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A Review of Cooperative Rural Electric Association Compliance with the Colorado Renewable Energy Standard for 2009

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Introduction

The Colorado Renewable Energy Standard (RES) – codified as §40-2-124, *C.R.S.* – requires all Colorado cooperative rural electric associations (also known as coops or REAs) to comply with the RES and to submit a compliance report to the Colorado Public Utilities Commission (CPUC) for the most recently completed 2009 compliance year. This report presents a review of the compliance reports submitted by the 25 coops doing business in Colorado.

Background

Colorado's renewable energy standard began in November 2004 with the passage of ballot initiative Amendment 37 which established the RES in Colorado. Initially, the RES applied to all Colorado electric utilities serving more than 40,000 customers. These utilities, termed Qualifying Retail Utilities (QRU), were required to generate an increasing percentage of their retail load from renewable resources beginning with three percent in 2007 and ending with ten percent in 2015 and beyond. At the time the RES went into effect, seven Colorado electric utilities – two investor owned utilities (IOU), three coops, and two municipally owned utilities (MOU) – met the 40,000 customer threshold. Compliance with the RES would become the responsibility of the CPUC.

In the first legislative session following the passage of Amendment 37, Senate Bill 05-143 was enacted to provide clarifying language to certain provisions of the original ballot initiative. The most important modification made by SB05-143 was a change in the retail rate impact limitation from $0.50 per residential customer per month to a maximum bill impact of one percent for all retail customers (including commercial and industrial).

The original RES statute also included a provision allowing a QRU to *"opt out"* of the RES on a majority vote of its customers. Shortly after the RES took effect, two coops – Intermountain Rural Electric Association and United Power – promptly notified CPUC that they had held such an election and that their customers had voted to opt out of the RES. The third coop, Holy Cross Electric Association, and the two municipal utilities – Fort Collins Utilities and Colorado Springs Utilities – did not hold such elections and notified CPUC of their intent to comply with the RES.[1]

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[1] Interestingly, the plain language of the statute would have permitted the two investor owned utilities – Public Service Company of Colorado (aka Xcel Energy) and Aquila (now

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One of the important features of the Colorado RES was a requirement that the investor owned QRUs meet four percent of their renewable obligation using solar resources. In addition, of this amount, half must come from customer sited solar resources. Commensurate with this requirement, the IOUs were required to establish solar rebate and net metering programs. The solar set aside does not apply to either the coop or municipal QRUs.

Beginning in 2005 and extending well into 2006, CPUC conducted a lengthy rule making process to develop rules to implement the provisions of Colorado's new RES. Code of Colorado Regulations (CCR) rules 723-3650 through 3665, implementing the RES, became effective in July 2006.

It was not long into the first compliance year of 2007 when the Colorado General Assembly, at the urging of Governor Bill Ritter, passed House Bill 07-1281 which made several important modifications to the RES. First, the target renewable percentages for the two IOUs doubled from ten percent by 2015 to twenty percent by 2020. Second, although the 40,000 customer threshold remained for MOUs, all coops were declared to be QRUs although they would be subjected to lower target percentages starting with one percent of retail load in 2008 ramping up to ten percent in 2020.[2] In exchange for the lower RES targets, the political compromise made in this legislation removed the provision allowing a QRU to opt out of the standard. However, the new RES retained a provision wherein MOUs with 40,000 customers or fewer could hold an election to opt-in to the RES, though at this point none have elected to do so.

In the new and improved RES, neither the coops nor the MOUs would be subject to the four percent solar set-aside or solar rebate requirements that were mandated for IOU compliance. Rather, the approach taken to encouraging solar penetration in these utility territories was to offer a 3x multiplier for solar generation applied toward the utility's renewable obligation. Very few cooperatives have utilized the solar multiplier as they continue to rely mainly on wind and hydropower to meet RES requirements.

In February of 2010, Colorado again revised the RES so that IOUs have an even more ambitious requirement of thirty percent renewables by 2020

Black Hills/Colorado Electric Utility Company) – to also opt out of the RES though, to the best of our knowledge, neither held such an election.

[2] In the process, Holy Cross Electric Association, which had originally volunteered to comply with the original requirement of 3 percent in 2007, would now be subject to the more relaxed requirements for coops under the new RES.

(HB10-1001). This amendment passed with the support of the state's major IOU, Public Service Company of Colorado (PSCo), who was already well ahead of the renewable energy targets needed to meet its twenty percent by 2020 requirement. In the new legislation, the renewable energy target for coops and municipal utilities remained at ten percent by 2020. The bill also supplanted the solar carve out for the IOUs with a new distributed generation (DG) carve out. However, like the solar carve out that preceded it, the new DG carve out will also not apply to either the REAs or the municipal utilities.

Specific Compliance Requirements for Colorado REAs

In addition to those described above, the Colorado RES contains a number of other differences in compliance requirements between the IOUs and coops and MOUs that are beyond the scope of this report. Some of these differences pertain to net metering requirements and are dealt with in other statutes. There are two additional notable differences in the compliance obligations between the IOU and non-IOU utilities. First, with the doubling of the standard for the IOUs, the retail rate impact limitation was also doubled from one percent to two percent. Recognizing that the coop targets are essentially half of those of the IOUs, the statute caps the customer bill impact for coop customers at one percent. The statute is silent about a rate cap for MOUs.

Section 40-2-124(5.5) describes the compliance reporting requirements for cooperative electric associations:

> *"Each cooperative electric association that is a qualifying retail utility shall submit an annual compliance report to the commission no later than June 1 of each year in which the cooperative electric association is subject to the renewable energy standard requirements established in this section. The annual compliance report shall describe the steps taken by the cooperative electric association to comply with the renewable energy standards and shall include the same information set forth in the rules of the commission for jurisdictional utilities. Cooperative electric associations shall not be subject to any part of the compliance report review process as provided in the rules for jurisdictional utilities. Cooperative electric associations shall not be required to obtain commission approval of annual compliance reports, and no additional regulatory authority of the commission other than that specifically contained in this subsection (5.5) is created or implied by this subsection (5.5)." (emphasis added)*

The two important components of this paragraph are that:

1. Cooperative REAs must submit compliance reports that include the same information required of investor owned utilities.
2. Commission approval of said reports is not required.

