Appendix B

Utah Rural Electric Association
Progress Report
August 18, 2015

Utah Rural Electric Association
10714 South Jordan Gateway
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(801) 619-6550
A Touchstone Energy® Cooperative
Dixie Escalante REA Flowell Electric Garkane Energy Moon Lake Electric Wells Rural Electric Bridger Valley Electric Empire Electric Mt. Wheeler Power Raft River Electric Deseret Power Strata Networks

August 18, 2015

Division of Public Utilities
Brenda Salter
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RE: Cooperative Association Progress Reports – Qualifying Electricity

In accordance with Section 54-17-604, Utah Code, each rural electric cooperative is required to make a progress report every five years to the association's board of directors, however, typically the cooperatives make reports to their board of directors on a much more frequent basis discussing energy resources, load forecasts and the cost-effectiveness of renewable energy. The Utah Rural Electic Association, on behalf of the rural electric cooperatives operating in the state of Utah, herewith submits the following summary to assist the Division in its January 1, 2016 report to the Legislature. Part 1 details the rural electric cooperatives that are "Members" of Deseret Generation and Transmission. Part 2 covers the rural electric cooperatives, not members of Deseret, who are headquartered outside the state of Utah but serve customers inside the state.

Please let me know if you have any questions or need additional information.

Sincerely,

Michael Peterson
Executive Director

Cooperative Association Progress Reports, Utah Code 54-17-604:
August 18, 2015

Part 1

Introduction:

Utah's rural electric cooperatives originated many years ago when rural farmers and ranchers joined together to bring the benefits of electricity to their isolated areas. They created member-owned electric cooperatives governed by locally elected boards of directors. Families worked together cutting trees for poles, digging the holes, setting the poles by hand and stringing wire. Over time these small organizations grew. Their demand for electricity increased. Rural residents shifted from coal-oil lamps to light bulbs, from wash boards to electric washing machines, from wood burning stoves to electric stoves and from manually carrying water to the house to electric water pumps for indoor plumbing. The quality of life forever changed for the members of the rural electric cooperatives

In the early 1970's unprecedented growth hit the utility industry, including the areas served by the electric cooperatives. The growth created a demand for more power resources. At the time the primary source of power for Utah's rural electric cooperatives was hydroelectric energy provided by generating units located at Glen Canyon and Flaming Gorge. These facilities were administered by the Western Area Power Administration (WAPA). The cooperatives were notified that no additional hydro resources would be available from WAPA beyond 1975. They started exploring ways to acquire new generation. As the rural electric cooperatives looked for additional resources, six cooperatives serving member/owners in Utah formed Deseret Generation & Transmission Cooperative (Deseret) in 1978. Those cooperatives were:

- Bridger Valley Electric Association, Mountain View, Wyoming
- Dixie Power, Beryl, Utah
- Flowell Electric Association, Flowell, Utah
- Garkane Energy, Loa, Utah
- Moon Lake Electric Association, Roosevelt, Utah
- Mt. Wheeler Power, Ely, Nevada

The aforementioned cooperatives became the Deseret "Members."

In response to the 1973 oil crisis and natural gas curtailments of the mid-1970s, the U.S. Congress restricted construction of power plants using oil or natural gas as a primary fuel and encouraged the use of coal, nuclear energy, and other alternative fuels. To meet projected load requirements Deseret made plans to build a coal-fired power plant in northeast Utah. In 1985 the Bonanza Power Plant was completed to provide power for the cooperatives. To secure financing for the project each Member became an "all-

requirements" customer – meaning the resources to serve their distribution load requirements are provided exclusively by Deseret.

Power requirement projections for the cooperatives indicated a second unit at Bonanza would be necessary by 1988 to meet expected electrical demand. However, when plans for the MX Missile system, Kaiparowits coal mine, oil shale and other potential loads, all located within rural electric cooperative service territory, were discontinued or dimmed, Deseret went from needing more power to having hundreds of megawatts surplus in a span of two years.

• Projected amount of qualifying electricity through 2025: 54-17-604(3)(a).

Load forecasts for the Deseret Members are developed employing a detailed understanding of specific Member customer load, econometric regression analysis, trending analysis and assumptions resulting from and understanding of local economics and demographics specific to each individual cooperative. Load forecasts are developed for each of the Member cooperatives and are then aggregated into a single Deseret Member load forecast.

