BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF COLORADO

*** * * * ***

IN THE MATTER OF ADVICE LETTER NO. 1906-ELECTRIC OF PUBLIC SERVICE COMPANY OF COLORADO TO REVISE ITS COLORADO PUC NO. 8-ELECTRIC TARIFF TO REVISE JURISDICTIONAL BASE RATE REVENUES, IMPLEMENT NEW BASE RATES FOR ALL ELECTRIC RATE SCHEDULES, AND MAKE OTHER PROPOSED TARIFF CHANGES EFFECTIVE DECEMBER 31, 2022.	)	**PROCEEDING NO. 22AL-XXXXE**

DIRECT TESTIMONY OF MEGAN N. SCHELLER

ON

BEHALF OF

PUBLIC SERVICE COMPANY OF COLORADO

NOVEMBER 30, 2022

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF COLORADO**

*** * * * ***

IN THE MATTER OF ADVICE LETTER NO. 1906-ELECTRIC OF PUBLIC SERVICE COMPANY OF COLORADO TO REVISE ITS COLORADO PUC NO. 8-ELECTRIC TARIFF TO REVISE JURISDICTIONAL BASE RATE REVENUES, IMPLEMENT NEW BASE RATES FOR ALL ELECTRIC RATE SCHEDULES, AND MAKE OTHER PROPOSED TARIFF CHANGES EFFECTIVE DECEMBER 31, 2022.	)	**PROCEEDING NO. 22AL-XXXXE**

TABLE OF CONTENTS

SECTION **PAGE**

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF COLORADO

*** * * * ***

IN THE MATTER OF ADVICE LETTER NO. 1906-ELECTRIC OF PUBLIC SERVICE COMPANY OF COLORADO TO REVISE ITS COLORADO PUC NO. 8-ELECTRIC TARIFF TO REVISE JURISDICTIONAL BASE RATE REVENUES, IMPLEMENT NEW BASE RATES FOR ALL ELECTRIC RATE SCHEDULES, AND MAKE OTHER PROPOSED TARIFF CHANGES EFFECTIVE DECEMBER 31, 2022.	)	**PROCEEDING NO. 22AL-XXXXE**

DIRECT TESTIMONY OF MEGAN N. SCHELLER

I. INTRODUCTION, QUALIFICATIONS, PURPOSE OF TESTIMONY, AND RECOMMENDATIONS

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Megan N. Scheller. My business address is 401 Nicollet Mall, Minneapolis, Minnesota 55401.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT POSITION?

A. I am employed by Xcel Energy Services, Inc. ("XES") as Sr. Director, Product Management. XES is a wholly owned subsidiary of Xcel Energy Inc. ("Xcel Energy"), and provides an array of support services to Public Service Company of Colorado ("Public Service" or the "Company") and the other utility operating company subsidiaries of Xcel Energy on a coordinated basis.

Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS PROCEEDING?

A. I am testifying on behalf of Public Service.

Q. PLEASE SUMMARIZE YOUR RESPONSIBILITIES AND QUALIFICATIONS.

A. As Sr. Director, Product Management, I lead the customer technology portfolio which includes customer facing channels and experiences as well as back end supporting systems and employee tools to serve our customers. I am responsible for the customer technology portfolio, working within internal processes to ensure we are investing in high value solutions for our customers and company. I lead work direction by aligning to a vision, strategy, and roadmap for advancing digital capabilities built with user research and feedback.

Prior to March 1, 2022, I was Sr. Director, Customer Brand Strategy, responsible for brand, advertising, customer insights and digital customer experience. In this Direct Testimony, I represent the Xcel Energy Technology Services organization (formerly Business Systems), which performs Xcel Energy's shared Information Technology ("IT") functions. A description of my qualifications, duties and responsibilities is set forth in my Statement of Qualifications at the conclusion of my testimony.

Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?

A. The purpose of my Direct Testimony is to provide an overview of the Technology Services area and discuss from a policy perspective how Technology Services has continued to become a more significant part of the Company's operations, even since the Company's last electric rate case, Proceeding No. 21AL-0317E (the "2021 Electric Phase I"). In addition, I support the Company's proposal for a deferral mechanism associated with the IT Aging Technology and Cybersecurity capital categories ("IT Deferral"), which will help mitigate the ongoing under

recovery of short-lived IT investments at the same time the need for these investments is growing. I also introduce Mr. Michael O. Remington, who supports the Technology Services area's specific capital additions and operations and maintenance ("O&M") expenses, including those for the Advanced Grid Intelligence and Security ("AGIS") initiative included in the Company's proposed 2023 Test Year cost of service that is presented by Company witness Mr. Arthur P. Freitas.

Q. ARE YOU SPONSORING ANY ATTACHMENTS AS PART OF YOUR DIRECT TESTIMONY?

A. No. I am not sponsoring any attachments.

Q. WHAT RECOMMENDATIONS ARE YOU MAKING IN YOUR DIRECT TESTIMONY?

A. I recommend that the Colorado Public Utilities Commission ("Commission") approve the Company's forecasted capital additions and O&M for the Technology Services area included in the Test Year. I also recommend that the Commission approve the Company's proposed IT Deferral for Technology Services capital additions associated with the Aging Technology and Cybersecurity categories.

Q. PLEASE INTRODUCE OTHER WITNESSES WHO ARE SUPPORTING THE COMPANY'S REQUESTS IN THIS PROCEEDING RELATED TO THE TECHNOLOGY SERVICES AREA.

A. In addition to my Direct Testimony, the Company is presenting Direct Testimony from Mr. Remington in the Technology Services area. Mr. Remington supports Technology Services plant-in-service additions for 2022 and 2023 and supports

Technology Services O&M expenses included in the cost of service. In addition, Mr. Remington supports the Company's request for capital and O&M costs associated with the AGIS initiative.

