Witness OCS – 5S

BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

In the Matter of the 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. 20-035-04**
	)	**Phase II Surrebuttal Testimony of Ron Nelson On behalf of the Office of Consumer Services**

November 6, 2020

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND OCCUPATION.

A. My name is Ron Nelson. I am a Director with Strategen Consulting. My business address is Suite 400, 2150 Allston Way, Berkeley, California 94704.

Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS PROCEEDING?

A. I am testifying on behalf of the Utah Office of Consumer Services ("OCS").

Q. ARE YOU THE SAME RON NELSON WHO FILED EARLIER TESTIMONY IN THIS DOCKET?

A. Yes. I filed Phase II direct testimony and rebuttal testimony.

Q. WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?

A. I respond to several intervenors' rebuttal testimony on Rocky Mountain Power's ("RMP's") proposed cost of service model, revenue apportionment, rate design, and AMI Project.

Q. PLEASE PROVIDE A DESCRIPTION OF THE EXHIBITS AND WORKPAPERS RELATED TO YOUR SURREBUTTAL TESTIMONY.

A. I have attached the following exhibits and workpapers:

- Exhibit OCS 5.1S consists of responses to data requests referenced in this testimony and the attached exhibits.
- Workpaper OCS 5.1S modifies RMP's rebuttal ECOSS to demonstrate the effect of RMP's new FERC account 364 subfunctionalizion.
- Workpaper OCS 5.2S modifies RMP's rebuttal ECOSS to demonstrate the effect of OCS' recommended ECOSS and revenue apportionment modifications.
- Workpaper OCS 5.3S documents my revenue apportionment analysis.

Q. DOES NOT RESPONDING TO AN ISSUE INDICATE AGREEMENT?

A. No. I respond to a narrow scope of issues in my surrebuttal and my not commenting on an issue should not be interpreted as agreement.

Q. HOW IS YOUR SURREBUTTAL TESTIMONY ORGANIZED?

A. My surrebuttal testimony is organized into the following sections:

I. Introduction
II. Embedded Cost of Service Study ("ECOSS"):
    a. Production & transmission ("P&T") subfunctionalization
    b. Distribution subfunctionalization
    c. AMI functionalization
    d. Production & transmission classification
    e. Distribution classification
III. Marginal Cost of Service Study ("MCOSS")
IV. Revenue apportionment
V. Rate design
    a. Rate unbundling
    b. Interruptible rate pilot
    c. Residential rate design

VI. AMI project

Q. WHAT ARE THE HIGH-LEVEL TAKEAWAYS FROM YOUR SURREBUTTAL TESTIMONY?

A. RMP's rebuttal testimony disengages from objective facts and analysis in repeated attempts to divert attention from the shortcomings of its proposals and deflect accountability. RMP's rebuttal testimonies also promote multiple subjective decisions that benefit its commercial and industrial classes at a significant cost to its residential class.

RMP does not dispute the objective facts and analysis from my direct testimony, such as the impacts I quantified from RMP's new subfunctionalization and rate unbundling process. RMP's avoidance has left my analysis uncontested: RMP's proposed P&T subfunctionalization and related rate unbundling shift cost collection away from volumetric bill components to demand related rate components and result in an unprecedented change to ratemaking. I continue to strongly recommend that the PSC reject RMP's proposed fixed and variable subfunctionalization and rate unbundling proposals.

As for the proposed AMI Project, RMP's rebuttal attempts to deflect accountability by refusing to provide regulators with a comprehensive accounting of its grid modernization investment plans. Instead, RMP is recommending a piecemeal regulatory approach that will benefit shareholders by concealing the true cost of grid modernization and relieve

the utility from providing the full spectrum of potential grid modernization benefits to its customers. AMI and other grid modernization investments represent a paradigm shift in the energy sector that regulators must address to ensure that customers receive benefits from these investments. I continue to support the recommendation made in my direct testimony as the initial steps that the PSC should take to ensure cost-effective grid modernization occurs within RMP's Utah service territory.

