

NOTICE OF CONFIDENTIALITY

**A PORTION OF THIS TESTIMONY OR TESTIMONY AND ATTACHMENTS
HAS/HAVE BEEN FILED UNDER SEAL.**

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

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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) PROCEEDING NO. 22AL-XXXXE
REVENUES, IMPLEMENT NEW BASE)
RATES FOR ALL ELECTRIC RATE)
SCHEDULES, AND MAKE OTHER)
PROPOSED TARIFF CHANGES)
EFFECTIVE DECEMBER 31, 2022.)

DIRECT TESTIMONY AND ATTACHMENT OF SANGRAM S. BHOSALE

ON

BEHALF OF

PUBLIC SERVICE COMPANY OF COLORADO

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Confidential: Attachment SSB-1C

November 30, 2022

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OF THE STATE OF COLORADO**

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LIST OF ATTACHMENTS

Attachment SSB-1C	Confidential Supply Chain Market Intelligence, Material Strategy, & Sourcing PowerPoint
Attachment SSB-1	Supply Chain Market Intelligence, Material Strategy, & Sourcing PowerPoint – Slip Sheet

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

* * * * *

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DIRECT TESTIMONY AND ATTACHMENT OF SANGRAM S. BHOSALE

1 I. **INTRODUCTION, QUALIFICATIONS AND PURPOSE OF TESTIMONY**

2 Q. **PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

3 A. My name is Sangram S. Bhosale. My business address is 1800 Larimer Street,
4 Denver, Colorado 80202.

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

6 A. I am employed by Xcel Energy Services Inc. ("XES"), the service company
7 subsidiary of Xcel Energy, as Vice President of Supply Chain. XES is a wholly-
8 owned subsidiary of Xcel Energy Inc. ("Xcel Energy"), and provides an array of
9 support services to Public Service Company of Colorado ("Public Service" or the
10 "Company") and the other utility operating company subsidiaries of Xcel Energy
11 on a coordinated basis.

1 **Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THE PROCEEDING?**

2 A. I am testifying on behalf of Public Service.

3 **Q. PLEASE SUMMARIZE YOUR RESPONSIBILITIES AND QUALIFICATIONS.**

4 A. As the Vice President of Supply Chain, I am responsible for managing the supply
5 chain functional areas including Capital & Major Projects Procurement, Category
6 Management, Governance & Enablement, Transformation & Innovation,
7 Procurement Operations, Material Management, Nuclear Supply Chain
8 Management, and Fleet. I also hold responsibility for managing supply chain
9 budgets. A description of my qualifications, duties, and responsibilities is outlined
10 in my Statement of Qualifications at the conclusion of my testimony.

11 **Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?**

12 A. My Direct Testimony introduces the Company's Supply Chain function and
13 activities. My testimony then discusses and supports the impact of inflation and
14 current supply chain constraints in the marketplace on the Company's non-labor
15 costs of providing electric service to customers, including operations and
16 maintenance ("O&M") expenses. I illustrate the sources of inflationary impacts and
17 also explain the timing of when these impacts translate into increased costs for
18 Company work.

19 The purpose of this discussion is to illustrate further why the Company's
20 costs are increasing and to support the appropriate application of inflationary
21 adjustments to the Company's test year non-labor O&M expense (other than
22 specific known and measurable ("K&M") adjustments), which is based on the
23 Company's actual O&M for the twelve months ended June 30, 2022. Company

1 witness Mr. Arthur P. Freitas discusses the methodology for applying the specific
2 IHS Markit inflationary factors to the Company's non-labor O&M in developing the
3 Company's revenue request in this case. I do not discuss the impacts of inflation
4 on the Company's internal labor, as Company witness Mr. Michael P. Deselich
5 addresses that topic.

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

8 A. Yes. I am sponsoring the following attachment that was created by me or under
9 my direct supervision:

- 10 • Attachment SSB-1C – Confidential Supply Chain Market Intelligence,
11 Material Strategy, & Sourcing PowerPoint
- 12 • Attachment SSB-1 – Supply Chain Market Intelligence, Material
13 Strategy, & Sourcing PowerPoint – Slip Sheet

1 **II. SUPPLY CHAIN BUSINESS AREA**

2 **Q. WHAT IS THE SUPPLY CHAIN BUSINESS AREA OF XCEL ENERGY?**

3 A. Supply Chain is the entire system used to support procurement and delivery of
4 materials and supplier services for Xcel Energy. Supply Chain procures goods and
5 services for each of the Xcel Energy operating companies, including Public
6 Service, and for all of the various utility operations (electric, gas, and steam) within
7 the overall enterprise. Supply Chain also procures equipment and services related
8 to the construction of new capital projects. Additionally, Supply Chain manages
9 materials/inventory and fleet management. However, my testimony's primary focus
10 is the activities related to procurement.