II. TECHNOLOGY SERVICES – BACKGROUND AND OVERVIEW

Q. WHAT IS THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY?

A. In this section, I provide an overview of the Technology Services area and the expanding technology needs of the Company. I explain why investment in technology is critical to Public Service's operations and customer service, and why costs of IT are growing, including how these increasing investments are beneficial to the overall business and our customers.

Q. PLEASE PROVIDE AN OVERVIEW OF THE TECHNOLOGY SERVICES BUSINESS AREA.

A. Technology Services is Xcel Energy's centralized IT organization, providing technology services to support all aspects of the operations of the Xcel Energy operating companies, including Public Service. While some IT projects are specific to an individual operating company and/or to electric or gas jurisdictions, the majority of Technology Services work is completed on an Xcel Energy-wide basis. In this era, it is hard to identify an aspect of Xcel Energy's operations that Technology Services does not support in some manner.

Q. PLEASE DESCRIBE TECHNOLOGY SERVICES' KEY FUNCTIONS AND RESPONSIBILITIES.

A. The key services Technology Services provides include the following:

- *Systems Control:* Technology support to our Generation, Transmission, and Distribution business areas to enable management and operation of the electric and gas systems. One of the systems that we maintain is the Outage Management System ("OMS"), which tracks customer outages and dispatches repair crews to restore service. Technology Services also supports the Supervisory Control and Data Acquisition

("SCADA") system, which is used to monitor the health of the electric and gas transmission and distribution systems.

- *Foundational Technology Infrastructure:* Support for each employee's hardware and software needs, including the provision and maintenance of hardware such as computers, phones, and servers; maintaining and updating operating systems; and providing sufficient data storage capabilities. Technology Services also provides protection from Cybersecurity attacks, including but not limited to computer viruses.

- *Customer IT Support:* Hardware and software needed to facilitate interactions with Public Service customers. These activities include maintaining the Xcel Energy website that provides important information to customers about outages, the status of their account, safety, information required by our regulators, and Public Service operations. Technology Services also maintains the Customer Resource System ("CRS"), which is our customer information system, and which generates billing statements to Public Service retail customers on a monthly basis. Technology Services also supports the Interactive Voice Response software that enables interaction with customers via telephone keypad or speech recognition.

- *Corporate IT Support:* Technology Services provides IT support for necessary corporate functions such as Human Resources and Financial Management.

Along with day-to-day work on the technology we have deployed, Technology Services makes capital investments and incurs O&M expenses to support other business areas and functions across Xcel Energy. Without ongoing investment in technologies, we would lack the tools to operate reliably and securely, support functional decision-making, enable communications and "smart" resources, and protect such fundamentally important resources as our grid, our customer information, our generation management, and our financial data. In this proceeding, Technology Services capital additions include but are not limited to hardware (e.g., desktop and laptop computers, servers, routers, phone systems, radio systems, microwave communication systems, and network equipment),

software (computer programs), related technology infrastructure investments, and Cybersecurity solutions that support the Xcel Energy operating companies' business operations. I discuss these in more detail below.

Q. OVERALL, WHAT IS THE IMPORTANCE OF IT TO XCEL ENERGY, AND PUBLIC SERVICE?

A. IT investments within a utility company like Public Service are just as essential as investments in poles, wires, meters, and fleet. In today's world, very few large businesses can function in a safe and reliable manner, or provide appropriate customer service levels, without IT investments. For example, the IT and Operational Technology ("OT") convergence, two traditionally separate systems, merges business insights, controls and processes in a single uniform environment. This convergence allows utilities to reduce errors, improve efficiency, enhance workflows, and manage costs. There is an increasing reliance on data enabled by technology to make informed decisions on equipment status, demand load management, and other critical functions in the utility business. Actionable and accurate data are dependent on system integrations to ensure all relevant factors are considered from multiple information sources. IT is also a critical component of effective customer interactions and managing work and employees – whether from a human resources ("HR") or field workflow perspective, and to enable day-to-day functions of the business, such as through the use of laptops, field devices, conference rooms, and other communications equipment.

Q. PLEASE DISCUSS THE CONTINUING EVOLUTION OF TECHNOLOGY SERVICES' KEY FUNCTIONS AND RESPONSIBILITIES SINCE THE 2021 ELECTRIC PHASE I?

A. We have continued to invest in routine maintenance as well as projects to address outstanding business needs, but we have also significantly enhanced our focus on customer experience. In this proceeding, customer experience investments are a focus in 2022 and will continue with further investments for the next several years, as changing customer expectations are requiring us to work to continuously improve and maximize the performance of the tools serving customers (such as MyAccount, contact center agent tools, and other interfaces and support). We are also continuing work on our AGIS initiative, including revisions and upgrades allocated to Public Service as a result of Advanced Distribution Management System ("ADMS") implementation in other jurisdictions, and Advanced Metering Infrastructure ("AMI") head-end software, interfaces and related AMI software solutions to support the AMI meter deployment. The AGIS initiative is discussed in more detail in Mr. Remington's Direct Testimony.

Q. CAN YOU SPEAK MORE BROADLY TO INDUSTRY CHANGES THAT ARE AFFECTING UTILITIES' IT NEEDS, RELEVANT TO THE KIND OF WORK THAT TECHNOLOGY SERVICES UNDERTAKES?

A. Yes. Technology plays an ever-increasing critical role in enabling utility agility, sustainability and resilience as the energy transition unfolds. Utility company operations and business models are evolving as energy provisioning transforms. Almost every critical aspect of utility companies' business and operations will

change in the coming decade. In addition to investing in technologies that will ensure operational resilience during extreme weather conditions and increased demand supply volatility, utilities must modernize their technology portfolios to ensure the business resilience and agility required during the energy transition. The nature of the utility business puts a high premium on safety, business continuity and predictability.

In addition, there are other industry changes that are impacting Public Service's IT needs. An example of a particular industry change that is impacting IT is the replacement of fossil fuels as the dominant source of primary energy, which is a significant shift and will involve fundamental redesign of energy systems and IT support. Scaling up alternative energy sources involves addressing major technical challenges.

Q. CAN YOU PROVIDE MORE DETAIL ON THE TYPES OF IT TECHNOLOGY SERVICES SUPPORTS AS A RESULT OF CHANGING UTILITY INDUSTRY NEEDS, INCLUDING SUPPORTING THE CLEAN ENERGY TRANSITION?

A. Yes. In carrying out Technology Service's key functions and responsibilities described above, important areas that the Company is investing in IT and that reflect industry changes include:

- Securing technology systems and IT processes to avoid and mitigate constantly evolving and increasingly sophisticated cyber threats.
- Avoid, limit, and/or contain potential Cybersecurity events, timely discovery of Cybersecurity events, the ability to contain the impact of a potential Cybersecurity event, and timely recovery to normal operations in order to reduce the impact from a Cybersecurity event.

- IT infrastructure needed to support operational and productivity applications and enable communications. Examples include data center/cloud capabilities to support storage for growing data needs, data integration between technologies to enable analysis and decision-making, support for field worker and remote workforce, including mobile technologies, ensuring resilient systems and disaster recovery capabilities.

- Operational technologies to assist in managing system demand load, enable critical equipment predictive maintenance, enable field worker mobility, enhance data driven decision-making and comply with regulatory requirements.

- Customer enablement technologies to support customer mobile interactions, enhanced customer billing and collections capabilities, and provide energy usage insights and other important messaging.

- Foundational technologies through digital platforms and capabilities to enable device management, integration data management, analytics, application enablement and management, while supporting more agile deployment of new technologies.

- Advanced grid technology such as meter data analytics to provide insights into operational performance of metering systems, distribution networks and asset loading to help anticipate abnormal events and to avoid asset failures; ADMS to enable a decision support environment to monitor, control and optimize the secure operations of the grid; AMI to enable consumption meters, a two-way communication channel, a data collection engine and a data repository that support all phases of the meter data life cycle; and meter data management ("MDM") technologies that cleanse, calculate, and provide consumption data. MDM data supports billing, load profiling, forecasting, asset loading, network operation and a variety of analytic use cases.

- Distributed energy resource management systems ("DERMS") are software applications that manage distributed energy resources ("DERs"), which are connected to the electric distribution grid. DERMS addresses the uncertainties created by high levels of penetration of DERs such as rooftop solar, by turning DERs into additional control levers to manage distribution network operation and commodity management. It also offers benefits to transmission network operations and flexibility markets.

- Electric vehicles ("EV") technology investments needed to support increased EV saturation include capabilities for customer enrollment,

scheduling, billing, interactions, and data analytics/reporting, as well support for EV charging infrastructure and associated grid upgrades.

Q. ARE THERE OTHER CHALLENGES UNIQUE TO TECHNOLOGY SERVICES?

A. Yes. Technology changes constantly. As a result, issues with older software or equipment may not seem critical during budget creation but become critical if systems begin to show signs of issues or failure, or no longer serve their intended purpose. Additionally, Cybersecurity threats are constantly in flux and may result in additional investment in a given year to ensure that Cybersecurity tools and resources are responsive to new threats to our information systems. As IT has become increasingly critical to the business, the demand for IT solutions and fixes far outpaces the dollars available to meet those requests. As a result, it is necessary to constantly monitor, and sometimes re-prioritize, the percent of total dollars invested in each capital budget grouping.

Q. ARE PUBLIC SERVICE'S IT NEEDS INCREASING?

A. Yes. There is no doubt that over time, the need for capital investment is increasing in order to effectively manage our business. As I previously discussed, the IT and OT convergence allows utilities like Public Service to reduce errors, improve efficiency, enhance workflows, and manage costs, but the Company is also increasingly relying on data enabled by technology, which helps the Company make informed decisions about critical functions. In turn, such investments drive O&M increases, which include internal and contract labor, vendor services, new licensing and maintenance agreements to support the technology. Additionally,

capital and O&M are increasing as both inflation and access to materials and contractors tightens.

Q. HOW ARE THESE INCREASING NEEDS DRIVING TECHNOLOGY SERVICES' IT INVESTMENT ON BEHALF OF THE COMPANY AND ITS CUSTOMERS?

A. These needs are driving Technology Services' IT investments in multiple ways. Technology Services is devoting significant resources to address aging technology, enhancing capabilities, and cyber security initiatives, as I discuss in more detail below. Our aging network infrastructure continues to be a key driver of increased investment and requires attention on an ongoing basis, which is a critical operational foundation required for the Company to provide a safe and reliable product. In addition, we continue to seek out areas that will enhance the Company's capabilities to provide value to our customers and make it easier for them to do business with the Company.

COVID-19 has also impacted Technology Services' priorities, which has required us to accommodate remote work policies, necessitating increased network support and new work-at-home tools. In some cases, as with other business changes, this has required us to implement projects differently and/or has resulted in some minor delays. The Technology Services area has reflected in its budgets going forward our best estimate of these financial impacts and will continue to adjust as needed to ensure safe and reliable service for our customers as many of our employees have adjusted to the way we work. This is consistent with the approach we would take related to any of the various ways our business may evolve during a given period.

Q. UNDERSTANDING THE COMPANY IS FACING INCREASING IT NEEDS, WHAT STEPS DOES THE COMPANY TAKE TO MANAGE AND CONTAIN OVERALL IT COSTS?