Many of RMP's decisions in this case favor the commercial and industrial classes. These decisions appear excessively subjective as they are made without sound supporting analysis from RMP. The subjective decisions begin in RMP's ECOSS with subfunctionalizing P&T and distribution using unprecedented and unsubstantiated methods, RMP's unsupported decisions then flow into revenue apportionment to justify arguments for low revenue allocations for commercial and industrial classes, such as Schedule 9, and end with rates based on unbundled cost components never before seen in the United States to artificially lower energy rates for these customers. RMP's bias is prevalent and consistent.

I recommend that the PSC scrutinize the methodical and comprehensive nature of RMP's subjective ECOSS and rate design decisions when evaluating RMP's proposals against the alternatives presented in this case.

II. ECOSS

a. P&T subfunctionalization

Q. WHICH INTERVENOR REBUTTAL DO YOU RESPOND TO IN THIS SECTION?

A. I respond to RMP Witness Robert Meredith and DPU Witness Bruce Chapman. Notably, UAE, Walmart, and Kroger did not address RMP's P&T subfunctionalization in rebuttal testimonies.

Q. WHAT DOES WITNESS MEREDITH SAY ABOUT RMP'S P&T SUBFUNCTIONALIZATION?

A. Witness Meredith stresses that "sub-functionalizing production and transmission into fixed and variable categories is necessary to facilitate the Company's proposed retail rate unbundling."[1] Witness Meredith also claims that I "oppose showing this additional level of information in the cost of service study, because it facilitates the Company's proposed unbundling of prices, which [Mr. Nelson] oppose."[2]

Q. HOW DO YOU RESPOND TO WITNESS MEREDITH?

A. Witness Meredith has mischaracterized my opposition to P&T subfunctionalization. I do not oppose showing additional information in a

[1] Meredith Rebuttal at 11.
[2] Meredith Rebuttal at 13.

cost of service study – if the information is relevant and meaningful to reasonable cost of service modeling. I also do not oppose retail rate unbundling – if the unbundling method is reasonable. For RMP's subfunctionalization, the additional level of information is not informative; because the categories of fixed and variable do not inform or improve cost classification or allocation. This is important because it means that RMP's proposed subfunctionalization does not inform or improve cost causation within the ECOSS, which is the purpose of each step within the study.

In fact, RMP's P&T subfunctionalization proposal does not meet Witness Meredith's own criteria for evaluating cost of service methodology alternatives.

Q. WHAT ARE WITNESS MEREDITH'S CRITERIA FOR EVALUATING COST OF SERVICE METHODOLOGY ALTERNATIVES?

A. In rebuttal testimony, Witness Meredith asserts that methodologies should strike a balance between:

1. reflecting cost causality
2. being relatively simple and easy for stakeholders to understand
3. using industry-accepted practices
4. minimizing the rate impacts that customers experience.[3]

[3] Meredith Rebuttal at 8-9.

Q. WHY DOES RMP'S PROPOSED P&T SUBFUNCTIONALIZATION FAIL THESE CRITERIA?

A. I address each criterion below:

1. RMP does not use its proposed fixed and variable subfunctionalization to better reflect cost causation, but instead to inform rate design through a distorted ECOSS. Better reflecting cost causation is necessarily demonstrated through a change in classification or allocation. RMP's subfunctionalization does not alter classification or allocation and therefore fails RMP's first criterion.
2. I was the only intervenor to demonstrate that I understood the mechanics of RMP's subfunctionalization and rate unbundling proposals. I am also the only intervenor to oppose it. As I noted in my rebuttal testimony, the DPU and Walmart made erroneous assumptions prompted by RMP's extremely convoluted and confusing subfunctionalization proposal. Intervenors' confusion demonstrates that RMP's proposal fails the second criterion.
3. There is no industry related publication endorsing this specific P&T subfunctionalization. Witness Meredith claims that that the Company performs a similar process in Wyoming but provides specific little support for his characterization of that mechanism in testimony or in discovery. In the Wyoming PSC order provided by RMP it appears RMP has a Power Cost Adjustment Mechanism (PCAM) that "tracks power costs over a 12-month period and compares them against a

baseline net power cost established in a general rate case."[4] This is not what is being proposed in this case for a couple of reasons. First, based on the information RMP provided, the mechanism appears akin to a fuel clause adjustment mechanism that adjusts outside of a rate cases—RMP's subfuncationalization and rate unbundling proposals would not. Second, based on the order provided, the Wyoming PCAM does not appear to be informed by the same subfunctionalization approach. This is not meant to be an exhaustive list of differences. Most importantly, however, is the fact that RMP can only point to one other jurisdiction that has used a somewhat similar approach that RMP proposed in that jurisdiction. This is not evidence of a best or accepted industry practice. The proposal clearly fails the third criterion.

