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

\* \* \* \* \*

IN THE MATTER OF THE APPLICATION OF	)		
PUBLIC SERVICE COMPANY OF COLORADO	)	DOCKET NO. 11A	_E
FOR APPROVAL OF ITS 2012 RENEWABLE	)		
ENERGY STANDARD COMPLIANCE PLAN	)		

#### **DIRECT TESTIMONY AND EXHIBITS OF SCOTT B. BROCKETT**

ON

**BEHALF OF** 

PUBLIC SERVICE COMPANY OF COLORADO

May 13, 2011

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

\* \* \* \* \*

IN THE MATTER OF THE APPLICATION OF	)		
PUBLIC SERVICE COMPANY OF COLORADO	)	DOCKET NO. 11A	E
FOR APPROVAL OF ITS 2012 RENEWABLE	)		
ENERGY STANDARD COMPLIANCE PLAN	)		

#### **DIRECT TESTIMONY AND EXHIBITS OF SCOTT B. BROCKETT**

#### **INDEX**

SEC	<u>CTION</u>	<u>PAGE</u>
I.	INTRODUCTION AND PURPOSE	1
II.	LEGISLATIVE BACKGROUND	2
III.	DERIVATION OF THE SRC CREDIT RATE	4
IV.	TARIFF PROVISIONS, ADMINISTRATION AND CUSTOMER NOTIFICATION	13

#### LIST OF EXHIBITS

SBB-1	Calculation of Total Aggregate Retail Rate (TARR)
SBB-2	Calculation of SRC Credit Rate
SBB-3	Proposed Schedule SRC Tariff

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

\* \* \* \* \*

IN THE MATTER OF THE APPLICATION OF	)
PUBLIC SERVICE COMPANY OF COLORADO	DOCKET NO. 11A- E
FOR APPROVAL OF ITS 2012 RENEWABLE	) DOCKET NO. 11AE
ENERGY STANDARD COMPLIANCE PLAN	)

#### **DIRECT TESTIMONY AND EXHIBITS OF SCOTT B. BROCKETT**

1		I. INTRODUCTION AND PURPOSE
2	Q.	PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.
3	A.	My name is Scott B. Brockett. 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., a wholly-owned subsidiary of
7		Xcel Energy Inc., the parent company of Public Service Company of
8		Colorado. My job title is Director, Regulatory Administration and Compliance.
9	Q.	ON WHOSE BEHALF ARE YOU TESTIFYING IN THE PROCEEDING?
10	A.	I am testifying on behalf of Public Service Company of Colorado ("Public
11		Service" or "the Company").
12	Q.	HAVE YOU INCLUDED A DESCRIPTION OF YOUR QUALIFICATIONS,
13		DUTIES, AND RESPONSIBILITIES?

1	A.	Yes. A description of my qualifications, duties, and responsibilities is included
2		as Attachment A.

#### 3 Q. HAVE YOU INCLUDED ANY OTHER ATTACHMENTS?

4 A. Yes. Attachment B is a glossary of definitions.

16

#### 5 Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?

A. I am sponsoring the Company's proposed methodology for determining the credit per kilowatt-hour ("kWh") that participants in Public Service's community solar garden program, called the Solar Rewards Community (SRC) program, (hereafter, "the Program") will receive on their electric bills. I am also sponsoring the proposed implementing tariff under the new Schedule "SRC" that would be in Colo. PU.C. No. 7 - Electric Tariff ("Electric Tariff").

# 12 Q. ARE YOU SPONSORING ANY EXHIBITS AS A PART OF YOUR DIRECT 13 TESTIMONY?

14 A. Yes. I am sponsoring Exhibit Nos. SBB-1 through SBB-3. These exhibits
 15 were developed under my direct supervision.