11 **Q. PLEASE DESCRIBE THE TYPES OF WORK UNDERTAKEN BY SUPPLY**
12 **CHAIN?**

13 A. Supply Chain is involved in various activities to procure and deliver materials and
14 services, such as sourcing of materials and services, strategic negotiations,
15 contract execution and management, supplier performance and relationship
16 management, and purchase order life cycle management.

17 **Q. HOW DOES THE SUPPLY CHAIN FUNCTION COORDINATE WITH BUSINESS**
18 **AREAS OF THE COMPANY?**

19 A. Supply Chain operates cross-functionally to support all of Xcel Energy, and
20 partnering with business areas is a crucial priority of our organization. This means
21 that we coordinate with business unit operations and leadership regularly to assess
22 organizational plans and prioritize procurement needs accordingly. Strategic
23 Sourcing teams advise business unit partners on current market conditions and

1 collaborate with them to develop strategies to secure materials and services. Our
2 teams also identify additional qualified suppliers of required materials and services
3 to help ensure they are acquired at a favorable total cost of ownership. Material
4 Strategy and Purchasing teams coordinate with business unit operations to
5 process purchasing requirements and work with suppliers to ensure timely material
6 availability to meet operational requirements. Coordination transpires at every
7 level of the operation - and is consistently tracked throughout the organization
8 through a regularly scheduled cadence of meetings and updates.

9 **Q. DOES SUPPLY CHAIN PROCURE MATERIALS AND SERVICES FOR BOTH**
10 **CAPITAL AND O&M WORK CARRIED OUT BY PUBLIC SERVICE'S ELECTRIC**
11 **DEPARTMENT?**

12 A. Yes. Our job is to procure goods and services throughout the enterprise to operate
13 and maintain existing infrastructure and construct new components of the utility
14 system where needed. With respect to materials and equipment, in most
15 instances, we are procuring items that become inventory and ultimately are used
16 in either capital or O&M activities as determined by the business area and the
17 capitalization policy discussed by Company witness Mr. Mark P. Moeller.
18 Examples of these purchases include wire and cable, the single largest product
19 purchase type for Xcel Energy, and can ultimately be used in capital and O&M
20 projects. In other instances, Supply Chain works with the business area to
21 purchase large pieces of more typically capital equipment (such as a new
22 transformer or wind turbine generator) that ultimately require maintenance or other
23 O&M activities when installed. Regarding services, we often set up supplier

1 contracts that may be leveraged for either capital or O&M work, such as design
2 engineering or damage prevention support.

3 **Q. TO WHAT EXTENT IS SUPPLY CHAIN RESPONSIBLE FOR GATHERING**
4 **INFORMATION ABOUT INFLATION, OVERALL COST PRESSURES, AND**
5 **INDUSTRY PRACTICES FOR MATERIAL, SUPPLY, AND SUPPLIER**
6 **MANAGEMENT?**

7 A. While each business area typically monitors trends affecting their particular types
8 of work and planning, the Supply Chain organization created a dedicated Market
9 Intelligence and Risk Management team to understand supply markets and
10 procurement risks and opportunities. This team coordinates using market data and
11 research, industry benchmarking, and cross-functional communication inside the
12 Supply Chain department, notably with Materials Management, to proactively
13 identify procurement risks and opportunities for the business areas and Xcel
14 Energy as a whole. Several data and information resources are used, including but
15 not limited to IHS Markit, S&P Global, Hackett, ProcurementIQ, IBIS World, and
16 Dunn & Bradstreet. These tools aid in our research to perform
17 Strength/weakness/opportunity/threat (“SWOT”) analysis, should-cost modeling,
18 Porter’s Five Forces analysis¹, and financial risk analysis and forecasting, as
19 appropriate, to properly assess market pricing. These analyses are used to
20 determine commodity pricing trends and timing for conducting sourcing events,

¹ Porter's Five Forces is a framework for identifying an industry's competitive environment, strengths, and weaknesses, focusing on competition in the industry, new entrants to the industry, supplier power, customer power, and alternative products.

1 develop contract negotiation strategies, identify inventory and risk mitigation plans,
2 and capitalize on procurement opportunities that manage overall costs for the
3 Company and its customers.

