Xcel Energy[SM]

PUBLIC SERVICE COMPANY

IN THE MATTER OF THE APPLICATION OF PUBLIC SERVICE COMPANY OF COLORADO FOR APPROVAL OF ITS 2009 RENEWABLE ENERGY STANDARD COMPLIANCE PLAN

DOCKET NO. 08A-532E

REBUTTAL TESTIMONY AND EXHIBITS

MARCH 23, 2009

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REBUTTAL TESTIMONY AND EXHIBITS

OF

DANIEL S. AHRENS

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF COLORADO

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IN THE MATTER OF THE APPLICATION OF	)	
PUBLIC SERVICE COMPANY OF	)	**DOCKET NO. 08A- 532E**
COLORADO FOR APPROVAL OF ITS 2009	)	
RENEWABLE ENERGY STANDARD	)	
COMPLIANCE PLAN	)	

REBUTTAL TESTIMONY AND EXHIBITS OF DANIEL S. AHRENS

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Daniel S. Ahrens. My business address is 1225 Seventeenth Street, Suite 1000, Denver, Colorado 80202.

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

A. I am employed by Xcel Energy Services, Inc., a wholly-owned subsidiary of Xcel Energy Inc., the parent company of Public Service Company of Colorado. My job title is Pricing Consultant, Rates and Regulatory Affairs.

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

A. I am testifying on behalf of Public Service Company of Colorado ("Public Service" or the "Company").

Q. HAVE YOU FILED DIRECT TESTIMONY IN THIS CASE?

A. Yes.

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

A. I am responding to the testimony of Commission Staff ("Staff"), the Office of Consumer Counsel ("OCC"), Interwest Energy Alliance ("Interwest") and the Colorado Solar Energy Industries Association ("CoSEIA").

Q. COULD YOU PROVIDE A SUMMARY OF THE ISSUES THAT YOU WILL ADDRESS?

A. My rebuttal testimony will focus on responding to answer testimony that addressed the following major topics:

- How the costs of renewable resources should be managed -- if the balancing account should be through the Renewable Energy Standard Adjustment ("RESA") or the Electric Commodity Adjustment ("ECA");
- If the costs associated with the Wind Forecasting Tool ("WiP") should be recovered through the RESA.
- How Public Service should determine expenditures and acquisitions for on-site solar generation.

I address these as well as a few other miscellaneous issues. In addition to me, Company witnesses Ms. Newell, Mr. Parks, and Mr. Scholl will be providing rebuttal testimony.

II. <u>DEFERRED BALANCING MECHANISM</u>

Q. COULD YOU PLEASE SUMMARIZE THE COMPANY'S DIRECT POSITION AS WELL AS THE INTERVENING PARTIES' RESPONSES?

A. Yes. The RESA is used to recover the projected incremental costs of the Eligible Energy, plus program administrative costs. The ECA recovers the projected non-incremental costs of the Eligible Energy. In past years, the actual costs of the Eligible Energy have been reported and differences between the projected total cost of the Eligible Energy and the actual total cost of the Eligible Energy have been "trued up" by adjustments to the RESA deferred account. This year Public Service is suggesting a change to that true-up procedure. Instead of adjusting the RESA deferred account to true up the projected costs of Eligible Energy to the actual costs of Eligible Energy, we now propose to use the ECA deferred account for that purpose.

In my Direct Testimony, I explained that there are no wind costs that are recovered through the RESA today, only solar costs. As wind comes on line to meet RES requirements, the Company is concerned that there will likely be more significant variations in the actual output of the wind facilities versus the output that was modeled. For example, the RES model going forward will model wind at some costs for energy with some average output profile. Since the RESA is currently the balancing rate mechanism, if there is more (or less) wind production than what was projected, the RESA deferred balance will be impacted by the *full* cost of that increased (reduced) wind generation as opposed to only the incremental cost of that generation. Since the Company pays for excess wind on a per kWh basis, the full cost of any excess generation will go against the RESA deferred balance, which is inappropriate since the RESA should recover only the incremental costs of the wind.

The cost of wind facilities is decreasing, lowering the incremental costs of these facilities when compared with non-renewable resources. In fact, Public Service recently obtained approval for a new wind contract, in Docket No. 09A-020E, where we predict (with imputed carbon costs and federal tax incentives) that the incremental cost of that facility will be negative (i.e. will create savings compared to the avoided non-renewable resources). We have to choose either the ECA or the RESA to be the balancing account for truing up projected costs to actual costs. Since the vast majority of the wind costs now mirror the avoided non-renewable costs, which is another way of saying that the vast majority of these costs are *non-incremental* costs, it makes more sense to us to use the ECA as the balancing account, so that the RESA is not burdened with excess cost when the wind blows more than expected

Q. DID ANY OF THE PARTIES RESPOND TO THE COMPANY'S PROPOSAL?

A. Yes, both Messrs. Shafer and Dalton of the OCC and Staff, respectively, provided comment.

Mr. Shafer recommended that the Company split the costs of over (under) wind generation into base and incremental and collect the costs through the ECA and RESA, respectively.[1]

[1] See page 3 line 18 of Mr. Shafer's Answer Testimony.

Mr. Dalton notes that the potential problem may exist but the problem has yet to materialize and the Commission should defer the issue to when the Company proposes a new ECA.[2]

Q. DO YOU AGREE WITH MR. SHAFER'S RECOMMENDATION?

A. I do not. I believe Mr. Shafer's suggestion would be difficult to implement and would not result in any appreciable benefit to customers. Essentially, all the renewable energy costs are recovered through the combination of the ECA and RESA. Adding the administrative burden created by Mr. Shafer's suggestion would not result in our customers paying less for the renewable energy.

We also oppose any process that requires the Company to recalculate the incremental costs of renewables after the resource acquisition decisions have been made and implemented. Public Service remains concerned that any mandatory retrospective calculation of this type could jeopardize the legality of executed contracts, should there have been a decrease in gas prices from predicted, thereby increasing the incremental costs in excess of the two percent retail rate impact limit. In Decision No. C08-0559 (June 4, 2008) addressing the Public Service 2008 RES Plan, the Commission agreed with the Company that Rule 3662(a)(XI), which requires a recalculation of the retail rate impact limit based upon actual compliance year values, is only necessary in those instances where the utility has not met the Renewable Energy Standard

[2] See Mr. Dalton's Answer Testimony page 40 line 4.

because of the limits placed on the utility by the retail rate impact limitations. We do not want to be required to do a retrospective calculation of actual incremental costs in situations other than the one required by this Commission rule.

Mr. Shafer acknowledges that he has not developed a method to allocate the costs of production variances between the ECA and the RESA. I believe this is an example of the devil being in the details. Such adjustments would have to be made well after the fact resulting in equal and opposite adjustments between the ECA and the RESA. The time spent accounting for and making the necessary adjustments between the ECA and the RESA would have no net impact on customers. In addition I do not know how this allocation should be made, absent re-running the STRATEGIST model at a higher level of RES generation, thereby reopening all of the issues I discussed earlier. I believe any benefit that might be derived from this process would be outweighed by the cost associated with implementation.

Q. DO YOU AGREE WITH MR. DALTON THAT THIS ISSUE OF COST RECOVERY SHOULD BE DEFERRED TO THE NEXT TIME THE COMPANY FILES FOR A NEW ECA?

A. No, I do not agree. Mr. Dalton is correct that the Company must soon file a new ECA.[3] However, the cost recovery methodologies for renewable resources are an appropriate issue to be resolved in a RES plan. Rule

[3] Docket No. 04A-214, 215, 216. Decision No. C05-0049.

3657(a)(V) requires the utility to address in its annual compliance plan the cost recovery mechanisms that are necessary to comply with Rule 3660. Rule 3657(a)(I)(A) also requires the utility to address in its annual compliance plan the determination of the retail rate impact pursuant to Rule 3661. The issue that Mr. Dalton argues should be deferred to the ECA affects both of these RES Rule sections.

Further, I note that in Public Service's last two plans, the Commission has approved cost recovery through the ECA and the RESA. This case should be no different. All we are suggesting is a slight variation on which of the two accounts -- the ECA or the RESA –is used to account for the difference between the projected total cost of renewable energy and the actual total cost of renewable energy. Right now the RESA is the swing account. For all of the reasons that I have discussed, the Company now believes that the ECA is the better account to use, given our concerns about being able to accurately predict the total kilowatt-hours of wind production.

Public Service is currently preparing its new ECA, which will be filed on or about May 1, 2009. There is nothing in that ECA filing that changes or affects this issue.

Q. ON A RELATED NOTE, ON PAGE 39 LINE 3, MR. DALTON USES THE FACT THAT ECA COSTS ARE NOT BEING TRUED UP AS A REASON TO DEFER THIS ISSUE TO A DOCKET WHEN THE ECA IS AT ISSUE. DO YOU AGREE?

A. No. This single account true-up issue has already been resolved by the Commission in past Public Service RES Plans. The Commission has already determined that there is no need to perform a true up to *both* the ECA and the RESA. Currently, the Company uses the RESA to true up the actual *total* costs of renewable energy to the projected *total* costs of renewable energy and not the ECA. In the future, we would like the ECA to be the true-up account and not the RESA. We have explained on this record why we think this switch is appropriate. There is nothing to be gained by deferring this issue to another case. We have nothing more to add on this issue.