4. The fourth criterion should be categorized as a rate design principle, not an ECOSS criterion. The ECOSS is necessarily focused on costs—not rate impacts. Rates evolve from the ECOSS through revenue apportionment and rate design. Only after an ECOSS is conducted and an analyst looks to revenue apportionment and rate design is it appropriate to consider rate impacts. It would not be a best practice to alter ECOSS methodologies to minimize rate impacts as implied by Witness Meredith.

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[4] *See* RMP's response to OCS Data Request 27.4 and the associated attachment at 9-10.

Q. DOES WITNESS MEREDITH REBUT YOUR ANALYSIS OF THE IMPACTS OF RMP's PROPOSED SUBFUNCTIONALIZATION?

A. No. In my direct testimony, I demonstrated how RMP's subfunctionalization step, by directly enabling the rate unbundling step, results in shifting cost categorization from energy to demand for rate design purposes. Witness Meredith does not dispute my findings of these results. I will discuss this further in the unbundling section of my surrebuttal.

Q. WHAT DOES WITNESS CHAPMAN SAY ABOUT RMP'S P&T SUBFUNCTIONALIZATION?

A. Witness Chapman appears to maintain the mistaken assumption from his direct testimony – which I responded to at length in my rebuttal – that RMP's subfunctionalization and classification are complementary ECOSS steps that together contribute to RMP's ECOSS results.

Q. CAN YOU PROVIDE AN EXAMPLE OF THIS ASSUMPTION?

A. Yes. Witness Chapman finds my statements contradictory that P&T subfunctionalization has no effect on RMP's ECOSS results, and that it also shifts costs in the direction of demand and away from energy.[5]

[5] Chapman Rebuttal at 4.

Q. HOW DO YOU RESPOND?

A. It is important to first note that ECOSS studies follow three basic and sequential steps.[6] First, the analyst functionalizes costs. Subfunctionalization is a sub-step within the first functionalization step that further functionalizes costs. For example, distribution costs are subfunctionalized into primary and secondary distribution functions. Another example is that transmission costs can be subfunctionalized into sub-transmission functions. Second, the analyst classifies costs. Traditionally, these categories are energy, demand, and customer. Third, and lastly, the analyst allocates costs between classes. A necessary implication of this sequence is that subfunctionalized costs are classified and/or allocated differently than if the costs were not subfunctionalized. Both examples I provided – subfunctionalized secondary distribution and subtransmission – would be allocated differently than they would be in a cost study that did not subfunctionalize. *In fact, classifying and/or allocating costs differently is the entire purpose of subfunctionalization*. If costs are not classified or allocated differently – as is the case with RMP proposed subfunctionalization of P&T – there is no reason to subfunctionalize.

[6] *See generally* NARUC Electric Manual and Electricity Pricing: Engineering Principles and Methodologies (Vogt, 2013).

Contrary to well established ECOSS procedure, RMP's P&T classification and allocation steps are unrelated to and uninformed by its P&T subfunctionalization step. Instead of building classification or allocation categories off its sub-functions, RMP separately creates its sub-functions without changing its classification or allocation categories at all. Essentially, RMP confuses the functionalization and classification steps; conducting classification first then functionalization. This results in RMP classifying and allocating P&T costs into energy and demand without any influence from its sub-functions, which is why the final ECOSS results are unaffected. However, RMP does not use allocated cost categories to design rates; RMP instead uses the separate "variable" and "fixed" sub-functions to "unbundle" rate design. Using these sub-functions instead of the classified and allocated costs has the effect of shifting costs away from volumetric cost-based rate collection.

Witness Chapman's faulty assumption is more evidence of how confusing RMP's approach is. