State of Utah

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Comments

To: Public Service Commission of Utah

From: Utah Division of Public Utilities
Chris Parker, Director
Artie Powell, Manager
Doug Wheelwright, Utility Technical Consultant Supervisor
Bob Davis, Utility Technical Consultant

Date: April 16, 2021

Re: **Docket No. 16-035-36,** In the Matter of the Application of Rocky Mountain Power to Implement Programs Authorized by the Sustainable Transportation and Energy Plan Act — Phase VI Uintah Basin.

Recommendation (Not Approve)

The Division of Public Utilities (Division) recommends the Public Service Commission of Utah (Commission) not approve Rocky Mountain Power's (RMP) application at this time. The Division concludes RMP has not demonstrated that its Uintah Basin Study is in the interest of its customers and recommends the Commission not approve the requested $200,715 unless RMP can provide evidence that the study is in its customers' interest. As it stands the benefits to RMP ratepayers appear insufficient, with the project being more directed at generally applicable environmental benefits more appropriately paid for out of general state revenues than compelled charges to ratepayers.

Issue

On March 3, 2021, RMP filed with the Commission a sixth tranche of its Sustainable Transportation and Energy Program (STEP). On March 3, 2021, the Commission issued an Action Request to the Division to review RMP's application and make recommendations. The Commission asked the Division to report back by April 2, 2021. On March 4, 2021, the

Commission issued its Notice of Virtual Scheduling Conference. On March 16, 2021, the Commission issued its Scheduling Order.[1] The Commission asked any interested party to file comments on or before April 16, 2021 and reply comments by April 23, 2021. The Commission set the hearing date for April 28, 2021.

Background

RMP filed this tranche of the STEP program, Projecting the Impact of the Electrification of the Uintah Basin Oil and Gas Fields on Air Quality (Study) under Utah Code Annotated § 54-20-105, Innovative Utility Programs.[2] The proposed program seeks STEP funds to study the potential for air quality improvement through electrification of the numerous pump jacks[3] located throughout the Uintah Basin in north-eastern Utah. The Utah State University (USU) team, under the direction of Dr. Marc Mansfield, and SLR International Corporation (SLR) plan to research and report the possible air quality benefits of converting the pump jacks' power sources from the current use of primarily natural gas to electricity.[4]

RMP has identified the program described in its application as providing a variety of benefits, including: (1) identifying ways electricity can facilitate reduction in the emissions contributing to high ozone events in the Uinta Basin area of Utah; and (2) producing data on the role and potential benefits of increasing the supply of electricity to a rural area with high oil and gas production and associated high ozone levels.[5]

The key research questions to be examined in this project are: (1) the extent to which controlling nitrogen oxide (NOx) emissions or controlling volatile organic compound (VOC) emissions will have a bigger impact; (2) the extent to which electrification of the Basin oil and gas fields will permit a significant reduction in NOx emissions and winter ozone levels; (3) the extent to which the benefits of electrification will significantly offset other NOx emissions, such as drilling

[1] See Commission Scheduling Order, Docket No. 16-035-36, March 16, 2021, https://pscdocs.utah.gov/electric/16docs/1603536/317621603536sonovtcanoh3-16-2021.pdf.
[2] See Utah Code Annotated § 54-20-105, https://le.utah.gov/xcode/Title54/Chapter20/54-20-S105.html?v=C54-20-S105_2019051420190514.
[3] Invented by Walter Trout, a pump jack is the over ground drive for a reciprocating piston pump in an oil well. It is used to mechanically lift liquid out of the well if not enough bottom-hole pressure exists for the liquid to flow all the way to the surface. Wikipedia.
[4] See Rocky Mountain Power, Application, Docket No. 16-035-36, March 3, 2021, Appendix A, https://pscdocs.utah.gov/electric/16docs/1603536/317624RMPAplctnImplmntPrgrmAuthrzdSTEPACT%203-3-2021.pdf.
[5] Id., page 3.

activities, and prevent a return to the very high ozone concentrations that occurred in the early 2010s; and (4) evaluation of whether the logistics and economics of electrification will allow the oil and gas industry to continue operating.[6] The application explains that the intent of this proposal is to study the economics and obtain quantitative estimates of the potential air quality improvement from electrification of wells and surrounding equipment in the oil and gas fields located in the Uintah Basin.

Discussion

RMP is seeking Commission approval to spend $200,715 of STEP funds for the Uintah Basin Study. The Division concludes RMP's Table 1: STEP Pilot Program Project, in this filing, is consistent with RMP's Table 1 Updated STEP Funding Budget from Phase Five of this docket.[7]

Table 1 Updated STEP Funding Budget ($)