Q. HAS EITHER MR. DALTON OR MR. SHAFER PERSUADED YOU TO CHANGE YOUR POSITION THAT THE COMMISSION SHOULD APPROVE THE COMPANY'S PROPOSAL TO USE THE ECA AS THE BALANCING MECHANISM?

A. No, I believe Public Services initial position remains the best alternative.

III. WiP COST RECOVERY

Q. DID ANY PARTIES RESPOND TO THE COMPANY'S PROPOSAL TO RECOVER WiP COSTS IN THE RES PLAN?

A. Yes. Mr. Dalton states that the Commission should approve WiP cost recovery through the RESA, but that the Commission should require the Company to report annual integration costs associated with intermittent resources as part of the Compliance Plan.[4] Mr. Shafer recommends that WiP cost recovery be split between the RES and the ECA.[5] Mr. Cox of Interwest suggested that the WiP should have been competitively bid and that the results should be peer reviewed. Mr. Parks addresses Mr. Cox's arguments as to why the Company found the NCAR WiP tool to be superior to the commercial alternatives available and Mr. Dalton's recommendation that Public Service should report an annual integration cost. I will respond to how the costs associated with the WiP should be recovered.

Q. DO YOU AGREE WITH MR. SHAFER'S SUGGESTION THAT THE WIP COSTS SHOULD BE RECOVERED THROUGH BOTH THE ECA AND THE RESA?

A. Not completely, as I explain below. Mr. Shafer notes that not only will the WiP tool be used to more accurately identify electric production for wind generation that will be recovered through the RESA, but also wind production that is currently being recovered through the ECA. I see the merit in Mr. Shafer's argument and agree that the WiP tool will provide savings to all of Public Service's wind generation, not just the wind whose incremental costs are recovered through the RESA.

Q. DO YOU AGREE WITH MR. SHAFER'S THAT PARTIES SHOULD HAVE THE OPPROTUNITY TO REVIEW THE COST ALLOCATION

[4] See page 48, line 11.
[5] See page 14, line 3.

BETWEEN OTHER XCEL ENERGY OPERATING COMPANIES GOING FORWARD?

A. Yes.

Q. HAVE YOU RECONSIDERED YOUR POSITION TAKEN IN DIRECT TESTIMONY ON THIS MATTER?

A. Yes, however instead of trying to identify the WiP costs that should be recovered through the ECA and the RESA as suggested by Mr. Shafer, I believe the best solution would be for the Company recover the WiP costs in base rates. As I stated in my direct testimony, the Company made an adjustment to remove WiP costs from the revenue requirement in our direct testimony in our Phase I rate case, pending in Docket No. 08S-520E. The Company, in the rebuttal case filed on March 20, 2009, now proposes to remove that adjustment and instead include the WiP costs in the base rate revenue requirements. This would accomplish two goals – it would provide cost recovery in an equitable manner for investment that will reduce the costs associated with wind generation regardless of whether some of the wind generation is RES related or not, and it also would allow the OCC and any other parties the opportunity to review how costs are allocated in future rate cases. I would note that if cost recovery is not permitted in the rate case, the Company requests the ability to recover the costs through the RESA. These are prudently incurred costs and the Company is entitled to cost recovery.

Q. WHY DOES MR. COX BELIEVE THE WiP SHOULD HAVE BEEN COMPETITIVELY BID?

A. I believe that Mr. Parks' rebuttal will show the Company's actions in procuring the WiP tool have been appropriate and prudent. However, I am concerned with what appears to Mr. Cox's justification in his Answer Testimony. On page 2, Mr. Cox indicates that Interwest provided comments in the RES Rulemaking that forecasting tools be placed for competitive bid. While the merit of proposed changes to RES rules will be vetted in the RES Rulemaking, it is unreasonable to suggest the Company should be required to comply with proposed changes to rules offered by parties, prior to their adoption by the Commission. Clearly Public Service is required to file a compliance plan in accordance with existing rules and the existing rules do not require the competitive bidding of wind forecasting tools.

IV. <u>SOLAR GOALS</u>

Q. HAS THE COMPANY SUCCESSFULLY COMPLIED WITH THE RES REQUIREMENTS IN ACQUIRING ON SITE SOLAR FACILITIES?

A. Yes. Public Service has exceeded all requirements in the RES Rules for both solar and non-solar resource acquisitions. If anything, Public Service has had to defend against attack the higher level of renewables we have proposed in our annual compliance filings compared to the Renewable Energy Standard, especially our higher levels of On-Site solar acquisitions. This year is no different. Specifically, some parties claim the

Company's On Site solar procurement of the less than 10 kW PV systems is too aggressive.

Q. WHAT CLAIMS HAVE THE PARTIES MADE?

A. Mr. Dalton states that the Company's accommodation of the small 10kw and below market segment does not result in the cost effective acquisition of solar resources.[6] Additionally, Mr. Dalton testifies that Staff is concerned with the Company's execution of the Solar Rewards program[7].

Similarly, Interwest witness Rick Gilliam states[8]:

> The Solar Rewards program historically has revolved around individual residential homeowners within the under 10 kW category. This focus has provided a consistent, viable market for the portion of the solar installation industry and the industry has responded with robust growth. However, this robust growth has come at the expense of other segments of the market.
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> **
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> This method of balancing the SOREC market, i.e., using the large segment of the market as a flexible buffer against fluctuations in the small program, prevents broad-based participation and stability for the segments of the market above 10 kW, despite the fact that about two-thirds of retail electricity sales and revenue, and funding through the RESA, derive from non-residential customers.

Mr. Gilliam recommends that the Company establish an explicit budget for the acquisition of SO-RECs and that that budget be further subdivided into program categories using the proportion of residential electric revenue to

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[6] Page 17, lines 5-11.
[7] Page 37, line 3.
[8] Page 12 line 1.

total sales for the funding of under 10 kW, and the remainder be used to fund the over 10 kW[9].

Mr. Brolis testifying on behalf of CoSEIA recommends that a target growth rate for on-site solar be established that is in excess of the average annual growth rate for the national solar industry, to the extent possible under the statutory retail rate cap.[10]

Finally the Commission rejected in Decision No. C08-0559 COSEIA's request to allocate a certain portion of the RESA funds to any specific subgroup. In Docket No. 07A-462E, addressing Public Service's 2008 RES Compliance Plan, COSEIA took a position that is not far from the position espoused by Mr. Gilliam in this docket.

Q. WHAT DOES THE COMPANY PROPOSE?

A. We believe the Company should review our On-Site Solar acquisition plans with an eye toward rebalancing the small, medium and large programs. We believe parties in this case have offered some insightful suggestions. Specifically, identifying more objective on-site solar targets for each category is a reasonable objective. It provides more certainty for the market and allows continuity between filed Plans.

Recognizing that we are already into March 2009, and we continue to have a large number of solar applications already in the queue, the Company requests that the RES Compliance Plan that the Company proposed for 2009 be approved. However, after reviewing the testimony

[9] Page 24, line 17.
[10] Page 1, line 11.

of Mr. Gilliam and Mr. Dalton, the Company has identified a general approach that we will consider when filing our 2010 RES Compliance Plan on July 1, 2009. A summary of the program changes we will consider are listed below with detailed explanation further on:

- Subdividing the On Site solar budget between greater than 10 kW and below 10 kW.
- Developing a schedule that allows for more frequent RFPs for the large program.

Developing a declining rebate payment schedules for the medium and small programs based upon the reaching of megawatt or megawatt hour targets during the compliance year.

Q. PLEASE DISCUSS SPLITTING THE ON-SITE SOLAR BUDGET BETWEEN THE LESS THAN 10 KW AND GREATER THAN 10 KW.

A. Public Service believes it is equitable to allocate a portion of the RES budget to the On-site solar acquisitions sufficient to acquire SO-RECs necessary for compliance with the RES, while still recognizing the solar market is developing. The On-site solar budget can be further divided between the less than 10 kW and greater than 10 kW.

Q. MR. GILLIAM RECOMMENDS AN ON-SITE SOLAR BUDGET EQUAL TO TWO PERCENT. DOES THE COMPANY AGREE WITH THAT RECOMMENDATION?

A. No. Current law limits what Public Service can spend on the incremental cost of all renewable resources, except for those resources that the

Commission determines qualify for acquisition under C.R.S. §40-2-123, which have been dubbed the "section 123 resources." Therefore, if the on-site solar budget equaled two percent of annual bills, Public Service would be prohibited by law from acquiring more wind, central solar, biomass, geothermal, and other forms of renewable resources. Mr. Gilliam's proposal would essentially dedicate all RESA funds to on-site solar at the expense of other more cost effective renewable resources.

Further, on-site solar is one of the most expensive forms of renewable energy. The Company believes that we should acquire sufficient on-site solar RECs to satisfy the requirements of the RES. Beyond that, the Company believes acquiring grid-connected renewable resources reflecting economies of scale is the better policy.