Commission rule 3650(b) identifies the set of RES rules that apply to cooperative electric associations. Of particular relevance to this discussion is rule 3662 which lists the elements that must be included in an annual compliance report. Appendix A contains the paragraphs of this rule that apply to coops. In important part, rule 3662 requires that:

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1. REA QRUs file their annual compliance reports with CPUC no later than June 1 each year.
2. REA QRU compliance reports must identify:
    a. The total megawatt-hours (MWh) sold to retail customers in Colorado during the compliance year,
    b. The eligible energy required for compliance based on the MWh sold and the percentage targets required in each compliance year,
    c. The amount and source of eligible energy borrowed forward and carried back for compliance, and
    d. The method used to develop the retail rate impact calculation.
3. Each REA QRU must explain whether the utility achieved compliance with the RES or why it had difficulty meeting the RES.
4. Each REA QRU must post an electronic copy of its annual compliance report on its website.
5. Each REA QRU must provide CPUC with an electronic copy of its annual compliance report for posting to the CPUC website.

Cooperative Rural Electric Associations in Colorado

There are 25 cooperative rural electric associations serving Colorado customers. Except for partial ownership in a handful of generating facilities, these coops are primarily distribution cooperatives, meaning that they redistribute to their retail customers electricity provided by one or more wholesale suppliers. Of these 25 utilities, 18 are members of and wholesale customers of Tri-State Generation & Transmission (Tri-State), a wholesale G&T provider serving utilities in Colorado, Wyoming, Nebraska, and New Mexico.[3] Four others are served by Public Service Company of Colorado, an operating unit of Xcel Energy. The last three coops are based out of state – one each in Kansas, Wyoming, and Utah – but whose distribution networks extend across state lines into Colorado. Additional information and contacts for these utilities can be found on the Colorado Rural Electric Association website at http://www.coloradorea.org.

Figure 1 shows the service territories of the REAs serving Colorado. Table 1 lists the 25 coops, their 2009 and 2008 retail electricity sales (in MWh), and their resulting renewable energy obligation based on one percent of the reported retail sales. These figures have not been independently

[3] Although Tri-State is a cooperative entity, it does not serve any retail customers and therefore is not a QRU as defined in the Colorado RES statute (§40-2-124, *C.R.S.*). Hence, Tri-State has no compliance obligation under the Colorado RES.

verified. The table also shows whether or not a 2009 compliance report was filed with CPUC. Additional miscellaneous statistics concerning these utilities can be found in Appendix B.

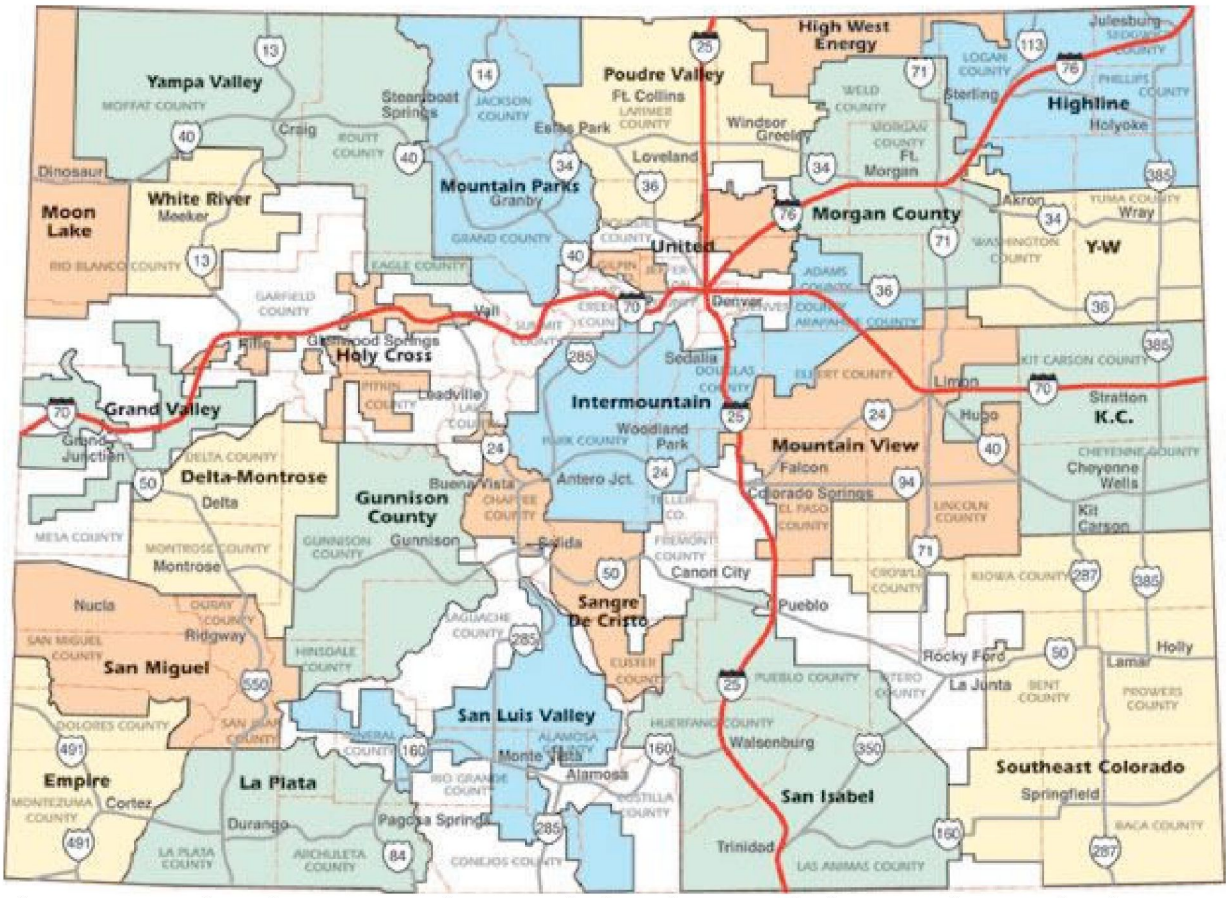

Figure 1. - Colorado Cooperative Rural Electric Association service territories. Areas in white are served by IOUs Public Service Company of Colorado and Black Hills/Colorado Electric. Not shown is Wheatland Electric near the Kansas border. (Source: http://www.coloradorea.org)

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Table 1. - Cooperative rural electric associations in Colorado with RES requirements.

