NOTICE OF CONFIDENTIALITY
A PORTION OF THIS DOCKET HAS BEEN FILED UNDER SEAL

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF COLORADO

*** * * * ***

RE: IN THE MATTER OF THE APPLICATION OF PUBLIC SERVICE COMPANY OF COLORADO FOR AN ORDER GRANTING A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY FOR DISTRIBUTION GRID ENHANCEMENTS, INCLUDING ADVANCED METERING AND INTEGRATED VOLT-VAR OPTIMIZATION INFRASTRUCTURE	**)** **)** **)** **)** **)** **)** **)** **)** **)**	**PROCEEDING NO. 16A-____E**

DIRECT TESTIMONY AND ATTACHMENTS OF JENNIFER B. WOZNIAK

ON

BEHALF OF

PUBLIC SERVICE COMPANY OF COLORADO

NOTICE OF CONFIDENTIALITY:
PORTIONS OF THIS DOCUMENT HAVE BEEN FILED UNDER SEAL

Confidential Attachment JBW-4

August 2, 2016

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

*** * * * ***

RE: IN THE MATTER OF THE APPLICATION OF PUBLIC SERVICE COMPANY OF COLORADO FOR AN ORDER GRANTING A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY FOR DISTRIBUTION GRID ENHANCEMENTS, INCLUDING ADVANCED METERING AND INTEGRATED VOLT-VAR OPTIMIZATION INFRASTRUCTURE	**)**	**PROCEEDING NO. 16A-____E**

SUMMARY OF THE DIRECT TESTIMONY OF JENNIFER B. WOZNIAK

Ms. Jennifer Wozniak is the Director, Jurisdictional Communication of Xcel Energy Services Inc. In this position she is responsible for corporate communications, social media, public relations and Demand Side Management ("DSM")/Energy Efficiency/Renewables marketing for Public Service Company of Colorado ("Public Service" or "Company"), one of four utility operating company subsidiaries of Xcel Energy, Inc. Her duties include, among other things, managing all communications strategy, planning, and execution for Colorado, Texas, and New Mexico. Her team also plans and executes all of the marketing campaigns for DSM, Energy Efficiency and Choice/Renewables programs in the same regions cited above.

In her testimony, Ms. Wozniak presents information regarding customer interest in advanced metering and its associated functions for customers, as well as the Company's Customer Education and Communication Plan ("Education Plan") for the

implementation of advanced meters in the State of Colorado. Ms. Wozniak begins by presenting the research Public Service has conducted and gathered regarding customer interest in advanced metering. Ms. Wozniak explains that according to a study conducted by Public Service in April of 2016, nearly 80% of customers agreed that the Company should provide advanced meters, including 64% who were highly favorable toward smart meters. This overall interest in advanced metering is coupled with specific customer interest in the benefits of smart metering, including customer insight into and control over their energy usage, greater reliability, and environmental benefits. Further, independent studies illustrate higher levels of customer satisfaction with utility service when the customer's utility has deployed advanced metering.

However, customers do not fully understand advanced metering technology or how advanced meters are critical to the benefits they want. They are also sensitive to the costs associated with advanced metering. Ms. Wozniak explains that Public Service recognized these considerations, describes Public Service's customer education strategy, and details the specific components of the Education Plan. In particular, she discusses the three phases of the Education Plan and the Company's implementation strategy for each phase:

Phase	Event	Timing
I	Raise Awareness	Q1 – Q4 2018
II	Support Meter installation	Q4 2018 – Q4 2020
III	Customer Engagement	Q2 2019 – Q1 2021

Ms. Wozniak also explains the Company's strategies for reaching and communicating with all Public Service customers via multiple forms of communication designed to support effective, broad-based outreach. Finally, Ms. Wozniak presents the anticipated costs of customer education and explains why those costs are reasonable based on Company experience, vendor information, and the overall scope of customer education needs.

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

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RE: IN THE MATTER OF THE APPLICATION OF PUBLIC SERVICE COMPANY OF COLORADO FOR AN ORDER GRANTING A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY FOR DISTRIBUTION GRID ENHANCEMENTS, INCLUDING ADVANCED METERING AND INTEGRATED VOLT-VAR OPTIMIZATION INFRASTRUCTURE	**)**	**PROCEEDING NO. 16A-____E**

DIRECT TESTIMONY AND ATTACHMENTS OF JENNIFER B. WOZNIAK

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Attachment JBW-6	JD Power Residential Customer Study

GLOSSARY OF ACRONYMS AND DEFINED TERMS

Acronym/Defined Term	Meaning
ADMS	Advanced Distribution Management System
AGIS	Advanced Grid Intelligence and Security
AMI	Advanced Metering Infrastructure
AMR	Automated Meter Reading
ANSI	American National Standards Institute
BPL	Broadband over Power Line
C&I	Commercial and Industrial
CAIDI	Customer Average Interruption Duration Index
CBA	Cost-Benefit Analysis
CIS	Customer Information System
CMO	Customer Minutes Out
Commission	Colorado Public Utilities Commission
Company	Public Service Company of Colorado
CPCN	Certificate of Public Convenience and Necessity
CPCN Projects	AMI, IVVO, and the components of the FAN that support these components
CPE	Customer premise equipment
CRS	Customer Resource System
CSF	Cyber Security Framework
CVR	Conservation Voltage Reduction
DA	Distribution Automation
DDOS	Distributed Denial of Service
DER	Distributed Energy Resources
DOS	Denial-of-service
DR	Demand Response
DSM	Demand Side Management
DVO	Distribution Voltage Optimization
EPRI	Electric Power Research Institute
ERT	Encoder Receiver Transmitter
ESB	Enterprise Service Bus
FAN	Field Area Network
FLISR	Fault Locate Isolation System Restoration