The majority of the Renewable Energy Costs identified on Table 6-3 are for resources that have been approved by the Commission as targets in our pending competitive All Source solicitation under our approved 2007 Resource Plan. We do not agree that we should reduce these resource acquisition targets in order to create additional revenues for on-site solar when the Company is in compliance with the RES On Site solar requirement. However, if as a result of the All Source solicitation the renewable resources prove to be less (or more) costly than what has been projected in tables 6-3 and 6-4 or if more RESA funds become available because retail sales are higher or Windsource contributions are greater, more RESA dollars could be used to acquire On-Site Solar resources.

Q. MR. GILLIAM SUGGESTS THAT THE ON-SITE SOLAR PROGRAM BE SUBDIVIDED INTO ABOVE AND BELOW 10KW. HOW COULD THAT BE IMPLEMENTED?

A. Mr. Gilliam suggests to use the percentage of RESA revenues associated with residential customers contributions to total revenues to identify the under 10 kW. Specifically, that 37 percent[11] of the solar budget should be used to support the under 10 kW solar standard offer. This method may be an appropriate way to identify the split. However, Public Service would like to investigate if there are any other potential methods that may be used to achieve a balance between acquiring the required SO-RECs in the most economic way, while balancing the goal of promoting the development of the solar industry and serving all market segments.

Q. WHAT IS THE STANDARD OFFER FOR PV SYSTEMS BELOW 10 KW?

A. Currently the Company has a REC payment of $1.50/watt and a rebate of $2.00/watt. The rebate is set by statute and rule; however the REC payment is at the discretion of the utility. The Company currently accepts all customers who wish to participate in the standard offer. As a result, the Company's planned expenditures for below 10kW on-site solar are based on the projected number of customers who desire to participate in the standard offer program.

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[11] Answer Testimony of Mr. Gilliam at page 20.

Q. HOW COULD THE COMPANY BETTER REGULATE ITS EXPENDITURES FOR THE STANDARD OFFER?

A. Once a target level of small on-site solar is identified as discussed above, we could estimate the SO-RECs from systems less than 10 kW that we would acquire at a $3.50/watt standard offer. Each year, as the level of subscriptions approached the set budget limit, the Company could adjust the standard offer down. The lowest the Company can go would be $0/SO-REC and the minimum $2.00/watt rebate payment. The reductions to the standard offer could be stair stepped or a single step. At the beginning of the next year the target budget could reset and the SO REC payments could go back up, or we may propose a different method to ration these dollars. Under a mechanism of this type, the small Solar*Rewards could remain open but there would be some control over the amount of RESA dollars going to On Site Solar through the less than 10 kW Standard Offer.

Q. WHAT IS THE COMPANY'S CURRENT THINKING ON HOW TO DESIGN PROGRAMS FOR ON-SITE SOLAR ACQUISITIONS GREATER THAN 10 KW IN FUTURE RES PLANS?

A. Public Service would like to maintain a standard offer for the Medium Solar*Rewards program, which under current Commission Rules is for On Site solar systems greater than 10 kW and up to 100 kW. We have asked for the Commission's RES Rules to be changed to allow the medium standard offer to increase to 500 kW; we have also testified in support of

SB09-051 that in its current form would require standard offers to be made to facilities up to 500 kW in size.

In addition, we currently favor periodic competitive solicitations for our large on-site solar program. A target budget would be set for the medium and large programs together, allowing for timing of the large program competitive solicitations to be managed in conjunction with the responses that we obtain from the standard offer for the medium program.

V. MISCELLANEOUS ISSUES

Q. ON PAGE 2, LINE 6 OF HIS TESTIMONY, MR. DALTON STATES THAT STAFF IS CONCERNED THAT THE INCREMENTAL RESOURCE COSTS COULD EXCEED THE TWO-PERCENT ANNUAL RETAIL IMPACT LIMIT FOR 2009. DO YOU AGREE WITH MR. DALTON'S CONCERN?

A. No. First, the resource acquisition *spending* is not limited in each year by a two percent cap. The two percent cap limits the amount that may be *collected* from customers in each year. Public Service is limited to collecting two percent of the total electric bill annually for each customer under the RESA. The RESA pays for the modeled incremental costs of renewable energy resources above non-renewable energy resources. The modeled incremental costs may be more or less than the RESA revenues collected each year because it also depends on the non-incremental costs, or costs that would have otherwise been incurred are collected through the ECA. To the extent that the incremental costs are greater than the RESA revenues in any one-year, Public Service carries forward, with interest, the unreimbursed costs. To the extent that the RESA revenues are greater than the incremental costs incurred in any one year, Public Service "banks" with interest the unexpended revenues for the purchase of eligible resources in future years.

Additionally, even if there were an annual two percent spending cap as suggested by Mr. Dalton, the Plan's incremental resource costs do not exceed two percent of the retail rate impact. I believe that Mr. Dalton may be concerned with the information presented on Table 6-4, which is the Windsource scenario. In that scenario, the Windsource premiums are in addition to the RESA revenues when determining the two-percent or RESA revenues. Even though the Company does not agree that such a requirement exists, I have included as Exhibit No. DSA-1, information from Table 6-4 where I have calculated the percentage of RESA Revenues (including Windsource credits) to Modeled Incremental Costs to RESA Revenues. For 2009, that number is 97 percent, i.e., that we expect to collect RESA revenues in 2009 that are greater than the incremental costs of the renewable energy that we will acquire in 2009. Even though the Company does not agree that there is such a spending cap, this exhibit shows that Mr. Dalton's concern is not well taken.

Q. MR. DALTON TESTIFIES THAT THE COMPANY SHOULD MODIFY ITS 2008 RES PLAN DUE TO THE LEVEL OF OCTOBER 2008 ON-SITE SOLAR REQUESTS.[12] DO YOU AGREE?

A. No. While Public Service generally strives to perform in accord with an approved compliance plan, changes in federal tax credits caused a significant change in the economics of the on-site solar. QRUs have the discretion, under law to change the offering price for SO-RECs at any time. See C.R.S. §40-2-124 (1)(g)(III) and Commission Rule 3659(d). In our discretion, we determined that we could now offer less for SO-RECs under our standard offer and our customers would still receive approximately the same overall *total* subsidy from the federal government and the utility. By reducing our SO-REC offer, we freed up more money in the RESA budget to acquire overall more renewable resources. Nothing about this action was improper or contrary to law or rule.

Q. ON PAGE 41, LINE 1, MR. DALTON ASKS WHAT ARE THE COSTS THAT ARE BEING DISPLACED IN THE NO-RES SCENARIO IF THERE IS NO CAPACITY BEING ADDED IN THE NO RES UNTIL 2013? CAN YOU ANSWER THIS QUESTION?

A. Yes, avoided costs include not only avoided capacity costs, but also avoided energy costs. Because Public Service is acquiring renewable generation, the resulting energy is displacing energy that would have been generated through conventional fossil fueled resources. As a result, there

[12] See page 36, line 16.

are avoided energy savings from capacity that is already on the system. Mr. Dalton appears to recognize this on page 40 beginning on line 18, but then he recommends that the avoided costs be credited against the RESA account.

Q. WOULD THAT BE APPROPRIATE?

A. No. Such a proposal would not allow the Company to recover its full costs. The avoided costs are captured in the RES/No-RES comparison. The avoided costs are calculated by subtracting the modeled incremental cost from the No-RES costs. Using a simplified example, if the total RES Plan model costs are $10 and the No-Res costs are $8, then the Company would collect $8 through the ECA and $2 through the RESA. The $8 collected through ECA represents the costs avoided by displacing non-renewable generation with renewable energy. In a sense, because the avoided costs are collected through the ECA and not the RESA, they are already "credited" against the cost of renewable energy. However, it would be improper to double credit these costs, by crediting them against the RESA, which appears to be Staff's proposal.

Q. ON PAGE 1, LINE 1, COSEIA WITNESS HART RECOMMENDS THAT THERE SHOULD BE A THIRD PARTY ADMINISTRATOR. DO YOU AGREE?

A. No. We argued against this proposal in the pending rulemaking Docket No. 08R-424E and I will reiterate our comments here. The Commission rejected the use of a third party administrator in Docket No. 05R-112E, after the issue was hotly contested and thoroughly debated and briefed in that docket. CoSEIA has presented no rationale as to why that Commission decision should now be changed. There is no evidence or public policy support for a third party administrator. Requiring a RES Program Administrator at this juncture would be tantamount to a Commission accusation that Public Service has failed at implementing the RES rules. Nothing could be farther from the truth. Public Service has exceeded all expectations in implementing the requirements of the RES Rules. The statute imposes a mandate on the qualifying retail utility to meet the Renewable Energy Standard. The utility, therefore, must be given the opportunity and discretion to administer its acquisition of eligible energy resources to meet the standard. There is no reference in the statute (which has been amended at least twice since the passage of Amendment 37) to any third party administrator. It is legally questionable whether the Public Utilities Commission could, by rule, remove from the utility the discretion and ability to act to meet a statutory mandate imposed upon it by the people of Colorado and the General Assembly.