	Note:	2017 (Actual)	2018 (Actual[1])	2019	2020	2021	Total	Annual Average
EV Charging Infrastructure	Footnote 2	487,502	1,880,703	2,000,000	2,000,000	3,300,000	9,668,205	1,933,641
Clean Coal Technologies								
Woody Waste Co-Fire	Footnote 3	-	230,277	493,620	815,083		1,538,980	
Emerging CO2 Capture	Footnote 3	160,451	530,289	658,639	213,000	25,000	1,587,379	
Sequestration Site Characterization		150,239	-	-	-	-	150,239	
CO2 Enhanced Coal Bed Methane Recovery		-	94,029	53,331	63,408	63,753	274,521	
Solar Thermal Assessment		-	-	82,951	89,992	13,500	186,443	
NOX Neural Net Implementation		457,767	207,616	216,718	32,000	32,000	946,101	
Advanced NOX Control	Footnote 3	131,405	26,010	-	-	-	157,415	
Subtotal Clean Coal Technologies		899,862	1,088,221	1,505,259	1,213,483	134,253	4,841,078	968,216
Innovative Utility Programs								
Battery Storage - Solar	Footnote 4	331,995	75,474	6,102,530	120,000	120,000	6,749,999	
Substation Metering		13,767	427,349	663,538	-	-	1,104,654	
Gadsby Emissions Curtailment		-	-	60,000	100,000	100,000	260,000	
Line Extension		-	69,340	500,000	500,000	500,000	1,569,340	
Other Innovative Technology: Microgrid	Footnote 5	-	90,713	110,000	70,000	-	270,713	
Other Innovative Technology: Smart Inverter	Footnote 5	-	383,859	-	-	-	383,859	
Other Innovative Technology: POWER DEMAND INTERMODAL HUBS				**815,843**	**951,079**	**228,653**	**1,995,575**	
Other Innovative Technology: BATTERY DEMAND RESPONSE				**1,470,000**	**1,570,000**	**230,000**	**3,270,000**	
Other Innovative Technology (Unallocated)	Footnote 6	-	-	-	697,930	697,930	1,395,860	
Subtotal Innovative Utility Programs		345,762	1,046,735	9,721,911	4,009,009	1,876,583	17,000,000	3,400,000
USIP		-	-	-	-	-	-	-
Conservation, Efficiency and Other New Technology Programs: ADVANCED RESILIENCY MANAGEMENT SYSTEM	Footnote 7	-	-	**1,430,000**	**5,690,000**	**9,400,000**	**16,520,000**	3,304,000
Five Years Projected STEP Fund Use		1,733,126	4,015,659	14,657,170	12,912,492	14,710,836	48,029,283	9,605,857

Footnotes:
1) 2018 actuals are preliminary and subject to change. Final numbers will be provided in the annual STEP report filing on April 30, 2019.
2) The EV program runs on a FY of September to August of each year. Therefore, 2021 amounts reflect program commitments from the previous years.
3) Amounts reflect the February 11, 2019 order to reallocate funds from the canceled Alternative Nox program to the Co-Fired Woody Waste and Cryogenic Carbon Capture programs.
4) Amount reflects the February 11, 2019 order authorizing an increase the funding for the Battery Storage project.
5) The Microgrid and Smart Inverter projects were approved on October 31, 2017.
6) Approximately $1.4m in funds associated with Other Innovative Technology remain unallocated. The Company is not proposing a use for these funds at this time.
7) Includes the STEP funds previously designated for the Utah Solar Incentive Program (USIP).

[6] Id., page 5.
[7] See Rocky Mountain Power, Application to Implement Programs Authorized by the Sustainable Transportation and Energy Act, Docket No. 16-035-36, Phase Five, March 8, 2019, Table 1 Updated STEP Funding Budget ($), page 4, https://pscdocs.utah.gov/electric/16docs/1603536/306971AplImplProgAuthSTEP3-8-2019.pdf.

Although RMP has not filed its Annual STEP report with the Commission for year 2020, the projected expenditures from RMP's last report for year 2020 remains reasonably consistent with the planned budget. RMP has allocated $48,494,080 of the approved $50,000,000 including this proposal. The remaining unallocated funds of $1,505,920 are available for timely projects, to offset unknown overages such as operating, maintenance, administration, and general (OMAG) expenses, or to be refunded to ratepayers. The Division concludes there is available funding for the proposed Uintah Basin Study project based on currently known STEP Program expenses.

The study does not meet the customer interest requirement of the STEP statutes. The proposed study scope of work does not indicate the project meets the requirement to be in the interest of the large-scale electric utility's customers promulgated in statutes: Utah Code Annotated § 54-20-105 and § 54-20-107.[8] The project's potential benefits relate primarily to improved air quality for some areas that include some RMP ratepayers. Those as yet unproven benefits are general social benefits unrelated to mitigating current RMP emission or improving RMP operations. Aside from the ratepayer interest requirement, the Division is concerned that USU and SLR may not have enough time to complete the study as designed before the STEP program ends in December of 2021.

RMP Plans for Electrification of the Study Area

If successful, the study will result in information with little practical value to RMP beyond making the case for adding a narrow set of ratepayers. RMP states that "*the study may provide evidence and the necessary starting point for RMP, oil and gas producers and state and federal regulators to work together to develop the infrastructure needed to optimize the availability of electricity to oil and gas sources in the area*."[9] However, neither RMP nor the researchers provide much, if any support or guidance on whether electrification of oil pumps is practically feasible or economical for either the utility or the oil pump owners. Regardless, the hoped-for social good is a broad one, with benefits flowing to far more than RMP and its ratepayers. A project of this sort should be paid for with other funds recognizing that the benefits might flow to a far wider set of entities than RMP ratepayers.