Acronym/Defined Term	Meaning
FLP	Fault Location Prediction
GFCI	Ground Fault Circuit Interrupter
GIS	Geospatial Information System
HAN	Home Area Networks
ICE	Interruption Cost Estimation
IDS	Intrusion Detection System
IEEE	Institute of Electrical and Electronics
IPS	Internet Provider Security
IT	Information technology
IVR	Interactive Voice Response
IVVO	Integrated Volt-VAr Optimization
kVAr	Kilovolt-amperes reactive
kVArh	Reactive power
kW	Kilowatt
kWh	Kilowatt hours
LTCs	Load Tap Changers
LTE	Long-Term Evolution
MDM	Meter Data Management
MitM	Man-in-the-Middle Attack
MPLS	Multiprotocol Label Switching
NCAR	National Center for Atmospheric Research
NOC	Network Operations Center
NPV	Net Present Value
O&M	Operations and Maintenance
OMS	Outage Management System
OT	Operational Technology
PTMP	Point-to-multipoint
Public Service	Public Service Company of Colorado
RF	Radio frequency
RFP	Request for Proposal
RFx	Request for Information and Pricing
RTU	Remote Terminal Units

Acronym/Defined Term	Meaning
SAIDI	System Average Interruption Duration Index
SAIFI	System Average Interruption Frequency Index
SCADA	Supervisory Control and Data Acquisition
SGCC	Smart Grid Consumer Collaborative
SGIG	Smart grid investment grants
SIEM	Security Incident and Event Management
SVC	Secondary static VAr compensators
TOU	Time-of-use
USEIA	United States Energy Information Administration
WACC	Weighted Average Costs of Capital
WAN	Wide Area Network
WiMAX	Worldwide Interoperability for Microwave Access
WiSUN	802.15.4g Standard
Xcel Energy Inc.	Xcel Energy
XES	Xcel Energy Services Inc.

BEFORE THE PUBLIC UTILITIES COMMISSION
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RE: IN THE MATTER OF THE APPLICATION OF PUBLIC SERVICE COMPANY OF COLORADO FOR AN ORDER GRANTING A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY FOR DISTRIBUTION GRID ENHANCEMENTS, INCLUDING ADVANCED METERING AND INTEGRATED VOLT-VAR OPTIMIZATION INFRASTRUCTURE	**)**	**PROCEEDING NO. 16A-____E**

DIRECT TESTIMONY AND ATTACHMENTS OF JENNIFER B. WOZNIAK

I. INTRODUCTION, QUALIFICATIONS, AND PURPOSE OF TESTIMONY

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Jennifer B. Wozniak. My business address is 1800 Larimer Street Suite 1600, Denver Colorado 80202.

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

A. I am employed by Xcel Energy Services Inc. ("XES") as Director, Jurisdictional Communications for Public Service in Colorado, and the Company's affiliate Southwestern Public Service Company in Texas and New Mexico. 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 "Company") and the other utility operating company subsidiaries of Xcel Energy on a coordinated basis.

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

A. I am testifying on behalf of Public Service.

Q. PLEASE SUMMARIZE YOUR RESPONSIBILITIES AND QUALIFICATIONS.

A. As the Director, Jurisdictional Communications. I am responsible for corporate communications, social media, public relations and DSM/Energy Efficiency/Renewables marketing for Public Service Company of Colorado and Southwestern Public Service. My duties include managing all communications strategy, planning, and execution for the two Companies in Colorado, Texas, and New Mexico. My team also plans and executes all of the marketing campaigns for Demand Side Management, Energy Efficiency and Choice/Renewables programs in the same regions cited above. Choice/Renewables programs include Windsource, Solar*Rewards, and other Public Service programs that enable customers to choose and utilize renewable energy resources for their service. The advertising element of those campaigns is managed by another department under the communications function. A full description of my qualifications, duties, and responsibilities is set forth after the conclusion of my testimony in my Statement of Qualifications.

Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?

A. The purpose of my Direct Testimony is to discuss (i) customers' desire for and understanding of advanced metering infrastructure ("AMI") and the associated functions; and (ii) our customer education strategy regarding AMI and the associated functions. AMI is a component of the Company's Advanced Grid Intelligence and Security ("AGIS") initiative that is discussed in more detail in the

Direct Testimonies of Company Witnesses Ms. Alice K. Jackson and Mr. John D. Lee. As part of the AGIS initiative the Company is seeking approval of a Certificate of Public Convenience and Necessity that includes AMI and other technologies (collectively, the "CPCN Projects"). The Customer Education and Communication Plan ("the Education Plan"), which I present in my testimony as Attachment JBW-1, focuses on educating customers on AMI and the Company's grid advancement effort.

First, I discuss research Public Service conducted into customers' interest in advanced meters, as well as customer understanding of the terms and goals of metering functions. This research was used in the development of this Education Plan. I also discuss other related studies, including customer satisfaction survey results regarding current and future advanced meter technologies.

I then address why a customer education strategy is necessary for this project, and present the Company's Education Plan. I explain how the Company's Education Plan was developed and address how it complies with the Commission's general directives for customer education plans, as well as specific findings regarding the need for customer education on advanced metering efforts. I also discuss the strategies the Company intends to use to disseminate the plan, and why it is important to do so through multiple communications channels.

Next, I detail the specific components of the Education Plan, including data management, special customer groups, and how the AGIS initiative will support customers' requests for more control over their energy usage, greater

reliability, energy conservation improvements, and more energy generation choices. I describe the three phases of the Education Plan and illustrate the purposes behind those education strategies. I also explain the proposed timelines for implementing each phase of the Education Plan. Finally, I address the anticipated costs of implementing the Education Plan.