After hearing extensive debate on this topic in Docket No. 05R-112E, the Commission ruled against the concept of third party administration. The Commission ruled in Docket No. 05R-112E that it was the responsibility of the QRU to comply with these mandates, and thus the QRU should have the management discretion to administer the RES compliance program. Some of the parties to Docket No. 05R-112E did not believe Public Service would implement the solar portion of the program quickly enough and they argued for a third party administrator. However, the Commission ruled the QRU has the burden of compliance and should be given the management discretion to administer its own program. The QRU has the burden of compliance and is better equipped than either the Commission Staff or a third party to conduct these programs in a cost-effective manner. Nothing has changed in the law since Docket No. 05R-112E to undermine that Commission ruling. Public Service has had the responsibility under the law to meet the Renewable Energy Standard and Public Service has been performing in an exemplary fashion.

Q. DOES HOMESMART PARTICIPATE IN THE SOLAR*REWARDS PROGRAM?

A. HomeSmart provides solar PV system installations for customers whose solar system requirements are < 10 kW, which fall under the small Solar*Rewards program. That program is a Standard Offer to all customers. HomeSmart customers are awarded contracts under the same terms and conditions as are customers who have other solar contractors perform their PV system installations. In addition, our HomeSmart program contracts with CoSEIA members for the installation of the solar systems.

Q. DO THE LAW AND COMMISSION RULES ALLOW THE UTILITIES TO OFFER ON SITE SOLAR?

A. Yes. In fact, Public Service has taken seriously the encouragement in the original Amendment 37 and in more recent amendments by the General Assembly for utilities to invest their own capital in renewable resources. We draw the Commission's attention to C.R.S. $40-2-124(1)(f), which among other things, provides a set-aside for utility investment in new eligible energy resources so long as the price is reasonable, and allows extra profit on utility investment in eligible energy resource technologies that provide net economic benefits. It is clear that utility participation in this industry is encouraged; therefore, the Commission cannot prohibit Public Service or any other utility from investing in eligible energy (so long as we do so at reasonable cost). This is a competitive industry and we are allowed to compete.

Q. DOES HOMESMART HAVE ANY UNFAIR ADVANTAGE IN ATTRACTING SOLAR*REWARDS CUSTOMERS?

A. Many unfounded allegations have been made but none have been proven. The Commission cannot infer that there have been any unfair competitive practices merely because Public Service is the administrator of the Solar*Rewards program. There has been no evidence that any preference has been given to HomeSmart or to any other Public Service project by our program administrators.

HomeSmart installs solar panels under the standard offer small program (10 kW and below). Homesmart is given the same contract as are all other installers - and this program has never been limited or closed.

HomeSmart obeys all Commission's cost assignment allocation rules as well as the rules for affiliate transactions. HomeSmart is an unregulated division of Public Service and receives no subsidies from Public Service's utility customers. HomeSmart pays for the advertising space it uses in the Xcel Energy bill stuffers in accord with the Commission's cost allocation rules. Our bill stuffers are clearly not the only advertising medium available to solar installers - indeed they may not even be the most effective advertising vehicle. HomeSmart uses a variety of other advertising means such as Home Shows, newspapers, magazines, and radio to advertisements. All of these same means of advertising are available to solar installers as well. In short, there has been no showing of any improper activity by Public Service. There is no justification for placing restrictions that either limits our investments in renewable energy or that changes the successful program administrator.

Q. DOES PUBLIC SERVICE HAVE PROCEDURES IN PLACE TO RESTRICT HOMESMART EMPLOYEES FROM ACCESSING CUSTOMER INFORMATION THROUGH PUBLIC SERVICE'S BILLING SYSTEM?

A. Yes. It is the practice and policy of HomeSmart to solicit solar customers solely through advertising. HomeSmart does not use customer information in the Public Service billing system to obtain customer leads or to contact customers about HomeSmart's solar offering. HomeSmart has access to CRS only for the following limited purposes:

- To assure customers are paying their HomeSmart Service charges or Appliance Repair service portion of a HomeSmart customer's bill,
- To Issue HomeSmart-related credits to customer bills, and
- Cancel HomeSmart charges for customers who cancel HomeSmart services.
- To verify a HomeSmart customer's account status prior to making a service call.

Q. ON PAGE 5, LINE 1, OCC WITNESS MR. SHAFER SUGGESTS THAT CARBON COSTS SHOULD BE EXCLUDED FROM THE "LOCK DOWN" CALCULATION THAT YOU HAVE PROPOSED. WHAT IS HIS REASONING?

A. Mr. Shafer is concerned that by adding the carbon to the "lock down" calculation, that the benefits of the renewable resources are over-stated. Since the lockdown calculation is identifying the benefits by comparing the RES and No-RES, including the carbon, Mr. Shafer is concerned that a larger delta between the two scenarios would result. Mr. Shafer acknowledges that the RES Rules require the utility to use the same methodologies and assumption used in the most recent approved resource plan when calculating the retail rate impact (again, the difference between the RES and No-RES), *unless otherwise approved by the Commission*. He suggests that the Commission exercise the option to approve something other than the same assumptions that were used in the least-cost plan since customers do not pay for carbon costs.

Q. DO YOU AGREE?

A. I believe it is appropriate to incorporate carbon costs in the "lock-down" calculations. Public Service believes that there will be carbon costs in the future and that the Commission approved carbon cost proxy of $20 per ton starting in 2010 is a reasonable proxy for what that cost is likely to be. I don't believe it would be consistent to include a carbon cost for purposes of determining the retail rate impact, but ignore the same cost for purposes of calculating the "lock down".

The Commission has agreed with the Company that we should be making future resource acquisition decisions based upon assumptions of future carbon emission costs, even though the form these costs will take is yet unknown. As such, it is appropriate to use these expected costs in the RES- No RES modeling, which determines the retail rate impact of the acquisition of renewable resources. Further, it is appropriate to use these expected costs in the lock-down of the costs that are charged against the RESA, as the Company proposes. Otherwise, there will be uncertainty as to how many RESA dollars are available for future resource acquisitions, thereby hampering utility resource planning.

Q. HAVE YOU INCLUDED A CORRECTED TABLE 4-4?

A. Yes. The Company discovered that there were errors in the central solar REC column j. Exhibit No. DSA-2 is a corrected Table 4-4 and replaces the original.

Q. DOES THIS COMPLETE YOUR REBUTTAL TESTIMONY?

A. Yes.

Exhibit No. DSA-1

Draft Adjusted Table 6-4

Public Service Company of Colorado
Renewable Energy Standard Budget
For the Years 2009-2020

Calculation of Percentage of 2009 RESA Funds Needed for 2009 Acquisitions

A	G	H	I	J	K	L	L1	M	N	N1		
	Total Renewable Energy Costs	**Modeled Incremental Costs**	**Estimated ECA Costs**	**Ongoing Incremental Costs**	**Purchased RECs**	**RESA Program & Admin Costs**	**Windsource Program & Admin Costs**	**RESA Rider Revenue**	**WHLS Revenue Credit**	**Premium Windsource Credits**	**Total RESA Revenue Balance**	**Modeled Incremental Costs to Total RESA Revenues**
2007												
2008	31,939,829	30,232,380	1,707,449		189,378	391,127		32,085,721	9,911	-		
2009	61,707,818	55,413,029	6,294,789	5,259,570	-	727,746	284,280	50,015,046	9,897	7,084,094	57,109,037	97%
2010	79,469,111	36,907,922	42,561,189	4,050,082	-	540,418	292,808	53,359,357	1,461,049	8,359,231	63,179,637	
2011	101,030,333	28,951,789	72,078,545	3,866,642	-	582,735	301,593	55,902,794	1,063,007	9,529,523	66,495,324	
2012	128,565,814	28,993,206	99,572,609	3,937,202	-	813,766	310,640	57,621,283	939,571	10,673,066	69,233,920	
2013	157,168,642	31,448,530	125,720,113	4,147,762	-	612,895	319,960	60,941,456	1,582,291	11,740,373	74,264,120	
2014	282,468,399	50,286,749	232,181,650	3,986,370	-	627,638	329,558	64,742,914	2,607,419	12,679,603	80,029,935	
2015	413,931,228	75,152,055	338,779,172	3,922,930	-	898,941	339,445	66,561,918	3,488,301	13,313,583	83,363,802	
2016	502,207,059	80,170,745	422,036,314	3,855,538	-	667,446	349,629	70,731,732	6,253,364	13,979,262	90,964,358	
2017	590,709,270	90,716,842	499,992,428	3,669,098	-	673,519	360,117	73,844,354	8,418,981	14,678,225	96,941,560	
2018	684,899,486	92,016,039	592,883,446	3,528,706	-	940,589	370,921	77,471,312	11,256,577	15,354,999	104,082,887	
2019	784,727,525	136,980,781	647,746,744	3,434,314	-	686,335	382,049	79,953,616	13,863,893	16,037,320	109,854,829	
2020	890,252,685	164,828,843	725,423,842	3,076,922	-	718,002	393,510	82,873,789	17,004,810	16,719,641	116,598,240	

Revised Table 4-4 - Planned Procurement of RECs
Public Service Company of Colorado
2009 Renewable Energy Standard Compliance Plan