[8] See Utah Code Annotated § 54-20-105(1), https://le.utah.gov/xcode/Title54/Chapter20/54-20-S105.html?v=C54-20-S105_2019051420190514, and Utah Code Annotated § 54-20-107, https://le.utah.gov/xcode/Title54/Chapter20/54-20-S107.html?v=C54-20-S107_2019051420190514.
[9] *Supra,* n4, pages 5-6. [emphasis added]

The buildout of transmission and distribution systems for 10,000 electric motors in remote areas covering a vast swath of rural Utah, is likely to have significant capital costs.[10] No analysis has been provided regarding projected costs, revenues, or possible construction schedules. Similarly, no analysis has been provided on the costs of converting pumps to electricity or the interest of owners in doing so. There is simply no information supporting the plausibility of actually electrifying the pumps even if the result would completely solve the air quality problems.

RMP's response to DPU DR 15.3 and 15.4 asserts that it currently has no plans and has not prepared any cost estimates for electrification of the area. RMP's response to DPU DR 15.3 was "…*The Uinta Basin study will provide useful data on both environmental benefits from using electrical pumps and the feasibility of expanding electricity in the Uinta Basin for oil and gas operations, including logistics, timing, and regulatory requirements as well as the distribution of costs between the oil and gas industry and RMP. While this information would contribute understanding of potential benefits from electrification of the Uinta Basin, much more information, planning, and coordination with interested customers would be necessary before a plan and realistic costs to expand electricity in the Uinta Basin could be developed."* [emphasis added]

RMP explains in its response to DPU DR 15.4 that the study USU and SLR is proposing does not include any cost-benefit analysis for electrification of the area but is a more scientific look at the environmental impact of reducing or NOx. RMP's response to the Division's inquiry was "*The scientific aspect of this study looks at the environmental impact of sharply reducing or eliminating nitrogen oxide (NOx) emissions from natural gas fired equipment at well pads, relying on electrification as the remaining option to enable the oil and gas industry to continue to operate. This study will not conduct a detailed cost-benefit analysis of full electrification of the Uinta Basin, but will do an initial evaluation of the feasibility, logistical, and economic challenges that would accompany implementing a requirement on the oil and gas industry to sharply reduce NOx emissions through electrification in place of natural gas. The study will*

[10] For example, during the technical conference held in this docket on March 23, 2021, the USU and SLR researchers estimated approximately 10,000 well heads might fall under the electrification plan. If that were the case and assuming 50HP motors on each well that could equate to roughly 373 (50 x 746w/hp x 10,000) MW of additional load in the Uintah Basin.

examine the potential economic impact on local industry and the socioeconomic fallout as well as feasibility." [emphasis added]

The Division concludes that the study may have merit in determining whether the pollution in the Uintah Basin non-attainment area is NOx or VOC controlled. This may be useful information for broad purposes. However, it is unclear to the Division how RMP intends to use the information gleaned from the study to move forward with electrification or how it benefits RMP ratepayers more specifically. Without at least some threshold level of information on whether it's plausible and practical to electrify the pumps, the Division recommends the Commission not approve RMP's Phase Six application.

If the Commission does elect to proceed with this study, the Commission should condition approval on the provision of initial information demonstrating at least at a high level how the electrification might be economic and how RMP's ratepayers might benefit from the study. Without a threshold showing that electrification is economically feasible, there is no value to ratepayers in studying potential results of a conversion that will never materialize. Further, even assuming feasibility, the deficiency of targeted utility-related benefits weighs against approval. While some STEP projects have been designed to achieve broader goals like improved air quality, they have done so when the air quality improvement directly related to the mitigation of existing RMP-caused emissions.

Service territory

RMP's and Moon Lake's service territories intermingle in Uintah County as illustrated in RMP's response to DPU data request DR 15.2 attached in Appendix A. Moon Lake's service territory serves those customers not served by RMP. The majority of the study area is included in RMP's service territory illustrated in Moon Lake Electric Association's[11] service boundary map and the Utah Department of Natural Resources Division of Oil, Gas and Mining map (DOGM) for Uintah County[12] shown in Appendix A, respectively.

RMP's response to DPU DR 15.5 asserts that neither RMP, USU, nor SLR have communicated with Moon Lake regarding the proposed study. RMP's response to DPU DR 15.6 asserts that it

[11] See Moon Lake Electric Association Boundary Map and Board of Directors at https://mleainc.com/.
[12] See Utah Department of Natural Resources Division of Oil, Gas and Mining (DOGM) for Uintah County at https://datamining.ogm.utah.gov/.

has not communicated with well developers regarding the potential changeover from natural gas-powered pumps to electric pumps in the study area.[13] However, USU and SLR currently participate in an ozone working group with the well developers and have informally discussed potential electrification of the study area. The Division has no further details of the informal discussions or what those discussions entail.

The Division understands that the proposed study to analyze information from the non-attainment area, regardless of service territories, might inform well developers regarding the air quality benefits that might result from electrification and does not suggest that the spillover of information to Moon Lake customers is a negative. However, in addition to the lack of detail on how, or whether RMP might build out its system to serve the pumps in its territory, there is also no indication that Moon Lake would be interested in or able to serve the pumps in its service territory. Potential air quality benefits would accrue to Moon Lake members even if only pumps in RMP's territory were electrified, leaving RMP ratepayers paying for benefits to another utility.