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

A. Yes, I am sponsoring the following:

- Attachment JBW-1: Proposed Smart Meter Customer Education and Communications Plan
- Attachment JBW-2: April 2016 Customer Research Panel Report
- Attachment JBW-3: October 2015 Product Interest Study
- Confidential Attachment JBW-4: E-Source Rate Design Study Findings
- Attachment JBW-5: JD Power Residential Customer Study
- Attachment JBW-6: January 2015 “Summary of AMI Customer Benefits Research”

II. CUSTOMER INTEREST

Q. WHAT RESEARCH HAS PUBLIC SERVICE CONDUCTED REGARDING CUSTOMER INTEREST IN ADVANCED GRID INTELLIGENCE AND SECURITY?

A. In April 2016, Public Service surveyed 596 Colorado residential customers about their understanding of and interest in advanced metering ("April 2016 Survey"). The April 2016 Survey included questions on customer opinions toward advanced meters, interest in intelligent distribution grid-enabled products and services, and understanding of energy and electricity terms.

The focus of the April 2016 Survey was AMI, commonly known in lay terms as "smart meters" or "advanced meters." We surveyed customers on these meters specifically to address past Commission statements in the Company's SmartGridCity proceeding regarding the need for future customer surveys and education regarding metering. Additionally, the April 2016 Survey focused on advanced meters and functionality because AMI is the largest cost component of AGIS, and because AMI is the aspect of AGIS with the greatest potential to impact customers' day-to-day energy usage. The research report is included as Attachment JBW-2.

Q. WHAT COMMISSION DIRECTION ON SURVEYS OF CUSTOMERS' INTEREST IN METERING DOES THE APRIL 2016 SURVEY ADDRESS?

A. It is my understanding that in the Commission's Decision Number C11-0406 issued in Proceeding Number 10I-099EG, the Commission identified the need for detailed customer education plans around future smart metering efforts and

noted that such plans should be supported by "thorough consumer segmentation studies." Our goal with the April 2016 Survey identified above was to identify customer understanding of, and interest in, advanced metering and the customer-focused functions associated with metering. As I discuss in more detail below, the April 2016 Survey also addressed the extent to which there were variances in customer interest and understanding. This Survey, along with others identified later in my testimony, help inform our customer education planning.

Q. HOW WAS THE STUDY CONDUCTED?

A. A third party vendor, Vision Critical, manages an online panel of 1,032 Colorado Xcel Energy customers that agree to be surveyed by the Company throughout the year. When research needs arise, the Company develops questions that are administered by Vision Critical on behalf of the Company. For the April 2016 Survey, Vision Critical sent electronic invitations to the 1,032 Colorado customers requesting their participation in an online panel survey, and 596 customers complied.

Q. CAN YOU GENERALLY DESCRIBE MARKET SEGMENTATION?

A. Yes. Market segmentation is a marketing strategy which involves dividing a broad target market into subsets of consumers and businesses that have, or are perceived to have, common needs, interests and priorities, and then designing and implementing strategies to target them.

Q. DOES THE COMPANY PERFORM MARKET SEGMENTATION STUDIES IN ITS SERVICE TERRITORIES?

A. No. The Company has purchased segmentation codes from a third party vendor that has access to market segmentation studies and applied those codes to the residential customers in the Company's service territory. The segmentation codes the Company purchased distinguish between demographically and behaviorally distinct customer types to help discern those particular customers' likes, dislikes, lifestyles and purchase behaviors. This information will assist us in developing materials for the Education Plan.

Q. WERE THE SEGMENTATION CODES USED IN THE APRIL 2016 SURVEY?

A. No. The CPCN Projects are targeted at all Colorado customers, so using segmentation codes to identify those most likely to use an advanced meter is not necessary at this stage. If the CPCN Projects are approved by the Commission, the Company will use the segmentation codes to develop Education Plan material to disseminate closer to when meters are being deployed because it will enable the development of more customized communication. For instance, if a direct mail communication piece includes a photograph of people viewing advanced meter data, we can customize the photo to the demographic segment. In addition, as the Company conducts future research of its customers in relation to the Education Plan, segmentation codes may be used to track the level of understanding**,** satisfaction, and participation relative to demographic and socio-economic segmentation.

Q. DID THE APRIL 2016 SURVEY SHOW THAT THERE IS CUSTOMER INTEREST IN ADVANCED METERS?

A. Yes. Nearly 80% of customers agreed that the Company should provide advanced meters, including 64% who were highly favorable toward smart meters. Less than one in five customers (19%) was not in favor of advanced meters. The top three reasons customers gave for not favoring advanced meters were concerns about energy bill increases, the need for more information, and data security.

Q. HOW WELL DO CUSTOMERS UNDERSTAND THE CONCEPTS SURROUNDING AMI OR ADVANCED METERS?

A. Not surprisingly, customers did not have a clear understanding of the technical terminology. More than half of the customers surveyed had not heard the term "AMI" or "Advanced Metering Infrastructure." More than half of the customers, however, did have a basic or fairly complete understanding of the terms "smart grid" and "smart meter." Based on these results, we focused our customer education materials on the terms customers do understand in an effort to make the information more accessible to them. Accordingly, we use "smart meter" in our Education Plan, whereas "AMI" is used throughout this CPCN Projects filing because it is the more correct technical and industry term.

The results of the April 2016 Study indicates that customers overwhelmingly had a basic, or fairly complete, understanding of terms such as "outage," "time of use rates," "peak demand," "kW," and "kWh." In addition, customers expressed high levels of interest (almost 70% were interested) in

certain services directly enabled by advanced metering, including outage alerts, mobile or online energy management tools, high bill alerts, and peak pricing or demand response programs. Further, 47% of surveyed customers were interested in time of use rates.

Q. WERE CUSTOMERS ALSO INTERESTED IN OTHER BENEFITS OF ADVANCED METERING?

A. Yes. Customers were asked whether indirect benefits of advanced metering such as reliability (allowing utilities to detect and prevent outages, reduce outage length, and provide immediate notification to customers); economic benefits (helping customers save money by providing real time energy usage information and better control/reduction of energy use); and environmental benefits (allowing customers to optimize their energy use and also enable the power grid to run more efficiently, thus reducing emissions) were important, not important, or unknown. The large majority of customers expressed that these benefits were important.