1 **III. INFLATIONARY IMPACTS ON THE COMPANY'S NON-LABOR O&M**

2 **Q. PLEASE PROVIDE AN OVERVIEW OF THE AREAS OF PUBLIC SERVICE'S**
3 **ELECTRIC BUSINESS THAT ARE BEING AFFECTED BY INFLATIONARY**
4 **PRESSURES IN THE SECOND HALF OF 2022 AND BEYOND.**

5 A. Throughout 2022, the Company's work on the electric service system and the
6 overall business has been impacted by inflation in materials, consumables, and
7 contract labor. Cost pressures derive from a number of sources – higher gasoline
8 and freight prices than in past years, increased costs for raw materials such as
9 steel, copper, and chemicals necessary to run our business, and tight labor
10 markets making vendor supplier expertise more limited and more expensive, as
11 well as supply limitations resulting from the pandemic, bottlenecks at ports, the
12 ongoing war in Ukraine, and natural disasters such as Winter Storm Uri and
13 Hurricane Ian.

14 In addition, the Biden Administration has introduced the Build Back Better
15 and Inflation Reduction Act which aims to expand infrastructure investments in
16 clean energy technology in the United States through several rebates and
17 incentives to investors and customers alike. While intended to reduce the overall
18 inflation impact and provide benefits to energy companies and their customers, as
19 described by Company witnesses Mr. Steven P. Berman, Mr. Paul A. Johnson,
20 and Ms. Naomi Koch, this legislation is also likely to increase demand for clean
21 energy products and supporting electric infrastructure for at least the next several
22 years.

1 These cost pressures, individually and in relation to each other
2 cumulatively, affect nearly every aspect of our operations and maintenance work.

3 **Q. CAN YOU PROVIDE ADDITIONAL PERSPECTIVE ON THE AREAS OF THE**
4 **COMPANY’S ELECTRIC OPERATIONS BEING AFFECTED BY INCREASED**
5 **INFLATIONARY PRESSURES?**

6 **A.** Yes. We are seeing impacts in all aspects of the business, including the
7 Distribution, Transmission, Energy Supply, and Shared Services Business Areas
8 and the cross-functional regions such as our transportation fleet.

9 These areas are impacted in various ways, including constrained access to
10 supplies, increased lead times, reduced availability of labor, transportation and
11 logistics challenges, and overall supplier delays due to market conditions. In many
12 cases, limited vendor supply is not specific to one business area. For example,
13 increased gasoline prices affect transportation costs in each business area.
14 Reduced access to relatively simple commodities like nuts, bolts, and other minor
15 materials that support operations work likewise affects areas throughout the
16 Company.

17 The tight labor market also affects shorter-term and longer-term project
18 support, as resources are limited. Large projects with long lead times on materials
19 are occurring across Public Service’s business areas, with inflation and supply
20 chain constraints driving up capital and O&M costs.

21 Even more specifically, examples of the types of Distribution needs affected
22 by inflation and supply chain constraints include transformers, arrestors, cutouts,
23 and line hardware. In Transmission, these concerns affect access and the price of

1 items like wires and cables, circuit breakers, panels/switches, and line hardware.

2 The costs of items like chemicals such as lime, ammonia, powder-activated
3 carbon, and calibrations gas are particularly affecting costs for Energy Supply.

4 **Q. GENERALLY SPEAKING, WHY DO SUPPLY CHAIN PRESSURES AND TIGHT**
5 **LABOR MARKETS TEND TO INCREASE O&M EXPENSES?**

6 A. Fundamentally, the law of supply and demand means that costs rise when supply
7 dips in relation to demand or there is an increasing risk that materials and labor
8 will not be available as needed. As I discussed earlier in my Direct Testimony,
9 supply has been severely hampered due to several factors, including a shortage
10 of workers for both skilled and front-line positions, logistics issues with rail, ocean
11 freight, port congestion, lack of raw material due to the Russia-Ukraine war, and
12 manufacturing sector shutdowns in China related to their zero-COVID strategy.

13 At the same time, demand has increased due to an increase in storm events
14 and massive increases in infrastructure upgrades to enhance grid resiliency and
15 support bringing on renewable energy projects – many of which are situated in
16 remote locations. Projects that may not have been commercially viable without the
17 tax and grant incentives made available through the Inflation Reduction Act are
18 now moving forward, adding to demand.

19 In the current economy, these factors are multiplied as the US Federal
20 Reserve continues to raise rates to tame high inflation. High-interest rates increase
21 supplier borrowing costs, increasing the cost of goods. Additionally, despite these
22 rate raises, demand has yet to soften, and supply has yet to catch up.

