Sophie Hayes (12546)
Western Resource Advocates
307 West 200 South, Suite 2000
Salt Lake City, UT 84101
801-212-9419
sophie.hayes@westernresources.org

Attorney for Western Resource Advocates

BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

In the Matter of the Application of Rocky Mountain Power for Approval of the Electrical Vehicle Infrastructure Program	DOCKET NO. 20-035-34

DIRECT TESTIMONY OF

KARL G. BOOTHMAN

ON BEHALF OF

WESTERN RESOURCE ADVOCATES

October 2, 2025

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List of Attachments

Exhibit WRA ___(KB-1)	Karl Boothman Resume

I. INTRODUCTION AND QUALIFICATIONS

Q: Please state your name and business address.

A: My name is Karl Boothman. My business address is 307 West 200 South, Suite 2000, Salt Lake City, UT 84101.

Q: By whom are you employed and in what position?

A: I am employed by Western Resource Advocates (WRA) in its Clean Energy Program as a Senior Policy Advisor. WRA is a regional nonprofit advocacy organization that fights climate change and its impacts to sustain the environment, economy, and people of the West. WRA's Clean Energy Program develops and implements policies to reduce the environmental impacts of utilities in the Interior West by advocating for a western electric system that provides clean, affordable, reliable energy, reduces economic risks, and protects the environment through the expanded use of energy efficiency, renewable energy resources, and other clean energy technologies. WRA has offices in Salt Lake City, Utah; Boulder and Denver, Colorado; Reno, Nevada; Phoenix, Arizona; and Santa Fe, New Mexico.

Q: On whose behalf are you testifying in this proceeding?

A: I am testifying on behalf of Western Resource Advocates.

Q: Please describe your education and professional experience.

A: I provide policy analysis and regulatory support to WRA in electric-industry-related matters. I have a B.A. in economics, conferred with distinction from the University of

Michigan. From 2013-2016, I was employed as a Staff Analyst with ApplEcon LLC, a consultancy based in Ann Arbor, Michigan that provides regulatory and econometric support in litigation related to antitrust, collusion, and price fixing. From 2016-2019, I was employed as a Consultant and from 2019-2022 as a Senior Consultant with 5 Lakes Energy LLC, an energy policy consultancy based in Lansing, Michigan. In this role, I provided analysis for clients on a wide range of topics in the energy industry, including but not limited to, cost of service and rate design, energy efficiency and demand response, energy siting, and integrated resource planning. Since 2022, I have been employed as a Senior Policy Advisor with Western Resource Advocates where I have worked on Utah energy policy. In addition to my formal education and work experience, I have completed professional development courses including power grid school, utility accounting and ratemaking, and the annual regulatory studies program at Michigan State University Institute of Public Utilities as well cost of service, rate design, and depreciation courses with EUCI. A more detailed description of my qualifications is attached as Exhibit WRA__(KB-1).

Q: Have you previously testified before the Public Service Commission of Utah (Commission)?

A: Yes. I submitted direct, rebuttal, and/or surrebuttal testimony in Phase I, II, and III of Docket No. 24-035-04 (PacifiCorp General Rate Case).

Q: Have you previously testified before a Public Service Commission in another jurisdiction?

A: Yes, I have submitted testimony in the following proceedings before the Michigan Public Service Commission:

- U-20561 (DTE Energy 2019 General Rate Case)
- U-20697 (Consumers Energy 2020 General Rate Case)
- U-20963 (Consumers Energy 2021 General Rate Case)

I have also filed comments and/or reply comments in the following non-litigated dockets before the Utah Public Service Commission:

- PacifiCorp's 2023 IRP (Docket No. 23-035-10)
- PacifiCorp's 2025 IRP (Docket No. 25-035-22)
- Investigatory docket into interconnection rule amendments (Docket No. 23-R312-01)[1]
- Schedule 37 Avoided Costs (Docket No. 25-035-T03)
- Solicitation Process for URC Program (Docket No. 24-035-55)

I have, or currently participate in, multiple stakeholder processes such as the DSM Steering Committee and DSM Advisory Group, RMP's Residential Time-of-Use Stakeholder workshops, RMP's wildfire workshops, RMP's Schedule 2E working group, RMP's Grid Modernization Collaborative, and the Multi-State Process (MSP).

Q: Please explain WRA's interest in participating in this proceeding.