That said, customers were also asked whether these benefits of advanced metering were “important, but at no additional cost,” “important, and I am willing to pay more for it, or “important, and I’m willing to pay more for it, but not at this time.” Again, it is not surprising that given the binary choice between the importance of these indirect benefits at no cost or their importance with costs, most customers chose “important, but at no additional cost.” Specifically, approximately one-quarter (27%) of customers would pay more for environmental benefits, 22% for economic, and 18% for reliability. Of the customers that were

willing to pay more for the benefits, the majority thought that reliability benefits were most important, followed by economic benefits, and finally environmental benefits. In other words, the drivers of customers' willingness to pay for these benefits did not fully align with the level of importance they assigned to each benefit.

Q. WHY WERE CUSTOMERS ASKED GENERALLY IF THEY WERE WILLING TO PAY FOR BENEFITS INSTEAD OF BEING GIVEN A RANGE OF POTENTIAL COSTS?

A. It is premature to present customers with a range of potential costs or estimates of bill increases that may incur for certain benefits for several reasons. First, AMI and the CPCN Projects are not yet approved by the Commission. Additionally, the Company is still in the process of selecting an AMI vendor and does not have exact costs to present to customers at this time. Further, many customers do not have a complete understanding of what advanced meters are and without that understanding there is limited value in determining what amount they might be willing to pay if given a range of options above zero. Therefore, given the limitations of the April 2016 Survey in this respect, the high level of interest customers showed in the benefits associated with advanced meters could be more meaningful than the low expressions of willingness to pay.

Q. DID THE APRIL 2016 SURVEY ASK ABOUT WILLINGNESS TO PAY FOR DIRECT BENEFITS?

A. No. The Survey did not ask about customer willingness to pay for specific direct benefits. Since the implementation of AMI had not yet been approved by the

Commission, we were reluctant to give customers the impression that specific AMI functions or benefits are guaranteed.

Q. WHAT DO YOU CONCLUDE FROM THESE FINDINGS?

A. I conclude that many customers think advanced meters are generally a good idea, and are very interested in benefits such as control over their energy usage, more information about their energy usage, greater reliability, and environmental benefits. However, customers do not fully understand the technology or how advanced meters are critical to the benefits that customers want. Company witnesses Ms. Jackson, Mr. Lee, and Mr. Russell E. Borchardt explain in their Direct Testimony why AMI metering is necessary to provide these benefits customers are seeking.

The April 2016 Survey also underscores two issues Public Service considered heavily when designing AGIS and our Customer Education Plan: First, it is important for the costs of AMI, and the overall AGIS initiative, to be reasonable. Second, customer education is needed for customers to understand AMI metering and how it relates to the needed technology and associated benefits. Company witnesses Ms. Jackson, Mr. Lee, and Mr. Borchardt describe our design of the advanced metering program and the associated costs. I outline our customer education strategy and plan later in my Direct Testimony.

Q. HAS PUBLIC SERVICE CONDUCTED ANY OTHER RESEARCH THAT SUPPORTS THESE FINDINGS?

A. Yes. The Company conducted a product interest study in October 2015 of both residential and commercial customers, and many of these earlier results are

comparable to the April 2016 Survey. The October 2015 study is included as Attachment JBW-3, and shows that a majority of both residential and commercial customers are interested in advanced meter-enabled products and services including proactive notifications, online management tools, and special rates:

Table JBW-1

Service	Residential Support	Commercial Support
Outage and other emergency alerts	63%	63%
High bill alert	60%	51%
Online energy usage management	56%	51%
Time-of-use ("TOU") rates	52%	57%
Special rates and consumption reduction	59%	49%

Q. WHAT OTHER RESEARCH HAS PUBLIC SERVICE USED TO UNDERSTAND CUSTOMER INTEREST IN GRID ADVANCEMENT GENERALLY?

A. The Company subscribed to an E Source study in 2015 addressing, among other issues, national customer interest in grid intelligence, advanced meters, and energy management. Similar to the April 2016 Survey, the majority of the E Source study participants were interested in proactively managing their energy use: 53% of those with advanced meters at their primary residence have visited their utility website to see their energy usage; 52% were interested in peak pricing/demand response programs, and 40% were interested in time of use pricing. The E Source study has been provided as Confidential Attachment JBW-4.

Customer research studies on advanced meter interest and understanding have become more common as the industry has increased penetration of advanced meters and related infrastructure, and taken additional steps to advance the electric grid. Attachment JBW-5 summarizes findings from seven third party studies between 2011 and 2015 that show corollary results to the April 2016 Public Service Survey.

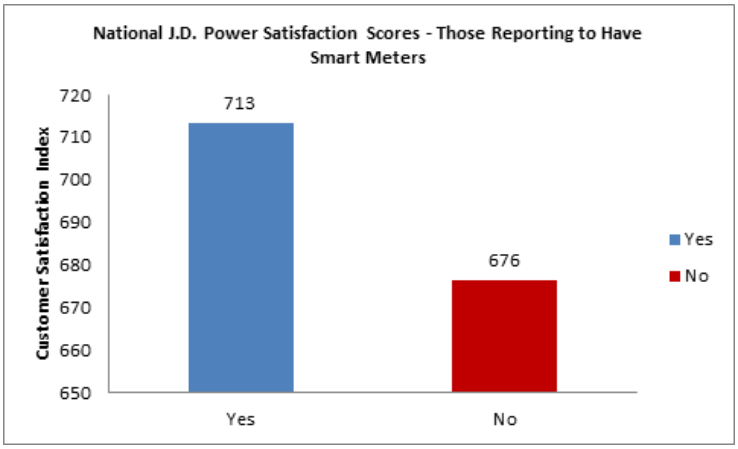
Q. DID ANY OF THE RESEARCH ADDRESS CUSTOMER SATISFACTION WITH ADVANCED GRID TECHNOLOGIES ONCE THEY ARE IMPLEMENTED?

A. Yes, a national 2016 J.D. Power study did. A summary of the relevant portions of that study is attached to my testimony as Attachment JBW-6.

Q. WHAT DID THE J.D. POWER STUDY ILLUSTRATE REGARDING CUSTOMER SATISFACTION WITH ADVANCED GRID TECHNOLOGIES?

A. The J.D. Power study showed that customers are more satisfied with products and services enabled by advanced meters, even if they are only aware of some of the choices but do not personally participate in them. Attachment JBW-5 shows above-average satisfaction levels for both awareness of and participation in advanced meter and grid-enabled offerings such as online energy management portals, time of use pricing, and energy use/spend alerts. As illustrated in Figure 1 below, customers who reported that they have advanced meters were significantly more satisfied (37-point increase) than customers who reported that they do not.

Figure 1: Improved National J.D. Power Satisfaction Scores



Q. IS THIS INCREASE IN CUSTOMER SATISFACTION ASSOCIATED WITH ADVANCED METERING BORNE OUT BY OTHER RESEARCH IN THE INDUSTRY?

A. Yes. As noted in Attachment JBW-6 to my Direct Testimony, "[a]ccording to an October 2015 article in Fortnightly, 'Commonwealth Edison in Chicago reported a rise in customer satisfaction as a result of its high-touch approach to engaging and educating its customers on smart meters as it rolls them out…'"[1] Other utilities, such as Baltimore Gas & Electric, Pepco, and Sacramento Municipal Utility District have had similar customer engagement success stories according to the Smart Grid Consumer Collaborative's ("SGCC") 2016 Customer Engagement Success Stories Case Studies.[2]

[1] Patty Durand, *Customer Connection*, FORTNIGHTLY, Oct. 2015, http://mag.fortnightly.com/iphone/article.php?id=2291463&font=searchResults3

[2] SGCC Smart Grid Customer Engagement Case Studies, http://smartgridcc.org/sgcc-smart-grid-customer-engagement-case-studies/

Q. HOW DO THESE STUDIES COMPLEMENT OR CONTRAST WITH THE STUDY PUBLIC SERVICE CONDUCTED IN APRIL 2016?

A. The Public Service Study does not focus on customer satisfaction, since Xcel Energy has not yet implemented AMI metering on its systems. However, the fact that utilities are experiencing increased customer satisfaction when advanced metering is deployed highlights the conclusion that customers are looking for the benefits advanced metering offers. They are also increasingly satisfied with their utility service when the investments are made and they receive those benefits. These studies further underscore that customers are not likely to fully understand the benefits of advanced metering until they experience these benefits, demonstrating that customer education is very important. Therefore, in the next segment of my testimony I discuss Public Service's customer education strategy.

III. CUSTOMER EDUCATION STRATEGY

Q. WHY DO CUSTOMERS NEED TO BE EDUCATED ON ADVANCED GRID INTELLIGENCE AND SECURITY?

A. Customer education is necessary for this initiative for multiple reasons. First, in Decision No. C11-0406, issued in Proceeding Number 10I-099EG, the Commission recognized the importance of customer education for advanced meters. Decision No. C11-0406 states, "[s]ince the cost justification for smart meters will likely rely, at least in part, on benefits resulting from expected shifts in consumer behavior, we note that significant consumer education efforts are critical. Consumer education is necessary to mitigate the risk that these benefits will not be realized due to lack of consumer awareness, knowledge, or interest."

The Commission further noted in Decision No. C11-0406 that "detailed consumer education plans should be filed in the smart meter applications developed via formal rulemaking as discussed in paragraphs 10 and 11. These plans should determine the most effective, cost-controlled consumer engagement methods and strategies to achieve minimum participation necessary to realize expected benefits. Thorough consumer segmentation studies need to underlie these consumer education plans. Consumer education plans should also involve a plan for stakeholder collaboration and propose multiple channels for consumer engagement."

Second, as described in Section II above, customers' understanding of the terms and functionalities associated with advanced meters and advanced grids is inconsistent and incomplete, as shown in the April 2016 Survey report in

Attachment JBW-2. In order to be fully informed about changes in their metering, customers need to be educated on the terminology and basic operations of the advanced grid equipment and benefits. It is the Company's goal to educate customers on these issues so they can get the most benefit and satisfaction from the new technologies we are proposing.

Q. HOW DID THE STUDIES OF CUSTOMERS' LEVELS OF UNDERSTANDING CONTRIBUTE TO PUBLIC SERVICE'S DEVELOPMENT OF A CUSTOMER EDUCATION STRATEGY?

A. These studies played a key role in the development of the Education Plan. First, in conjunction with requirements set by the Commission, we gained additional intelligence on the gaps of customer understanding so that they may take full advantage of advanced meters and related grid-enabled technologies, starting by defining and clarifying the relevant language. Second, we will tailor education planning with the knowledge that customers have varying degrees of understanding and interest. While a lack of knowledge of key terms can be a roadblock to customer understanding of our services and technologies, we tailored the Education Plan to help address these issues.

Q. HAS THE PUBLIC UTILITIES COMMISSION GIVEN ANY DIRECTION REGARDING DEVELOPMENT AND/OR CONTENT OF CUSTOMER EDUCATION PLANS?

A. Yes. In paragraph 19 of Decision No. C10-1077 in Proceeding No. 10I-099EG, the Commission noted that advanced metering applications should include "the utility's proposal to implement a substantial and comprehensive customer

education program …" In compliance with this expectation, I present Public Service's customer education plan in the next section of my testimony.

Additionally, in paragraph 32 of Decision No. R13-0096 in Proceeding No. 11A-1001E, the Commission envisioned "[the Company] developing performance metrics specifically tied to consumer education and engagement which would include qualifications of consumer awareness, understanding, interest, participation, and satisfaction."

Q. DID THE COMPANY LEARN OTHER LESSONS REGARDING CUSTOMER EDUCATION FROM SMARTGRIDCITY?

A. Yes. Engaging with customers early in the process is a key component of any successful customer education plan. A sound plan with communication touch points prior to installation enables a customized approach, with relevant messages that fit different audiences. Customer concerns can be fully addressed and managed for a successful roll out of any initiative. Best practices and lessons learned from SmartGridCity and the other research we considered are collectively listed in a section of the Education Plan, Attachment JBW-1.

Q. HAS PUBLIC SERVICE ALSO EVALUATED OTHER CUSTOMER EDUCATION PLAN CRITERIA?

A. Yes. We also considered industry best practices.

Q. HOW DID PUBLIC SERVICE EVALUATE INDUSTRY BEST PRACTICES TO CREATE A CUSTOMER EDUCATION STRATEGY?

A. In addition to utilizing the results of our own study, the Education Plan was developed using best practices learned from research of advanced meter

customer education from other utilities, and from community outreach available from the U.S. Department of Energy on SmartGrid.gov.

In-depth research performed by the communications team at Baltimore Gas and Electric Company ("BGE") in late 2010 was particularly helpful in developing the Education Plan. BGE conducted interviews with and gathered best practices from communications chiefs of four investor-owned U.S. utilities, who outlined their experiences in smart meter customer education and community outreach. The BGE communications team also gathered best practices from smart meter contractor Silver Spring Networks ("Silver Springs"), which developed best practices through implementing smart grid programs with other utilities throughout the United States. The BGE team also conducted interviews with and gathered perspectives from representatives of nonprofit and advocacy organizations to help reach and engage a wide spectrum of customers including, including but not limited to, seniors, low-income customers, and non-English-speaking audiences.

Other best practice resources that contributed to the development of smart meter customer education included information available via the web from: Smart Grid Consumer Collaborative, Oncor, Duke Energy, Electric Power Research Enstitute, PG&E, OG&E, and GE. All of the best practices and lessons learned are included on page 3 of Attachment JBW-1.

Q. WHAT STRATEGIES DO YOU ANTICIPATE USING TO REACH CUSTOMERS?

A. Taking into consideration customer need, regulatory requirements, and best practices, I expect to launch the Education Plan in three phases: (1) raising awareness, (2) targeting affected customers in geographic areas to educate and minimize confusion, and (3) customer engagement. I describe these phases in more detail in Section IV of my testimony.

Overall we intend to educate customers through a variety of communications channels including, but not limited to, website updates, stakeholder outreach meetings, media outreach, social media, blogs, direct mail, e-mail, outbound calls, door hangers, community events, bill onserts, targeted advertising, fact sheets, video, and customer testimonials.

Q. WHY DISSEMINATE THE PLAN THROUGH MULTIPLE COMMUNICATIONS CHANNELS?

A. It is important to use a diverse set of communications channels to reach customers in their channel of preference because approximately half of Colorado customers are not aware of the basic terms associated with advanced metering or this project. In paragraph 32 of Decision No. C11-0406, in Proceeding No. 10I-099EG, the Commission noted the importance of implementing multi-channel strategies for disseminating education plans. Multiple communication channels improve the extent to which Public Service can provide information to varying customer groups.

In particular, not all customers have access to the same communication channels. For example, about 75% of surveyed customers said they would prefer to hear about smart meter options via email, but as of April 2016, 848,255 Public Service customers have provided email addresses: this represents only about 46% of all customer premises in Colorado. If we used email as the only communication channel for disseminating customer education, a majority of customers would not have access to it. We need to use diversified communications channels to help ensure that all customers receive adequate information and education.

Q. HAS PUBLIC SERVICE PREVIOUSLY UTILIZED THESE MULTI-CHANNEL COMMUNICATION STRATEGIES?

A. Yes, we have previously used a similar multi-phase approach via multiple communication channels in communications plans for introducing new programs or initiatives. Such an approach has successfully educated customers and driven enrollments in energy efficiency programs, as evidenced by annual goal achievement in the state of Colorado. Each communications strategy is different and based on the unique challenges and specifics of each plan's objectives. Given the unique and novel nature of the AGIS initiative in Public Service's history, we have not previously created customer education plans that we can use as an exact template for this project; we can and will, however, translate and expand many of the strategic elements we have previously utilized in other plans.

Q. ARE THESE STRATEGIES EFFECTIVE FOR EDUCATING CUSTOMERS?

A. Yes, these strategies are effective for educating customers because they provide information over a period of time, and each phase builds upon the previous one. Phases I through III increase the complexity of information being provided to customers, and each will be modified based on customer feedback as time progresses. These strategies also use almost every possible communications channel so that each customer can be reached through the channel that they prefer (e.g., e-mail, direct mail, bill messaging, etc.).

IV. CUSTOMER EDUCATION PLAN

Q. HAS PUBLIC SERVICE DEVELOPED A CUSTOMER EDUCATION PLAN FOR THE AGIS INITIATIVE?

A. Yes. We have created a three-phase Advanced Meter Education Plan to educate customers on the AGIS initiative and accompanying products and services. The Plan is included as Attachment JBW-1. Given that the Company proposes to begin AMI deployment in 2018, pending approval of this CPCN Projects Application, the Education Plan is focused on education subject matter, the means of customer education, and the costs of customer education, rather than on specific talking points. The specific content of Public Service's messaging program will be developed as the CPCN Projects get closer to implementation.

Q: PLEASE EXPAND ON THE THREE PHASES OF THE EDUCATION PLAN.

A: Phase I is designed to raise awareness of AGIS and advanced meters among customers and other community members prior to installation; this will be an introductory and wide-reaching effort to inform customers about advanced meter installations and educate them on the overall benefits of grid intelligence. Phase II will directly target affected customers by geographic area to provide meter-specific informational support just before and during installation to minimize confusion during that process. Phase III will be an ongoing effort after meter installation to engage customers and provide additional information about how they can take advantage of their newly-installed meters and accompanying features.

Q. WHAT IS PUBLIC SERVICE'S STRATEGY REGARDING THE TIMELINES FOR LAUNCHING EACH CUSTOMER EDUCATION INITIATIVE?

A. The timelines for each phase are as follows: Phase I – Raising Awareness would take place from Q1-Q4 of 2018; Phase II – Supporting Meter Installation would happen from Q4 of 2018 through Q4 of 2020; Phase III – Customer Engagement would take place from Q2 of 2019 through Q1 of 2021.

Table JBW-2

Phase	Event	Timing
I	Raise Awareness	Q1 – Q4 2018
II	Support Meter Installation	Q4 2018 – Q4 2020
III	Customer Engagement	Q2 2019 – Q1 2021

This is in conjunction with the planned timing for AMI meter installation commencing in the fourth quarter of 2018. This timeline of the Education Plan is subject to the timing of the AMI deployment, and any changes to the deployment schedule will impact the timing of the Education Plan. Additionally, there is flexibility in the timing of these phases based on customer feedback that the Company receives throughout the implementation of the Education Plan.

Q. HOW DID PUBLIC SERVICE DETERMINE WHAT CONTENT TO INCLUDE IN THE EDUCATION PLAN?

A. The content of the Education Plan is driven by our customer education strategy described above, including incorporation of Commission directions, past Company experience with customer education, and industry best practices.

Overall, the Education Plan draft (Attachment JBW-1) thus far is based on gaps in customer awareness and understanding we discovered in the research in Attachment JBW-2 as described above. As the customer-facing details of the advanced meter implementation and data portal of tools provided to the customer are further developed, we will update the Education Plan to reflect those additional educational elements. Further, we presently anticipate focusing on the "smart meter" language customers tend to understand better than "AMI." As customer education progresses, it may be appropriate to transition to utilizing more technical terminology.

Q. DO YOU CONSIDER THE EDUCATION PLAN COMPLETE AT THIS TIME?

A. No. As I have described throughout my testimony the Education Plan will continue to evolve as we move closer to meter deployment and throughout the entire process as we gain further customer insight into their understanding of AMI and advanced grids. It is important for the Education Plan to be flexible in this respect because we are at such an early stage in the customer education process. Typically we develop Education Plans closer in time to the event that we are educating them on however, given the Commission's expectations we engaged in through research efforts to develop this Education Plan. With that said, we look forward to input on the Education Plan from our stakeholders.

Q. HOW DOES THE EDUCATION PLAN ADDRESS RAISING CUSTOMER AND COMMUNITY AWARENESS IN PHASE I?

A: We will raise awareness on multiple levels, including informing them that we will be installing advanced meters, explaining why doing so is important to advancing

the distribution grid, and discussing the customer benefits of the installation. In order to raise awareness effectively, we will focus on educating customers on key terms relevant to energy service in general and the AGIS initiative in particular.

Q: WILL THE PLAN EXPLAIN WHAT CUSTOMERS CAN EXPECT WHEN THEIR METERS ARE INSTALLED IN PHASE II?

A: Yes, Phase II of the Plan will focus on educational information supporting meter installation. This portion of the Education Plan will be developed more fully when we are closer in time to the AMI meter deployment.

Q: HOW DOES THE PLAN APPROACH ENGAGING CUSTOMERS IN PHASE III?

A: In general, Phase III will target customers who have received an advanced meter to get their feedback, ensure their satisfaction, and let them know how to best take advantage of the features of their new meters. As with Phases I and II, we will finalize this approach during and after AMI meter deployment. The content of this Phase of the Education Plan will be impacted by the feedback we get from customers in the first two Phases of the Education Plan.

Q. HOW DOES THE EDUCATION PLAN ADDRESS THE COMMISSION'S EXPECTATIONS FOR CUSTOMER EDUCATION PLANS?

A. This Education Plan was developed in accordance with the Commission's expectations for customer education plans, which I discussed earlier. That includes evaluating current consumer awareness, understanding, and interest based on customer feedback on those elements. The Education Plan includes plans to measure these elements as directed by the Commission, in addition to

customer participation and satisfaction, after each of the three phases of the Education Plan is executed. As I discuss above, the specific content of the Education Plan will evolve as the Company moves closer to deployment and gains more insight into customers understanding of AMI and advanced grids. With that said, based on our experience developing education plans and the results of the April 2016 Survey, we anticipate that customers will want to understand all of the benefits available to them and how to get the most out of them.

Q. WHAT ANTICIPATED BENEFITS OF THE CPCN PROJECTS DOES PUBLIC SERVICE COVER IN THE EDUCATION PLAN?

A. The Education Plan will cover three key indirect benefits of advanced distribution grids and meters: economic, environmental, and reliability. There are economic benefits to customers because this technology helps consumers save money by having access to real-time energy usage information, and as a result they can manage their energy use to reduce their bill. There are environmental benefits as the technology enables the connection of more renewable energy sources to the grid. The technology also enables more reliability, as an advanced grid can sense problems and re-route power, prevent outages and reduce the duration of those that occur. Customers have different preferences and these three benefit themes will appeal differently to different customers.

The Education Plan does not currently address specific direct benefits of advanced meters; rather, this portion of our customer education efforts will be

developed further once a meter vendor has been selected and we are closer in time to deployment activities.

Q: HOW DOES THE PLAN ADDRESS CUSTOMERS' ABILITY TO MANAGE THEIR ENERGY USAGE DATA?

A. The Education Plan will address the specifics of data management in Phase III. This Phase will provide customers with information on how to access their data through available platforms, and how they can actively use that information to manage their energy use. The specifics of data management and the way in which customers can access their data are still being planned as a part of this overall effort, and will be incorporated into the Education Plan when available. Some of this information will rely on the particular advanced meters ultimately selected, and we will develop specific educational language to roll out in Phase III based on the ultimate meter selection.