1 **Q. CAN YOU PROVIDE SOME ADDITIONAL EXAMPLES OF SPECIFIC TYPES**
2 **OF PURCHASES FOR WHICH SUPPLY IS LOW, AND DEMAND IS**
3 **PARTICULARLY HIGH?**

4 A. Yes. A primary example would be the increased demand for semiconductor chips
5 affecting several cost areas. These impacts can be felt throughout the business in
6 categories such as computer equipment, technologies such as smart meters and
7 thermostats, LED lights, solar power, and electric vehicles (“EVs”). Suppliers
8 compete for these resources as companies and governments commit to cleaner
9 energy initiatives.

10 Similar pressures are occurring within clean energy metal markets used in
11 EV production, such as lithium, cobalt, nickel, and rare earth metal processing.
12 According to International Energy Agency and Visual Capitalist, China dominates
13 the processing operations accounting for 35 percent of nickel, 58 percent of lithium,
14 65 percent of cobalt, and 87 percent of rare earth metal processing². China’s strict
15 COVID policies have hampered operations, and existing tight supply lines have
16 become more constrained as demand strengthens. Supply struggles to resolve
17 backlogs, pushing supply and demand further apart.

18 As a further example, the Russia-Ukraine war has significantly impacted
19 Xcel Energy’s single largest commodity purchase, wire, and cable. As illustrated
20 in Confidential Attachment SSB-1 to my Direct Testimony, Russia and Ukraine
21 have a combined share of 52 percent of the global trade of pig iron, 12 percent of

² <https://www.visualcapitalist.com/chinas-dominance-in-clean-energy-metals/>;
<https://www.iea.org/reports/the-role-of-critical-minerals-in-clean-energy-transitions/executive-summary>

1 aluminum, and 9 percent of copper used in wire and cable production. These
2 constraints have caused demand to spike and prices to increase significantly. Bare
3 More specifically, the bare overhead conductor has experienced extended lead
4 times of 50+ weeks, price increases of 100 percent or more, and required
5 expansion of our supply base to meet operations needs.

6 **Q. PLEASE DISCUSS THE EXTENT TO WHICH CURRENT SUPPLY CHAIN**
7 **CONSTRAINTS HAVE AN IMMEDIATE (VERSUS LONGER-TERM) IMPACT**
8 **ON THE COMPANY'S COSTS OF PROVIDING ELECTRIC SERVICE.**

9 A. Current supply chain constraints immediately impact Company costs in many
10 ways. In addition to those items noted above and purchased for immediate use,
11 labor costs remain historically high, with skilled labor scarce and retention difficult.
12 In discussions with suppliers, it has been noted that even when materials are
13 present, they cannot operate at full production capacity due to their inability to
14 retain enough workers. In July of 2022, the US Department of Labor announced
15 there were 11.2 million open positions, which equates to almost two vacant jobs
16 for every unemployed person, highlighting the employment gap, according to
17 Bloomberg.³

18 Additionally, total consumer prices affecting business continue to rise and
19 remain historically high, affecting business, trending over 8 percent since March of
20 2022.⁴ Producer pricing reflects similarly. Specifically, these impacts are felt
21 through rising gasoline and diesel prices, wire and cable, chemicals, and minor

³ <https://fortune.com/2022/08/30/job-openings-surge-july-jolts-labor-department-layoffs-11-million/>

⁴ <https://www.usinflationcalculator.com/inflation/current-inflation-rates/>; <https://www.bls.gov/cpi/>

1 materials that support equipment installs and operations fieldwork. For Example,
2 in the chemicals category, a supplier implemented a 25 percent price increase for
3 Soda Ash plant deliveries beginning in July 2022, a chemical used to help reduce
4 carbon dioxide emissions at our energy generation sites. Another chemical,
5 ammonia, used for nitric oxide and nitrogen dioxide emission reductions, has
6 experienced price increases of 80 percent year-to-date. These costs impact the
7 line of business immediately.

8 **Q. PLEASE DISCUSS THE EXTENT TO WHICH CURRENT SUPPLY CHAIN**
9 **CONSTRAINTS ALSO HAD AN ONGOING OR LAGGING IMPACT ON**
10 **COMPANY COSTS.**

11 A. Supply chain constraints and disruptions also affect future costs, in several
12 respects. One Example is the implementation of longer-term supply or supplier
13 contracts. For instance, negotiating a two- or three-year contract at this time means
14 that the Company will be paying increased prices over the next several years. And
15 while it may seem preferable to negotiate shorter-term contracts in periods of
16 higher inflation, tight supply combined with high demand gives suppliers greater
17 control throughout the life of the contracts into which they will enter. Further, opting
18 for shorter-term contracts at this time creates a risk that prices will be even higher
19 when renewal periods arise. Additionally, given demand is significantly higher than
20 capacity, suppliers allocate capacity to customers with long-term commitments
21 and, in some cases, have refused to accept orders unless long-term contracts are
22 in place. It is a constant balancing act to ensure access to materials and suppliers
23 as there are needed.