A. There are various types of IT assets, including software, hardware, and network (communications). All IT assets have a manufacturer recommended timeline in regard to when a technology needs to be upgraded and/or replaced. The typical lifespan of software assets is seven years, but under certain circumstances, it can be extended to 10 or 15 years. Hardware and network assets typically have a life of five years; however, network asset upgrades may be delayed if a more critical technology need arises or to control costs. Technology Services will balance the costs, benefits, and risks of adhering to, or delaying, the manufacturer recommended lifespan – such is the case with the Customer Resource System ("CRS"). CRS was implemented 18 years ago and has exceeded its lifespan; the Company has chosen to continue to ensure system stability and security by remediating issues and adding incremental functionality over the years. Increasingly, CRS lacks the flexibility needed to continue supporting the evolving needs of customer interaction and billing. While CRS has not been updated since the original implementation, the Company is now evaluating a potential replacement or upgrade to mitigate system reliability and functionality risks.

Technology Services leverages the Technology Investment Governance ("TIG") process to prioritize projects though a gated approach to ensure the highest need efforts, but not all, are executed in a given timeframe. Cost control continues as projects are executed though standard project management approaches. I

discuss our budgeting process in more detail below and how we manage costs from a budgeting perspective through the TIG process.

Finally, costs are also managed through the Company's Sourcing organization to ensure vendor agreements and contracts are negotiated at a competitive rate using a standard Request for Proposal ("RFP") process.

Q. CAN YOU PROVIDE ADDITIONAL INFORMATION ABOUT THE TYPICAL LIFESPAN OF IT ASSETS?

A. Yes. As discussed previously, technology asset lives tend to be short (three to five years for hardware and seven years for most software assets) because in general, the hardware or software is useful for these periods of time. On average, the Company's IT assets need attention more frequently, especially with respect to unexpected technology changes or Cybersecurity threats. These short asset lives impact the Company's ability to recover costs in a timely manner.

Q. HOW DOES THE REGULATORY PROCESS ALIGN WITH THE DEGREE TO WHICH IT ASSETS HAVE SHORTER USEFUL LIVES?

A. By the time we obtain initial recovery of IT assets with shorter lifespans, we are often several years into the investment in the project. For example, it is my understanding that Public Service's current electric rates are based on capital that was placed in service on or before December 31, 2021. For IT projects that were placed in service in early 2022, we are not likely to recover those costs until after rates go into effect sometime in 2023. For projects that went into service in early 2022 and have a seven-year lifespan, Public Service is not recovering roughly 20 percent of the total projects' costs in depreciation expense. This is of concern to

the Technology Services organization, particularly given the extent of the utility's IT needs.

Q. IS THE COMPANY MAKING ANY PROPOSALS IN THIS PROCEEDING TO HELP MANAGE THE COSTS OF INCREASING IT NEEDS?

A. Yes. Later in my testimony, I support the Company's proposal to implement a deferral mechanism for IT capital costs associated with Aging Technology and Cybersecurity investments. As I discuss in Section IV of my Direct Testimony, this proposal is intended to mitigate the lag in recovery of these shorter-lived assets and support the Company's need to maintain an appropriate level of IT investment in today's utility landscape.

III. TECHNOLOGY SERVICES BUDGETING AND PLANNING

Q. WHAT IS THE PURPOSE OF THIS SECTION OF YOUR DIRECT TESTIMONY?

A. The purpose of this section of my Direct Testimony is to discuss Technology Services' project development and management processes, along with its capital spending, budgeting, and funding processes.

A. Overview of Capital Project Needs

Q. WHAT ARE THE PRIMARY DRIVERS OF TECHNOLOGY SERVICES CAPITAL ADDITIONS IN 2022 AND 2023?

A. The five key areas that drive Technology Services budget forecasts are:

- Addressing evolving **Cybersecurity** threats and requirements;
- Replacing **aging technology**;
- **Enhancing capabilities** of our business and our ability to serve customers;
- Advancing and modernizing the **customer experience**, including updating systems through our Customer Experience Transformation Programs; and
- Developing a more advanced distribution grid through the **AGIS** initiative.

Q. PLEASE DESCRIBE CYBERSECURITY PROJECTS.

A. Investments in Cybersecurity ensure the availability, integrity, and confidentiality of our IT systems, as well as compliance with legal and regulatory obligations. These investments provide prevention, detection, containment, and repair services to protect the Company from cyberattacks and to assist in recovery if such an attack occurs. A good example of the types of Cybersecurity projects that we have implemented is the Multi-factor Authentication project, which deployed a multi-method, multi-level process for the authentication of individuals who attempt to

access Xcel Energy's network, as well as ensuring that the device used is compliant from a security perspective.

Cybersecurity does not, however, include physical security investments, such as property security. Physical security is part of Shared Corporate Services, and is discussed by Company witness Mr. Adam R. Dietenberger.

Q. PLEASE DESCRIBE AGING TECHNOLOGY PROJECTS.

A. Technology Services supports the operations of the Company with a large and growing IT infrastructure. Information assets are no different from physical assets, although IT assets have generally shorter lives, as I previously mentioned. They are subject to aging, technological obsolescence, and increasing maintenance costs. Technology Services not only completes routine annual refreshes of technology, like replacing computers and printers, but also plans and places in service large IT projects that modernize the Company's IT and address the needs and experiences of our customers and employees. A reasonably up-to-date infrastructure is necessary for the Company to continue to meet increasingly demanding data security, reliability, and compliance requirements, as well as the service expectations of our customers. For example, some aging technologies are not equipped with the most current data security measures, meaning they are more vulnerable to cyberattack. In addition, the recovery of aging technologies after an outage can be compromised if those systems are no longer supported by their vendor. In general, while Technology Services seeks to maximize investments by harvesting the value of existing systems prior to replacing them, there comes a time when we must upgrade our aging systems due to business, reliability, or

compliance needs. Aging technology projects include both routine and specific refresh projects that update older IT systems, hardware, and programs. An example of a specific aging technology project is the Core HR Application project, which involves replacement of multiple existing core Human Resources software systems and vendors at Xcel Energy with a single, integrated software solution. Routine projects (or what we also call life cycle management projects) typically involve refreshes of smaller components of technology infrastructure on regular cycles.