Q. DOES THE PLAN ADDRESS CUSTOMERS' ABILITY TO OPT OUT OF THE AMI PROGRAM?

A. Yes. The possibility that customers will ask about "opt-out" options is one of the questions Public Service anticipates in the Education Plan. Company witnesses Ms. Jackson and Mr. Borchardt discuss how the Company intends to approach customers' ability to opt out of AMI metering. Depending on whether this opt-out approach is approved by the Commission, we intend to develop the specific answer to the opt-out question. Our customer Education Plan will explain the benefits of AMI and the cost of opting out so that customers can make a well-

informed choice and will be encouraged to take advantage of advanced meters and their associated benefits.

Q. DOES THE PLAN ADDRESS CONCERNS OF LOW INCOME AND OTHER CUSTOMER GROUPS WITH RESPECT TO ADVANCED METERS?

A. Yes, this is already in included in the Plan draft as Attachment JBW-1. Low income and other customer groups will have access to advanced meters and the benefits of the CPCN Projects, as well as to education that may be helpful to them.

Q. HOW WILL THE COMPANY EVALUATE THE SUCCESS OF THE EDUCATION PLAN?

A. The Company will evaluate the success of the Education Plan by conducting market research studies prior to the launch of the Plan to set a baseline, and then after each of the three phases to measure progress against a goal. Overall, the studies will assess the customer's understanding of communications and satisfaction with each phase of the Education Plan. Data collected in the baseline study will enable specific satisfaction goals and measurements to be determined.

V. COSTS

Q. HAVE YOU DEVELOPED AN ESTIMATED COST FOR THE EDUCATION PLAN?

A. Yes, the estimated costs for the Education Plan are set forth in Attachment JBW-1. Overall, we estimate that the customer education effort as proposed will cost approximately $3 million. However, as I identified above, the content of this Education Plan will evolve over time and we look forward to stakeholder input. Therefore it is possible that this estimate may change.

Q. WHAT IS THE BASIS FOR THIS COST ESTIMATE?

A. As previously noted, we determined that the purposes of the Education Plan are to (1) raise general awareness about the need to advance the distribution grid and enhance our metering structure, and (2) support individual customers before and after implementation of their advanced meters. Further, this education effort is large in scope, as it affects all of the Company's Colorado electric customers, and the Company will need to touch every customer with AMI education material multiple times. Therefore, the Education Plan includes multiple communications channels throughout the phases of the education effort.

Q: BASED ON THESE CONSIDERATIONS, HOW DID YOU DEVELOP THE COSTS IN THIS PROPOSAL?

A: Public Service has created multiple customer education plans and corresponding budgets. I relied on my past experience creating other large scale plans to create the cost estimates for this Education Plan.

Additionally, given the scope of this Education Plan I obtained estimates from third-party vendors for some of the specific outreach methods we propose. While many of the outreach methods will be completed internally and will not give rise to incremental costs, information from third-party vendors helped to scope third-party costs and to validate our estimates.

Finally, we organized costs around two outreach tactics that generally align with the phases of our customer education.. The first outreach tactic is developing general customer awareness about AGIS benefits. The second outreach tactic is customer implementation and customer service, with the goal of supporting individual customers before and after their advanced meter installation.

Q. WHY HAVE YOU INCLUDED COSTS FOR MULTIPLE OUTREACH METHODS?

A. As I discussed in Section III of my testimony, it is important to use multiple communication channels in order to reach all affected customers. We have learned through research and previous experience that some customers prefer certain methods of outreach and others do not engage with those same channels. For example, advertising to market is a very effective method when it is necessary to reach all of the Company's electric service customers in Colorado, which is critical for this customer education effort. This strategy is compliant with Commission Decision No. C11-0406 (¶18) in Proceeding No. 10I-099EG, in which the Commission stated the Company should use multiple channels for consumer engagement in future advanced meter initiatives.

Q. WHAT ARE THE LARGEST DRIVERS OF THE COSTS OF IMPLEMENTING A CUSTOMER EDUCATION PLAN?

A. Potential plan costs are driven primarily by the frequency and channel of communication. Electronic channels, such as blogs and social media, are relatively inexpensive, while advertising and direct mail are more expensive. In order to achieve the Company's goals for each outreach tactic and ultimately succeed in educating customers, it is important to use multiple channels to ensure we contact each customer multiple times. Based on known project parameters thus far, those channels and estimated costs have been developed, as can be seen in Attachment JBW-1.

Q. HOW DID YOU DETERMINE THAT THE ESTIMATED EDUCATION PLAN COSTS ARE REASONABLE?

A. In addition to Public Service's experience in developing education plans, the Company secured quotes from third party vendors that are regularly used by the Company for printing, social media (pricing on set social media channels), and our contracted advertising agency. Any vendors that we regularly use have already been vetted in a thorough Request for Proposal ("RFP") and sourcing process to secure the best work at the best price. Through these processes, as well as the overall development of the Education Plan and our efforts to balance effective outreach with efforts to contain costs, we believe this cost estimate is reasonable.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes, it does.

Statement of Qualifications

Jennifer B. Wozniak

As the Director, Jurisdictional Communications, I am responsible for corporate communications, social media, public relations and DSM/Energy Efficiency/Renewables marketing for Public Service Company of Colorado and Southwestern Public Service. My specific job duties include managing all communications strategy, planning, and execution for Colorado, Texas and New Mexico. This includes developing and executing communications and outreach strategies using multiple channels that explain company business initiatives. I also lead crisis communications efforts in coordination with Operations, Media Relations, Enterprise Continuity and other key stakeholders in order to communicate with customers and the media. My team also plans and executes upon all of the marketing campaigns for Demand Side Management, Energy Efficiency and Choice/Renewables programs in the same regions cited above.

Formerly at Xcel Energy, I worked in the Marketing department, serving in both project management and as the Director of Marketing and Customer Strategy. My past experience includes working in many competitive industries such as banking, retail grocery, office supplies, and sports management. I have held multiple leadership roles in these industries covering the areas of marketing, customer strategy, risk management, strategic planning, human resources and finance. I earned a Bachelor of Arts degree in English and an MBA in Marketing from the University at Buffalo in Buffalo, NY. My MBA was focused upon the discipline of Market Research.