Row	Calendar Year	On-Site Solar RECs	On-Site RECs Retired for Windsource	In-State Bonus RECs	Community-Based Bonus RECs	On-Site Solar Total RECs	SunE Alamosa RECs	New Central Solar RECs	Central Solar RECs Retired for Windsource	In-State Bonus RECs	Central Solar Total RECs	Existing Non-Solar RECs (1)	New Non-Solar RECs (1)	Non-Solar RECs Retired for Windsource	Non-Solar Bonus RECs (2)	Non-Solar Total RECs
	Column Reference	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	Calculation			((a - b) * 0.25)		(a - b + c + d)				((f + g - h) * 0.25)	(f + g - h + i)					(k + l - m + n)
1	**2010**	73,652	6,281	16,843	0	84,215	16,630	2,374	1,621	4,346	21,729	3,176,595	467,390	357,899	806,092	4,092,178
2	**2011**	85,916	7,671	19,561	0	97,806	16,548	50,714	6,005	15,314	76,571	3,174,631	746,263	403,336	863,982	4,381,540
3	**2012**	92,979	8,655	21,081	0	105,405	16,507	50,843	6,269	15,270	76,351	3,374,932	1,097,844	452,129	988,633	5,009,279
4	**2013**	99,233	8,628	22,651	0	113,256	16,383	625,616	55,819	146,545	732,725	3,349,165	1,386,092	449,312	1,055,126	5,341,069
5	**2014**	109,076	8,741	25,084	0	125,419	16,301	1,042,717	84,868	243,538	1,217,688	3,310,869	1,933,375	461,251	1,184,576	5,967,569
6	**2015**	114,146	8,415	26,433	0	132,164	16,220	1,459,818	108,818	341,805	1,709,025	3,248,069	2,477,526	465,370	1,315,056	6,575,282
7	**2016**	123,814	8,702	28,778	0	143,890	16,180	1,462,637	103,939	343,720	1,718,598	3,246,925	3,167,876	499,092	1,478,927	7,394,636
8	**2017**	124,767	8,628	29,035	0	145,174	16,058	1,459,818	102,060	343,454	1,717,270	3,226,549	3,690,667	531,631	1,596,396	7,981,981
9	**2018**	131,051	8,949	30,526	0	152,628	15,978	1,459,818	100,775	343,755	1,718,776	3,204,551	4,218,244	564,712	1,714,521	8,572,605
10	**2019**	132,040	8,915	30,781	0	153,906	15,899	1,459,818	99,633	344,021	1,720,105	3,196,432	4,742,057	599,609	1,834,720	9,173,601
11	**2020**	138,465	9,245	32,305	0	161,525	15,859	1,462,637	98,715	344,945	1,724,726	3,196,262	5,278,273	635,604	1,959,733	9,798,663

Notes:
(1) RECs presented are net of transfers and do not include in-state bonus
(1) Removes Foote Creek from RECs eligible for bonus

Xcel Energy[SM]

PUBLIC SERVICE COMPANY

IN THE MATTER OF THE APPLICATION OF PUBLIC SERVICE COMPANY OF COLORADO FOR APPROVAL OF ITS 2009 RENEWABLE ENERGY STANDARD COMPLIANCE PLAN

DOCKET NO. 08A-532E

REBUTTAL TESTIMONY

OF

PAMELA J. NEWELL

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF COLORADO

* * * * *

IN THE MATTER OF THE APPLICATION OF PUBLIC SERVICE COMPANY OF COLORADO FOR APPROVAL OF ITS 2009 RENEWABLE ENERGY STANDARD COMPLIANCE PLAN	)))))	**DOCKET NO. 08A-532E**

REBUTTAL TESTIMONY OF

PAMELA J. NEWELL

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Pamela J. Newell. My business address is 5050 North Service Drive, Winona MN, 55987.

Q. DID YOU FILE DIRECT TESTIMONY IN THIS DOCKET?

A. Yes.

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

A. The purpose of my rebuttal testimony is to address issues raised by the Public Utilities Commission Staff ("Staff"). Specifically, I respond to questions regarding acquisitions in the Small and Medium Solar*Rewards Standard Offers, the impacts of the reduction in REC price in the Small program, and expansion of the Small program to include other groups of customers.

Q. IN HIS ANSWER TESTIMONY, STAFF WITNESS MR. DALTON OUTLINES THE PARAMETERS OF EACH OF THE CURRENT ON-SITE

SOLAR PROGRAMS – SMALL, MEDIUM AND LARGE. DO YOU AGREE WITH HIS PROGRAM SUMMARIES?

A. Yes.

Q. ON PAGE 17, MR. DALTON PRESENTS THE STAFF'S OBSERVATION ON THE MANAGEMENT OF THE SMALL PROGRAM. PLEASE COMMENT ON THIS OBSERVATION.

A. There are two observations in the answer. The first does acknowledge the role of the Small program. However, it falls slightly short in its acknowledgement because while it recognizes the Company and the industry, it does not take into account the customer. The Small program must also be responsive and reflective of customer demands.

Q. AND THE SECOND?

A. The second observation implies that by responding to the unexpectedly large response to the Small program in 2008, the Company has turned away other, less costly, resources.

Q. IS THIS TRUE?

A. No. The Company is not aware of any less expensive resources that were avoided as a result of the success of the Small program. The "accommodation" cited in Mr. Dalton's testimony was achieved through three efforts: 1) adding 4.6 MW to the projected on-site acquisition forecast for 2008-2020; 2) filling the MWh void created by lack of Medium project completion; and 3) shifting the RFP release to later in 2009 and then releasing subsequent RFPs in odd, rather than even, years.

Q. YOU REFER TO LACK OF MEDIUM PROGRAM PARTICIPATION, AS DOES MR. DALTON ON PAGE 18 OF HIS ANSWER TESTIMONY. CAN YOU EXPLAIN THE LACK OF PARTICIPATION?

A. We do not have any specific data showing why projects in this category are not being completed. However we do have some anecdotal evidence that suggests that the upper-end cutoff for this program at 100 kW is too low.

Q. DOES THE COMPANY SUPPORT THE MEDIUM PROGRAM CONCEPT?

A. Yes.

Q. WHY DOES THE ORIGINAL ON-SITE ACQUISTION PLAN (VOLUME 1, SECTION 5, PAGE 4) STATE THAT "PUBLIC SERVICE RECOMMENDS NO CHANGES TO THE MEDIUM SOLAR*REWARDS PROGRAM."?

A. No program changes are being proposed in this filing. Several significant changes, presently being proposed in the Rulemaking Docket No. 08R-424E, however, would have an impact on this program. These are the changes in the maximum system size for Medium consideration, and the provisions for allowing renters to own PV and participate in the program.

Q. PLEASE EXPLAIN THE CHANGES THAT ARE BEING REQUESTED TO THE MAXIMUM SIZE OF THE MEDIUM PROGRAM.

A. Currently, Commission Rule 3655(a) requires utilities to use competitive bidding for acquiring renewable energy from solar facilities with nameplate ratings greater than 100 kW. Since our medium program is structured as a standard offer and not as a competitive bid, by current Commission rule it must be limited to facilities 100 kW and below. We have received information from solar installers and some customers that they could participate in our medium program if the maximum level were higher. Public Service has recommended that Rule 3655(a) be changed to raise the threshold for mandatory competitive bidding to 500 kW. We are also supporting a similar provision in SB 09-051, currently before the Colorado General Assembly.

Q. MR. DALTON INDICATES ON PAGE 19 THAT STAFF IS SATISFIED WITH THE REC PRICE LEVELS ESTABLISHED BY THE COMPANY, BUT EXPRESSES CONCERN WITH THE COMPANY'S METHOD OF DETERMINING THOSE LEVELS. WHAT IS YOUR RESPONSE TO HIS CONCERNS?

A. Last year, Public Service adjusted the Small program standard offer downward when the Congress increased federal subsidies for solar installations. We adjusted our SO-REC offer to maintain approximately the same total subsidy (federal tax credits plus utility rebates and So-REC payments) as prior to the federal law enactment. We gave our solar installers approximately 32 hours notice that we intended to reduce our SO-REC standard offer. In that short period, over 1,000 applications were filed to take advantage of the higher SO-REC payment. While the Company anticipated consequences from the price change, we did not anticipate this very large response. This was not due to lack of regard or consideration; the Company simply did not have any way to know how many potential sales each individual installer had available for submission.

Q. WAS A LONGER NOTIFICATION PERIOD CONSIDERED?

A. Yes, along with the suggestion of no notification period at all.

Q. COULD THE "SURGE" MR. DALTON REFERS TO ON PAGE 32 HAVE BEEN MORE EXTREME?

A. Yes. There is no reason to believe that a longer time between announcement and implementation of a drop in REC price would have yielded anything other than even more applications in the Small program queue. Ultimately the acquisition "bubble" would have been more severe, and the Company wanted to avoid that.

Q. MR. DALTON GOES ON TO RECOMMEND THE COMPANY CONSIDER "MORE VIABLE TRANSITION PERIODS". WHAT IS THE COMPANY'S RESPONSE TO THIS RECOMMENDATION?

A. The Company agrees that smoother transitions are in everyone's best interest. Two factors made the October 24^{th} price change unique. For one thing, it was the first time the So-REC price had been changed since the program's inception. Having no direct experience to draw on would have been a detriment in any case. More importantly, the change was precipitated by an external and significant event (changes to the tax laws) that had an almost immediate impact.

Q. HOW CAN THIS SITUATION BE AVOIDED IN THE FUTURE?

A. Establishing price change "triggers" that are more visible and more accurately interpreted and anticipated by customers, the industry, and the Company would help all parties manage through these changes more effectively. The Company supports looking for ways to make these program changes.

Q. FINALLY, MR. DALTON EXPRESSES CONCERNS WITH RESPECT TO COMPANY PROPOSALS FOR MAKING THE SOLAR*REWARDS PROGRAM MORE AVAILABLE TO CUSTOMERS WHO RENT AND CUSTOMERS WHO HAVE TAX-EXEMPT STATUS (PAGE 21). PLEASE COMMENT.

A. The issue for renters was clarified in Docket No. 07A-462E, Decision No. C08-0559, where the Commission agreed with the Company's position that "the owner of the building must also be the owner and operator of the solar electric system;" (page 11, #28). This position automatically excludes any renters from participating in the program, so by definition, they are not only underrepresented – they are not represented at all. Public Service has suggested rule changes in Docket No. 08R-424E that would open up the solar program to commercial tenants.

Q. AND FOR TAX-EXEMPT ENTITIES?

A. When the Company lowered the REC price for small systems, we did so based on the assumption that customers would remain relatively "whole" through tax credit recovery. But customers who could not take advantage of the tax credits were adversely impacted by the price reduction. When we filed our 2009 RES Compliance Plan, we were concerned about this situation and suggested that we might need a higher SO-REC payment for tax-exempt entities.

Q. HAS THE COMPANY OFFERED A HIGHER SO-REC PAYMENT FOR TAX-EXEMPT ENTITIES?

A. Not yet. We are waiting to see the impact of the new stimulus bill and other federal legislation and the results of the Colorado legislative session. An increased SO-REC payment for this market segment may not be necessary.

Q. DOES THAT CONCLUDE YOUR TESTIMONY?

A. Yes.

Xcel Energy[SM]

PUBLIC SERVICE COMPANY

IN THE MATTER OF THE APPLICATION OF PUBLIC SERVICE COMPANY OF COLORADO FOR APPROVAL OF ITS 2009 RENEWABLE ENERGY STANDARD COMPLIANCE PLAN

DOCKET NO. 08A-532E

REBUTTAL TESTIMONY AND EXHIBITS

OF

KENT L. SCHOLL

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF COLORADO

* * * * *

IN THE MATTER OF THE APPLICATION OF PUBLIC SERVICE COMPANY OF COLORADO FOR APPROVAL OF ITS 2009 RENEWABLE ENERGY STANDARD COMPLIANCE PLAN	)))))	**DOCKET NO. 08A-532E**

REBUTTAL TESTIMONY AND EXHIBITS OF

KENT L. SCHOLL

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. Kent L. Scholl; 550 Fifteenth Street, Denver, Colorado 80202.

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

A. I am employed by Xcel Energy Services Inc., the service company subsidiary of Xcel Energy Inc., which is the registered public utility holding company parent of Public Service Company of Colorado ("Public Service", or "Company"). My title is Senior Planning Analyst, Wholesale Planning.

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

A. I am testifying on behalf of Public Service Company of Colorado ("Public Service" or the "Company").

Q. HAVE YOU FILED DIRECT TESTIMONY IN THIS CASE?

A. No.

Q. HAVE YOU PROVIDED A STATEMENT OF QUALIFICATIONS?

A. Yes. A Statement of Qualifications is included with my testimony as Attachment A.

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

A. I am responding to the testimony of Colorado Solar Energy Industries Association ("CoSEIA") witness Beth Hart, in which she compares the costs of solar systems in the small, medium, and large Solar*Rewards categories.

Q. CAN YOU PROVIDE A SUMMARY OF MS. HART'S TESTIMONY?

A. Yes. Ms. Hart indicates that the Company's comparison of the cost of RECs between the small, medium, and large categories is not representative and does not adequately account for the difference between upfront and future costs. She attached CoSEIA's calculations of the REC costs for the three categories to her testimony (Attachment CoSEIA 1-14 Xcel N-21) and indicated that CoSEIA's analysis refutes any assertions that systems under 10 kW are more expensive than the other categories.

Q. DOES THE COMPANY AGREE WITH THE S-REC COST CALCULATIONS PRESENTED BY COSEIA?

A. No we do not. We can confirm the math used by CoSEIA; that is, if we use their methodology and their input assumptions, we arrive at the same values. However, we do not agree with CoSEIA's methodology or their input assumptions.

Q. WITH WHICH OF COSEIA'S INPUT ASSUMPTIONS DOES THE COMPANY NOT AGREE?

A. We primarily disagree with two input assumptions that CoSEIA has made in their analysis: 1) the choice of a 7.00% discount rate, and 2) the assumption of $0.22/kWh ($220/MWh) as the REC purchase price for a Large Program facility.

Q. WHAT IMPACT DOES THE ASSUMPTION OF A 7.00% DISCOUNT RATE HAVE ON THE ANALYSIS?

A. Rather than use a 7.00 percent discount rate, the Company believes that the discount rate used should be the same as that used to evaluate competitive bids in the context of the Company's resource plan. In the resource plan proceeding (Docket No. 07A-447E), the Company proposes to use as the discount rate the after-tax weighted average cost of capital ("WACC"), calculated based on the Company's most current forecast of the weighted average of cost of debt and the thirteen month average of its capital structure as of 12/31/08. This equals 7.715 percent. If CoSEIA's examples are re-run using 7.715% as the discount rate instead of the 7.00% they selected, the spread between the Large Program case NPV cost and the Small Program case NPV cost changes from $19.11/SO-REC (7.00% discount rate) to $32.05/SO-REC (7.715% discount rate), an increase of $12.94/SO-REC.

Q. WHAT DOCUMENTATION DOES COSEIA PROVIDE TO JUSTIFY ITS USE OF $220/MWH FOR THE REC PURCHASE PRICE IN ITS LARGE PROGRAM CALCULATIONS?

A. In response to a discovery question, CoSEIA indicated that they based their estimate of $220 on their knowledge of the solar market.

Q. WHAT DOES THE COMPANY ASSUME FOR THE PAYMENT RATE OF LARGE PROGRAM RECS?

A. Based on the results of the Company's most recent RFP for Large Program Solar*Rewards projects, the Company assumes a cost of $171.50/MWh. This value is the energy weighted average of the bids accepted in that RFP.

Q. WHAT IMPACT DOES THIS ASSUMPTION HAVE ON THE NPV COST CALCULATIONS?

A. The cost differential is dollar-for-dollar; the NPV of costs assuming a $171.50/MWh REC Purchase cost is $48.50/SO-REC less than what CoSEIA calculates.

Q. WHAT ARE THE RESULTS IF AN ASSUMPTION OF BOTH A 7.715% DISCOUNT RATE AND A $171.50/MWH LARGE PROGRAM PURCHASE PRICE ARE ASSUMED?

A. If CoSEIA were to assume a 7.715% discount rate and a Large Program REC Purchase price of $171.50/MWh, the spread between Small Program SO-RECs and Large Program SO-RECs would be $80.55/SO-REC and not the $19.11/SO-REC presented in Ms. Hart's testimony.

Q. GIVEN A 7.715% DISCOUNT RATE AND A $171.50/MWH REC PURCHASE PRICE UNDER THE LARGE PROGRAM, WHAT WOULD THE UP-FRONT REC PURCHASE PRICE NEED TO BE UNDER THE SMALL PROGRAM IN ORDER TO OBTAIN THE SAME SO-REC COST UNDER COSEIA'S METHODOLOGY?

A. A $0.45/W_DC up-front REC purchase under the Small Program would result in the same SO-REC cost as a $171.50/MWh REC purchase price under the Large Program. This would be a 70% reduction in the current standard offer up-front REC purchase price of $1.50/W_DC.

Q. PREVIOUSLY YOU INDICATED THAT YOU DID NOT AGREE WITH THE METHODOLOGY THAT COSEIA USED TO CALCULATE THE COST OF AN SO-REC. CAN YOU PROVIDE MORE DETAIL?

A. Yes. The Company believes that the true cost of a REC is best calculated net of costs and benefits. The methodology employed by CoSEIA captures the costs, but does not capture the benefits solar energy provides to the Public Service system.

Q. PLEASE EXPLAIN IN MORE DETAIL.

A. Incremental solar generation provides avoided energy cost and avoided generation capacity benefits to the Public Service system. This is true whether the generation is net-metered or whether it is directly connected to the Company's transmission or distribution system. Also, in order to more accurately compare the various ways in which solar generation can be obtained by the Company, net-metered generation should be provided a credit for avoided transmission and distribution losses and avoided generation planning reserve margins.

Q. CAN YOU PROVIDE SOME COST COMPARISON OF SOLAR RECS WHEN TAKING INTO ACCOUNT BOTH COSTS AND BENEFITS?

A. Yes. In Exhibit No. KLS-1, I show calculations to estimate the levelized cost of avoided generation capacity, the levelized cost of avoided energy and carbon, and the levelized REC costs (gross of benefits) from the Large, Medium, and Small Solar*Rewards programs. Note that on a gross of benefits basis, Small and Medium Program RECs are approximately $75/SO-REC or 39% more expensive than Large Program RECs based on my assumptions.

Q. WHAT DO THE RESULTS LOOK LIKE NET OF BENEFITS?

A. Exhibit No. KLS-2 shows the results net of benefits. Note that on a net of benefits basis, Small and Medium Program RECs are approximately $73/SO-REC more expensive than Large Program RECs; however, on a percentage basis, Small and Medium Program SO-RECs are over 200% more expensive than Large Program SO-RECs.

Q. WHY DOES THE COMPANY BELIEVE THAT A NET OF COSTS AND BENEFITS APPROACH IS A BETTER METHODOLOGY THAN THAT PRESENTED BY COSEIA TO COMPARE SOLAR REC COSTS FROM THE SOLAR*REWARDS PROGRAMS?

A. A net of costs and benefits approach more closely aligns with how the Company conducts its RES/No-RES calculations and thus is a better indicator of the RESA funds required by each particular program for the acquisition of solar RECs. Stated another way, significantly more SO-RECs can be purchased under the 2% RESA retail rate impact cap through the Large Program than from the Small or Medium programs at current price levels.

Q. SHOULDN'T NET-METERED SOLAR ALSO BE PROVIDED CREDIT FOR AVOIDED DISTRIBUTION CAPITAL COSTS?

A. In general, any generation source connected at distribution could result in avoided distribution capital costs; that is true for net-metered and non-net-metered generation sources. The calculations presented here are meant to compare projects indicative of the various programs through which Public Service can acquire SO-RECs. Avoided distribution capital cost credits are not generic to all net-metered projects, but instead are site and project specific. As such, it is proper to not attempt to quantify them in this type of a calculation.

Q. WHAT ABOUT ESTIMATED INTEGRATION COSTS?

A. In its recently completed study on the costs of solar integration, Public Service estimated the impacts of the hourly variability of solar generation on its system. The study found relatively low levels of integration costs from expected hourly variations in photovoltaic or solar thermal generation. Photovoltaic generation is characterized by rapid generation ramp rates under partly-cloudy/hazy conditions, which would be expected to result in incremental integration costs above and beyond that caused by hourly variations. However, insufficient sub-hourly meteorological data exist to currently estimate the integration costs that result from these rapid ramp rates and to determine whether or not small, medium, or large, net-metered solar facilities result in any different levels of integration costs.

Q. DOES THIS COMPLETE YOUR REBUTTAL TESTIMONY?

A. Yes.

Attachment A

STATEMENT OF QUALIFICATIONS

KENT L. SCHOLL

I have a Bachelors of Science degree and a Masters of Science degree in Mechanical Engineering from the University of Minnesota and a Masters of Science degree in Finance from the University of Colorado at Denver. I am a licensed Professional Engineer in the State of Colorado. I have successfully passed all three exams required for the Chartered Financial Analyst designation, although I do not currently hold that designation.

I was employed at the National Renewable Energy Laboratory from 1990 – 1998 and, while there, conducted research in solar thermal and geothermal energy technologies.

I have been employed at Xcel Energy Services, Inc. for approximately seven years; first, as a Financial Engineer in the Risk Management department, then in the Resource Planning and Acquisition department as a Purchased Power Analyst, as a Business Analyst, and currently as a Senior Resource Planning Analyst.

As a Senior Resource Planning Analyst, I am responsible for the quantitative and non-quantitative analysis of proposed capacity and energy additions and proposed wholesale purchase and sales transactions across all of Xcel Energy's utilities. I have testified before the Colorado Public Utilities Commission in prior resource planning and RES dockets.

Capacity Cost		**Avoided Energy/Carbon Costs**	
Discount Rate		Avoided Heat Rate (MMBtu/MWh)	Carbon Emission Rate (lb/MMBtu) [2]
7.715%		8.50	119.00
Annual Escalation		Annual Escalation	Annual Escalation [3]
2.50%		2.50%	7.00%

	Large Program Solar*Rewards [4,5]			**Medium Program Solar*Rewards [6]**			**Small Program Solar*Rewards [6]**		
	Rebate ($/W_dc)	Upfront REC ($/W_dc)	System Size (kW_dc)	Rebate ($/W_dc)	Upfront REC ($/W_dc)	System Size (kW_dc)	Rebate ($/W_dc)	Upfront REC ($/W_dc)	System Size (kW_dc)
	$ 2.00	$ -	1,000.00	$ 2.00	$ -	100.00	$ 2.00	$ 1.50	10.00
	Annual Escalation	Annual Degradation	Annual DC Capacity Factor	Annual Escalation	Annual Degradation		Annual Escalation	Annual Degradation	
	0.00%	1.00%	19.5%	0.00%	1.00%		0.00%	1.00%	

Year	Market Capacity Cost ($/kW-yr) [1]	NG ($/MMBtu)	Carbon Cost ($/ton) [3]	Avoided Energy/Carbon ($/MWh)
0				
1	$ 85.00	$ 8.00	$ 20.00	$ 78.12
2	87.13	8.20	21.40	80.52
3	89.31	8.41	22.90	83.02
4	91.54	8.62	24.50	85.62
5	93.83	8.83	26.22	88.32
6	96.18	9.05	28.05	91.12
7	98.58	9.28	30.01	94.04
8	101.04	9.51	32.12	97.07
9	103.57	9.75	34.36	100.23
10	106.16	9.99	36.77	103.52
11	108.81	10.24	39.34	106.94
12	111.53	10.50	42.10	110.51
13	114.32	10.76	45.04	114.23
14	117.18	11.03	48.20	118.11
15	120.11	11.30	51.57	122.16
16	123.11	11.59	55.18	126.39
17	126.19	11.88	59.04	130.81
18	129.34	12.17	63.18	135.42
19	132.57	12.48	67.60	140.24
20	135.88	12.79	72.33	145.29
	Levelized Capacity Cost @ 100% CF ($/kW-yr)			**Levelized Avoided Energy/Carbon Cost ($/MWh)**
	$ 102.28			**$ 99.41**

Year	Large REC Cost ($/MWh)	Large Solar Energy (kWh)	Large Cost ($)	Medium REC Cost ($/MWh)	Medium Solar Energy (kWh)	Medium Cost ($)	Small REC Cost ($/MWh)	Small Solar Energy (kWh)	Small Cost ($)
0			$ 200,000			$ 200,000			$ 35,000
1	$ 171.50	1,704,360	292,298	$ 115.00	145,859	16,774	$ -	14,586	-
2	171.50	1,687,316	289,375	115.00	144,400	16,606	-	14,440	-
3	171.50	1,670,443	286,481	115.00	142,956	16,440	-	14,296	-
4	171.50	1,653,739	283,616	115.00	141,527	16,276	-	14,153	-
5	171.50	1,637,201	280,780	115.00	140,112	16,113	-	14,011	-
6	171.50	1,620,829	277,972	115.00	138,710	15,952	-	13,871	-
7	171.50	1,604,621	275,193	115.00	137,323	15,792	-	13,732	-
8	171.50	1,588,575	272,441	115.00	135,950	15,634	-	13,595	-
9	171.50	1,572,689	269,716	115.00	134,591	15,478	-	13,459	-
10	171.50	1,556,962	267,019	115.00	133,245	15,323	-	13,324	-
11	171.50	1,541,393	264,349	115.00	131,912	15,170	-	13,191	-
12	171.50	1,525,979	261,705	115.00	130,593	15,018	-	13,059	-
13	171.50	1,510,719	259,088	115.00	129,287	14,868	-	12,929	-
14	171.50	1,495,612	256,497	115.00	127,994	14,719	-	12,799	-
15	171.50	1,480,656	253,932	115.00	126,714	14,572	-	12,671	-
16	171.50	1,465,849	251,393	115.00	125,447	14,426	-	12,545	-
17	171.50	1,451,191	248,879	115.00	124,193	14,282	-	12,419	-
18	171.50	1,436,679	246,390	115.00	122,951	14,139	-	12,295	-
19	171.50	1,422,312	243,926	115.00	121,721	13,998	-	12,172	-
20	171.50	1,408,089	241,487	115.00	120,504	13,858	-	12,050	-
		Levelized Generation (MWh)	Levelized Net Cost ($000)		Levelized Generation (MWh)	Levelized Net Cost ($000)		Levelized Generation (MWh)	Levelized Net Cost ($000)
		1,589,103	$ 292,472		135,995	$ 35,580		13,600	$ 3,490
			Levelized REC Cost ($/MWh)			**Levelized REC Cost ($/MWh)**			**Levelized REC Cost ($/MWh)**
			$ 184.05			**$ 261.63**			**$ 256.59**

Notes:

1) Market price of capacity based on the estimated capital costs of a generic combustion turbine
2) Carbon dioxide emission rates for natural gas
3) Carbon dioxide cost assumptions from the Company's Phase I CRP docket
4) Levelized REC value is the energy-weighted REC cost of those bids accepted in the 2008 Large Program Solar*Rewards RFP
5) Large Program facility performance data from PV Watts assuming a 1-axis tracking facility located in Boulder, CO
6) Small and Medium Program facility performance data from PV Watts assuming a fixed PV facility located in Boulder, CO

	Solar*Rewards Large (primary voltage)		Solar*Rewards Medium (secondary voltage)		Solar*Rewards Small (secondary voltage)
Levelized REC Price ($/MWh)	$ 184.05	Levelized REC Price ($/MWh)	$ 261.63	Levelized REC Price ($/MWh)	$ 256.59
Levelized Inc. Transmission ($/MWh)	-	Levelized Inc. Transmission ($/MWh)	-	Levelized Inc. Transmission ($/MWh)	-
Total Cost ($/MWh)	$ 184.05		$ 261.63		$ 256.59
Avoided Energy/Carbon ($/MWh)	$ 99.41	Avoided Energy/Carbon ($/MWh)	$ 99.41	Avoided Energy/Carbon ($/MWh)	$ 99.41
Transmission/Distribution Losses [1]	4.97%	Transmission/Distribution Losses	7.69%	Transmission/Distribution Losses	7.69%
Avoided Energy/Carbon ($/MWh)	$ 104.61	Avoided Energy/Carbon ($/MWh)	$ 107.69	Avoided Energy/Carbon ($/MWh)	$ 107.69
Avoided Capacity Cost ($/kW-mo)	$ 102.28	Avoided Capacity Cost ($/kW-mo)	$ 102.28	Avoided Capacity Cost ($/kW-mo)	$ 102.28
Accredited Capacity Factor [2]	69.00%	Accredited Capacity Factor	59.00%	Accredited Capacity Factor	59.00%
Annual Energy Capacity Factor	22.9%	Annual Energy Capacity Factor	21.6%	Annual Energy Capacity Factor	21.6%
Transmission/Distribution Losses	4.97%	Transmission/Distribution Losses	7.14%	Transmission/Distribution Losses	7.14%
Planning Reserve Margin	16.00%	Planning Reserve Margin	16.00%	Planning Reserve Margin	16.00%
Avoided Capacity ($/MWh)	$ 44.53	Avoided Capacity ($/MWh)	$ 41.45	Avoided Capacity ($/MWh)	$ 41.45
REC Multiplier	1.00	REC Multiplier	1.00	REC Multiplier	1.00
$/REC	**$ 34.91**	**$/REC**	**$ 112.48**	**$/REC**	**$ 107.45**

Notes:

1) Transmission and Distribution Losses from Company's most recent studies
2) Accredited Capacity Factors from the Company's most recent ELCC study
   Solar*Rewards Large projects are modeled as 1-axis tracking systems
   Solar*Rewards Medium and Small projects are modeled as fixed systems

Xcel Energy[SM]

PUBLIC SERVICE COMPANY

IN THE MATTER OF THE APPLICATION OF PUBLIC SERVICE COMPANY OF COLORADO FOR APPROVAL OF ITS 2009 RENEWABLE ENERGY STANDARD COMPLIANCE PLAN

DOCKET NO. 08A-532E

REBUTTAL TESTIMONY

OF

KEITH A. PARKS

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

* * * * *

IN THE MATTER OF THE APPLICATION OF PUBLIC SERVICE COMPANY OF COLORADO FOR APPROVAL OF ITS 2009 RENEWABLE ENERGY STANDARD COMPLIANCE PLAN	)	**DOCKET NO. 08A-532E**

REBUTTAL TESTIMONY OF

KEITH A. PARKS

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Keith A. Parks. My business address is 550 15th Street, Suite 1200, Denver, CO 80202.

Q. DID YOU FILE DIRECT TESTIMONY IN THIS DOCKET?

A. Yes.

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

A. The purpose of my rebuttal testimony is to address issues raised by Interwest Energy Alliance ("Interwest") witness Cox and Public Utilities Commission Staff ("Staff") witness, William J. Dalton. Specifically, I respond to questions/concerns regarding:

- the process of choosing NCAR as the wind forecast provider
- tracking actual integration costs annually.

Q. WHAT WAS THE PROCESS FOR CHOOSING A VENDOR TO PROVIDE A WIND FORECASTING TOOL?

A. Specific vendors, including major commercial wind forecasting vendors, were invited to submit proposals. Meetings with promising vendors were scheduled. Pros and cons were weighed internally.

Q. ON PAGE 2 OF MR. COX'S ANSWER TESTIMONY, HE SUGGESTS THAT THE WIND PREDICTOR TOOL ("WiP") SHOULD HAVE BEEN COMPETITIVELY BID. WHAT WERE THE REASONS FOR CHOOSING THE NATIONAL CENTER FOR ATMOSPHERIC RESEARCH (NCAR) OVER OTHER COMMERCIAL FORECASTING PROVIDERS?

A. After visiting with NCAR staff on April 15 and again on June 1 of 2008, it was apparent that choosing NCAR to provide our wind forecasting service had a distinct advantage over other services.

State of the art commercial forecasting services typically take the current popular and publically available NCAR/Penn State Mesoscale Model (MM5) and manipulate it to generate forecasts for subscribers. The model runs a few times per day as new meteorological information becomes available. These models typically use publicly available information to recast their forecasts. This information is typically hours old at the time of simulation. Additionally, due to the nature of the physics being modeled, the simulation requires a significant model time interval for the calculations to reach a steady state. That is, there is a simulation transient period over which the simulation results are unreliable. Veritable forecasts are not attainable up to the six hour forecast timeframe. Commercial vendors use statistical processes to refine short-term forecasts rather than rely on fundamental weather models.

The WiP tool provided by NCAR has significant advantages over other forecasting tools:

- NCAR proposed to use its latest Weather Research and Forecast (WRF) model over the MM5. Although improvements to the MM5 are still ongoing, most research efforts are focusing improvements in the WRF. NCAR would be on the forefront of future improvements to the model (or at the very least would be well aware of the improvements) and would allow for incorporation of those improvements in to the model.
- NCAR has sophisticated data screening, validation, and assimilation packages. Notably, the WRF 3-Dimensional Variational Data Assimilation (3DVAR) system and the Real-Time 4-Dimensional Data Assimilation (RTFDDA) system. This allows for real-time data assimilation of datasets immediately upon retrieval, many of them in real-time from the various wind farms, thereby keeping the model up-to-date with the most recent information possible. In addition, these tools allow the WRF to remain in a steady state from model initiation. This eliminates the transient stage of the model solution bringing a veritable physics-based solution closer to real-time.
- Statistical methods will be applied to the weather forecast to remove model bias and improve performance of the fundamental forecast. Commercial vendors typically correct bias at the energy production-level only.
- More than just being able to provide a wind energy forecast, NCAR will build weather dependent decision support tools. Simple tools will be

provided to real-time operators to support their minute-to-minute decision-making. Comprehensive, investigative tools will be developed for staff meteorologists. Post-processing tools will be developed for analysts to track performance and identify failures.

- NCAR has the experience necessary to develop a comprehensive wind forecasting tool. NCAR is a world-renowned atmospheric science research and development center. Its Research Applications Laboratory (RAL) specializes in applied research and technology transfer to mission agencies and sponsors. NCAR/RAL has successfully developed and transferred to operations weather decision support technologies to the aviation community, National Weather Service (NWS), international governments, private sector companies, Army, Air Force, Defense Threat Reduction Agency (DTRA), Pentagon Force Protection, National Ground Intelligence Center (NGIC), Department of Homeland Security (DHS), Department of Transportation (DOT), National Aeronautics and Space Administration (NASA), and other clients.

The Company's evaluation process demonstrated that NCAR will outperform other forecasting tools. Attaining the best forecast possible will become increasingly important as more wind is installed on the system.

Q. ON PAGE 47, MR. DALTON TESTIFIES THE COMPANY SHOULD TRACK ANNUAL INTEGRATION COSTS. DOES XCEL ENERGY CALCULATE ACTUAL INTEGRATION COSTS?

No. Calculating integration cost for a variable type resource, such as wind, is very difficult. The Company has allocated significant efforts into modeling the expected costs of integration but understand that it is very difficult to go back after-the-fact and attempt to calculate actual integration costs.

The difficulty of attempting to calculate actual integration costs, with an after-the-fact review, is that you would need to recreate the situation of the system operator, such as the forecast they were working with at the time, then compare it to a simulation using the actual data after it had taken place. In other words, the only way to attempt to calculate the integration costs is after the fact by comparing the actual dispatch data to some simulated environment wherein the system operator has perfect knowledge of the weather and what would have been their dispatch orders. Although the Company has performed back-casting for determining the value of certain components of the wind integration costs, Public Service has not been able to develop a good method for tracking all of the actual wind integration costs. We would recommend the Commission deny Mr. Dalton's recommendation to track the actual wind integration cost.

Q. DOES THIS COMPLETE YOUR REBUTTAL TESTIMONY?

A. Yes.

CERTIFICATE OF SERVICE

I hereby certify that on this 23rd day of March 2009, an original and ten (10) copies of the foregoing **"REBUTTAL TESTIMONY AND EXHIBITS"** were served via hand-delivery to:

Doug Dean
Director
Colorado Public Utilities Commission
1560 Broadway, Suite 250
Denver, CO 80202

Wynne Leonard