Co-op	2008 Colorado Retail Sales (MWh)	2008 RES Obligation @ 1% (MWh)	2009 Colorado Retail Sales (MWh)	2009 RES Obligation @ 1% (MWh)	2009 Compliance Report Submitted	2009 Method of Compliance
Delta-Montrose	626,646	6,267	596,994	5,970	Yes	RECs only
Empire	577,603	5,777	593,291	5,933	Yes	Self-generation and RECs
Grand Valley	226,712	2,268	225,873	2,259	Yes	RECs only
Gunnison County	123,593	1,236	116,221	1,163	Yes	Self-generation and RECs
Highline	429,823	4,299	396,774	3,968	Yes	Self-generation only
High West Energy	15,942	160	16,705	168	Yes	RECs only
Holy Cross	1,180,780	11,808	1,191,298	11,913	Yes	RECs only
Intermountain	2,121,573	21,216	2,063,926	20,640	Yes	RECs only
K.C. Electric	193,497	1,935	163,186	1,632	Yes	RECs only
La Plata	1,041,438	10,415	1,063,908	10,640	Yes	Self-generation and RECs
Moon Lake	553,243	5,533	514,947	5,150	Yes	Self-generation only
Morgan County	188,340	1,884	178,195	1,782	Yes	RECs only
Mountain Parks	295,122	2,952	297,434	2,975	Yes	RECs only
Mountain View	702,151	7,022	701,878	7,019	Yes	RECs only
Poudre Valley	1,016,938	10,170	1,034,497	10,345	Yes	Self-generation and RECs
San Isabel	377,067	3,771	394,302	3,944	Yes	RECs only
San Luis Valley	209,333	2,094	196,636	1,967	Yes	RECs only
San Miguel	197,835	1,979	193,975	1,940	Yes	Self-generation and RECs
Sangre De Cristo	103,765	1,038	103,645	1,037	Yes	Self-generation and RECs
Southeast	186,267	1,863	181,516	1,816	Yes	Self-generation and RECs
United Power	1,199,035	11,991	1,197,966	11,980	Yes	Self-generation and RECs
Wheatland	1,977	20	1,925	20	Yes	RECs only
White River	480,635	4,807	780,684	7,807	Yes	RECs only
Y-W	333,947	3,340	301,357	3,014	Yes	RECs only
Yampa Valley	594,576	5,946	590,292	5,903	Yes	RECs only
Total	**12,977,838**	**129,791**	**13,097,423**	**130,985**		

Cooperative REA Compliance Reports

This section on coop compliance will be segmented according to the wholesale provider serving the respective utilities: Tri-State coops, PSCo coops, and the three foreign (out of state) coops.

Tri-State Affiliated Rural Electric Associations

Eighteen of the 19 Tri-State coops report that they achieved compliance with the RES by virtue of the retirement by Tri-State of a sufficient number of RECs on their behalf (Highline Electric utilized the RECs generate from its heat recovery project). Each of these utilities submitted, under their cover letter, a form memorandum sent to them by Tri-state containing a table of the retail sales and renewable obligation for each of the Tri-State coops. That table is reproduced below as Table 2. The table shows, for each coop, its 2009 retail electric sales, one-percent RES compliance obligation, and number of RECs retired by Tri-State on its behalf. It also lists nine coops claiming independently acquired renewable generation but the filings provide no substantiation for this renewable generation or for the multipliers claimed.

The bottom portion of the table shows the source of the RECs and where the 1.25 multiplier for in-state generation was applied. Based on this data, it appears that approximately 72 percent of the RECs applied resulted from Colorado resources. A significant portion, 24 percent, was RECs obtained from recovered energy projects in North and South Dakota. Of the remaining amount, approximately 50 percent of the RECs were from small hydro, slightly under three percent from wind, and 0.5 percent from biomass. Although Tri-State recently entered into a 20 year PPA with Duke Energy to purchase electricity generated from a wind farm located in Colorado, to the best of our knowledge most of the resources applied to 2009 compliance by Tri-State existed prior to the RES.

Nine of the 19 coops reported acquiring renewable supplies to help meet the RES in 2009, compared to 2008, when only one coop reported acquiring renewable supplies. Empire Electric, Gunnison Country Electric, Highline Electric, La Plata Electric, Poudre Valley Electric, San Miguel Power, Sangre De Cristo Electric, Southeast Colorado Power, and United power all acquired renewable supplies to meet the RES requirement. Only one of the compliance letters submitted by the coops describes the type of renewable resources acquired to comply with the RES.

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Table 2. – RECs retired by Tri-State Generation & Transmission on behalf of its member coops in Colorado.

Colorado 2009 Renewable Portfolio Standard (RPS) Compliance Report
COMPLIANCE (MANDATORY) REQUIREMENTS

Line No.	Colorado Members	2009 Form 7 Total Retail Electric Sales (MWh)	2009 Colorado RPS Requirement at 1 Percent (MWh)	Less: 2009 Member Acquired Renewable Supplies Before Multiplier (MWh)	Less: 2009 Member Acquired Renewable Supplies With Multiplier (MWh)	2008/2009 Net Colorado RPS Requirement Met by Tri-State For Members (MWh)
1	Delta Montrose Electric Association	596,993.8	5,970.0	-	-	5,970
2	Empire Electric Association, Inc.	593,290.5	5,933.0	32.260	96.780	5,836
3	Gunnison County electric Association, Inc.	116,221.2	1,162.3	1.109	3.327	1,159
4	Highline Electric Association	396,773.5	3,967.8	3,174.240	3,967.800	-
5	High West Energy	16,704.7	167.1	-	-	167
6	K.C. Electric Association	163,185.9	1,631.9	-	-	1,632
7	La Plata Electric Association, Inc.	1,063,908.1	10,639.1	721.455	2,116.415	8,523
8	Morgan County Rural Electric Association	178,195.0	1,782.0	-	-	1,782
9	Mountain Parks Electric, Inc.	297,433.6	2,974.4	-	-	2,974
10	Mountain View Electric Association, Inc.	701,877.7	7,018.8	-	-	7,019
11	Poudre Valley Rural Electric Association, Inc.	1,034,496.8	10,345.0	63.003	189.009	10,156
12	San Isabel Electric Association, Inc.	394,302.4	3,943.1	-	-	3,943
13	San Luis Valley Rural Electric Cooperative, Inc.	196,635.8	1,966.4	-	-	1,966
14	San Miguel Power Association, Inc.	193,975.4	1,939.8	35.400	44.250	1,896
15	Sangre De Cristo Electric Association, Inc.	103,645.1	1,036.5	114.339	343.017	693
16	Southeast Colorado Power Association	181,515.5	1,815.2	138.799	187.270	1,628
17	United Power, Inc.	1,197,966.0	11,979.7	88.264	264.792	11,715
18	White River Electric Association, Inc.	780,683.9	7,806.9	-	-	7,807
19	Y-W Electric Association, Inc.	301,356.7	3,013.6	-	-	3,014
20	**Total Colorado**	**8,509,162**	**85,093**	**4,368.869**	**7,212.660**	**77,880**