Q. PLEASE DESCRIBE ANY ADDITIONAL BENEFITS OF REPLACING OR UPGRADING AGING TECHNOLOGIES.

A. Replacing or upgrading aging IT also affords the Company the opportunity to take advantage of certain enhancements or efficiencies of more modern IT, such as automating previously labor-intensive processes in order to reduce labor costs and other employee expenses, such as travel time. Other upgrades make our systems more secure, make them more consistent with existing IT across the Company, or are implemented to maintain compliance with regulations.

Another area of IT that must keep pace with current needs is our Company's data storage capabilities. The increasing use of technology across the organization is resulting in the need to store, transmit, and manage ever larger amounts of data, and our systems must be able to keep up with these growing data storage needs. While solutions such as routine information purging and data warehousing can help reduce the impact of this data "explosion," they are not sufficient to fully mitigate it. As a result, we need to increase our storage capacities

and the speed and flexibility of our networks, and improve our tools to cost effectively manage our data and information.

Q. PLEASE DESCRIBE PROJECTS THAT ENHANCE CAPABILITIES.

A. Technology can offer the opportunity to improve productivity, enhance communications between systems and between people, and use data more efficiently. Technology Services is constantly evaluating new technologies and helping business areas examine ways to increase efficiencies and enhance communications between systems that benefit the Company and our customers. An example of an enhancing capabilities project is the Strategic Fiber Deployment Project, where the Company will acquire dark fiber optic cable assets in order to better support enterprise network connectivity.

Q. PLEASE DESCRIBE CUSTOMER EXPERIENCE PROJECTS.

A. The customer experience refers to the Xcel Energy customer's direct interactions with the Company, whether by digital platforms, through the call center, or in person. Managing the experience, requires both system tools and customer interfaces that work for the customer, supporting their satisfaction with their service and overall experience with the Company.

While all of Technology Services' work puts the customer front and center, prior to 2019 it had been several years since we had invested significantly in primary customer touch points and relationship management tools. In support of the enterprise focus on enhancing customer experience, Xcel Energy launched a specific Customer Experience Transformation ("CXT") program in 2019 to help create smarter and simpler experiences for employees and customers and created

a new category called customer enhancements. This multi-year effort is designed to simplify Company technology, transform customer experiences, improve customer satisfaction and employee engagement, and continue to drive more efficient operations. CXT is designed to work strategically on enhancing digital channels, developing a data fabric model and migrating customer and business data into the model, and deploying the foundational components to allow the first two to operate. More specifically, Xcel Energy is utilizing more modern technologies that customers have come to expect through experiences with other companies. This includes interactive websites, account management options, and smart phone applications.

As more modern technologies become available for customers, it will be necessary to continue to invest in new capabilities like mobility, data and analytics, and customer relationship management. Front line employees' innovative thinking is being used to align with our customers' needs and expectations.

Q. PLEASE DESCRIBE THE AGIS INITIATIVE AND TECHNOLOGY SERVICES' ROLE IN PROVIDING SUPPORT FOR AGIS IN THIS PROCEEDING.

A. The AGIS initiative is a comprehensive plan that will advance the Company's electric distribution system, provide customers with more choices, and enhance the way the Company serves its customers. The foundational programs in the Company's AGIS initiative include: ADMS, including the Geospatial Information System ("GIS"); AMI; the Field Area Network ("FAN"); Intelligent Field Devices that include Fault Location Isolation and Service Restoration ("FLISR"); Integrated Volt-VAR Optimization ("IVVO"); and the Advanced Planning Tool ("APT"). Each of

these programs involves a coordinated approach – i.e., planning, design, build, deployment and ongoing support from Technology Services and Distribution. IT integration and Cybersecurity protections are needed to support these technologies.

Both Mr. Mino and Mr. Remington support the AGIS initiative because while AGIS is largely a Distribution Business Area initiative, it is also supported by Technology Services. While Mr. Mino's Direct Testimony supports AGIS components related to meter deployment and field devices, Mr. Remington provides specific support for the IT integration necessary to carry out the AGIS initiative. However, many of the same principles around budget development and management that I discuss below also apply to the overall AGIS initiative as presented by Mr. Remington.

Q. TO WHAT EXTENT ARE TECHNOLOGY SERVICES' CAPITAL NEEDS READILY PREDICTABLE?

A. While Technology Services undertakes significant long-term planning, in other cases, Technology Services must react quickly to changing IT risks and needs. New Cybersecurity risks and new technologies are emerging all the time, requiring flexibility within Technology Services to respond to those risks and needs. Given the nature of the issues Technology Services responds to, our capital additions tend to vary from year to year. Nevertheless, our overall budget supports our investments in technologies and associated services as necessary to ensure system reliability and security, to facilitate operational decision-making, and to provide the necessary levels of support to our customer and business capability

functions. Technology Services is expected to manage its overall capital additions to its capital budget once that budget has been developed, fully-vetted, and approved, even though IT risks and needs constantly change.

B. Technology Services Budget Development and Management

Q. WHAT IS THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY?

A. In this section, I explain how the Company develops and manages its Technology Services budget, focusing on robust planning and ongoing detailed management. I explain that from a global perspective, we manage to our overall budgets. Within those budgets, however, we must be adaptable so that our work reflects quickly evolving business and customer needs and also successfully carries out a number of larger projects with quite long implementation timelines. This approach is in the public interest because such project management and implementation means we are always working to ensure the proper prioritization of evolving customer and business needs.

