
24 test year?

25

1 **A.** The company projects our average number of team members
2 within the OT&S department in 2025 to remain the same as
3 2024, at 234 team members.

4
5 **Q.** What factors caused the addition of approximately 37 new
6 team members in the OT&S area between 2022 and 2024?

7
8 **A.** The increase of approximately 37 team members between 2022
9 and 2024 is primarily due to the (1) internal transfer or
10 reassignment of 24 team members to the OT&S department;
11 and (2) hiring of 13 new team members.

12
13 A total of seven employees transferred to OT&S from the IT
14 department, along with 11 from Energy Supply and six from
15 the company's RF Controls team. These reassignments were
16 needed to help the OT department carry out its vision and
17 strategy. Additionally, Tampa Electric determined the OT
18 department needed 13 new employees to provide the new
19 skillsets necessary to manage and maintain the operational
20 technology infrastructure. These 13 additions include the
21 following positions:

- 22
- 23 • Four to perform data strategy, data analytics, and
 - 24 project management.
 - 25 • Two to perform ADMS job functions.

- Three who joined the Meter team.
- Four who joined the Lighting team.

1
2
3
4 **Q.** What metrics or analysis did the OT&S department use to
5 identify the need for the approximately 37 additional
6 employees in the OT area?

7
8 **A.** The OT&S department first identified the skills necessary
9 by engaging in communications with industry leaders in the
10 field. We then looked within the company to identify
11 current employees that already had these skills or could
12 be retrained to develop them. The department was then able
13 to determine the number of new employees or "new hires"
14 required and what skillset would be needed.

15
16 **Q.** Do the approximately 37 team members added to the OT&S
17 department between 2022 and 2024 result in any avoided
18 costs or cost savings?

19
20 **A.** As stated above, 24 of the additional employees were
21 transferred from another area of the company, which does
22 not add to the overall number of company employees. This
23 reorganization will allow the company to better use the
24 existing skillsets in a more effective manner. The 13 new
25 Tampa Electric employees that joined the OT&S department

1 bring new skillsets that allow us to achieve the
2 organizational efficiencies and customer benefits that I
3 previously described in my direct testimony.
4

5 **SUMMARY**

6 **Q.** Please summarize your direct testimony.
7

8 **A.** My direct testimony describes the company's OT&S
9 department, and the OT&S resources and applications Tampa
10 Electric uses to operate its electric system and provide
11 an outstanding customer experience. I explained the
12 progress made in the OT&S area since the company's last
13 base rate case. I summarized the OT&S department's plans
14 and explained the company's OT&S capital investments and
15 O&M expense. I described the Grid Reliability & Resilience
16 Projects that will be going in service as part of Tampa
17 Electric's Subsequent Year Adjustments for 2026 and 2027.
18 These investments will enable us to provide a more
19 resilient and reliable service to our customers.
20

21 **Q.** Does this conclude your direct testimony?
22

23 **A.** Yes.
24
25

TAMPA ELECTRIC COMPANY
DOCKET NO. 20240026-EI
WITNESS: LUKCIC

EXHIBIT

OF

DAVID LUKCIC

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TAMPA ELECTRIC COMPANY
DOCKET NO. 20240026-EI
EXHIBIT NO. DL-1
WITNESS: LUKCIC
DOCUMENT NO. 1
PAGE 1 OF 1
FILED: 04/02/2024

LIST OF MINIMUM FILING REQUIREMENT SCHEDULES
SPONSORED OR CO-SPONSORED BY DAVID LUKCIC

MFR Schedule	TITLE
B-11	CAPITAL ADDITIONS & RETIREMENTS
B-13	CONSTRUCTION WORK IN PROGRESS
C-16	OUTSIDE PROFESSIONAL SERVICES

OPERATION TECHNOLOGY CAPITAL EXPENSE SUMMARY
2022-2025

Tampa Electric OPERATION TECHNOLOGY							
		2022	2023	2024	Total 2022-2024	2025	Total
Total Capital		72,742,292	89,823,206	95,029,185	257,594,684	220,958,300	478,552,983
	AFUDC	(2,568,688)	(771,958)	(22,224,123)	(25,564,768)	(92,102,790)	(117,667,559)
	BTL	(913,538)	535,321	(2,788,000)	(3,166,217)	0	(3,166,217)
Rate Base		69,260,066	89,586,570	70,017,062	228,863,698	128,855,509	357,719,208
<u>Rate Base Projects</u>							
	ADMS	1,898,984	3,376,137		5,275,120		5,275,120
	AMI	5,563,150	5,391,768	750,000	11,704,918	2,038,651	13,743,569
	BLSN	112,251	45,921		158,172		158,172
	DAP	3,404,206	9,167,041	14,799,000	27,370,247	18,075,079	45,445,326
	Grid Reliability and Resilience Projects	43,127	10,468,158	10,735,019	21,246,304	65,871,743	87,118,047
	Meter Operations		765,696		765,696	2,815,381	3,581,077
	Other	31,879,515	17,136,709	11,137,595	60,153,819	4,188,739	64,342,557
	Blanket - Lighting	12,417,103	20,604,737	15,601,544	48,623,384	16,069,585	64,692,969
	Blanket - Meter	4,094,596	5,032,166	4,568,619	13,695,381	3,867,678	17,563,059
	Lighting - Growth	5,988,456	7,192,840	2,400,000	15,581,296	550,000	16,131,296
	Lighting - Operations		108,823	500,000	608,823	500,000	1,108,823
	OT Application	3,799,176	10,196,884	8,195,978	22,192,038	11,312,970	33,505,008
	ES Capital Maintenance/Improvement Project/Program	59,502	99,691	1,129,307	1,288,501	665,000	1,953,501
	ED Capital Maintenance/Improvement Project/Program			200,000	200,000	2,900,685	3,100,685
	TOTAL Rate Base	69,260,066	89,586,570	70,017,062	228,863,698	128,855,509	357,719,208