	Tri-State Renewable Sources	Resource (MWh)	Resource Multiplier	Resource (MWh) With Multiplier	Percent of Total
21	Highline Electric (Recovered Energy)	13,632.8	1.25	17,041	21.88%
22	Non-Colorado Member Policy 117 RECs	90.8	various	272	0.35%
23	Denver Water Board (Small Hydro, 3.6 MW)	11,788.2	1.25	14,735	18.92%
24	Platte River Power Authority (Wind)	1,995.9	1.0	1,996	2.56%
25	Vallecito Ptarmigan (Small Hydro, 5.6 MW)	19,576.0	1.25	24,470	31.42%
26	Wyoming Premium Farms (Biomass)	336.4	1.0	336	0.43%
27	Basin Electric (Recovered Energy)	19,030.0	1.0	19,030	24.44%
28	**Total Sources**	**66,450.1**		**77,880**	**100.00%**

Note: This data represents the renewable portfolio obligations by Tri-State Generation and Transmission Association's Members serving Colorado and the resources utilized to meet those obligations. Tri-State has permanently retired these renewable credits to meet the obligations.

PSCo Affiliated Rural Electric Associations

As noted above, four Colorado coops are wholesale customers of Public Service Company of Colorado: Holy Cross Electric Association, Grand Valley Powerlines, Yampa Valley Electric Association, and Intermountain Rural Electric Association. Each of these four utilities received a load ratio share of RECs from PSCo's renewable energy generation and that supporting information was included in each of their filings. Table 3 summarizes the RES compliance information submitted by these four utilities. Of the four, only Grand Valley Powerlines and Yampa Valley Electric Association independently acquired renewable generation and the associated RECs outside of its contract with PSCo in 2009. The generation acquired by these coops is aligned to the Ponnequin wind project owned by Xcel Energy, and the coops pay Xcel a monthly "REC rider fee" for the REC tracking and transfer completed within the online system. Holy Cross did acquire its own RECs in 2008 through a geothermal project located in Southern Idaho and carried some of the 2008 RECs forward for its 2009 compliance.

From the accounting provided, it is not clear if Holy Cross, Yampa Valley, and Grand Valley are correctly applying the 1.25 multiplier for in-state resources. If not, they may be retiring more RECs than needed leaving them with fewer to carry over to following years. However, each of the PSCo coops has more than sufficient RECs to carry over to satisfy its compliance obligation for several years so the impact on future compliance should be negligible. On the other hand, this also means that there may be less incentive on the part of these utilities to invest in new renewable generation.

Of the RECs provided by PSCo in 2009, 91 percent were aligned with wind projects located in Colorado which implies that the vast majority of the 2009 compliance obligation was met with RECs from Colorado resources.

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Table 3. - RES compliance information submitted by PSCo affiliated REAs.

	Grand Valley	Holy Cross [a]	Intermountain [b]	Yampa Valley [c]	Total
2009 Colorado Retail Sales (MWh)	225,873	1,191,298	2,063,926	590,292	**4,071,389**
2009 RES Obligation @ 1% (MWh)	2,259	11,913	20,639	5,903	**40,714**
2008 PSCo Load Ratio RECs	32,594		138,923	84,087	**255,604**
2008 Self Generated RECs		78,521			**78,521**
2009 PSCo Load Ratio RECs					
Existing hydro	1,405		12,268	3,641	
New hydro	133		1,158	344	
Biomass	119		1,043	309	
Colorado wind	22,003		192,116	57,011	
Wyoming wind	493		4,296	1,275	
Total 2009 PSCo Load Ratio RECs	24,153	87,950	210,881	62,580	**385,564**
2009 Self Generated RECs	240			721	**961**
Total RECs Carried at End of 2008	32,594	193,800	194,712	84,141	**505,247**
Total RECs at End of 2009	56,987	166,471	349,804	147,388	**720,650**
RECs Retired for Compliance	2,259	11,913	16,512	5,903	**36,587**
RECs Carried Over	54,728	154,558	333,292	141,485	**684,063**

[a] Holy Cross received RECs in 2007-08 from an investment in the Raft River (RR) geothermal project in Idaho. While not self generated, per se, they are independently acquired external to the REA's all requirements contract with PSCo.

[b] To meet its compliance obligation, Intermountain retired Colorado wind RECs therefore making use of the 25% in-state bonus

[c] From Staff's review of Yampa Valley's submittal, it appears that the utility may have shorted itself by 54 RECs in compiling its 2008 totals. The values shown in the table are Staff's corrected figures.

Foreign (Out-of-State) Rural Electric Associations

As mentioned earlier, three additional rural electric cooperatives serve Colorado customers on the fringe areas of the state: Moon Lake Electric Association on the Utah border, High West Energy in the northeast part of the state, and Wheatland Electric Cooperative on the Kansas border. Table 4 shows the compliance information for these three foreign rural electric associations. With its current load and the current RES requirements, Wheatland owns sufficient RECs to meet its obligation for the next five years from a one-off purchase of RECs from a Kansas wind farm. Moon Lake owns its own hydro generating facilities in Utah and also purchases electricity from another hydro facility in Colorado. As a result, it has considerably more RECs available than it is ever likely to need to meet its RES obligations. High West is a Tri-State coop, and achieves compliance in the same manner as other Tri-State coops that are located in Colorado, by virtue of the retirement of a sufficient number of RECs on its behalf.

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Table 4. - RES compliance information submitted by three foreign REAs.

	Wheatland [a]	Moon Lake [b]	High West	Total
2009 Colorado Retail Sales (MWh)	1,925	514,947	16,705	**533,577**
2009 RES Obligation @ 1% (MWh)	20	5,149	167	**5,337**
2008 Wholesaler Supplied RECs	230			
2008 Self Generated RECs		116,677		
2009 Wholesaler Supplied RECs			167	
Existing hydro				
New hydro				
Biomass				
Colorado wind				
Kansas wind				
Total 2009 Wholesaler Supplied RECs	0	0	167	**167**
2009 Self Generated RECs		27,885		
Total RECs Carried at End of 2008	230	Not reported	Not reported	**230**
Total RECs at End of 2009	230	144,562	167	**144,959**
RECs Retired for Compliance	20	5,149	167	**5,336**
RECs Carried Over	210	139,412	0	**139,622**

[a] Wheatland's wholesale supplier, Sunflower Electric Power Corporation, transferred to Wheatland 250 December 2008 RECs acquired from the Smokey Hills Wind Farm.