Q. HOW DOES TECHNOLOGY SERVICES IMPLEMENT CAPITAL PROJECTS FOR PUBLIC SERVICE?

A. Although Technology Services implements some projects specific to individual operating companies, including Public Service, it achieves efficiencies of scale by performing most activities on a system-wide basis. Accordingly, many of the Technology Services projects are planned and budgeted at the Xcel Energy level, allocated or assigned to the appropriate operating companies, and implemented throughout the different operating companies. When projects are developed and implemented solely for Public Service or other individual operating companies, the

costs are directly assigned to that utility.[1] In other cases, common projects are allocated across Xcel Energy operating companies. Company witness Ms. Nicole L. Doyle supports the Company's allocation of common capital costs to the Public Service Electric Department. Capital additions in my testimony are stated at the Public Service (Total Company) level, including electric and common projects but excluding any gas-only projects.

Q. HOW DOES TECHNOLOGY SERVICES DETERMINE WHEN AN EXISTING APPLICATION OR SYSTEM NEEDS TO BE REPLACED OR UPGRADED?

A. Technology Services works with each of the business areas and operating companies to identify short- and long-term technology needs. The needs typically are greater than the organization's ability to fund them, so Technology Services partners with business leaders to evaluate and prioritize all proposed Technology Services investments. Technology Services strives to maximize technology investment value by maintaining existing systems until the risk and costs associated with keeping these aging technologies in place outweigh the benefits.

Q. PLEASE DESCRIBE THE PROCESS TECHNOLOGY SERVICES USES TO PREPARE ITS CAPITAL BUDGETS.

A. More broadly, Mr. Dietenberger explains how the Company establishes overall business area capital spending guidelines and budgets based on financing availability, specific needs of business areas, and the overall needs of the Company. Mr. Dietenberger also explains that generally, there are more projects

[1] The Manchief Onboarding project is such an example, which involves, among other things, transitioning IT assets at the acquired Manchief Electric Generating Station to Xcel Energy IT assets and converting applications functionality to Xcel Energy's systems.

and work to be done than Xcel Energy has the capacity to fund, resulting in the need for prioritization and assessment across business areas and operating companies that ultimately results in a capital budget specific to the Company and business areas. Technology Services uses the TIG process to evaluate all proposed Technology Services investments. The TIG process is the Company's IT budget development, project prioritization, and project oversight process, which helps to establish budgets that are reasonable and to manage our capital expenditures accordingly. The TIG process helps ensure Company budgets are reasonably reflective of the projects that will be placed in service during the relevant year or years.

As part of the TIG process, key business and IT leaders are accountable for managing demand intake, prioritization, and business outcomes of the IT projects in their portfolios as they move from project inception towards in-service, thereby ensuring that projects comply with IT portfolio and project management requirements. TIG leadership is comprised of executive level and senior business leaders in a partnership with IT leadership. Projects are reviewed so that scope and costs are managed from inception through implementation. The TIG process provides oversight of all IT projects during each phase of project lifecycles.

Q. PLEASE GENERALLY DESCRIBE HOW TECHNOLOGY SERVICES DEVELOPS COST ESTIMATES FOR PROPOSED CAPITAL ADDITIONS.

A. When a Technology Services project is in the initial stages of planning, we develop cost and schedule estimates based on internal experience with similar implementations. We then utilize a competitive bid process to ensure that Xcel

Energy receives quality service at a fair price, that business value is delivered according to the agreed requirements, and that costs remain in line with the approved budget.

Q. HOW DOES TECHNOLOGY SERVICES MANAGE PROJECT COSTS?

A. After cost estimates are developed, all projects follow the TIG process requiring reviews and approvals of the budget by Business Portfolio Owners, while the portfolio level budgets are approved at the senior leader and executive levels. After these approvals, projects are reviewed monthly to compare budget to actual expenditures. Technology Services and the TIG leaders evaluate deviations to determine whether costs are appropriate. In addition, Technology Services develops action plans to mitigate variations in actual to budgeted expenditures. These mitigation plans may either reduce or delay expenditures to support the overall authorized budget. If authorized budget adjustments are required, they are identified and approved through the TIG process.

Q. HOW DO TECHNOLOGY SERVICES CAPITAL INVESTMENTS AFFECT THE COMPANY'S O&M COSTS?

A. Over the past 10 years, approximately, as we entered a new phase of capital investment, our costs began to increase—largely because new IT capital investments typically require additional software licensing fees, other operational costs, including Company labor, and more complex maintenance. Looking ahead to 2023, we anticipate continued cost increases reflecting the addition of new capital investments, replacement of aging technologies, customer experience projects, and AGIS investments. These investments, however, benefit our

customers in several respects. First, our customers have benefited from lower O&M and capital costs in previous years where we deferred and avoided technology investments by harvesting maximum value from our current systems. However, we cannot defer investments to replace dated technology or old hardware indefinitely and need to make investments to continue to serve our customers and to protect them and our business from Cybersecurity and system failure risk. Second, our investments in technology help other business areas serve customers efficiently and effectively. Finally, our investments are intended to maintain and enhance our service to customers, including in the ways customers interact with Xcel Energy. Without making these investments, we could not provide reliable, quality service to our customers.

Q. FROM A BUDGETING PERSPECTIVE, PLEASE DISCUSS HOW TECHNOLOGY SERVICES MANAGES IT O&M COSTS EFFECTIVELY.

A. The Company establishes business area O&M spending guidelines and budgets based on financing availability, specific needs of business areas, and overall needs of the Company. Overall, we establish a reasonable annual O&M level that allows Technology Services to complete priorities that are important to providing a reasonable level of services to the Company and our customers. During a financial year, Technology Services may need to adjust for changing business impacts, such as updates in technology, customer expectations, operating priorities of the business units across the Company, and the Company finance area. There are times when O&M funds are shifted within Technology Services during the year, typically to address unplanned requirements. Technology Services management

monitors actual versus budget expenditures for both capital and O&M efforts on a monthly basis. Deviations are evaluated and action plans are developed to mitigate variations in actual to budgeted expenditures. These mitigation plans may either reduce or delay other expenditures to support the overall authorized budget. If authorized budget adjustments are required, they are identified and approved at an appropriate level of management.

