

Section 6 – Retail Rate Impact and Budget

Commission Rule 3661 establishes the parameters for determining the retail rate impact of implementing the Renewable Energy Standard (“RES”). Rule 3661(a) states that the net rate impact of Public Service’s actions to comply with the RES shall not exceed two percent of the total electric bill annually for each retail customer. Under C.R.S. §40-2-124(1)(g)(l): “...the commission shall establish a maximum retail rate impact for this section of two percent of the total electric bill annually for each customer. The retail rate impact shall be determined net of new alternative sources of electricity supply reasonably available at the time of the determination.”

On February 28, 2008, Public Service filed Advice Letter No. 1505 establishing an Interim Renewable Energy Standard Adjustment (“RESA”) of 1.46%, which went into effect on March 1, 2008, and is the RESA impact to date. Public Service purposely designed the RESA to collect only the *incremental* costs of new Eligible Energy, so that the RESA would readily demonstrate the level of the retail rate impact contemplated by law. Until the passage of HB07-1281, the maximum retail rate impact was one percent. HB07-1281 raised the maximum retail rate impact limit to 2 percent. Therefore, by law, Public Service is now permitted to charge a RESA that is two percent, and to apply this adjustment to the total annual electric bill for each retail customer. Public Service proposes to raise the RESA to two percent, beginning January 1, 2009, to fund the Eligible Energy Resources that the Company proposes to acquire through 2015 under the Company’s recently approved¹ Resource Plan. Those resources include 850 MW of intermittent resources and up to 600 MW of Concentrating Solar Power with storage capability. Depending upon the technologies proposed, some or all of the 600 MW of solar facilities could qualify as Section 123 Facilities and therefore not impact the retail rate impact limitation.

¹ Decision No. C08-0929, in Docket No. 07A-447E.

In addition to addressing the monies needed for potential 850 MW of intermittent resources, there are significant costs associated with the On-Site Solar*Rewards program due to a substantial increase in applications in 2008. Table 6-3 shows the incremental costs of acquiring more renewable resources over the ten-year RES Planning period, which includes the remaining seven years of the Resource Acquisition Period through 2020. As a result of the passage of HB07-1281, the RES substantially increases in years 2011 (to ten percent), and again in 2016 (to fifteen percent), making it essential that the Company look at the level of new Eligible Energy needed to stay in compliance and the projected costs associated with such additions.

While Public Service already has sufficient non-solar resources to meet these new minimum RES requirements through 2020, the Company must acquire more solar resources to meet the new minimum standards of HB07-1281 through both the Resource Acquisition Period and the RES Planning Period. In addition, for carbon reduction purposes, the Company proposed, in its Resource Plan to increase its non-solar resources above minimum levels.

The Commission approved the Company's 2007 and 2008 RES Compliance Plans, which calculated a proposed RESA level based upon the funding needs of the *full* RES Planning Period, taking into account the Company's need to collect funds in advance of the years where there are significant increases in the percentages of the Renewable Energy Standard. Public Service uses that same methodology in this 2009 RES Compliance Plan to calculate the RESA needed to fund the Company's Plan through 2020. The Company's proposal is set forth in Table 6-3.

The Company's Resource Plan acquires Eligible Energy in advance of the years needed to comply with the RES (with the exception of the central solar resources in the early years of the RES Planning Period). Acquiring resources that are

more than the minimums under the RES is expressly allowed by HB07-1281. C.R.S. §40-2-124(1)(g)(I) permits a utility to acquire more than the minimum amount of Eligible Energy Resources and Renewable Energy Credits required by the RES, so long as the retail rate impact does not exceed the maximum two percent allowed by law. For carbon reduction purposes, Public Service proposed in the 2007 Colorado Resource Plan to use this statutory authorization to add more Eligible Energy Resources than required by the minimum standards. As is shown by Table 6-3, the Company continues to estimate that these resources can be acquired for an incremental rate impact of two percent – throughout the Resource Acquisition Period in the 2007 Colorado Resource Plan (2007-2015).

Rule 3661(e) states that for purposes of calculating the retail rate impact, Public Service will "use the same methodologies and assumptions it used in its most recently approved Least-Cost Planning case, unless otherwise approved by the Commission." Public Service has used the same methodologies and assumptions in conducting the analyses for this 2009 Compliance Plan as the Company used in Docket No. 07A-447E, updated to be consistent with the Commission orders in that Docket. For example, in estimating the costs of the RES Plan and the No RES Plans, the Company has used the same blend of four gas forecasts that the Commission approved in Decision No. C08-0929 but we have used the most *recent* forecast from each of these sources.

Rule 3661(h) sets forth the basic method for calculating the retail rate impact. This rule details how Public Service will use its computer models to determine the difference in costs between two alternative scenarios of electric resources over the RES Planning Period. The first scenario ("RES Plan") includes the new Eligible Energy that is added during the RES Planning Period. The second scenario (the "No RES Plan") is comprised of those "non-renewable resources reasonably available" that are necessary to replace the new Eligible Energy

Resources in the RES Plan to meet the Company's capacity and energy requirements.

In developing the RES Plan for this 2009 RES Compliance Plan, Public Service included *all* of the Eligible Energy Resources that were included in the Company's 2007 Colorado Resource Plan. In developing the No RES Plan, the Company removed all of the new Eligible Energy Resources in the RES Plan that the Company will acquire after 2008. 200 MW of Concentrating Solar Power with Storage, with an in-service date of 2013 was assumed to be a Section 123 resource. As such, it was included in both the RES Plan and the No RES Plan, so that its costs would not impact the incremental cost calculation used to determine the retail rate impact.

The results of our Base Case are set forth on Tables 6-1 and 6-3.

In Docket No. 06A-478E, a concept called the "time fence" was brought up by Commission Staff. The time fence concept suggested that the Commission should determine a time after which the costs and benefits of renewable resources would be counted as new resources and before which all the costs and benefits would be considered as sunk resources. Only the costs and benefits of the new non Section 123 resources would factor into the retail rate impact calculation. Public Service agreed with the concept of the time fence so long as the four renewable resources that were winning bids in the 2005 All Source RFP were considered sunk resources. Public Service believes this time fence needs to be established to ensure the benefits of the Eligible Energy Resources at the time the acquisition decision is made are recognized in future years.

Time Fence

To assure that both costs and benefits are included in the RES scenario when they are compared to the No-RES scenario in determining the retail rate impact,

the Company proposes that a “time fence” be set or “locked down” once the net costs and benefits for a particular year have been quantified; those locked down net costs or benefits will be used from that point forward to assure that both the costs and the benefits are included in the RES Modeling.

Each time the RES/No RES modeling is performed there are new sets of assumptions, which if they had been the assumptions used at the time of earlier resource acquisition, could have altered the acquisition decision. It is not appropriate to continue to revisit acquisition decisions based upon later updated assumptions. The Company makes the best acquisitions it can, based upon the assumptions that are used at the time of acquisition. By locking down the costs and benefits of a new Eligible Energy resource at the time the acquisition decision is made, later changes in the modeling assumptions will not cause unintended consequences. When the Commission approves a RES Compliance Plan, acquisitions in accord with that plan are deemed prudent. Therefore, the assumed incremental costs or benefits associated with those acquisitions should remain constant over the life of that facility for purposes of calculating the incremental costs that must be charged against the RESA.

This “locking down” of net costs or net benefits is only performed to determine which Eligible Energy costs are recovered through the RESA and which costs are recovered through the ECA. Public Service will recover, through the combination of these two adjustment clauses, only the *actual* costs incurred. The only issue here is how much of the actual costs are charged against the RESA deferred account – an account that is limited by law to accumulations of no more than two percent annually on each customer’s bill. Public Service suggests that the RESA impacts should be determined at the time of resource acquisition, or at the time of the next compliance plan report, rather than have the RESA impacts revisited every year with each compliance plan.

To implement this new proposal, for the 2009 RES Plan, the ongoing net incremental costs (and net benefits) of the Eligible Energy Resources that have impacted the retail rate impact calculations in earlier RES Compliance Plans, namely the SunE Alamosa central solar facility and the on-site solar facilities were determined separately and “locked down”. The incremental costs of these resources will not be recalculated next year. These costs will impact the retail rate impact calculation by being collected through the RESA, but they were not “recalculated” based upon the updated assumptions next year.

Modeling the RES and No RES Plans

The modeling output of the RES Plan costs minus the No RES Plan costs provides the incremental cost of the New Eligible Energy Resources. These costs are shown on Tables 6-1, the Company’s Base Case and 6-2, the Windsource Case in the column labeled “Incremental Costs.” The avoided costs that matches the costs of the non-renewables is then “estimated” by subtracting the incremental costs from the projected total costs of the new Eligible Energy Resources.