[b] Moon Lake owns two Hydro resources in Utah which make up 37% of the RECs listed above, they also purchase the contract for all of the power from a hydro unit in Colorado which they are then claiming a 1.5 multiplier on due to it being a Colorado community based resource, this is the other 63% of the RECs.

2009 RES Compliance Summary and Analysis

2009 was the second RES compliance year for Colorado's 25 cooperative rural electric associations. All of the 25 utilities submitted compliance reports to CPUC as required in *§40-2-124(5.5) C.R.S.* All 25 report compliance with the RES, primarily by virtue of the transfer or retirement of a suitable number of RECs by their respective wholesale energy provider (Moon Lake, described above, being the lone exception that achieved compliance using its own resources).

As part of the compilation of this 2009 report, a brief survey was sent via email to all of the coops located in Colorado by the graduate students involved in this compilation, in an effort to determine the coops' opinions of participation in the RES process. The questions asked of the coops are included in Appendix C, and some results have been referenced in this report when relevant to the compliance discussion. An analysis of the effects of the REAs' compliance is also reported on and discussed separately in the students' supplemental report included in Appendix D.

Of the four PSCo coops, Grand Valley Powerlines and Yampa Valley reported independent resource acquisition with RECs generated by the Ponnequin Wind project owned by Xcel Energy. Holy Cross also used RECs acquired from the 2007 Raft River Geothermal Project in Idaho. While Holy Cross also reported being involved in a variety of small community based projects during the survey process, the cooperative did not report the RECs from any of these projects in its compliance report. In addition, PSCo transferred to its four wholesale customers a load ratio share of RECs from its renewable generation. However, it is not clear where or how these RECs and their retirement will be tracked. The reports filed by the PSCo coops indicate that some RECs were being tracked in the Western Renewable Energy Generation Information System (WREGIS) while others were recorded only in PSCo's own REC tracking database. Going forward, the absence of one central, verified REC tracking system for all of Colorado is likely to be problematic.[4]

Tri-State G&T is the wholesale provider for 19 of the coops reporting and reports retiring a sufficient number of RECs acquired on their behalf. Empire Electric, Gunnison County Electric, Highline Electric, La Plata

[4] We note that after initially opposing the suggestion in its 2007 compliance plan docket (06A-478E), in its 2008 compliance report PSCo touted the benefits of a transition to WREGIS for all of its REC tracking. As of the date of this report, Holy Cross Electric Association, Intermountain Rural Electric Association, and Tri-State G&T were the only cooperatives with active WREGIS accounts.

Electric, Poudre Valley, San Miguel, Sangre de Cristo, United Power, and Southeast Colorado all reported additional independent resource acquisition.

Of the two non-Tri-State foreign coops, Moon Lake Electric satisfied the RES requirements with hydro facilities located inside and outside of Colorado while Wheatland Electric used RECs obtained from its wholesale provider to comply.

According to the statute, the cooperative REAs must satisfy their compliance obligation without increasing customer bills by more than one percent. In 2008 none of the coops reported any rate impact as a result of meeting the RES, some claimed it was too difficult to calculate, while others said the cost was embedded in the charges they already incur from their wholesale providers. However, PSCo did charge its four coops administrative and REC transfer fees commensurate with recovering its *"full costs of renewable generation"* as stipulated in the statute.

The 2009 compliance reports similarly failed to identify any rate impact as a result of RES compliance. However, in survey responses based on 2009 delivery, several of the coops favor being permitted to add the cost of compliance as a line item to the customer bills, so that it is clear what portion of any electricity cost increase is being "caused" by the RES.

One coop commented that with tax credits expiring in 2011, this cost is likely to increase as the number of projects decreases and the amount of renewable electricity available for purchase consequently fails to keep up with demand. Conversely, another coop indicated its belief that the cost differential between renewable and other sources of power is decreasing and may cease to exist in the future. However, neither respondent provided any hard data to support these beliefs.

The 13.1 million MWh retail sales for the 25 reporting coops in 2009 is less than half the 28.6 million MWh retail sales of the state's largest IOU. However, with the current year's RES obligation of only one percent, the 130,975 RECs retired on the coops' behalf is less than one-tenth the 1.43 million RECs generated and retired by PSCo with its greater generation and a 5-percent RES obligation. This effectively sets the RES requirement statewide for 2009 to approximately 3.67 percent (excluding the municipal utilities for which we have no data). Two factors indicate that the distinction between IOUs' and coops' RES compliance may be unnecessary: 1) Two large wholesale suppliers, Tri-State and PSCo, provide nearly all of the RECs for the coops on an as-needed basis, leaving the coops with little

responsibility to acquire RECs themselves, and 2) after only one year of compliance in 2008, some of the coops were left with sufficient RECs to satisfy the RES for several years to come with little, if any, associated rate impact. It is understandable that compliance may add some additional administrative responsibility to the coops, as it does to IOUs, but it remains to be seen exactly how rate-paying customers of either have been excessively burdened by the compliance, especially when the utilities fail to clarify any additional costs on customer billing statements.

In 2009, we saw an increase in the number of coops that acquired renewable generation or purchased individual RECs to help comply with the RES. The number of coops acquiring renewable supplies increased from only two in 2008 to twelve in 2009. While only one of the compliance documents submitted by the coops explained the details of their renewable supplies, some of the coops' survey responses did shed some light on this.

- La Plata Electric Association – As reported in 2008, LPEA has two small photovoltaic systems interconnected to the grid at two local middle schools that were installed by the cooperative.
- San Miguel Power Association – Partially complies with the RES through the sale of RECs produced locally by its solar and hydroelectric installations. Additionally, San Miguel intends to add two more hydroelectric facilities to its renewable portfolio.
- Moon Lake Electric – Owns both a 900kW and a 1,200kW hydro facility in Utah. It also contracts to purchase all of the power from a 1,600kW hydro facility in Rangely Colorado.
- Holy Cross Electric – has 1.8MW of net metered renewables, largely made up of solar PV, 160kW of micro hydro, 87,600 RECs from the Raft River geothermal plant, plus a number of future solar and other projects. Only the geothermal RECs were reported for compliance purposes.

In addition to these renewable acquisitions, Tri-State entered into an agreement to purchase electricity from a 30MW solar farm that broke ground in New Mexico in April of 2009. This facility is now fully operational and, in addition to the wind project mentioned earlier, should provide RECs that may be used to meet future coop compliance obligations.

As noted above, the coops serviced by Tri-State primarily rely on Tri-State to achieve compliance with the Colorado RES. Those coops that responded to our survey regarding their RES compliance generally indicated varying levels of customer demand for integrating renewable resources into their

generation portfolios, but concerns about excessive costs prevent many coops from aggressively taking action to incorporate more renewables.

In summary, all 25 of the cooperative rural electric associations doing business in Colorado reported compliance with the Renewable Energy Standard in 2009. Compliance was achieved using a mix of in-state and out-of-state resources, self-generation, and purchased RECs. Although the cost of this renewable energy acquisition must be included somewhere in costs ultimately passed down to ratepayers, none of these utilities identified any specific increase in rates as a result of its compliance with the RES.

Looking ahead, we earlier noted that in February of 2010, Colorado again revised the RES presenting IOUs with an even more ambitious RES requirement of thirty percent by 2020 while maintaining the REA RES obligation at ten percent by 2020. The bill also supplanted the solar carve out for the IOUs with a new DG carve out. However, like the solar carve out that preceded it, the new DG carve out will also not apply to either the REAs or the municipal utilities. In the same 2010 legislative session, three additional bills were enacted that may potentially impact future renewable energy generation in coop territory: 1) HB10-1342 authorizing solar gardens, 2) HB10-1349 creating the Re-energize Colorado Program and net metering for state parks, and 3) HB10-1418 providing additional incentives for renewable resources connected to REA-owned transmission. Though the intent of these bills was to foster additional distributed generation and renewable energy in rural areas, their future impact on renewable energy generation in REA territory remains uncertain.

Appendix A

Portions of CPUC Rule 3662 that apply to REAs

3662. Annual Compliance Report.

(a) Each investor owned and cooperative electric association QRU shall file an annual compliance report no later than June 1 to report on the status of the QRU's compliance with the renewable energy standard for the most recently completed compliance year. Unless expressly noted otherwise, the annual compliance report of each investor owned and cooperative electric association QRU shall provide the following information for the most recently completed compliance year:

(I) The total megawatt-hours sold by the QRU to its retail customers in Colorado and the associated eligible energy required for compliance with each component of the renewable energy standard;

(II) The total amount and source of eligible energy and RECs acquired by the QRU during the compliance year for each component of the renewable energy standard. The QRU shall separately identify amounts of eligible energy and RECs by each type of resource;

(III) (Not applicable to REAs)

(IV) The total amount of eligible energy and RECs borrowed forward, pursuant to paragraph 3654(k), in previous compliance years that was made up during the compliance year to achieve compliance with each component of the renewable energy standard;

(V) The total amount of eligible energy and RECs borrowed forward, pursuant to paragraph 3654(k), from future compliance years to achieve compliance with each component of the renewable energy standard in the compliance year;

(VI) The total amount and source of eligible energy and RECs the QRU is carrying back from the year following the compliance year under subparagraph 3654(i)(I) to achieve compliance with each component of the renewable energy standard in the compliance year;

(VII) The total amount of eligible energy and RECs the QRU has carried forward from prior calendar years under subparagraph 3654(i)(III) to apply in the compliance year for each component of the renewable energy standard.

(VIII) The total amount of eligible energy and RECs the QRU has acquired in the compliance year that the QRU proposes to carry forward under subparagraph 3654(i)(III) to future years for each component of the renewable energy standard;

(IX) The total amount of eligible energy and RECs the QRU has counted toward compliance with each component of the renewable energy standard in the compliance year. The QRU shall separately identify amounts of renewable energy by each type of resource;

(X) The total amount of renewable energy or RECs acquired by the QRU during the compliance year pursuant to the standard rebate offer program;[5]

(XI) (Not applicable to REAs)

(XII) (Not applicable to REAs)

[5] It is not clear why subparagraph (X) is included in the list of rules that apply to REAs since coops are not required to have standard rebate offer programs.

(XIII) Whether the QRU has invested in any eligible energy resource and whether that resource is under construction or in operation; and

(XIV) (Not applicable to REAs)

(XV) A description of the method used to develop the retail rate impact calculation.

(b) In the annual compliance report, the QRU must explain whether it achieved compliance with each component of the renewable energy standard during the most recently completed compliance year, or explain why the QRU had difficulty meeting the renewable energy standard.

(c) (Not applicable to REAs)

(d) On the same date that the QRU files its annual compliance report, the QRU shall post an electronic copy of its annual compliance report excluding confidential material on its website to facilitate public access and review.

(e) On the same date that the QRU files its annual compliance report, it shall provide the Commission with an electronic copy of its annual compliance report excluding confidential material. The Commission may place the non-confidential portion of each QRU's annual compliance report on the Commission's website in order to facilitate public review.

Appendix B

Miscellaneous Statistics for Colorado REAs (2007)

Source: Colorado Rural Electric Association Website (http://www.coloradorea.org)

A Review of Cooperative Rural Electric Association Compliance With the Colorado Renewable Energy Standard for 2009

Co-op	Employees	Meters Served	Consumers Per Mile	Year Organized	Power Source	Miles of Line	Total Plant in Service ($)
Delta-Montrose	121	31,920	10.14	1938	Tri-State	3,148	$105,051,396
Empire	67	15,355	8.12	1939	Tri-State	1,891	54,375,548
Grand Valley	39	16,761	11	1936	Xcel/WAPA	1,472	53,344,930
Gunnison County	39	10,053	10.2	1938	Tri-State	1,024	30,000,000
Highline	52	9,947	1.97	1938	Tri-State	5,048	69,738,206
High West Energy	38	9,220	2.71	1939	Tri-State	3,406	47,300,000
Holy Cross	160	53,502	18.8	1939	Xcel/WAPA	2,846	202,745,055
Intermountain	186	136,102	15.1	1938	Xcel/WAPA	9,014	530,878,514
K.C. Electric	27	6,254	2.19	1946	Tri-State	2,876	39,984,477
La Plata	115	41,205	12.76	1939	Tri-State	3,416	211,528,033
Moon Lake	85	17,733	4.6	1938	Deseret/WAPA	3,568	96,389,162
Morgan County	42	8,370	2.9	1937	Tri-State	2,890	51,682,217
Mountain Parks	71	18,816	10.5	1946	Tri-State	1,792	63,000,000
Mountain View	133	44,575	7.5	1941	Tri-State	5,940	190,000,000
Poudre Valley	90	36,375	9.3	1939	Tri-State	3,838	116,383,430
San Isabel	90	22,765	5.4	1938	Tri-State	4,194	115,521,241
San Luis Valley	51	12,044	4.4	1937	Tri-State	2,742	79,536.42
San Miguel	69	12,876	7	1938	Tri-State	1,836	64,139,764
Sangre De Cristo	37	11,478	6.77	1940	Tri-State	1,695	41,425,278
Southeast	55	10,097	1.8	1937	Tri-State	5,554	74,315,829
United Power	162	63,840	11.6	1938	Tri-State	5,485	207,356,445
Wheatland	123	33,420	8	1948	Sunflower	4,210	170,000,000
White River	25	3,030	3.42	1945	Tri-State	886	21,422,733
Y-W	47	8,689	1.98	1945	Tri-State	4,043	69,243,870
Yampa Valley	63	25,500	9.2	1940	Xcel/WAPA	2,792	94,385,766
Total/Average	**1,987**	**659,927**	**7.49**			**85,606**	**$2,795,748,317**

Appendix C

Survey Questions for Rural Electric Associations

Associations Contacted

A Review of Cooperative Rural Electric Association Compliance With the Colorado Renewable Energy Standard for 2009

Survey Questions for Colorado Coops Regarding RES Compliance

1. Please describe your organization's philosophy on renewable energy and meeting Colorado's Renewable Energy Standard.

2. If renewable energy is part of your generation portfolio, please describe the type and size of your renewable energy assets.

3. Do you have any plans to obtain part of your generation from renewable resources directly? If so, please explain how you plan to do so.

4. Has your customer base expressed any interest in purchasing electricity generated from renewable energy?

5. In 2011, the RES target increases from 1% to 3% for cooperative and municipal utilities. What challenges do you, or your wholesale electricity provider, foresee in meeting the 3% requirement? Please describe how you plan to remedy them.

6. What challenges do you, or your wholesale electricity provider, foresee in meeting the 10% requirement by the year 2020? Please describe how you plan to remedy them.

7. What feedback do you have on the annual reporting process? In your opinion, does the absence of penalties in the RES for non-compliance impact the ability to achieve the policy's end goals?

8. What mechanism do you favor for recovering the additional cost of providing your customers with renewable energy? Please explain.
    - Build into base rates
    - A surcharge or rate rider based on kWh used
    - A public benefits fund collected by the utility but administered by an independent organization
    - Taxes (property, sales, or income) paid by the general public into a fund from which the utility applies for recovery of the above market costs of renewables.
    - Other

9. Will you attempt to take advantage of the provision in HB10-1418 that provides for a 2x REC multiplier to encourage community based projects that connect to transmission or distribution facilities owned by a cooperative electric association?

A Review of Cooperative Rural Electric Association Compliance With the Colorado Renewable Energy Standard for 2009

Rural Electric Association	Contacted?	Response Received?
Delta-Montrose	Yes	No
Empire	Yes	No
Grand Valley	Yes	Yes
Gunnison County	Yes	No
Highline	Yes	No
High West Energy	No	No
Holy Cross	Yes	Yes
Intermountain	Yes	No
K.C. Electric	Yes	No
La Plata	Yes	Yes
Moon Lake	No	No
Morgan County	Yes	No
Mountain Parks	Yes	No
Mountain View	Yes	No
Poudre Valley	Yes	No
San Isabel	Yes	No
San Luis Valley	Yes	No
San Miguel	Yes	Yes
Sangre De Cristo	Yes	No
Southeast	Yes	Yes
United Power	Yes	Yes
Wheatland	No	No
White River	Yes	Yes
Y-W	Yes	No
Yampa Valley	Yes	Yes

Appendix D

CU Graduate Students' Additional Analysis of Colorado REAs 2009 RES Compliance

A Review of Cooperative Rural Electric Association Compliance With the Colorado Renewable Energy Standard for 2009

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December 2010

Colorado 2009 RES Compliance by REAs -Our Analysis and Insight-

INTRODUCTION

This paper is intended as a complementary analysis to the Colorado REA 2009 Compliance Report, compiled by the same authors for use and publication by the Colorado Public Utilities Commission. The opinions and conclusions expressed below, as well as the attached survey results, have been generated and produced by the authors as CU graduate students and are independent from the opinions and research conducted by the employees of the state PUC.

BENEFITS REALIZED BY RES COMPLIANCE

Many coops continued in 2009 to achieve compliance either partially or completely through RECs provided by Tri-State or PSCo, but the numbers of coops supplying some of their own RECs or self generation has increased from 2 in the first year of compliance to 12 of the 25 in the second year. Most of the coops providing their own generation or RECs are providing them from in-state sources; however some out-of-state sources are also represented.

Tri-State obtains its RECs from approximately 68% in-state sources before multipliers are applied (72% after the multipliers are applied). Although PSCo provides about 91% of its RECs from CO wind, with another 7% from other in-state sources, it was not made clear whether the wholesale provider took advantage of the multipliers available to it.

It is difficult to predict how the REC provision will proceed as the RES obligations increase, especially when wholesale providers like Tri-State already have a major Colorado presence and therefore arguably little motivation to build their next wind farm in Colorado rather than Wyoming or some other state. Tri-State has added an Eastern wind farm to its generation mix in 2010 through a 20-year PPA with Duke Energy, but its next reported renewables purchase will be out of state with a PPA with a 30MW solar farm in New Mexico.

Job Creation

From the compliance reports submitted we can see that the majority of the 1% requirement is being met by in-state resources; however we cannot really be certain of whether this is having a long-term impact on Colorado jobs – positive or negative. One of the traditional arguments by both environmental activists and politicians in favor of an RES is stimulating job creation, yet there have always been arguments about whether it results in short-term or long-term jobs. Colorado Governor Ritter's office claims that as of 2010, Colorado offers "17,000 jobs in renewable energy and energy research, the fourth-highest concentration in the nation, and 230 solar companies."[6] The true test will be if those jobs and companies can survive the waves of policy, which often infuse the industry in short bursts with stimulus funding or short-term tax incentives, and if those jobs are specifically a result of the state's RES or if they are established by federal funding at labs and universities with ongoing research focused on national objectives.

Reduced Emissions

As far as environmental impacts of the RES, it could be said that the environmental benefit is being provided "to the world" in terms of reducing carbon emissions, regardless of where the electricity is being generated, but in regards to RECs generated from a wind farm in Colorado or Wyoming, the environmental argument holds because mercury and sulfur are localized pollutants. Others might argue that the end goal of policy mechanisms like a RES is to decrease or shift all fossil fuel generation out of state, to ensure that the emissions are reduced in your local area rather than worldwide. Similar to the job creation argument, the latter argument is reinforced by the multipliers which can incentivize the development or utilization of more in-state resources.