1 For Example, a recent vegetation management contract was awarded a
2 three-year contract and an 8 percent increase for 2022. However, vegetation
3 management companies have struggled to hire and retain employees due to the
4 current labor market. As a result, the contract terms state pricing must be adjusted
5 annually to address market wage increases. This impact is estimated to result in
6 an additional 15 percent increase in 2023. Similar effects will be felt within
7 construction labor contracts, as contractor union rates have increased about 4
8 percent in 2022, with union negotiations pointing to additional increases of 6
9 percent in 2023.

10 An additional impact is on projects with long lead times, which may have
11 both capital impacts (when the contract price is paid or the project is implemented,
12 determined in coordination with business areas) and O&M impacts related to the
13 capital project or following from it. Several examples of long lead-time materials
14 include wire and cable, transformers, circuit breakers, transmission insulators, gas
15 meters, and voltage regulators. All of these material categories have experienced
16 lead time increases of 100-400 percent, with delivery dates stretching up to 40-
17 80+ weeks for certain materials in 2022, increasing the need for longer-term
18 planning. Due to a significant imbalance between demand and supply,
19 transformer lead times with some suppliers extend to 40-60 weeks, whereas
20 before COVID-19 average lead times were less than 12 weeks. Thus, the
21 Company is looking at alternate suppliers to diversify our supply base and, ideally
22 find suppliers with shorter lead times. However, alternate suppliers quoted prices
23 between 40-200 percent higher than units from current suppliers but still required

1 lead times of 20+ weeks – creating a lag in when the recent cost increases will fully
2 affect the Company.

3 Another example of an ongoing supply chain issue is wire and cable.
4 Extended lead times with our primary wire and cable supplier, currently 42-58
5 weeks, have compelled us to expand our domestic and foreign supply base to
6 meet operations needs. In doing so, we have faced price increases of up to 200
7 percent and averaging around 50 percent for the entire category. Again, due to
8 lagging delivery dates, current price increases will be incurred in the future even
9 as they are ordered now.

10 In conclusion, we expect continued cost increases, both from the unit cost
11 and labor perspective, and the lagging cost of onboarding necessary suppliers
12 whose prices are exponentially higher than historical levels.

13 **Q. DOES RISK OF REDUCED ACCESS TO NEEDED MATERIALS, SUPPLIES,**
14 **COMMODITIES, AND FUELS DRIVE UP PRICES EVEN IN THE ABSENCE OF**
15 **CURRENT ACTUAL CONSTRAINTS?**

16 A. Yes, such risks can have temporary or more permanent or long-term effects. For
17 Example, access to supplies is seasonal in some cases because they are affected
18 by winter storms and hurricanes. Even the risk of reduced access can drive up
19 demand, which will put upward pressure on prices. For instance, conversations
20 with a primary supplier for Southern Yellow Pine, used for pole production,
21 suggests that the risk of hurricane and winter storm season is putting pressure on
22 the market that is already constrained due to pent-up demand and lack of
23 resources to process raw material. Many utilities lack storm reserves and are on

1 allocation with suppliers, limiting the ability to react to storm situations. These
2 circumstances are anticipated to constrain the market further and put upward
3 pressure on prices in 2023.

4 Another example of long-term risk is the war in Ukraine, creating uncertainty
5 and volatility in many commodity markets, such as fuel, into the future. Russia
6 recently slashed the amount of natural gas it supplies to Europe via the Nord
7 Stream 1 pipeline by 80 percent, a move expected to lead to further disruptions in
8 the oil market as European nations look to move away from natural gas toward
9 crude oil.⁵

10 An additional example is the recent news of the United States Days of
11 Diesel Supply hitting 25 days.⁶ This metric measures the days' worth of supply of
12 U.S. refineries that stopped producing oil and the industry stopped importing oil
13 from other countries. Days of Diesel metric is calculated by dividing the U.S.
14 inventory by daily demand, which the industry uses as a benchmark to review
15 overall supply and demand. The risk of diesel shortage drove immediate fear and
16 concern in the marketplace, and we saw an overall spike of 50 percent increase in
17 prices compared to 2021.

18 Overall, all of these circumstances impact Public Service by increasing
19 operational costs of the organization in labor, materials, and services, driven by
20 volatility and uncertainty of future risks.