A: As described in my introduction, WRA is a conservation organization that advocates for an electric system that provides affordable and reliable energy, reduces economic risks, and protects the environment with expanded use of energy efficiency, renewable energy,

[1] *See Comments of Western Resource Advocates*, Docket No. 23-035-10 (filed March 10, 2023; December 12, 2023; January 31, 2024; May 30, 2024; September 4, 2024); *Comments of Western Resource Advocates*, Docket No. 23-R312-01 (filed October 31, 2023); *Western Resource Advocates' Response to Proposed Amendments*, Docket No. 23-R312-01 (filed June 12, 2024).

and other clean energy technologies. Our broader mission is to sustain the people, economies, and environments of the West by addressing climate change. Because the transportation sector is the largest source of greenhouse gas emissions in the West, WRA is interested in ensuring that funds expended under EVIP are used in a manner that increases adoption of zero-tailpipe emissions electric vehicles.

Q: Are other witnesses testifying for WRA?

A: Yes. WRA Policy Advisor Deborah Kapiloff provides the policy background for Rocky Mountain Power's Electric Vehicle Infrastructure Program (EVIP) and addresses the Company's proposal to increase funding for Company-owned chargers and eliminate Schedule 120 incentives for third-party EV charging stations and rebates for residential and multifamily EV chargers.

II. SUMMARY

Q: Please summarize your testimony and recommendations.

A: In my testimony, I address an error in the Company's cost of service study that causes the vastly inflated Schedule 60 cost-of-service relative to class revenue. To remedy this, I recommend the Company correct the erroneous demand factors attributed to Schedule 60 and refile its cost-of-service study and exhibits in rebuttal testimony. I also recommend

aligning the on-peak and off-peak periods in the proposed Schedule 60 tariff with the peak periods in the Company's forthcoming Schedule 1 Time-of-Use Optional Rate.[2]

III. SCHEDULE 60 COST OF SERVICE

Q: Please describe Schedule 60 and the facilities that take service under this rate schedule.

A: Rocky Mountain Power's (RMP) Schedule 60 is the tariff for Company Operated Electric Vehicle Charging Station Service. Schedule 60 provides the effective rates for DC Fast Charging and Level 2 Charging at Company-owned charging locations. The rate schedule also describes differentiated prices for RMP and non-RMP customers at DC Fast Chargers and the session fee and off-peak charging credit. As of December 31, 2024, there were four Company-owned Direct Current Fast Charging (DCFC) locations across Utah. The Company plans to install and operate 20 total DCFC stations to support electric vehicle (EV) adoption in Utah.[3] The Company's testimony and exhibits in this proceeding use data from calendar year 2024, the first year of operation for these four locations.[4]

[2] *See Application of Rocky Mountain Power for Authority to Increase its Retail Electric Utility Service Rates in Utah and for Approval of its Proposed Electric Service Schedules and Electric Service Regulations*, Docket No. 24-035-04, Phase II Settlement Stipulation (filed January 14, 2025), at 3-4, 337604PhsIIStlmntStpltn1-14-2025.pdf [hereinafter Phase II Settlement Stipulation]; *see also* Rocky Mountain Power Electric Service Schedule No. 1, *Residential Service* (filed May 9, 2025), 001_Residential_Service.pdf [hereinafter Schedule No. 1].

[3] A Rocky Mountain Power electric vehicle charging station is now open in Millcreek.

[4] The in-service dates for each of the Company-owned DCFC locations occurred periodically throughout calendar year 2024, so the data used for the cost-of-service study begins in May 2024.

Q: The Company did not propose to update its rates for Electric Service Schedule No. 60 (Company Operated Electric Vehicle Charging Station Service) in this proceeding. Do you recommend a change to Schedule 60 rates?

A: I do not recommend a change to Schedule 60 rates at this time. Company witness Elder testified that the Company has complete revenue and load data for four charging stations over a six-month period.[5] In testimony, witness Elder recommended waiting until more data is collected from Company-owned charging stations before transitioning Schedule 60 rates to cost of service.[6] I agree with the Company that the available data is too sparse on which to base updated Schedule 60 rates, and that it may be prudent to delay the transition to cost-of-service based rates until more data is available. It is assumed that DC fast charging utilization by EV drivers will increase over time as awareness of Company-owned charging locations grows and EV adoption increases. Charging revenue over the initial six months may not be indicative of ongoing Schedule 60 revenue, consequently, adjusting energy prices based on currently low but increasing utilization rates is not appropriate at this time.