Resource diversity

Of the coops that answered the survey questions pertaining to their renewable portfolio, the following breakdown was noted:

- The majority of reported coop sources were solar and hydro. Other sources included a recovered (heat) energy project and RECs from a geothermal project.
- 2 coops reported utilizing distributed generation systems, mostly solar
- 2 coops reported obtaining a portion of their RECs for compliance from out-of-state resources

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[6] Press Release: "Major Boost to Renewable Energy Standard". February 4, 2010. http://www.colorado.gov/cs/Satellite/GovRitter/GOVR/1251570814621

Solar is starting to become more popular with the coops, possibly because it can be done at very small scale by their constituents. However at least one coop expressed concern about acting as a "battery" for the solar systems since its peak load does not match the peak generation of the solar systems.

DRAWBACKS OF RES COMPLIANCE

Cost

A few of the cooperatives that responded mentioned cost as a concerning factor of acquiring renewable energy as stipulated by the RES. Southeast Power expressed concern about justifying the increased costs of renewable energy to its customer base. Grand Valley also expressed support for renewable resources - as long as they do not have a significant impact on rates and service reliability to end customers. However, it is difficult to verify whether the complaint that the RES raises costs is well founded. Many of the coops rely on their wholesale provider Tri-State to ensure compliance with the RES. As such, it is difficult to ascertain whether the costs Tri-State has incurred from meeting the RES on behalf of its members is being passed on to the coops. Furthermore, the coops that are complying with the RES through their own generation have utilized smaller distributed generation sources that have been installed by their customer base. It is our understanding that this has not created a significant cost burden to the coops, especially when customers are given the option to individually opt into a project such as a solar garden.

Intermittency

One survey respondent expressed concern about the feasibility of meeting the RPS due to the laws of physics. No further explanation was given. From the survey responses, it appears there is some general confusion among coops of the best way to integrate renewable resources and hence comply with the RES. One coop, for example, stated in its survey response that, *"renewables used as (or in lieu of) base load generation currently require a one-for-one kWh backup with fossil fuel generation to provide capacity and energy when the renewable is not available..."* Perhaps more collaboration among coops and larger utilities could provide a better understanding of the best way to efficiently integrate renewable resources onto the electric grid. It is our understanding that a one-for-one kWh backup is not required, and that renewables in their current form were not intended to replace base load generation, but instead, to complement it.

Administrative Burden

Lastly, the additional paperwork required to demonstrate compliance with the RES, while minimal, does represent an additional burden to the coops. However, it appears to be minimal at best, based on the survey responses we received and the compliance documents we reviewed.

COMPLIANCE PROCESS OVERALL: Pros, Cons, and Potential Improvements

Because the current Colorado RES lacks a standardized process for Evaluation, Measurement, and Verification (EM&V) and does not enable the Colorado PUC to impose financial penalties on coops for non-compliance, it is difficult to forecast how coops will cooperate as the compliance requirements become more stringent in the future.

Reporting Process Ownership

As of now, most coops rely on their wholesale provider to provide documentation of the RECs or renewable generation purchased on their behalf, which means that the reports submitted to the Colorado PUC are not uniformly structured, nor do they all include the same level of detail. However, because the administrative burden involved with annual compliance is relatively low, most coop members do not seem averse to the RES and all of the coops have willingly complied each year to date.

Wholesale providers, such as Tri-State, do not fall under the state PUC's jurisdiction to regulate wholesale rates, which has led to some public backlash on how the wholesaler acquires renewable sources and pushes the cost down to the rural coops. The current system structure and contracts in place with wholesale customers can sometimes restrict the ability of coops to buy and sell different renewable generation independently, which can frustrate coop members who would prefer to take a more aggressive stance on acquiring renewables or rewarding "behind the meter" generation.[7]

Financial Penalties – or Lack Thereof

Unlike other states, Colorado does not employ penalties (commonly referred to as an ACP, Alternative Compliance Payment) with the enforcement of its RES. The lack of financial penalties concerns environmental groups and proponents of renewable deployment on a wider scale throughout the state, even though all utilities currently willingly comply with the Colorado RES. Yes, there is political pressure if they fail to

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[7] *Colorado's New Energy Economy – Town Meetings*, Public Utilities Staff Report. December 2007. http://www.dora.state.co.us/puc/energy/MiscEnergyReports.htm

do so, and public disclosure of the reports could result in bad press for the utility failing to comply, but Colorado does not threaten a more tangible and consistently applied kWh charge as do some other states. For example, Texas currently has a $50 per MWh ACP for those who do not comply with the RES, California charges 5 cents per kWh with a cap of $25M per utility, and Minnesota defaults the amount and enforcement to its PUC, stating in its RES that the ACP "may not exceed the lesser of the cost of constructing facilities or purchasing credits, and proceeds must be deposited into a special account reserved for energy and conservation improvements".[8] Although all Colorado utilities have complied with the RES to date, as the requirements become more stringent we believe that in the future Colorado may wish to consider specific noncompliance penalties that could potentially contribute to a state fund to subsidize capital investments in new generation or transmission.

CONCLUSION

Based on the survey responses received, there is a wide spectrum of reactions from the coops about the RES requirements on REAs and the extent to which compliance benefits REA members and the state as a whole.

One coop that responded to the survey asserted "*The challenge is explaining to our members why we are paying nearly twice as much for renewable energy to [resell] to them as for traditionally generated energy… Renewables used as (or in lieu of) base load generation currently require a one-for-one kWh backup with fossil fuel generation to provide capacity and energy when the renewable is not available.*" Certainly, this particular utility does not seem to be in favor of the RES and may be in favor of optional compliance by REAs. On the other end of the spectrum, another coop stated, "*We are very very very proactive with regards to renewables*." Regardless of a coop's method of compliance, the majority seemed somewhat supportive of the RES with a common concern being the effective cost and reliability of generation sources resulting from its implementation.

In spite of concerns about cost, intermittency, and administrative burden, all Colorado coops have successfully complied with the state's RES and some appear to be proactively planning for the ramp-up of requirements by initiating their own renewable projects. However, there are still a number of coops who are up front about their intention to simply rely on a

[8] Current ACPs for each state mentioned can be found at http://www.dsireusa.org/

wholesale provider indefinitely to meet the increasing requirements. Because coops are geographically and politically distinct organizations with their own distribution networks, there is little opportunity for the coops to collaborate and combine resources to build large renewable projects. As 2020 approaches and the coops are held to a requirement of 10% renewables, future policy changes that would motivate the REAs to cooperate on alternative energy projects may be worthy of consideration.