#### II. <u>LEGISLATIVE BACKGROUND</u>

- 17 Q. DID THE COLORADO LEGISLATURE PROVIDE ANY GUIDANCE TO THE
  18 COMPANY AS TO THE METHOD IT SHOULD USE TO CALCULATE THE
  19 CREDIT RELATIVE TO THE PROGRAM?
- 20 A. Yes. Colorado House Bill 10-1342 specifies the following (at C.R.S. §40-2-21 127(5)(b)(II)):
- The net metering credit shall be calculated by multiplying the subscriber's share of the electricity production from the community

solar garden by the qualifying retail utility's total aggregate retail rate as charged to the subscriber, minus a reasonable charge as determined by the commission to cover the utility's costs of delivering to the subscriber's premises the electricity generated by the community solar garden, and administering the community solar garden's contracts and net metering credits.

# 7 Q. HOW DOES THE COMPANY PROPOSE TO APPLY THIS LANGUAGE 8 WHEN DETERMINING THE CREDIT FOR SUBSCRIBERS TO SOLAR 9 GARDENS?

Α.

Α.

We propose to apply a total bill credit ("SRC Credit") equal to a credit per kWh ("SRC Credit Rate") times the monthly kWh produced from the customer's monthly SRC kilowatt Allocation. This SRC Credit Rate would equal the retail rate that the subscriber currently pays for electricity minus any costs that the Company incurs in the delivery of the SRC Allocation, minus any costs incurred for public-benefits programs, minus administrative costs.

# Q. HOW SHOULD AN INDIVIDUAL CUSTOMER'S SRC CREDIT BE DERIVED BASED ON THIS APPROACH?

The SRC Credit should be determined by multiplying the SRC Credit Rate, expressed as a dollar amount per kWh, by the monthly kWh produced from the customer's "SRC Allocation" in the community solar garden. The SRC Allocation is the amount of monthly Photovoltaic Energy (in kWh) produced from the number of kilowatts to which the SRC Subscriber has subscribed in a community solar garden.

#### 1 Q. CAN YOU PROVIDE A HYPOTHETICAL EXAMPLE OF THIS

#### **DERIVATION?**

A.

A. Yes. Assume a customer who uses 500 kWh of electricity each month purchases an SRC allocation in a community solar garden that produces 500 kWh per month. Also assume that the rate per kWh for that electricity is \$.09/kWh and that the SRC Credit Rate is \$.06/kWh. The customer's cost of electricity before the credit would be \$45.00 (\$.09/kWh x 500 kWh). The subscriber's SRC Credit would be the SRC Credit Rate times the subscriber's SRC Allocation production of 500 kWh, or \$30 (\$06/kWh x 500 kWh). The customer's new bill would then be \$15.00, or the subscriber's previous bill of \$45.00 minus the \$30.00 credit.

#### III. DERIVATION OF THE SRC CREDIT RATE

#### *1. OVERVIEW*

## 14 Q. PLEASE SUMMARIZE HOW YOU DETERMINED THE SRC CREDIT RATE 15 BASED ON THE STATUTORY GUIDANCE DESCRIBED ABOVE?

I began by deriving the total aggregate retail rate ("TARR") for each customer rate class served by Public Service. From this amount I subtracted the class delivery cost, including any rider components that recover delivery costs. I then subtracted the costs per kWh associated with Public Service's demand-side management ("DSM") program and the Renewable Energy Standard Adjustment ("RESA"). The resulting amount per kWh for each class is the SRC Credit Rate.

- 1 Q. WHAT IS THE BASIS FOR YOUR DETERMINATION OF THE COSTS
- 2 THAT THE COMPANY INCURS TO DELIVER A CUSTOMER'S SRC
- 3 **ALLOCATION?**
- 4 A. I have used the embedded test-year costs approved by the Colorado Public
- 5 Utilities Commission ("Commission") in the Company's most recent Phase II
- 6 rate case (Docket No. 09AL-299E) to derive these costs. This information is
- 7 included in the Company's Class Cost of Service Study ("CCOSS") approved
- 8 in that proceeding.
- 9 Q. ARE YOU ALSO RECOGNIZING ANY ADMINISTRATIVE COSTS?
- 10 A. Yes. The Company is recognizing the administrative costs imposed by
- 11 Community Solar gardens customers. I will explain how the SRC Credit Rate
- recognizes these costs later in my testimony.
- 13 2. DETERMINING THE TOTAL AGGREGATE RETAIL RATE BY CLASS
- 14 Q. HOW DID YOU DEFINE THE TERM "TOTAL AGGREGATE RETAIL RATE"
- FOR THE PURPOSES OF DETERMINING THE SRC CREDIT FACTOR?
- 16 A. I defined the TARR as the total energy charge that a customer in a specific
- 17 rate class pays per kWh. The TARR includes any base energy or demand
- charges, and all applicable riders. The TARR excludes the Service and
- 19 Facilities ("S&F") Charge.
- 20 Q. CAN YOU PROVIDE AN EXAMPLE OF THIS CALCULATION?
- 21 A. Yes. Exhibit No. SBB-1 provides the calculation of the TARR for each rate
- class. As an example, consider the Residential class. The first component of
- the Residential TARR is the test-year base revenue requirement allocated to