Existing resources available to serve Member load continue to include ownership interests in coal-fired Bonanza I and Hunter II generating units, entitlements to coal-fired Intermountain Power Project units 1 & 2, federal hydro-power allocations and some additional hydro-electric generation owned by the Members and a number of small PURPA purchases.

Deseret still projects having excess generation for the coming years and actively markets capacity and energy excess resources through short and long term sales while maintaining access to sufficient portions of its excess resource to meet future Member load growth. Deseret and the Members do not foresee the need for any new or additional capacity over the current planning horizon.

Given the amount of surplus energy at favorable cost, Deseret Members are in a unique situation with adequate resources to meet demand for the foreseeable future. Therefore, consistent with 54-17-602(3)(a)(b)(c) Deseret Members would not be required to substitute qualifying electricity for existing resources owned or contractually committed.

• The source of qualifying electricity: 54-17-604(3)(b)

With surplus resources, the Deseret Members would add additional costs to their member/owners if required to purchase additional qualifying electricity. However, Deseret and its Members have investigated various renewable options, particularly in response to member/owner inquiries. In addition to hydroelectric energy, one of the Deseret Member systems, Dixie Power, working with Deseret under its all-requirements contract and in conjunction with the City of St. George, built a 100 kW solar facility (the SunSmart project) with the output sold to

customers in lieu of individual roof top solar panels. By 2010 26.5 kW of solar panels from the initial 100 kW installation were subscribed between St. George City and Dixie Power. Dixie had 8 customers purchasing a total of 7 kW. With help from federal stimulus funding, an additional 150 kW have now been installed at the SunSmart project – helping to lower the average price to customers. The project now has 26 total customers, including 9 from Dixie purchasing approximately 8.4 kW. The project currently has 217 kW of unsubscribed capacity.

54-17-602(6)(b) allows cooperative associations to count towards the target qualifying electricity generated or acquired or renewable energy certificates acquired for a program that permits a retail customer to voluntarily contribute to a renewable energy source. Deseret Members promote the "*Green Way*" program wherein customers pay a premium on their utility bill to support renewable power production in the Western United States. Several hundred electric distribution cooperative members currently participate in the program.

• Estimated cost of achieving the target: 54-17-604(3)(c)(ii)

Deseret Member system boards of directors (elected locally) regularly review their cost of purchased power and renewable proposals primarily from developers for wind and solar. Dixie Power also communicates regularly the findings of their Sun Smart solar project to the other Deseret Members.

Two tables from Dixie are also shown below detailing their estimated costs of achieving the 20% target by 2025. Because the all-requirements contract and rate structure through Deseret is applicable to all the Deseret Members, the Dixie Power results shown below are a good representation of the cost premium for achieving the target for all Deseret Members:

Energy Purchases

The following table contains (a) the actual and projected amount of qualifying electricity through 2025 and (b) the source of qualifying electricity for Dixie Power:

Renewable Portfolio Standard Progress Report

Year	kWh Sales	WAPA (hydro)	Quail Creek (hydro)	Greenway (biomass)	SunSmart (solar)	NetMetering (solar)	Geothermal	Other RE (solar)	Total RE	% RE	Target RE
2000	168,198,703	62,122,643	8,421,800						70,544,443	41.94%	
2001	175,142,236	62,122,643	8,155,190						70,277,833	40.13%	
2002	195,429,803	62,122,643	6,177,958						68,300,601	34.95%	
2003	216,223,208	62,122,643	8,325,504						70,448,147	32.58%	
2004	250,537,329	62,122,643	9,876,176						71,998,819	28.74%	
2005	269,161,113	62,122,643	13,684,600						75,807,243	28.16%	
2006	309,295,177	62,122,643	9,460,300	63,600					71,646,543	23.16%	
2007	352,106,346	62,122,643	5,862,300	124,500					68,109,443	19.34%	
2008	371,367,405	62,122,643	9,114,900	116,700	1,648				71,355,891	19.21%	19.21%
2009	370,994,966	62,122,643	8,328,000	108,600	74,974				70,634,217	19.04%	20.00%
2010	372,649,352	62,122,643	9,348,400	94,800	122,063				71,687,906	19.24%	20.00%
2011	373,163,930	62,122,643	13,182,100	90,000	227,508	11,619			75,633,870	20.27%	20.00%
2012	392,573,880	62,122,643	8,195,100	87,000	214,935	20,992	76,960		70,717,630	18.01%	20.00%
2013	402,196,620	62,122,643	9,839,830	83,100	227,374	18,007	402,560		72,693,514	18.07%	20.00%
2014	406,815,670	62,122,643	6,393,500	93,000	223,301	26,553	328,560		69,187,557	17.01%	20.00%
2015	428,301,912	62,122,643	8,957,711	93,000	223,279	66,737	365,560	13,831,453	85,660,382	20.00%	20.00%
2016	440,486,717	62,122,643	8,957,711	93,000	223,279	66,737	365,560	16,268,414	88,097,343	20.00%	20.00%
2017	452,697,624	62,122,643	8,957,711	93,000	223,279	66,737	365,560	18,710,595	90,539,525	20.00%	20.00%
2018	464,934,632	62,122,643	8,957,711	93,000	223,279	66,737	365,560	21,157,997	92,986,926	20.00%	20.00%
2019	477,197,740	62,122,643	8,957,711	93,000	223,279	66,737	365,560	23,610,619	95,439,548	20.00%	20.00%
2020	489,486,950	62,122,643	8,957,711	93,000	223,279	66,737	365,560	26,068,460	97,897,390	20.00%	20.00%
2021	501,802,261	62,122,643	8,957,711	93,000	223,279	66,737	365,560	28,531,523	100,360,452	20.00%	20.00%
2022	514,143,672	62,122,643	8,957,711	93,000	223,279	66,737	365,560	30,999,805	102,828,734	20.00%	20.00%
2023	526,511,185	62,122,643	8,957,711	93,000	223,279	66,737	365,560	33,473,307	105,302,237	20.00%	20.00%
2024	538,904,798	62,122,643	8,957,711	93,000	223,279	66,737	365,560	35,952,030	107,780,960	20.00%	20.00%
2025	551,324,513	62,122,643	8,957,711	93,000	223,279	66,737	365,560	38,435,973	110,264,903	20.00%	20.00%

The "target" amounts of renewable energy to be purchased are calculated to increase from 2008 levels up to 20% by 2025, but not to exceed an increase of 20% in any given year.

Costs of Renewable Energy Purchases

The following table illustrates historical data back through 2000 and an estimate of the cost of achieving the target for Dixie Power:

Renewable Portfolio Standard Costs

Year	Cost WAPA	Cost Quail Creek	Cost Greenway	Cost SunSmart	Cost NetMetering	Cost Geothermal	Cost Other RE	Total Cost RE	Avoided Cost	Premium RE
2000	$1,287,181	$589,526						$1,876,707	$1,058,167	177%
2001	$1,287,181	$570,863						$1,858,044	$1,054,167	176%
2002	$1,287,181	$432,457						$1,719,638	$1,624,509	168%
2003	$1,287,181	$582,785						$1,869,966	$1,056,722	177%
2004	$1,287,181	$691,332						$1,978,513	$1,079,982	183%
2005	$1,287,181	$957,922						$2,245,103	$1,137,109	197%
2006	$1,287,181	$662,221	$1,590					$1,950,992	$1,074,698	182%
2007	$1,570,460	$410,361	$3,113					$1,983,934	$1,021,642	194%
2008	$1,570,460	$638,043	$2,918	$890				$2,212,311	$1,070,338	207%
2009	$1,664,887	$582,960	$2,715	$40,486				$2,291,048	$1,059,513	216%
2010	$1,840,073	$654,388	$2,370	$65,914				$2,562,745	$1,075,319	238%
2011	$1,840,073	$922,747	$2,250	$63,702	$188			$2,828,960	$1,134,508	249%
2012	$1,840,073	$573,657	$2,175	$60,182	$367	$4,618		$2,481,071	$1,060,764	234%
2013	$1,840,073	$688,788	$2,078	$63,665	$355	$24,154		$2,619,112	$1,090,403	240%
2014	$1,840,073	$447,545	$2,325	$62,524	$1,121	$19,714		$2,373,301	$1,037,813	229%
2015	$1,840,073	$627,040	$2,325	$62,518	$2,468	$21,934	$1,867,246	$4,423,603	$1,284,906	344%
2016	$1,859,331	$627,040	$2,325	$62,518	$2,468	$21,934	$2,196,236	$4,771,851	$1,321,460	361%
2017	$1,859,331	$627,040	$2,325	$62,518	$2,468	$21,934	$2,525,930	$5,101,546	$1,358,093	376%
2018	$1,859,331	$627,040	$2,325	$62,518	$2,468	$21,934	$2,856,330	$5,431,945	$1,394,804	389%
2019	$1,859,331	$627,040	$2,325	$62,518	$2,468	$21,934	$3,187,433	$5,763,049	$1,431,593	403%
2020	$1,859,331	$627,040	$2,325	$62,518	$2,468	$21,934	$3,519,242	$6,094,857	$1,468,461	415%
2021	$1,859,331	$627,040	$2,325	$62,518	$2,468	$21,934	$3,851,756	$6,427,371	$1,505,407	427%
2022	$1,859,331	$627,040	$2,325	$62,518	$2,468	$21,934	$4,184,974	$6,760,589	$1,542,431	438%
2023	$1,859,331	$627,040	$2,325	$62,518	$2,468	$21,934	$4,518,896	$7,094,512	$1,579,534	449%
2024	$1,859,331	$627,040	$2,325	$62,518	$2,468	$21,934	$4,853,524	$7,429,139	$1,616,714	460%
2025	$1,859,331	$627,040	$2,325	$62,518	$2,468	$21,934	$5,188,856	$7,764,472	$1,653,974	469%
							$38,750,424		$18,285,592	

From Dixie's analysis, prices for Renewable Energy have a significant percentage increase over the existing resources at Deseret, assuming solar energy could be purchased for the same price offered to Nevada Power in their most recent RFP. The cost premium, coupled with an existing surplus of resources, currently make it less than prudent for the Deseret Member system boards of directors to seriously consider renewable options for their member/owners. Nevertheless, as noted above, Dixie Power did respond to consumer requests to enter the renewable fold. Their pilot solar project is subsidized over 50% with federal stimulus money, a Utah tax credit, and a Dixie Escalante subsidy.

• Conditions impacting the renewable energy source and qualifying electricity markets: 54-17-604(3)(d)

Cost. The costs for renewable energy components have continued to decline. Lower component costs combined with federal subsidies have helped renewable energy growth across the country. Rural Electric Cooperatives, however, because of their non-profit status, are not eligible for tax credits. Thus most federal subsidies are not available to rural electric cooperatives. Nevertheless, the cost of generation resources at Deseret remain below the cost of renewables, especially given the intermittent nature of wind and solar.

Overall Rural Electric Cooperative customers do not appear eager to pay a premium for renewable energy. While Dixie Power reported receiving an average of one request per day for solar options, after six years only nine Dixie Power customers have actually signed up for solar power. Participation in the "*Green Way*" program, wherein customers pay a premium on their utility bill to support renewable power production, averages less than 0.2% among Deseret Members.

Transmission. The July 2009 study, '*Challenges to Building-Out the Nation's Electric Transmission Infrastructure to Support Renewable Energy*' conducted by Navigant Consulting Inc. which was referenced in the electric cooperatives 2010 progress report still has relevance. The study reported:

• Expanding the nation's transmission infrastructure to support 20% wind energy may require the construction of 15,000 miles of new high-voltage transmission lines involving 30 states in the Eastern Interconnection alone. The Eastern Interconnection (roughly all states East of Colorado) would require coordination of eight transmission planning authorities for the multi-state transmission line. To date, this type of multi-regional transmission project has not been successfully undertaken.

• The process to site transmission lines varies from state to state creating delays even with a potential backstop of federal regulatory authority. Right-of-way acquisition also produces project setbacks, not only negotiating with private property owners and concerned citizen groups, but more significantly with the federal government. In the West, crossing federal lands with new high voltage transmission lines will create significant challenges as parties deal with plant and animal species threatened or protected under the endangered species act. This takes time and money.

• Who pays the billions of dollars for new transmission lines – the states with wind resources or customers in states purchasing renewable energy? The estimated cost of the 15,000 miles of new transmission lines is up to $5 million per mile. Transmission projects traversing multiple jurisdictions will not move forward without agreement on cost allocation. Adding to the dilemma is the fact that since wind and solar energy is intermittent, the transmission costs are spread across fewer megawatt-hours making the spread cost more than double the price for traditional resources capable of producing energy 24 hours a day.

• Recommendations: 54-17-604(3)(e)

The Utah Rural Electic Association recommends that policy makers continue to ensure the cost-effectiveness of meeting the portfolio target is maintained. While renewable energy continues to be a politically correct buzz word in today's vernacular, the transformation from traditional sources of electricity to renewables is difficult and seldom understood.

Policy makers must recognize cost and performance data based on studies and representations typically do not have the credibility of data taken from actual projects developed or being developed – with real money at risk. A claim might be made that a certain renewable project can produce electricity at a cost of eight cents per kilowatt hour measured at the point where it interconnects with the grid, with the amortization of the investment cost averaged over all of the electric power it generates during its life. But the value is properly assessed by considering both the value of the capacity (the ability to reliably call on the output on demand) and energy (the long term total output) provided by any given resource.

Power from the sun and wind is and will continue to be integrated into the electrical power system. It should, however, be based on sound economics and feasible engineering solutions, not Government mandates.

Cooperative Association Progress Reports, Utah Code 54-17-604:
August 18, 2015

Part 2

Three Rural Electric Cooperative Associations headquartered outside the state of Utah, not Members of Deseret, serve customers located in Utah:

- Empire Electric Association, Cortez, Colorado
- Raft River Electric Cooperative, Malta, Idaho
- Wells Rural Electric Company, Wells, Nevada

These organizations serve a small number of customers in Utah and have contracts for purchased power with organizations not located in Utah. Below is a brief description of these cooperatives.

Empire Electric Association

Empire Electric Association (Empire) is headquartered in Cortez, Colorado. Empire serves approximately 1,257 Utah customers located in and around Monticello, Utah.

The state of Colorado's renewable portfolio standard went into effect in 2008. Empire's renewable portfolio standards are based on Colorado kWh sales as follows: years one through four: three percent of retail electricity sales; years five through eight six percent of retail electricity sales; year nine and thereafter: ten percent of retail electricity sales.

Empire is an all-requirements customer of Tri-State Generation and Transmission Association (G&T) headquartered in Westminster, Colorado - meaning the resources to serve their load requirements are provided exclusively by Tri-State.

Tri-State's portfolio of electric energy is derived from coal, natural gas and oil-fired combustion turbine generation. The G&T owns and operates plants in Colorado and New Mexico. It also receives a share of power from plants in Arizona, New Mexico and Wyoming. Tri-State purchases federal hydro power from the Western Area Power Administration (WAPA) in addition to energy from other renewable energy source such as wind power, small hydropower and biomass. Currently renewable resources account for 14% of Tri-State's resource portfolio.

In 2009, Tri-State and First Solar signed an agreement to develop one of the largest solar photovoltaic facilities in the word. Tri-State has also signed a power purchase agreement with Duke Energy to acquire all the electricity generated at a new wind farm being developed in east-central Colorado. Tri-State will continue adding renewable power to its portfolio on behalf of its Members to meet government RPS requirements.

Raft River Electric Association

Raft River Electric Association (Raft River) is headquartered in Malta, Idaho and serves approximately 648 accounts in Utah.

Raft River has previously submitted its progress report to the DPU and is not duplicated here.

Wells Rural Electric Company

Wells Rural Electric Company (WREC) is headquartered in Wells, Nevada and serves approximately 706 customers in the Wendover, Utah area.

WREC has a long-term power supply contract with the Bonneville Power Administration (BPA). The BPA energy resources comprise approximately 78.8% hydroelectric, 11.6% nuclear, and 9.6% from BPA contracts and small thermal and renewable resources.

• Recommendations: 54-17-604(3)(e)

Combined these three electric cooperatives serve less than 3,000 customers in the state of Utah. The Utah Rural Electic Association believes it would be prudent to consider a provision for 54-17-604 similar to the net metering language in 54-15-107.

For example:

"*An electrical corporation with fewer than 5,000 customers in this state that is headquartered in another state is in compliance with this chapter if the electrical corporation conforms to any applicable cost-effective renewable energy provisions/goals of the appropriate authority in the state in which the electrical corporation's headquarters are located.*"