Q: Do you have concerns with the results of the Company's cost of service study presented as Exhibit RMP___(KLE-2)?

A: Yes. Company witness Elder testified that Schedule 60 revenues would have to increase by 2,670 percent to reach *only a 20 percent share* of the class's cost of service.[7] This

[5] *Direct Testimony of Kenneth Lee Elder, Jr. for Rocky Mountain Power*, Docket No. 20-035-34 (filed July 25, 2025) at lines 77-79 [hereinafter *Elder Direct Testimony*].
[6] *Id.* at lines 79-83.
[7] *Id.* at lines 71-73.

result seemed anomalous. In my career as an energy consultant and policy analyst, I have never seen a rate so subsidized as to require an increase of this magnitude to reach 20 percent, much less full cost-of-service.

Q: Did you find an error in the Company's cost-of-service study that caused this anomalous result?

A: Yes.

Q: Please describe the error that you found.

A: I began by examining the total cost-of-service for Schedule 60. A summary table of cost-of-service by rate schedule was provided in Exhibit RMP___(KLE-1). According to this Exhibit, the total cost-of-service for Schedule 60 in calendar year 2024 was $21,426,582. Total Schedule 60 revenue for the same period was $154,703 or just 0.72% of the annual cost-of-service. According to witness Elder, the class's revenue of $154,703 would have to increase by 2,670.3% to collect $4,285,316, or approximately 20% of the class's cost-of-service. To reach full cost-of-service, current revenues would have to increase by 13,750.14%.[8]

Noting the large disparity between Schedule 60 revenues and cost of service, I examined cost of service for Schedule 60 by function.[9] According to Exhibit RMP___(KLE-1), the Production component of Schedule 60's cost-of-service totaled $13,575,301. For

[8] *Id.* at Exhibit RMP___(KLE-1).
[9] Rocky Mountain Power categorizes each cost into one of five different functionalized categories: Production, Transmission, Distribution, Retail, and Miscellaneous. The Production function includes costs incurred to fuel, operate, and maintain plants as well as purchased power and plant depreciation expense.

comparison, this amount is roughly the same production cost as the entire irrigation class (Schedule 10), which had 3,608 customers as of 2024 and consumed 233,582 MWh adjusted for line losses.[10] Per the Company's cost-of-service study, Schedule 60 had only four customers (reflecting each operational DCFC site) and according to the cost-of-service study consumed 515 MWh adjusted for line losses.[11] Using Schedule 10 as a benchmark, *the irrigation class used 454 times more energy than Schedule 60, but its allocated production costs were roughly $300,000 less than Schedule 60.* On a volumetric unit cost basis, each kWh (not MWh) of energy consumed by Schedule 60 would have to be priced at $26.36/kWh to recover production costs only,[12] not including the other four functionalized categories. Including distribution, transmission, retail, and miscellaneous costs, the unit cost for Schedule 60 would be $41.61/kWh. So according to the cost-of-service study, fully charging a 75-kWh electric vehicle would cost *over $3,000 per session.*

This quick comparison of production costs suggested that there was an error in Schedule 60's demand billing determinants. Most production costs are allocated using the Factor 10 (F10) allocator, which is calculated by weighting a class's total 12CP demand by 75% and a class's annual energy by 25%. The demand component is calculated as the sum of

[10] Shown on tab *Unit Costs-earned* of file "20-035-34 RMP Elder Workpaper – COS UT 2024 7-25-25.xlsx" in column I.
[11] Shown on tab *Unit Costs-earned* of file "20-035-34 RMP Elder Workpaper – COS UT 2024 7-25-25.xlsx" in column M.
[12] Schedule 60 production costs of $13,575,301 divided by annual energy usage of 515,000 kWh or 515 MWh.

the class's contribution to the monthly coincident system peaks at input, while annual energy is total energy consumption adjusted for line losses.

The error is found in the demand factor attributed to Schedule 60. In the cost-of-service study provided in Mr. Elder's workpapers, the tab *Demand Factors* shows each class's coincident peak load during the hour of each monthly system peak. In *Table 1* below, I show Schedule 60's 12CP from this tab.

Table 1

Rocky Mountain Power														
KW Loads Coincident To System Peak														
Merged Company Peaks														
12 Months Ended Dec 2024														
Coincident Peaks @ Input														
Month :			**Jan-24**	**Feb-24**	**Mar-24**	**Apr-24**	**May-24**	**Jun-24**	**Jul-24**	**Aug-24**	**Sep-24**	**Oct-24**	**Nov-24**	**Dec-24**	**Sum Of**
Peak Date:		**COS**	**16**	**15**	**4**	**8**	**28**	**25**	**10**	**2**	**6**	**14**	**19**	**10**	**12**
Peak Time:		**Sch**	**08:00**	**10:00**	**08:00**	**07:00**	**17:00**	**18:00**	**16:00**	**16:00**	**16:00**	**16:00**	**18:00**	**08:00**	**CPs**
Sch 060	sec	60	-	-	-	-	957	55,834	58,387	111,349	238,333	108,478	191,432	12,124	776,894

Note that these loads are reported in kW. This implies that the Company's four operational DCFC locations drew anywhere from 0.9 MW (May) to 238 MW (September) during monthly system peaks.

There are several ways to illustrate that this is an error. First, Schedule 60's energy consumption in calendar year 2024 totaled 515 MWh. Assuming that the fast chargers were in use *only during the eight monthly coincident peak hours from May-December* (i.e. for eight hours over the entire year), but drew the loads reported in *Table 1* for the entire hour, Schedule 10's annual energy consumption would necessarily exceed 515 MWh. Put differently, if the charging stations operated at the demand factors shown, the entire class would have drawn 776.9 MWh over only eight hours of operation.

Alternatively, there are 22 individual charging ports across the four Company-owned charging sites that were placed in service in 2024 and included in the cost-of-service study.[13] If each charging port drew the maximum load rating of 350 kW simultaneously,[14] the maximum demand possible for the entire Schedule 60 class would be 7.7 MW. Realistically, very few EV models can charge at 350 kW, and it is exceedingly unlikely that *every* port across the four sites would be in use simultaneously. Nevertheless, this upper-bound, bookend calculation shows that a maximum demand of 238 MW, as seen in the Company's cost of service study, is erroneous.

Finally, and most importantly, on tab *Dist. Factors*, Schedule 60's monthly non-coincident peaks (NCP) are shown in kW. The *sum* of eight non-coincident peaks totals 3,724 kW (3.724 MW), and no single monthly non-coincident peak for the class exceeds 642 kW (0.642 MW). These values are shown in *Table 2* below.

Table 2

Rocky Mountain Power
Cost Of Service By Rate Schedule
State of Utah
2020 Protocol (Non Wgt)
12 Months Ended Dec 2024
Non Coincident Peaks @ Sales

Description		Sch	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	NCP
Sch 060	**sec**	**60**	-	-	-	-	64	282	465	560	539	635	642	538	**3,724**

Tables 1 and *2* show that Schedule 60's monthly coincident peak demand inputs far exceed its non-coincident peak inputs, but a class's coincident peak cannot exceed its non-coincident peak. By definition, a class's non-coincident peak is the highest recorded load regardless of when it occurs. At most, coincident and non-coincident peaks could be

[13] Six charging ports at Vernal, four at Kimball Junction, four at Olympus Cove, eight at Moab.
[14] *Direct Testimony of James A. Campbell for Rocky Mountain Power,* Docket No. 20-035-34 (filed July 25, 2025) at lines 85-87.

equivalent *only if* a class's highest load in a period occurs simultaneously with the system peak in the same period.

Q: What are the implications of this error?

A: There are no immediate implications from a rate design perspective as the Company did not propose adjusting Schedule 60 rates. However, non-Company stakeholders were not presented with an accurate cost-of-service study on which to make recommendations on the Company's transition plan for Schedule 60 rates to cost-of-service.

Q: How should the Company remedy this error?

A: In rebuttal, the Company should explain the error, provide an updated cost of service study with intact formulae and correct 12CP data for Schedule 60. Additionally, witness Elder should provide updated versions of Exhibits RMP___(KLE-1), RMP___(KLE-2), and RMP___(KLE-3). If the updated results necessitate a new approach to transitioning Schedule 60 rates to reflect cost of service, Mr. Elder's testimony should be updated so that intervening parties can respond to the new strategy.

IV. SCHEDULE 60 RATE DESIGN

Q: Do you have any other recommendations?

Yes, I recommend changing the on-peak and off-peak time periods listed in the Company's proposed Schedule 60 tariff in this proceeding.[15]

[15] *Elder Direct Testimony, supra* note 5, at Exhibit RMP___(KLE-5), page 4.

Q: Why do you recommend changing the on-peak and off-peak periods for Schedule 60?

A: The on-peak and off-peak periods in the Company's proposed tariff are out of date. In 2021, these periods were applied to Schedule 60 because they aligned with the Company's then-current Rate Schedule No. 2E (Residential Electric Vehicle Time-of-Use Pilot).[16]

Following the Company's 2024 General Rate Case, Schedule 2E was closed to new service effective April 25, 2025. Per the Phase II Settlement Stipulation in the 2024 GRC, Schedules 2 and 2E will be consolidated and replaced by a new, optional time-of-use rate open to all residential customers including EV owners.[17] Existing Schedule 2E customers will be automatically assigned to the new Schedule 1 residential TOU pilot program on December 1, 2025.[18] To align with Schedule 1 TOU customer education efforts required by the Phase II Settlement Stipulation and reinforce the importance of off-peak charging, residential EV drivers in RMP's Utah service territory should see consistency between the on-peak/off-peak periods their home and at Company-owned fast charging locations.

Q: Are there other reasons why the Schedule 60 and the Schedule 1 TOU option peak periods should align?

[16] *See* Rocky Mountain Power Electric Service Schedule No. 2E, *Residential Service – Electric Vehicle Time-of-Use Pilot* (filed May 9, 2025), 002E_Residential_Service_Electric_Vehicle_Time_of_Use_Pilot.pdf.
[17] Phase II Settlement Stipulation, *supra* note 2, at 3-4.
[18] *See* Schedule No. 1, s*upra* note 2.

A: Yes. There are at least two additional reasons why the Schedule 60 peak periods should match the forthcoming Schedule 1 TOU option peak periods. First, relative to the older Schedule 2E peak periods, the forthcoming Schedule 1 TOU peak periods are based on more current system peak usage and electricity prices. I will not reiterate the full rate design of the new Schedule 1 TOU option here, aside from stating that relative to the peak periods in the current and proposed Schedule 60 tariffs, the Schedule 1 TOU option peak periods are based on more current electricity price data from the 15-minute Western Energy Imbalance Market (WEIM) and they align more closely with the Company's substation peak loads.[19] In order to minimize system impacts from DC fast charging and to continue to incent off-peak charging, Schedule 60 peak periods should reflect the forthcoming TOU rate available to residential customers.

The second reason for aligning peak periods with the new Residential TOU optional rate is to minimize arbitrage opportunities for RMP customers. Once Schedule 2E customers are reassigned to the new Schedule 1 TOU rate, there will be several hours in which charging at Company-owned fast chargers will be more economical than charging at home if the peak periods are not aligned. For example, from 8pm-10pm, RMP customers on the Residential TOU option could feasibly charge at Company-owned fast chargers for

[19] I have actively participated in the design of the new residential TOU rate in stakeholder workshops and in testimony during Phase II of PacifiCorp's 2024 GRC. For more details on the new Schedule 1 TOU rate option, *see Direct Testimony and Exhibits of Robert M. Meredith for Rocky Mountain Power* (filed June 28, 2024) and *Phase II Rebuttal Testimony of Robert M. Meredith* (filed November 26, 2024) in Docket No. 24-035-04; and *Phase II Direct Testimony of Karl G. Boothman of behalf of Western Resource Advocates* (filed October 30, 2024) and *Phase II Rebuttal Testimony of Karl G. Boothman on behalf of Western Resource Advocates* (filed November 26, 2024) in Docket No. 24-035-04.

$0.15/kWh while their home rate is $0.28/kWh-$0.32/kWh.[20] Conversely, customers charging at RMP DCFC locations from 8am-10am and 3pm-6pm would pay on-peak rates even though these times no longer align with system peaks or the highest WEIM prices.

V. RECOMMENDATIONS

Q: Please summarize your recommendations.

A: I recommend the following:

- The Company should correct the coincident peak input data for Schedule 60 and file an updated cost of service study and updated exhibits in rebuttal testimony.
- The Company should align its proposed Schedule 60 tariff so that the time periods match the time periods in the forthcoming Schedule 1 Time-of-Use Optional Rate.

Q: Does this conclude your testimony?

A: Yes.

[20] Schedule 1 TOU is a seasonally-differentiated rate, hence the range of summer and winter energy prices.

I have read this filing and believe that it is supported in fact and in law.

Respectfully submitted,

WESTERN RESOURCE ADVOCATES

Sophie Hayes
Utah Clean Energy Manager/Senior Attorney
801-212-9419
sophie.hayes@westernresources.org