Limited Incremental Value

Additionally, the Division is concerned that this study does not significantly improve on studies already performed or underway by other groups such as the Utah Department of Air Quality (DAQ) and Utah Department of Environmental Quality (DEQ), and that no further action to mitigate the pollution may ever take place.[14] This study merely adds to those previous studies with claims to be in the public interest by narrowing down NOx versus VOC control as the primary reason for poor air quality. The extent to which knowledge gained in this study will duplicate or add to other studies and the relative effects of the NOx versus VOC problems are not clear.

Conclusion

The Commission should reject the application. There is insufficient evidence to better understand how RMP's ratepayers might benefit from funding the study instead of funding sources

[13] RMP responses to Division Data Request DR 15.1 – 15.6, March 16, 2021 and Data Request DR 16.1-16.12, April 6, 2021, contained in Appendix B.
[14] See Rocky Mountain Application, Sustainable Transportation and Energy Plan Act, Phase VI, Docket 16-035-36, March 3, 2021, Appendix A, pg. 10, https://deq.utah.gov/air-quality/emissions-of-reactive-organics-from-natural-gas-fueled-engines.

accounting for the broader dispersion of hoped-for benefits. RMP presented no evidence regarding the feasibility of electrifying the area in the event the potential benefits materialize. RMP made no evaluation of the extent to which other participants and beneficiaries, including Moon Lake, might benefit from or contribute to the project or any future actions stemming from the project. Clearly, the potential reduction of NOx or VOCs is evident and important, but without studying the feasibility of electrification, the cost/benefit equation is empty. Furthermore, the lack of sufficient nexus between RMP's activity and the much broader dispersion of benefits if they eventually materialize suggests the program is more appropriately funded through sources other than RMP's captive ratepayers.

RMP admits that it has not, even on a preliminary basis, studied the costs associated with electrification of the Basin, including transmission and distribution upgrades, generation of energy to supply the Basin, or any of the associated costs to ratepayers. RMP has not consulted with Moon Lake or well developers in the area and is unaware of any plans to electrify the Basin.[15]

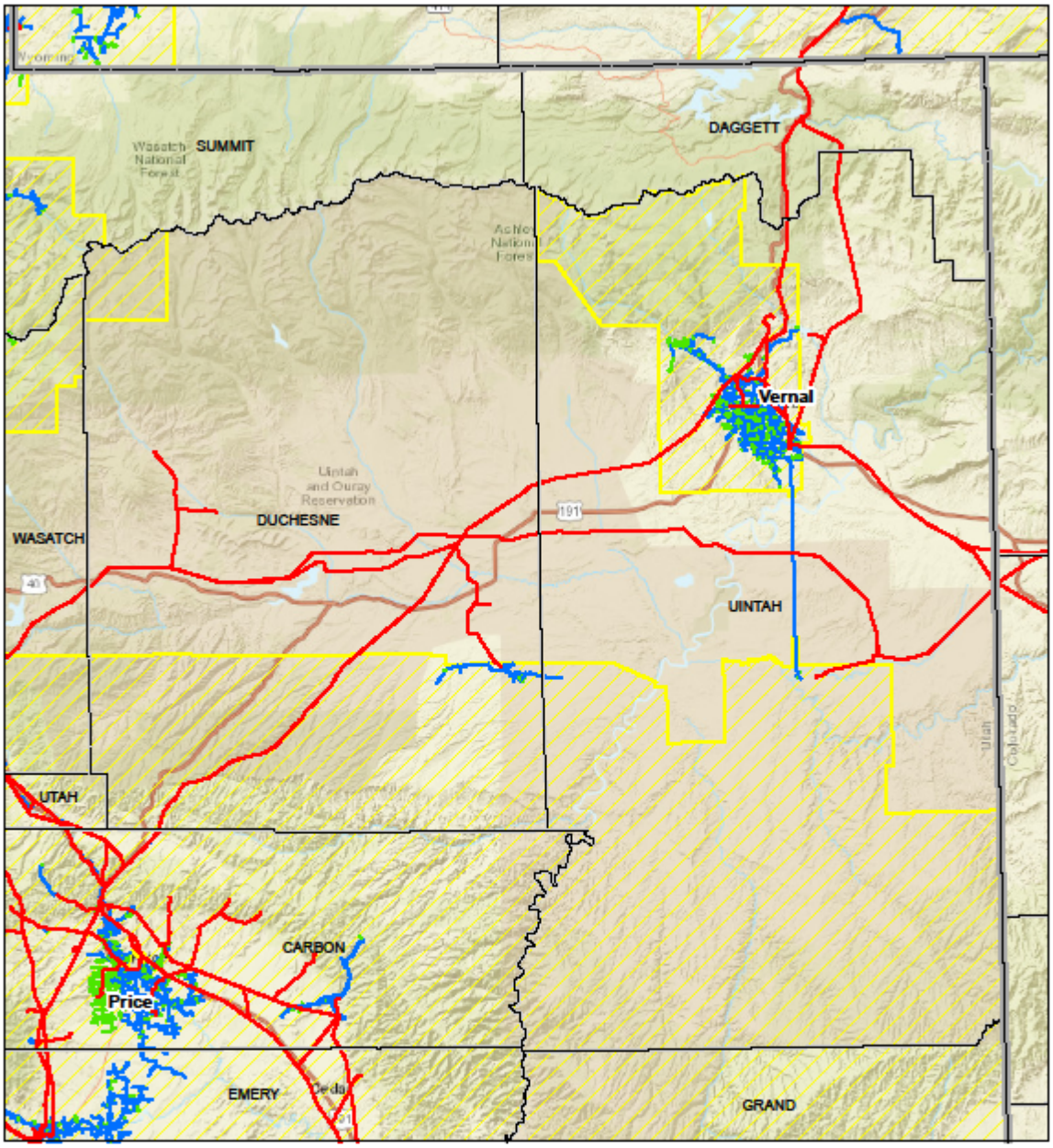
RMP's application is not in the interest of its ratepayers even if it is successful in (1) identifying ways electricity can facilitate reduction in the emissions contributing to high ozone events in the Uinta Basin area of Utah; and (2) producing data on the role and potential benefits of increasing the supply of electricity to a rural area with high oil and gas production and associated high ozone levels.[16] Those benefits are best obtained by funding the study differently and considering whether, and to what extent, it is feasible to electrify pumps in the Uinta Basin.

cc: Joelle Steward, RMP
Jana Saba, RMP
Marie Durrant, RMP
Michele Beck, OCS

[15] In response to Division Data Request, DPU DR 16, RMP now claims that it has contacted Moon Lake and briefed them on the study and put them in direct contact with the researchers conflicting with what RMP told the parties during the technical conference and in response to prior data requests.
[16] *Supra,* n5.

APPENDIX A

DPU Data Request 15.2



Uinta Basin Service Territory with Transmission and Distribution Lines

Overhead
Underground
Transmission Lines
Service Territory

0 5 10 20 Miles

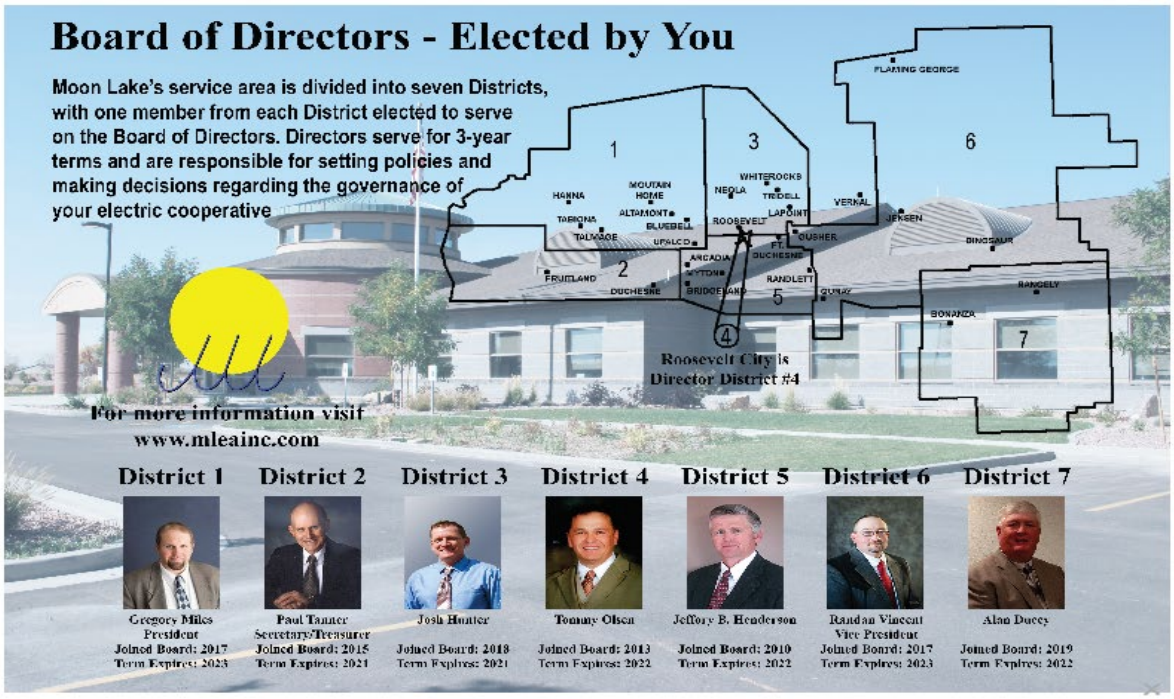
N

PACIFICORP

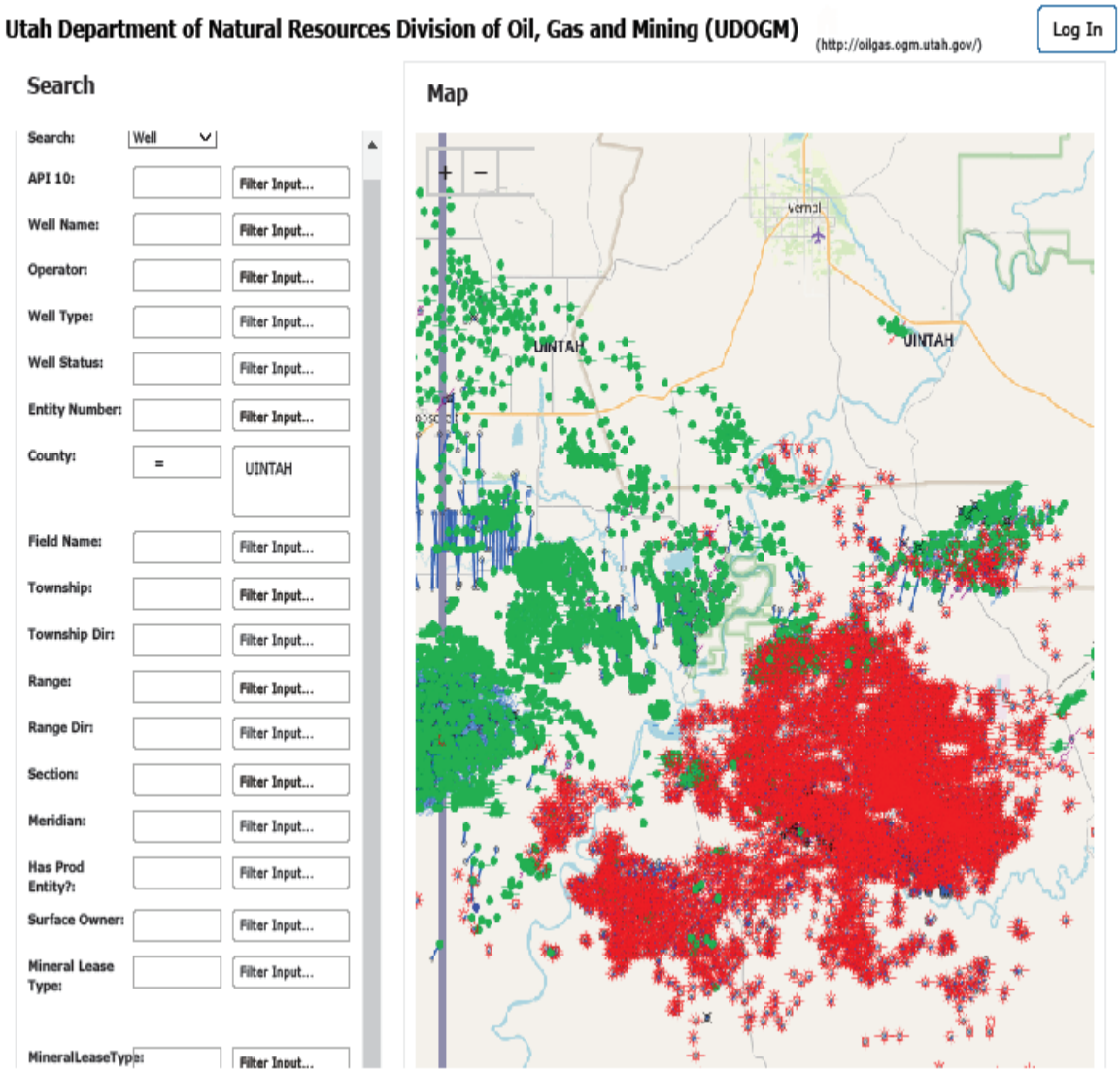
Data is projected in UTM Zone 12, NAD83, meters.

PacifiCorp makes no representations or warranties as to the accuracy, completeness or fitness for a particular purpose with respect to the information contained in this map. PacifiCorp shall have no responsibility or liability to any person or entity resulting from the use of any information furnished in this map.

Moon Lake Electric Association Boundary Map



Utah Department of Natural Resources Division of Oil, Gas and Mining (UDOGM)



APPENDIX B

16-035-36 / Rocky Mountain Power Reponses to DPU DR 15.1-15.6 / March 16, 2021

DPU Data Request 15.1

Please provide copies of all past and future data requests and data responses received by Rocky Mountain Power from or sent by Rocky Mountain Power to any other party in Phase VI of this docket. Please include both formal and informal responses.

Response to DPU Data Request 15.1

Please refer to the Company's response to DPU Data Request 1.1.

DPU Data Request 15.2

Please provide RMP's service territory map that encompasses the proposed study area.

Response to DPU Data Request 15.2

Please refer to Attachment DPU 15.2.

DPU Data Request 15.3

Please provide RMP's plan, in detail with rough estimates of costs, regarding how the electrification of this area might occur should the study be successful.

Response to DPU Data Request 15.3

Rocky Mountain Power (RMP) does not currently have plans or cost estimates for electrification of the Uinta Basin. The Uinta Basin study will provide useful data on both environmental benefits from using electrical pumps and the feasibility of expanding electricity in the Uinta Basin for oil and gas operations, including logistics, timing, and regulatory requirements as well as the distribution of costs between the oil and gas industry and RMP. While this information would contribute understanding of potential benefits from electrification of the Uinta Basin, much more information, planning, and coordination with interested customers would be necessary before a plan and realistic costs to expand electricity in the Uinta Basin could be developed.

DPU Data Request 15.4

Does USU and SLR plan to provide a cost benefit analysis in their final report for the electrification of the area if the study proves to show a benefit?