⁵ <https://connect.ihsmarket.com/master-viewer/show/phoenix/4531167?connectPath=Search&searchSessionId=77c00c82-8477-4afe-9370-66020280d517>

⁶ <https://www.newsweek.com/us-only-has-just-days-diesel-left-before-supply-runs-out-1754851>

1 **Q. IS ACCESS TO FINISHED PRODUCTS THAT MIGHT OTHERWISE BE**
2 **CAPITAL ALSO AFFECTING THE COMPANY'S OVERALL O&M EXPENSE?**

3 A. Yes. Supply shortages, in some cases, make it difficult to purchase new
4 equipment. The Company must, therefore, sometimes increase the time and cost
5 associated with maintaining or refurbishing existing equipment. For Example, a
6 significant drop in production of light to heavy-duty commercial vehicles, such as
7 Ford F150, F500, and bucket trucks, has resulted in having to hold on to end-of-
8 life vehicles in the Company's vehicle fleet, resulting in increased fuel, repair, and
9 maintenance costs compared newer vehicles. Additionally, vehicle shortage has
10 required using rental equipment, driving up O&M costs. We have had to rely on
11 vehicle rentals for construction seasons, where we have seen cost increases of 8-
12 9 percent over last year.

13 As the wood pole market has tightened, Supply Chain has worked to ensure
14 access to sufficient materials to address aging infrastructure. To this end, the
15 Company is accepting refurbished material on existing poles where appropriate
16 rather than replacing poles, which drives up O&M costs.

17 Another example where a lack of finished products increases O&M cost can
18 be found within the transformer category. Due to decreased availability and long
19 lead times of transformers, the enterprise has had to pivot to repairing,
20 refurbishing, and rebuilding used transformers in the field to meet critical
21 operational needs resulting in significantly higher O&M costs, at times 200 percent
22 or more.

1 **Q. TO WHAT EXTENT ARE THESE COST PRESSURES EXPECTED TO**
2 **CONTINUE INTO 2023 AND 2024?**

3 A. Supply chain cost pressures are expected to persist into 2023 and beyond. Original
4 predictions forecasted abatement in 2024; however, the ongoing war in Ukraine
5 and the massive infrastructure investments expected due to grants and incentives
6 included in the recently passed Inflation Reduction Act will continue to stress the
7 contemporary climate further.

8 Further, as I noted earlier, due to the global nature of supply chains, inflation
9 in raw material costs takes months or years to work through the various tiers of the
10 supply chain. This is primarily due to the First-In-First-Out inventory accounting
11 principles used by most companies. For instance, commodity prices increased as
12 we began to come out of the pandemic, yet it took almost a year before we started
13 to see an increase in finished goods prices. Throughout the pandemic, we saw
14 price volatility and average prices remained 20-40 percent higher than pre-
15 pandemic levels. Case in point, as of October 2022, line hardware pricing
16 increased 37 percent relative to the 2020 price baseline. Similarly, the price of
17 insulators has increased 38 percent over the same period.

18 Labor markets have also seen significant inflation of roughly 5 percent year-over-
19 year. They are anticipated to continue at that rate for the next several years,
20 affecting the Company's costs of contracted labor services.

1 **Q. PLEASE PROVIDE AN OVERVIEW OF THE STEPS SUPPLY CHAIN IS**
2 **TAKING TO MITIGATE SUPPLY LIMITATIONS AND O&M COST INCREASES**
3 **ASSOCIATED WITH INFLATION.**

4 A. Supply Chain is constantly undertaking efforts to control costs, including but not
5 limited to supplier consolidation or diversification as appropriate, adopting a
6 category management approach to consolidate volume across the enterprise to
7 gain economies of scale, reducing consumption, managing tail spend
8 (consolidating the number of suppliers that account for a large number of
9 transactions but a small portion of spend volume), bundling services, engaging in
10 data driven negotiations to mitigate cost increases, use of third party benchmarking
11 to validate and obtain competitive rates, and increasing supplier competition
12 through Requests for Proposal (“RFPs”).

13 **Q. PLEASE DESCRIBE THE COMPANY’S EFFORTS TO CONTROL**
14 **PROCUREMENT COSTS IN MORE DETAIL.**

15 A. Supply Chain management has mitigated pressures and cost increases with
16 inflation through creative solutions, analyses substitutions, and most notably,
17 supplier diversification. We have also collaborated with operational business areas
18 to identify, develop, investigate, and implement several strategies and
19 opportunities to mitigate current and future cost and supply risks, including:

- 20 • Inventory Management and Planning. We have worked with business areas
21 to extend the planning range, increasing safety stock and inventory levels
22 for materials and equipment impacted by supply volatility and increased
23 lead times. For Example, this year, we experienced inventory growth of 50
24 percent in Energy Delivery, mainly including wire and cable inventory. We
25 have also experienced a 55 percent inventory increase with a strategic
26 distributor to cover the forecasted gap between demand visibility and lead

1 times for items such as line hardware, arresters, voltage regulators, and
2 circuit breakers.