The 2009 Compliance Plan consists of the resources identified in the 2007 Colorado Resource Plan as the Company’s preferred plan which the Commission approved with modification, including the on-site solar facilities projected by Ms. Newell in her rebuttal testimony in Docket No. 07A-447E, updated to reflect the increased small program applications received by Public Service in the fourth quarter of 2008.

The following tables illustrate the resources in the RES and No RES models.

PSCo RES Plan -- Resource MW														
Year	On-Site Solar	Sun Ed Alamosa	Central Solar	Solar Thermal Storage	Solar Thermal Gas Hybrid	Company Solar	Wind	Bio Mass	Geo Thermal	Erie Land Fill	IGCC	2005 All-Source 775 MW Wind	2005 All-Source 3.2 MW Landfill	Optimized Expansion Plan
2008	18	8.2										775	3.2	
2009	17					1								
2010	8					1	150	4		3				
2011	8		16				100							
2012	3						100							
2013	8			200			100							CC
2014	3				200		200							CC
2015	8				200		200							
2016	3						200		20		150			
2017	8						200							CT
2018	3						200							CT

PSCo No RES Plan -- Resource MW														
Year	On-Site Solar	Sun Ed Alamosa	Central Solar	Solar Thermal Storage	Solar Thermal Gas Hybrid	Company Solar	Wind	Bio Mass	Geo Thermal	Erie Land Fill	IGCC	2005 All-Source 775 MW Wind	2005 All-Source 3.2 MW Landfill	Optimized Expansion Plan
2008	18	8.2										775	3.2	
2009														
2010														
2011														
2012														
2013				200										CC
2014														CT
2015														CT
2016											150			CT
2017														CT
2018														CT

Central Solar

Public Service is including in the RES model a central solar project representing roughly 48,000 MWh of annual energy to come on line in 2011.

Subject to the RESA, the Company intends to acquire no more than 850 MW of new, intermittent renewable generation. Intermittent solar generation includes photovoltaics and solar thermal (CSP) without storage or gas backup.

Solar Thermal with Storage or Gas Backup

In Decision No. C08-0929, the Commission specifically addressed solar facilities with storage; the Commission agreed that the benefits of experience and developmental progress of a solar generation facility with energy storage warrants the acquisition of a minimum of 200 MW. The Commission also agreed with the Company's plan to limit the acquisition of solar thermal with storage or gas backup to no more than 600 MW. The Commission has determined that solar thermal with thermal storage meets the definition of a Section 123 resource,

thus these MW would not be included in the retail rate impact calculation. 200 MW Central Solar Projects with storage or Gas Backup in each of 2013, 2014 and 2015 are included in the RES Plan. The facility with storage would have a solar field sized to accommodate four hours of thermal storage capability allowing the project to produce its full nameplate capacity during the Company's peak hour. Facilities with gas backup are also considered available for peak at their full nameplate capacity.

In Decision No. C08-0929, the Commission approved with modifications the Company's 2007 Colorado Resource Plan (CRP), which includes resource acquisitions (including potential solar resource acquisitions) that become commercial prior to the end of 2015. The No RES Plan contained the following resources for the period 2009- 2015. The No RES Plan also removed all of the Eligible Energy Resources that the Company has acquired since the passage of Amendment 37, with the exception of the four resources selected as winning projects in the 2005 All Source RFP, and the 123 Solar Thermal with Storage resource in year 2013.

By comparing the RES and No RES optimized resource plans from Strategist, we determined that the removed non section 123 Eligible Energy Resource units in the RES plan were replaced by CT capacity and energy in the No RES plan. The timing and MW level of the replacement capacity results from a Strategist re-optimization of available generic thermal resources with the new non Section 123 renewable resources removed.

Incremental and Avoided Costs

The eligible energy resources in the RES plan were modeled at their full cost. The No RES plan contains all the costs of the renewable resources that had been acquired before the passage of Amendment 37 and the four resources acquired in the 2005 All Source RFP and all costs of the non-renewable resources, and the Section 123 solar resource in year 2013. Since the RES plan

contains all the costs for the eligible renewable resources, the cost difference between the RES and No RES plans represents the incremental costs of the RES plan. The total costs of the Eligible Energy Resources is compared to the incremental costs of the RES Plan; the difference is the Avoided Cost or cost of the renewable resources that matches the costs of the non-renewable resources. These avoided costs are called the “Estimated ECA Costs” in Table 6-1 and 6-2.