Response to DPU Data Request 15.4

The scientific aspect of this study looks at the environmental impact of sharply reducing or eliminating nitrogen oxide (NOx) emissions from natural gas fired equipment at well pads, relying on electrification as the remaining option to enable the oil and gas industry to continue to operate. This study will not conduct a detailed cost-benefit analysis of full electrification of the Uinta Basin, but will do an initial evaluation of the feasibility, logistical, and economic challenges that would accompany implementing a requirement on the oil and gas industry to sharply reduce NOx emissions through electrification in place of natural gas. The study will examine the potential economic impact on local industry and the socioeconomic fallout as well as feasibility.

DPU Data Request 15.5

Please provide any correspondence RMP, USU, or SLR has had with Moon Lake Electric Association regarding this study and electrification of the area in the study proposal.

Response to DPU Data Request 15.5

Rocky Mountain Power (RMP) has not had any correspondence with Moon Lake Electric Association regarding this study. RMP reached out to Utah State University (USU) and SLR International Corporation (SLR), and they report they also have not corresponded with Moon Lake regarding the study. Over the years, RMP has had periodic informal discussions with Moon Lake regarding the topic of expanding available electricity in the Uinta Basin to develop and finance the expansion of electricity.

DPU Data Request 15.6

Please provide any correspondence RMP, USU, or SLR has had with well developers regarding the potential changeover from oil/gas to electrification.

Response to DPU Data Request 15.6

Rocky Mountain Power (RMP) has not communicated with well developers regarding the potential changeover from natural gas-powered pumps to electrical pumps that is being evaluated in this study. Utah State University (USU) and SLR International Corporation (SLR) participate in an ozone working group with well developers, and the group has had informal discussions about potential electrification, but neither USU nor SLR report formal correspondence with well developers regarding this matter.

16-035-36 / Rocky Mountain Power Reponses to DPU DR 16.1-16.12 / April 7, 2021

DPU Data Request 16.1

In reference to Appendix A of RMP's Application, Section IX-Proposed Budget, please provide the detail and calculations for the $11,811 USU fringe benefits.

Response to DPU Data Request 16.1

Under Utah State University (USU) standard accounting procedures for senior personnel at USU, fringe benefits are not included in the hourly rates. The fringe benefits are calculated separately at 46.5 percent of salaries. Total salaries to be billed for senior personnel Mansfield, David, and Lyman are $25,401; the $11,811 in fringe benefits is 46.5 percent of the total senior salaries.

DPU Data Request 16.2

In reference to Appendix A of RMP's Application, Section IX-Proposed Budget, please provide the detail and calculations for the $63,239 direct costs.

Response to DPU Data Request 16.2

The $63,239 referenced are indirect costs, not direct costs. Direct costs include salaries, fringe benefits, and the consultancy fees to be paid to SLR Corporation (SLR) and come to a total of $137,476. Under standard Utah State University (USU) accounting procedures, indirect costs (also known as Facilities and Administrative costs) are billed at 46 percent of direct costs. This rate has been negotiated between USU and the federal government and is binding on all federal contracts, and USU typically bills the same rate on all other contracts.

DPU Data Request 16.3

For example, if each pump required a 50-horsepower motor at 746 watts per horsepower and there were 10,000 pumps, that would equate to an additional 373 MW load to the Uintah Basin.

(a) Does RMP have an estimate of the expected increase in load?

(b) Has RMP included this increased load and timing in any of its load forecasts?

(c) In addition to the local distribution upgrades to electrify the region, how would RMP cover this additional load (generation and transmission) should this project move forward based on the study? Please explain.

(d) If RMP does not intend to provide service to electrify some or all the pumps – explain what the benefits are of the study?

Response to DPU Data Request 16.3

(a) While the study will provide useful information that may incentivize regulators to require, or oil and gas producers to expand, use of electricity for pumps or other equipment, until specific producers make concrete requests to expand access, Rocky Mountain Power (RMP) has not taken efforts to project what type of load increase may or may not occur or over what time period any increase would occur.

(b) No.

(c) Please refer to the Company's response to subpart (a).

(d) RMP anticipates it would provide service to some of the operators who may elect to request additional electrical service.

DPU Data Request 16.4

Based on the researchers' responses to questions during the technical conference held on March 23, 2021, there seems to be a great deal of data already collected, not only at the exhaust of the pump jack engines and other adjacent equipment, but also the surrounding atmosphere by other agencies.

(a) What is the significance of this study versus what is already known?

(b) What is the cost to benefit ratio for RMP's ratepayers who are ultimately funding this project? Please explain.

Response to DPU Data Request 16.4

(a) The key unknown question that this study is evaluating is whether controlling for nitrogen oxide (NOx) or for volatile organic compounds (VOC) in the Uinta Basin is scientifically the better approach. That answer will come through running the proposed models in the study. The study will use available data combined with new data generated by the study as inputs for the study models.

(b) It is difficult to provide exact cost to benefit ratios for Rocky Mountain Power's (RMP) customers. The study is fairly low cost and will provide important information about the value of electricity as a tool for reducing ozone in the Uinta Basin, and NOx emissions in general. This information benefits RMP customers as discussed in the Utah Association of Energy Users (UAE) "16-035-36 STEP Docket Uinta Basin Study / UAE Questions for 3/23/2021 Technical Conference" Docket. Quantifying this benefit is difficult at this early stage, but RMP considers the benefits as outweighing the relatively low costs.

DPU Data Request 16.5

Have, or are, the researchers considering what the outcome would be:

(a) If the present oil/gas engines were converted to higher-efficiency or low-NOx natural gas engines? Please explain.

(b) What percentage of existing oil/gas engines are already higher-efficiency natural gas engines?

Response to DPU Data Request 16.5

(a) Yes, the study will examine the impacts of switching to lower nitrogen oxide (NOx) engines.

(b) This is the type of question the study will help to answer. The breakdown of the engine data into categories of engine type will be one of the steps in the study. Engine type has been reported to the State of Utah, but a statistical analysis has not yet been developed.

DPU Data Request 16.6

In response to DPU's data request DPU 15.6:
(a) Have the researchers and RMP reached any conclusions on how many wells the developers would be interested in converting? Please explain.

(b) Please provide estimates of the average cost for a service line extension to a typical well within the RMP service area.

Response to DPU Data Request 16.6

(a) Estimating electrification adoption levels by operators is beyond the scope of the study. Adoption levels depend on a complex set of considerations including technology and fuel cost trade-offs, infrastructure needs, environmental policies, consumer preference, and the interaction between these factors. Drivers and barriers of adoption will be qualitatively addressed in the socioeconomic portion of the study.

While not predicting actual adoption levels, the study does seek to estimate the minimum level of adoption required to meet Uinta Basin air quality benchmarks, and the subsequent peaking demand and infrastructure needed to support that level of adoption. This will provide important information and context for both regulators and developers who are making decisions about the costs and benefits of electrifying specific facilities in the Uinta Basin.
(b) Electrical costs are dependent upon the well location, its proximity to existing services, agreements between the customer and Rocky Mountain Power (RMP), and permitting requirements. Costs for specific wells and configurations are ancillary to this study. It is also not possible to identify a "typical" well within the RMP service area. For current RMP customers, RMP has provided from 90 megawatts (MW) of power for multi-unit systems of a single operator during high production timeframes to minimal power as low as 0.03 MW for a single well located near a distribution line. Costs depend on the infrastructure and load available at the location as well as the customers' specific setup and requested service. Costs could range anywhere from a few thousand dollars to millions of dollars, depending on what is requested.

DPU Data Request 16.7

Please detail and explain RMP's projection about how electrification of the Uintah Basin might impact future generation, transmission, distribution, Moon Lake, and customer bills.

Response to DPU Data Request 16.7

Rocky Mountain Power (RMP) has not performed the type of analysis requested. As mentioned, RMP supports the study because it will contribute understanding to answer questions like this about the costs and benefits of electricity for oil and gas operations in the Uinta Basin. RMP has contacted Moon Lake, briefed them on the study and put them in direct contact with the researchers. The results of the study will be publicly available to Moon Lake and other interested parties.

DPU Data Request 16.8

In response to DPU's data request DPU 15.5, how does RMP plan to discuss the electrification of the Uintah Basin with Moon Lake concerning the potential increase in load, service line extensions, or potential capital needs that might impact Moon Lake?

Response to DPU Data Request 16.8

Please refer to the Company's response to DPU data request 16.7.

DPU Data Request 16.9

Does RMP, USU, or SLR intend to share the results of the study with Moon Lake or any other entities or individuals?

Response to DPU Data Request 16.9

Yes. Please refer to the Company's response to DPU data request 16.7.

DPU Data Request 16.10

Please provide an estimate for the remaining production years based on the number of current producing wells under the assumption that either no more wells will be drilled or maintain the current level of producing new wells.

Response to DPU Data Request 16.10

This information is not available to either Rocky Mountain Power (RMP) or the study organizers and is beyond the scope of the study.

DPU Data Request 16.11

Many newer horizontal wells have a service period of approximately 10 years.
(a) Assuming well locations are moved on a 10-year rolling average basis, does RMP have a proposal or basic plan for temporary service installations on this scale?

(b) For example, are there types of utility service lines that are temporary and moveable on the scale of what would be required for electrification of multiple thousands of transient pumps over a large service area?

(c) Does RMP have any information on what this might cost to deploy and move as the pumps move? Who would be expected to cover these types of costs?

Response to DPU Data Request 16.11

The statement forming the basis for these questions makes a broad assumption which neither Rocky Mountain Power (RMP) nor the study organizers have evaluated. SLR Corporation (SLR) reports that oil and gas operators normally try to minimize surface disturbance for a variety of reasons, and multiple wells can be accessed/developed from the same pad. Having available electricity may be one factor encouraging reuse of existing well pad locations.
(a) RMP does not possess the requested information.

(b) RMP does not possess the requested information.

(c) RMP does not possess the requested information.

DPU Data Request 16.12

Has USU and/or SLR received, or potentially will receive grant money from any other agency for this proposed study? Please explain.

Response to DPU Data Request 16.12

Utah State University (USU) has submitted a funding proposal to Utah Division of Air Quality (UDAQ) with a similar goal of understanding whether the Uinta Basin is nitrogen oxide (NOx) limited. However, no decision on that submission has been made. The UDAQ award will be very competitive, with many different academic groups competing, making USU's chances for receiving this funding low. The UDAQ award announcement will be made in mid-summer 2021.