- 3 • Supplier Diversification. Supplier diversification has had the most notable
4 impact on the Company's materials supply. Traditionally, Xcel Energy has
5 dealt mainly with large suppliers, creating a known, stable supplier base and
6 utilizing primarily economies of scale and overall relationships to manage
7 costs and access to goods and services. However, current conditions have
8 challenged the Company to expand our supply base to meet the
9 organization's needs and fill gaps left by some suppliers due to current
10 supply chain constraints. Supply Chain is therefore working to onboard
11 multiple new, vetted suppliers in several material categories, both foreign
12 and domestic, to support various needs throughout the enterprise. For
13 Example, Xcel Energy's Corporate Standards department approved
14 additional foreign and domestic conductor suppliers to prepare for future
15 operational requirements. We have similarly diversified our supplier base
16 for transformers and wire and cable categories, enabling us to meet the lead
17 times necessary for the business to operate.
- 18 • Specification Standardization: We have collaborated with our Engineering
19 Standards group to adopt broader industry standards, reducing field-
20 specific preferences, and utilizing alternate materials, designs, and parts
21 where possible. For Example, we partnered with a transformer supplier on
22 the Lighter Core Redesign program, which converted designs to copper
23 high-voltage windings while minimizing the electrical steel required,
24 maximizing material usage. And in turn, it shortens lead time, increases
25 availability, and speeds up production on several high-volume, high-
26 demand units.
- 27 • Flexible Approach to Rebuild/Replace Options: For Example, we added
28 personnel and hours to internal Transformer Repair Shop operations to
29 rebuild, repair, and return used or rebuilt units to service, increasing internal
30 rebuilt capacity by 42 percent. Additionally, we negotiated pricing and
31 executed contracts with select suppliers to purchase rebuilt or repaired
32 units.
- 33 • Substitutions of Products and Materials: Substituting products or materials
34 is another essential tactic to combat shortages. For Example, Xcel Energy's
35 Corporate Standards department approved using alternative distribution
36 arresters because of the factory constraints experienced at our leading
37 supplier. Other Examples include using wood cross-arms when fiberglass
38 cross-arms were in short supply and using other wood species, such as Red
39 Pine or Douglas Fir, instead of Southern Yellow Pine.

- 1 • Strategic Use of Indexed Pricing: Xcel Energy has worked to utilize index
2 pricing within new contracts where possible and applicable to allow pricing
3 to change due to market fluctuations that may be positive or negative in the
4 future. Index pricing in contracts can be a powerful tool to hedge risk and
5 meet customer demands during times of volatility in the market.
- 6 • Enhanced Communications: Operations and Supply Chain regularly
7 collaborate to perform day-to-day, job-by-job reviews and planning to
8 ensure the most critical needs are met first. We have also increased the
9 frequency of production planning meetings with manufacturers and
10 suppliers from monthly to bi-weekly to obtain early insights into potential
11 supply challenges (delivery delays, volume changes, etc.) and help meet
12 production schedules. Component deliveries are dealt with jointly, and
13 changes to accommodate schedules are considered.
- 14 • Market Intelligence and Business Analytics (“MIBA”) Team: Supply Chain
15 created a dedicated MIBA team to research macro-level supply market
16 conditions, forecast industry trends, develop should-cost models,
17 understand sub-component and raw material requirements, etc. This team
18 supports the strategic sourcing efforts described in my Direct Testimony.

19 **Q. CAN YOU PROVIDE SPECIFIC, RECENT EXAMPLES OF SITUATIONS**
20 **WHERE THE COMPANY HAS BEEN ABLE TO CONTROL COSTS THROUGH**
21 **THESE STRATEGIES?**

22 A. Yes. In mid-year 2022, Supply Chain leveraged third-party benchmarking firms to
23 support negotiations for a 3-year enterprise-wide software maintenance renewal
24 and achieved a 10 percent savings over the contract term. Supply Chain also
25 recently utilized should cost analysis (analysis of cost drivers and anticipated cost)
26 as a method for preparing data-driven negotiations for a substation rolled steel bid
27 event. This effort resulted in an awarded cost below the should cost model and a
28 20 percent savings. Additionally, an example of bundling services occurred early
29 in 2022, when IT Sourcing conducted an enterprise-wide RFP for IT Application
30 Support to obtain the best overall value with suppliers that demonstrate best