New Wind Forecasting

In the 2008 RES Compliance Plan and in the 2007 Colorado Resource Plan, the Company indicated that there are certain costs and reliability concerns associated with wind integration. The Commission agreed with the Company’s proposal to limit the addition of intermittent resources between now and 2015 to 850 MW and that these resources should be added ratably through the acquisition period. Public Service has determined that better wind forecasting tools are available in the market that could reduce the cost of wind integration. These tools use wind data gathered at the wind generation site, which is used to predict the level of generation at those locations. Public Service is requesting to recover the costs of a new wind-forecasting tool, with a projected revenue requirement of \$35,343 for 2009, which includes the costs of forecasting tool as well as data acquisition costs. The Company proposes to recover this revenue requirement as an approved RES costs.

The Company estimates that the resulting improved wind forecasting will result in a gross cost savings of \$2,758,000 on an annual basis. As part of the RES No-RES modeling, the Company has included in its modeling scenarios reduced wind integration costs as a result of the improved forecasting information.

Retail Rate Impact Analyses

Tables 6-3 and 6-4 presents the retail rate impact calculations using the same presentation style that was approved by the Commission in Docket No. 06A-478E, and presented in the Company's 2008 Renewable Compliance Plan for the Company's Base Case. The difference between the two is that Table 6-4 includes Windsource costs and credits. These Tables are set up as follows: Column A sets forth the calendar year. Column B, "On-site Solar Costs," includes the estimated cost of the Company's on-site solar programs. Column C, "Central Solar Costs," sets forth the projected costs of the Central Solar resources including the Solar Thermal with gas backup. Column D, "Wind Energy Costs," sets forth the projected costs of wind energy resources. Column E, "Other Renewable Costs," includes the costs of the non-solar, non wind "new" Renewable Resources, in this case the expected 4 MW biomass, 3 MW Erie Landfill and 20 MW Geothermal facility.

Column F reflects the costs for the Company owned PV described in Section 5. Column F1 on Table 6-4 represents the total cost of the current Windsource resources. The incremental Windsource costs that the current Windsource premium offsets is not shown but included in Column H, "Modeled Incremental Costs " and would be less than the total costs shown in Column F1, and are approximately \$4.3 million annually on average in the near term. The avoided costs of the Windsource program are included in Column I, "Estimated ECA Costs ".

Column G, "Total Renewable Energy Costs," is the summation of the costs included in Columns B, C, D, and E and F. The costs shown in Column G represent the total costs to the Company of the "new" Eligible Energy Resources that are in the RES Plan, and not in the No RES Plan.

Column H, "Modeled Incremental Costs " are the cost differences in each year between the RES Plan and the No RES Plan, as determined by the Strategist modeling and as set forth on Tables 6-1 and 6-2.

Column I, "Estimated ECA Costs " are the differences between the Total Renewable Energy Costs in the RES Plan found in Column G and the "Modeled Incremental Costs" from Column H. They are the avoided costs of the non-renewable resources that are in the No RES Plan that are displaced by renewable resources in the RES Plan.

Column J, "Ongoing Incremental Costs," shows the net costs and benefits of the New Eligible Energy Resources that is locked down under the "time fence" process. Column J reflects the accumulation of time fence net costs and benefits each annual Eligible Energy Resource portfolio from year to year.

Column K "Purchased RECs," shows the amount of money the Company has contracted to spend for S-RECs needed to meet the solar requirement in early years of the Renewable Energy Standard.

Column L contains the RESA program and Administrative costs. Column L1 on Table 6-4, identifies the Windsource program and administrative costs.

Column M, "RESA Rider Revenue," is an estimate of the annual revenue that the Company will recover from retail customers, using the percentage Renewable Energy Standard Adjustment assumed for each year. In this plan, Public Service has applied a 2% rider to expected retail rate revenue to determine the RESA Rider Revenue.

Column N, "Wholesale Revenue Credit," credits against the deferred balance the projected revenue for this Eligible Energy that the Company expects to collect

from its wholesale customers under its existing wholesale rates and the load ratio share agreements discussed earlier. Column N1 on Table 6-4 identifies the Windsource premium credits. The Windsource credits shown are based on projected growth in the Windsource program and provide additional RESA budget monies to support the projected program growth with not yet identified resources.

Column O, "Annual Excess/Deficiency," shows the calculated difference between the Revenue collected and the costs

Column P, "Interest," shows the amount of interest accrued on the balance in the RESA-funding account.

Column Q, represents the sum of the Annual Excess and the interest.

Column R "Rolling Balance (Deferred)," shows the running accrual of surpluses or deficits in the RESA account from year to year over the entire RES Planning Period.