the Residential rate class in the previous Phase II rate proceeding divided by the test-year residential energy use. This amount is \$.05208 per kWh. The next component of the TARR is the sum of the various riders currently assessed to the Residential class. This amount is \$.04707 per kWh. The sum of the base cost per kWh and rider cost per kWh is then multiplied by 1.02 to capture the RESA. The resulting TARR is \$.10113 per kWh, as shown on Exhibit No. SBB-1.

## 8 Q. HOW WAS THE TARR CALCULATED FOR CLASSES THAT ARE 9 ASSESSED BOTH AN ENERGY CHARGE AND A DEMAND CHARGE?

Α.

I calculated the base-rate component of the TARR in the same manner as described above for the Residential class: I divided the test-year base revenue requirements by the class test-year energy use. I used the same approach to derive the rider component of the TARR. In this manner all costs assigned to a class, whether recovered through an energy charge or a demand charge, can be expressed as a cost per kWh for purposes of deriving the TARR. Again, Exhibit No. SBB-1 provides these derivations.

#### 3. DETERMINING THE COST OF DELIVERY BY CLASS

- 18 Q. HOW DID YOU DEFINE "THE COSTS OF DELIVERING TO THE
  19 SUBSCRIBER'S PREMISES THE ELECTRICITY GENERATED BY THE
  20 COMMUNITY SOLAR GARDEN"?
- A. I considered that language to mean any transmission and distribution ("T&D")
  costs that Public Service is currently recovering through base rates and
  riders. I did not include generation-related base or rider costs. Exhibit No.

- 1 SBB-1 provides the calculation of the T&D components of the TARR, which 2 are then used in Exhibit No. SBB-2 to derive the SRC Credit Rates. the TARR includes delivery costs, these same costs must be subtracted from 3 4 the TARR when deriving the SRC Credit Rate to ensure that community solar 5 garden subscribers continue to pay for their delivery services. The statute 6 specifically provides for this reduction to the TARR.
- 7 Q. PLEASE EXPLAIN WHY IT IS APPROPRIATE FOR SOLAR GARDEN SUBSCRIBERS TO CONTINUE TO PAY THROUGH THEIR RETAIL 8 RATES THE FULL EMBEDDED COST OF THE COMPANY'S T&D 9 SYSTEM. 10

11

- Α. The Program creates a new source of generation on Public Service's system, 12 but does not reduce the customer's on-site load, or the energy that must flow 13 to the customer across the Company's T&D system. No matter how many 14 shares a subscriber may choose to purchase under the Program, the 15 customer's peak loads and energy requirements will not change. The new generator will simply displace energy production from other generators on the 16 17 Company's system. By extension, the costs of providing delivery services to the customer will not change. 18
- SHOULD THE LEVEL OF T&D COSTS A PARTICIPANT PAYS 19 Q. 20 RECOGNIZE THE RELATIVE **PROXIMITY** OF THE SOLAR INSTALLATION TO THE PROGRAM PARTICIPANTS' PREMISES? 21
- 22 Α. I do not believe so. The Company's rates are based on system-average 23 costs. I have not attempted to disaggregate those costs or create separate

rate zones. The concept of broadly applied rates based on system-average costs is a long-standing Commission policy. One example of this policy is the fact that Public Service used to have geographically based S&F Charges. Customers located in areas that were less densely populated paid higher S&F charges based on the higher level of investment that was necessary to serve them. The Commission allowed the Company to move to a system-average S&F Charge several years ago.