Q. WHAT DO YOU CONCLUDE ABOUT TECHNOLOGY SERVICES OVERALL LEVEL OF CAPITAL AND O&M INVESTMENTS?

A. As I discussed, the Company's capital and O&M investments have increased in light of the rising importance of IT in our business. Nonetheless, the kinds of investments that the Company is making are important to meeting our customers' changing energy needs and we are working to ensure reasonable costs for these investments. As specifically shown by Mr. Remington, the Company's overall levels of Technology Services' capital investments for 2022 and 2023 and O&M for the Test Year are reasonable.

IV. IT DEFFERAL PROPOSAL

Q. WHAT IS THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY?

A. In this section, I provide support for the Company's request for a deferral mechanism associated with the Technology Services Aging Technology and Cybersecurity capital categories (the IT Deferral).

Q. PLEASE EXPLAIN THE COMPANY'S REQUEST FOR AN IT DEFERRAL MECHANISM.

A. The Company respectfully requests the Commission authorize Public Service to defer and track capital costs associated with the Aging Technology and Cybersecurity categories within Technology Services for review and potential recovery in a future rate case. Company witness Ms. Marci A. McKoane describes in more detail the mechanics of the Company's proposed IT Deferral, including the Company's request for interest on deferred amounts.

Q. WHY IS THE COMPANY PROPOSING A DEFERRAL MECHANISM FOR TECHNOLOGY SERVICES CAPITAL ADDITIONS?

A. In general, Technology Services investments affecting Public Service's electric business have significantly increased in recent years due to the need for greater focus on and attention to IT needs within the Company and the customer experience. Our investment evolution continues to see an upward trend in the technology investments needed to keep pace with the emergence of Cybersecurity issues as well as refreshing aging technology and addressing changing customer expectations. These investments are keeping the Company operating, protecting

important data, supporting customer service, and helping other areas effectively manage O&M to reasonable levels.

More particularly, our aging network infrastructure also continues to be a key driver of increased investment in 2022 and 2023, as shown by Mr. Remington, and requires attention on an ongoing basis, which, as I previously indicated, is a critical operational foundation required for the Company to provide a safe and reliable product. Regarding Cybersecurity, as the number of cyber threats, attacks, and regulatory requirements continues to increase in volume and complexity, it is imperative that the Company establish and maintain the proper tools to protect the integrity and confidentiality of our data and our systems. Public Service has limited choices when it comes to replacing aging systems that are no longer supported by the vendor, unable to be updated due to lack of parts or technology changes, or otherwise out-of-date for utility use. The Company also must be proactive to protect against and respond to Cybersecurity threats, and is subject to compliance obligations to protect utility systems, employee data, and customer data. Further, given the unpredictability of these threats, it is important that these tools and resources continue to change in response to new threats to our information systems.

Additional costs to keep up with Aging Technology and addressing Cybersecurity threats could likewise be substantial, as shown in the capital additions forecasts presented by Mr. Remington. As costs continue to rise but cost recovery is on a one- to two-year delay, significant portions of the project costs are never recovered.

Q. YOU MENTIONED THE IMPACTS OF DELAYED COST RECOVERY ON SHORT-LIVED IT ASSETS. CAN YOU PROVIDE MORE INFORMATION ABOUT THIS CONCERN?

A. Yes. As illustrated below, none of our incremental Aging Technology or Cybersecurity assets for 2022 and 2023 have planned lives longer than 15 years, and roughly 80 percent of the total capital additions for 2023 have anticipated lives of 10 years or less. For 2022, most assets have a useful life of 10 years or less, with the vast majority having lives of 6-7 years. Under these circumstances, even a one- to two-year delay in recovery can reduce overall recovery of the invested costs and associated return by one-third. The proposed deferral will reduce the delay in recovery of such costs.

1

TABLE MNS-D-1
Lives of Aging Technology and Cybersecurity Assets
Public Service (Total Company)
(Dollars in millions)

			2022			2023
Category	**Depreciation Group**	**Depreciable Life**	**Actuals**	**Forecast**	**Total**	**(Forecast)**
Aging Technology	PSC-Common General Network Equipment	6	$12.1	$31.7	$43.7	$34.7
	PSC-Common Software-Foundational	3	-	-	$0.0	-
	PSC-Common Software-General	7	$3.6	$16.7	$20.3	$35.3
	PSC-Common Software-Long Term	10	-	$9.3	$9.3	$1.0
	PSC-Electric General Communication Equipment	15	$0.1	$0.1	$0.2	$21.1
	PSC-Electric General Network Equipment	6	$0.0	$3.4	$3.4	$2.3
	PSC-Electric Software-Foundational	3	$0.0	$0.0	$0.0	$0.0
	PSC-Electric Software-General	7	$0.6	$0.5	$1.1	$10.5
Aging Technology	**Total**		**$16.4**	**$61.7**	**$78.0**	**$105.0**
Cyber Security	PSC-Common General Communication Equipment	15	$0.0	-	$0.0	-
	PSC-Common General Network Equipment	6	$0.2	$0.4	$0.6	$2.6
	PSC-Common Software-Foundational	3	-	-	$0.0	-
	PSC-Common Software-General	7	$6.0	$5.4	$11.4	$6.1
	PSCo Common Software-Long Term	10	-	$0.4	$0.4	$0.0
	PSC-Electric General Network Equipment	6	$0.0	$0.0	$0.0	$0.0
Cyber Security	**Total**		**$6.2**	**$6.2**	**$12.4**	**$8.7**
	Grand Total		**$22.6**	**$67.9**	**$90.4**	**$113.7**

Q. ARE NECESSARY IT CAPITAL ADDITIONS IN AGING TECHNOLOGY AND CYBERSECURITY CONSISTENT YEAR-OVER YEAR?

A. No. IT investment levels vary year over year depending on the needs of existing technology systems and when particular capital projects are placed in service. Table MNS-D-2 below illustrates this variability, before allocations to individual operating companies:

TABLE MNS-D-2
Technology Services 2017 to 2023 Capital Additions
(Xcel Energy Total Enterprise)
(Dollars in millions)

Category	2017	2018	2019	2020	2021	2022	2023
Aging Technology	$131	$149	$179	$144	$178	$237	$351
Cyber Security	$20	$21	$12	$23	$11	$40	$30
Total Additions	**$151**	**$170**	**$192**	**$167**	**$188**	**$277**	**$380**

This table illustrates the variability of IT capital additions over time. For example, as discussed by Company witness Mr. Remington, the Company is placing certain large projects in service, including the Company's Dynamic EMS (DEMS) Environment Phase 4 and a major refresh of annual Microsoft software licenses for years 2023-2028 to reflect the Windows 11 operating system. The variability of Company and customer needs and of project completion, particularly for discrete large projects, in turn causes variability in annual capital additions.

Q. HOW DOES THE COMPANY PROPOSE TO DEFER AND TRACK IT COSTS?

A. The Company proposes to track and defer recovery of depreciation expense and interest at the Company's weighted average cost of capital ("WACC") associated with incremental Aging Technology and Cybersecurity electric capital additions placed in service between January 1, 2024 (or otherwise at the end of the Test

Year approved by the Commission), and the implementation of final rates in our next rate case. These costs would then be available for examination of their reasonableness in the Company's next case, at which time the appropriate recovery period could also be determined.

Q. PLEASE SUMMARIZE WHY IT WOULD BE REASONABLE FOR THE COMMISSION TO APPROVE THE PROPOSED IT DEFERRAL.

A. For the reasons I identify above, the Company's proposed IT Deferral would provide a reasonable way to track Technology Services' costs associated with Aging Technology and Cybersecurity capital needed to ensure safe and reliable service for our customers, reducing lag in recovery while enabling review of actual costs in a future case. As I have discussed, Cybersecurity investments ensure the availability, integrity, and confidentiality of our information systems and are necessary to ensure we meet our legal and regulatory obligations and risk management objectives. Our Aging Technology investments ensure that our systems are reasonably up-to-date in order to continue to meet increasingly demanding data security, reliability, and compliance requirements, in addition to service expectations of our customers. Costs associated with these capital investments tend to have shorter lifespans, have increased, and are often not readily predictable. A deferral will reduce regulatory lag associated with these assets that generally have shorter accounting lives compared to other Company assets, while allowing parties to evaluate actual investments for potential recovery in a future rate case.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, it does.

Statement of Qualifications

Megan N. Scheller

Megan Scheller is the Sr. Director of Product Management, leading the Customer Technology Portfolio, for Xcel Energy Services Inc. Megan is responsible for defining the roadmap, vision, and prioritization of the product portfolio based on value for the customer. She utilizes user experience design, customer sentiment, and business value to prioritizes work to achieve key results, and adjusts the plan to meet the evolving needs of the customer and business.

Megan has 16 years of experience in the field of Customer Experience and Strategy, with 11 of those years in a management role. She joined Xcel Energy in October 2006 where she began her career in developing and marketing Energy Efficiency programs. In 2013 Megan launched the Customer Experience organization which quickly evolved into driving new digital experiences to meet evolving customer expectations. In 2016 Megan added the development of the voice of the customer insights program along with our brand and advertising strategy and execution to her scope. In 2019, Megan used her expertise to lead the Customer Experience Transformation in the simplification of our technology and the development of new channels and experiences for our customers. Megan has recently joined the Technology Services organization and is using her knowledge and experience of applying strategic planning and value to technology planning.

Megan graduated from the University of St Cloud Minnesota where she earned a bachelor's degree in Advertising and Marketing. She earned a Master's in Business Administration degree from Capella University.

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF COLORADO

* * * *

IN THE MATTER OF ADVICE LETTER NO. 1906- ELECTRIC OF PUBLIC SERVICE COMPANY OF COLORADO TO REVISE ITS COLORADO PUC NO. 8-ELECTRIC TARIFF TO REVISE JURISDICTIONAL BASE RATE REVENUES, IMPLEMENT NEW BASE RATES FOR ALL ELECTRIC RATE SCHEDULES, AND MAKE OTHER TARIFF PROPOSALS EFFECTIVE DECEMBER 31, 2022.	)))))))))	**PROCEEDING NO. 22AL-XXXXE**

AFFIDAVIT OF MEGAN N. SCHELLER
ON BEHALF OF
PUBLIC SERVICE COMPANY OF COLORADO

I, Megan N. Scheller, being duly sworn, state that the Direct Testimony and attachments were prepared by me or under my supervision, control, and direction; that the Direct Testimony and attachments are true and correct to the best of my information, knowledge and belief; and that I would give the same testimony orally and would present the same attachments if asked under oath.

Dated at Minneapolis, Minnesota, this 22 day of November, 2022.

Megan N. Scheller
Senior Director, Project Management

Subscribed and sworn to before me this 22 day of November, 2022.

JONATHAN HARTWIG BITTMANN
NOTARY PUBLIC - MINNESOTA
MY COMMISSION EXPIRES 01/31/27

Notary Public

My Commission expires 01-31-2027