1 practices for tools, skills, capabilities, and innovation and processes. Historical
2 resource constraints and inflation caused labor rate pressures. Through this RFP,
3 we achieved cost savings and avoidances of 51 percent for O&M over a 3-year
4 term. Furthermore, Supply Chain recently leveraged an enterprise-wide category
5 approach to sourcing an event for crane services, with a total three-year savings
6 of more than 4 percent annually. But for these efforts, these types of costs would
7 be higher than currently anticipated.

8 **Q. WHAT DOES ALL OF THIS MEAN FOR THE COMPANY'S MATERIAL AND**
9 **SUPPLY COSTS FOR 2022-2023 AND BEYOND?**

10 A. Overall, the Company is seeing increases in material, supply, and contractor costs
11 in the second half of 2022, affecting prices into 2023 and 2024. The need to
12 manage supply constraints closely will continue due to additional demands from
13 having to react to unplanned events. Further, constraints in raw material
14 availability, lead times, and labor are expected to continue through at least the end
15 of 2023, as suggested by producer and consumer price indices published via IHS
16 Markit and S&P Global, two major economic research firms to which the Company
17 subscribes.⁷ While conditions will remain tight through 2023, many strategies are
18 in place to minimize impacts to operations, such as long-term planning, increased
19 safety stock and inventory levels, indexed pricing in contracts, supplier
20 diversification, standardization and rationalization of specifications, and use of
21 alternative and substitute materials when possible. Consequently, while price

⁷ <https://connect.ihsmarkit.com/document/show/phoenix/994709?connectPath=Search&searchSessionId=573e8802-654f-4f43-baf0-8415d860d252>

1 increases are not avoidable, the Company is taking proactive, appropriate steps
2 to mitigate impacts to the extent reasonably practicable.

3 **Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

4 **A. Yes.**

Statement of Qualifications

Sangram S. Bhosale

Sangram Bhosale is the Vice President and Chief Supply Chain Officer for Xcel Energy Services Inc. At Xcel Energy, Sangram is responsible for leading the supply chain and fleet organization that manages all external spending on material, equipment, and services except for fuels, all capital spares, consumables, and parts inventories across 71 warehouses and 7,500 vehicle assets across eight states.

Sangram has over 25 years of experience in procurement, supply chain management, and operations, including various leadership and management consultant roles. Sangram's experience includes successfully architecting and implementing enterprise-wide transformation programs and leading procurement and supply chain organizations. In addition, as a management consultant earlier in his career, Sangram advised executives and led client engagements related to organizational transformation, strategy development, procurement, supply chain management, operational excellence, and asset optimization at global 500 companies. Sangram joined Xcel Energy in 2020 in his current role.

Sangram graduated from the College of Engineering, Pune, where he earned a Bachelor of Science degree in Mechanical Engineering. He earned a Master of Science in Industrial Engineering and Management from Oklahoma State University. He also earned a Master of Business Administration from the University of Chicago Booth School of Business.

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF COLORADO

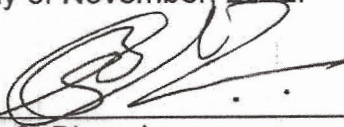
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IN THE MATTER OF ADVICE LETTER)
NO. 1906-ELECTRIC OF PUBLIC)
SERVICE COMPANY OF COLORADO)
TO REVISE ITS COLORADO PUC NO.)
8-ELECTRIC TARIFF TO REVISE)
JURISDICTIONAL BASE RATE) PROCEEDING NO. 22AL-XXXXE
REVENUES, IMPLEMENT NEW BASE)
RATES FOR ALL ELECTRIC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

AFFIDAVIT OF SANGRAM S. BHOSALE
ON BEHALF OF
PUBLIC SERVICE COMPANY OF COLORADO

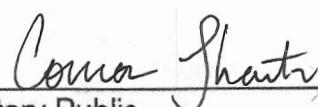
I, Sangram S. Bhosale, being duly sworn, state that the Direct Testimony and attachments were prepared by me or under my supervision, control, and direction; that the Direct Testimony and attachments are true and correct to the best of my information, knowledge and belief; and that I would give the same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

Dated at Denver, Colorado, this 28th day of November, 2022.



Sangram S. Bhosale
Vice President, Supply Chain

Subscribed and sworn to before me this 28th day of November, 2022.



Notary Public

My Commission expires June 21, 2026