Disaggregating the Company's system average costs for SRC Allocation participants is akin to reverting back to geographically based S&F charges. The Company does not believe that such a departure from Commission policy is warranted.

Moreover, the proximity of the generator to the customer can, and most likely will, vary considerably. The only limitation on solar garden participation is that the load and generator be in the same county. Even that restriction is relaxed for counties with populations of less than 22,000. Consequently, a generator could be far removed from the customer's load.

Finally, there are many instances where a retail customer with no onsite or off-site solar generation is closer to one of the Company's generators than the typical customer in the same rate class. If solar gardens subscribers were granted a T&D rate preference based on their assumed proximity to generation sources, then other customers close to generation sources could legitimately request similar preferences. The result could well be an

1	unraveling of the policy of broadly applied rates based on average system
2	costs.

- In short,, it would be inappropriate to reduce the TARR by a delivery charge that was geographic-specific.
- 5 Q. YOU MENTIONED THAT THE DELIVERY CHARGE WOULD RECOVER
  6 THE T&D COSTS COLLECTED THROUGH BOTH BASE RATES AND
  7 RIDERS. ARE THERE ANY RIDERS THAT ARE INCLUDED IN THE
  8 DELIVERY CHARGE?
- 9 A. Yes. The Transmission Cost Adjustment ("TCA") is a rider that (as the name suggests) collects transmission-related costs. The TCA is included in the calculation of the TARR. Consequently, the TCA must also be subtracted from the TARR to determine the SRC Credit Rate -- in the same manner that T&D costs in base rates are subtracted from the TARR. The TCA credit reductions are itemized on Exhibit No. SBB-2.
- 4. DETERMINING THE COST OF PUBLIC BENEFITS PROGRAMS BY
   CLASS
- 17 Q. PLEASE EXPLAIN WHY YOU STATED EARLIER THAT THE RESA
  18 COSTS SHOULD BE SUBTRACTED FROM THE TARR.
- As explained previously, the Company's calculation of the TARR includes the RESA. If I did not back out this same RESA charge when deriving the SRC Credit Rate, solar garden subscribers would not contribute their fair share to the funding of renewable resources. I did not read the community solar garden legislation to exempt solar garden subscribers from paying into the

fund for renewable energy -- the very fund that is used to pay for the Renewable Energy Credits generated by the community solar gardens.

Q.

Α.

In the same legislative session in which the solar garden bill was passed, the General Assembly passed HB10-1001. In that bill, the General Assembly recognized that customers who install on-site solar panels and are net metered had not been paying their fair share to the RESA. HB10-1001 authorized utilities to charge customers with on-site generation more than a 2 percent RESA on their net metered energy to rectify this problem.

Since the General Assembly took steps to ensure that customers with on-site solar panels continued to contribute their fair share to the RESA, I do not believe that this same body intended for community solar garden subscribers to contribute less to the RESA as a result of their subscriptions.

Exhibit No. SBB-2 provides the RESA deductions from the TARR by class.

- IS THERE ANOTHER REASON FOR ENSURING THAT COMMUNITY SOLAR GARDENS CUSTOMERS CONTRIBUTE THE SAME AMOUNT TO THE RESA AS THEY WOULD IN THE ABSENCE OF THEIR SUBSCRIPTIONS?
- Yes. As I mentioned earlier in my Rebuttal Testimony, the statute provides for the collection of the costs of administering the Program. Since these costs will be collected through the RESA, it is even more critical that subscribers contribute the same amount to the RESA as they would in the absence of their subscriptions.

## 1 Q. WHY ARE YOU SUBTRACTING THE COSTS OF DEMAND SIDE 2 MANAGEMENT PROGRAMS FROM THE TARR?

Α.

A.

A utility's provision of DSM programs advances an important societal and public-policy goal. The majority of our DSM program costs are collected through either the base energy charge or the base demand charge, depending on the rate class. The remaining costs are collected through the Demand Side Management Cost Adjustment ("DSMCA"). The Company believes that SRC participants should support DSM programs at the same level at which they would have absent their subscriptions. For reasons similar to the reasons explained above for the RESA, I do not believe that the General Assembly intended for customers to contribute less to this public benefits program by virtue of their subscription to a community solar garden.

# Q. SINCE DSM COSTS ARE CURRENTLY RECOVERED IN BOTH BASE RATES AND A RIDER, HOW WOULD THE COMPANY DETERMINE THE AMOUNT TO DEDUCT FROM THE TARR?

The DSM cost per kWh included in base rates for each customer class was provided on Exhibit No. SBB-1. For those customer classes whose DSM costs are collected through demand charges, the cost per kW of billing demand would be converted to a cost per kWh using the same methodology used to develop the TARR. To this amount we would add the DSMCA per kWh to derive the total DSM-related deduction from the TARR. The total DSM costs per kWh are derived in Exhibit No. SBB-1, and included as a reduction to the SRC Credit Rate on Exhibit No. SBB-2.

- 1 5. TREATMENT OF GENERATION RELATED RIDERS
- 2 Q. ARE YOU SUBTRACTING EITHER THE PURCHASED CAPACITY COST
- 3 ADJUSTMENT OR THE ELECTRIC COMMODITY ADJUSTMENT FROM
- 4 THE TARR?
- 5 A. No. Both of these riders clearly recover generation-related costs.
- 6 6. SUMMARY OF SRC CREDIT RATE BY CLASS
- 7 Q. CAN YOU PROVIDE AN EXAMPLE THAT ILLUSTRATES THE RESULT
- 8 OF YOUR PROPOSED METHODOLOGY?
- 9 A. Yes. Exhibit No. SBB-2 provides the illustrative SRC Credit Factor for each
- 10 rate class. Again, I will use the Residential class as an example. The
- illustrative Residential SRC Credit Factor is \$0.06878/kWh. This amount is
- equal to the illustrated Residential TARR of \$0.10113/kWh minus the T&D
- cost in base rates of \$0.02503, minus the TCA cost of \$.00023, minus the
- 14 RESA cost of \$0.00198, minus the DSM cost of \$0.00511.
- 15 Q. BASED ON THE APPROACH OUTLINED ABOVE, PLEASE SUMMARIZE
- 16 THE COSTS THAT THE CUSTOMER WILL AVOID THROUGH THE SRC
- 17 **CREDIT RATE?**
- 18 A. For Each kWh that the subscriber purchases from the Program, the customer
- 19 will not pay:
- any base generation-related costs, with the exception of DSM costs;
- the Energy Cost Adjustment ("ECA"); or
- the Purchase Capacity Cost Adjustment ("PCCA").

1		In other words, the customer will not pay for generation-related costs
2		collected through base rates or riders.
3 4		IV. TARIFF PROVISIONS, ADMINISTRATION AND CUSTOMER NOTIFICATION
5	Q.	WHAT REVISIONS TO THE CURRENT ELECTRIC TARIFF ARE YOU
6		PROPOSING?
7	A.	The Company proposes to add the Schedule SRC tariff, shown as Sheets 94
8		through 94F, along with required updates to the Colo. P.U.C. No. 7 Table of
9		Contents to reflect Sheets 94 through 94F, attached as Exhibit No. SBB-3.
10	Q.	PLEASE SUMMARIZE THE PROPOSED SCHEDULE SRC ATTACHED AS
11		EXHIBIT NO. SBB-3?
12	A.	The proposed Schedule SRC, Exhibit No. SBB- 3, has three main purposes.
13		First, it specifies entities are that eligible to produce photovoltaic energy into
14		the Company's electric system. Each entity that is eligible is defined as an
15		"SRC Producer" who provides an allocated amount of their production to
16		eligible subscribers.
17		Second, Schedule SRC sets forth the method upon which the
18		Company will calculate the allocated amount of photovoltaic energy as a bill
19		credit to each SRC Subscriber, defined as an SRC Credit.
20		Third, schedule SRC establishes who is eligible to subscribe.
21	Q.	PLEASE PROVIDE DETAILS OF WHAT IS INCLUDED IN SCHEDULE
22		SRC?

A. Schedule SRC as proposed consists of five sections: (1) Applicability, (2) Definitions, (3) SRC Credit Rate Calculation, (4) SRC Credit Billing, and (5) Rules and Regulations. The Applicability section defines eligibility and specifically excludes area/street lighting or resale service customers from participation. The Definitions section defines all rates, terms and conditions of Schedule SRC, including definitions for Service Period, Demand-Side Management Component, SRC Allocation, SRC Non-base Rate Adjustments, SRC Producer, SRC Subscriber, Total Rate Adjustment Component, TCA Component, Total Aggregate Retail Rate (TARR) and Transmission and Distribution costs.

The SRC Credit Rate Calculation section lists the variables used to calculate the SRC Credit, which I previously discussed in my testimony. The section defines those variables as:

SRC Credit = A - B - C - D - E

15 Where:

16 A = TARR 17 B = T&D

18 C = DSM Component

D = TCA Component

E = TRA Component (includes RESA)

The SRC Credit Billing section details how the Company will calculate and apply the SRC Credit to customers' bills.

The Rules and Regulations portion of the tariff details what is expected of the SRC Producer in such matters as contract compliance, equipment installation and maintenance, and notification requirements related to service failure or damage to Company equipment.

- Q. DOES YOUR TESTIMONY IDENTIFY THE ACTUAL TARR, DELIVERY
  CHARGES AND CREDITS, THAT WILL BE REFLECTED IN THE
  PROPOSED TARIFF?
- A. No. The Company is seeking approval only of the methodology for deriving the credit, not the level of credit. The specific credits will be subject to change at least once a quarter (when the ECA changes) or whenever there are changes to any of the other factors that are used to determine the SRC Credit Rate.
- 9 Q. WILL THE ACTUAL CREDITS BE VERY DIFFERENT FROM THE
  10 ILLUSTRATIVE CREDITS SHOWN IN YOUR EXHIBIT NO. SBB-2?
- 11 A. No. My Exhibit No. SBB-2 reflects what the credits would be based on the
  12 rates effective April 1, 2011. Unless there happens to be a large change in
  13 base rates or riders between April 1, 2011, and the date of subscription, my
  14 illustrative credits should be a good approximation of the credit that
  15 subscribers will receive.
- 16 Q. WHY ARE YOU PROPOSING TO EXCLUDE THE CREDIT FROM THE
  17 SOLAR REWARDS COMMUNITY TARIFF?
- 18 A. If the specific credits were included, an update to the Tariff would need to be
  19 filed every time there was a change to base rates or riders, since the TARR,
  20 Delivery Charges and the resulting Credit are affected by such rate changes.
  21 That is why I am seeking approval of the proposed methodology for insertion
  22 into the Tariff, not the specific credit amounts. The proposed methodology
  23 would then be executed in our Billing System each time there was a rate

change in either rate category. Since one of the riders is the ECA, which can change quarterly, the Billing System would be scheduled for an update to the credit at least quarterly, with further updates scheduled to capture any changes that might occur aside from the quarterly ECA updates.

## 5 Q. HOW DOES A POTENTIAL SUBSCRIBER KNOW WHAT CREDIT THEY 6 WILL RECEIVE IF THEY DECIDE TO PARTICIPATE IN THE PROGRAM?

The Company proposes to place an illustrative credit on the Company's web site, with an explanation that the illustrative credit is the actual credit as of some effective date. In this manner, the potential subscriber will understand that the illustrative credit is an approximation, but not a guarantee, of the credit they will receive. This is necessary because the credit that the potential subscriber actually receives is a function of the base rates and riders that are in effect when the subscriber's bill is rendered. In addition, the proposed web site will also clarify to potential subscribers that the credit they receive will change to reflect changes to base rates or riders.

#### 16 Q. DOES THIS CONCLUDE YOUR TESTIMONY?

17 A. Yes, it does

A.

#### Attachment A

#### **Statement of Qualifications**

#### Scott B. Brockett

I graduated from Otterbein College in 1980 with a Bachelor of Arts degree in English and Economics. I graduated from Miami University (Ohio) in 1981 with a Masters of Arts degree in Economics.

From August 1982 through February 1999 I was employed by the Minnesota Department of Public Service ("Department"), a state agency charged with developing energy policy and representing all customers in utility matters before the Minnesota Public Utilities Commission.

From August 1982 through My 1984 I was an analyst in the Computational Services Unit, where conducted economic analyses and reviewed telecommunications depreciation filings. From June 1984 through January 1991 I worked in the Energy Unit. My major areas of responsibility were buyback rates for Qualifying Facilities, rate design, embedded cost of service and marginal cost of service.

From January 1991 to August 1994 I held two, similar supervisory positions. My primary responsibility was to oversee the Department Staff's advocacy in electric utility matters including general rate proceedings, integrated resource plans, demand-side management programs, and a wide variety of other regulatory issues.

In August 1994 I was promoted to Manager of Energy Planning and Advocacy. In this capacity the responsibilities I assumed as a supervisor were expanded to include natural gas advocacy, the development of state energy policy,

and testifying on energy matters before the Minnesota Legislature. In December 1998 I was appointed Acting Assistant Commissioner of Energy. I held this position until February 1999.

From February 1999 to July 2004 I was employed by Consumers Energy ("Consumers"), an investor-owned utility providing natural-gas and electric service in Michigan, as Supervisor of Pricing and Revenue Forecasting. My primary responsibilities were developing prices for Consumers' electric and natural gas services, conducting economic analyses of various service options, evaluating the impact of Michigan's electric open-access program, estimating customer bills, and forecasting natural gas and electric revenue. I also managed Consumers' voluntary Green Power Pilot Program.

During my tenure with the Department I testified on demand-side management, rate design, embedded cost of service, marginal cost of service, and the environmental costs of electric generation. During my tenure with Consumers I testified on gas pricing issues and electric stranded costs.

I joined Xcel Energy as Manager, Gas Pricing and Planning, in July 2004. I assumed my current position in 2008. During my tenure with Xcel Energy I have testified on pricing issues in three gas general rate cases (Docket Nos. 05S-264G, 06S-656G and 08S-146G), on policy issues in a proceeding involving electric interruptible rates, and 011 electric Demand Side Management cost recovery and incentives.

#### **Attachment B**

#### **Glossary of Terms**

Acronym/Defined Term	Meaning
Commission	Public Utility Commission of Colorado
Company	Public Service Company of Colorado, a Colorado corporation
Demand Side Management Component	The amount of Demand-side Management Costs included in base rates for each rate schedule, plus the applicable Demand-Side Management Cost Adjustment (DSMCA) expressed as a kilowatt-hour rate
Generation Cost per kWh	The capacity cost for generating one kWh of energy
Program	The Solar Rewards Community Offering
RESA	The Renewable Energy Standard Adjustment rider, which is a percent applied to the total of all other rate components and added to the rate
SRC Factor	Solar Production Credit Factor
SRC Allocation	The allocation of Photovoltaic kW Capacity that is converted into the monthly kWh produced from that capacity and applied to the SRC Credit Rate
SRC Credit	Equal to the SRC Credit Rate times the monthly kilowatt hours of energy produced from the subscriber kilowatt SRC Allocation
SRC Credit Rate	The amount per kWh that is applied to the monthly kWh produced from the subscriber SRC Allocation
SRC Non-base Rate Adjustments	Any additional adjustment to the SRC Credit Rate beyond Base Rate considerations. Currently includes the Demand Side Management Cost Adjustment (DSMCA), Transmission Cost Adjustment (TCA), and the Renewable Energy Standard Adjustment (RESA), expressed as a kilowatt-hour rate, or as a percentage to the before application kilowatt-hour rate
SRC Producer	A Company approved Solar Rewards Community Photovoltaic Energy Producer
SRC Subscriber	A customer of the Company who receives a Photovoltaic subscription from the SRC Producer
TARR	Total Aggregate Retail Rate
T&D Cost per kWh	The capacity cost for transmitting & delivering one kWh of energy
Transmission Cost Adjustment (TCA)	The Transmission Cost Adjustment Rider, expressed as a kilowatt-hour rate
Total Rate Adjustment Component (TRA)	Includes the RESA as well as any other applicable adjustment that is applied to the total rate, expressed as a kilowatt-hour rate or percentage to the kilowatt-hour rate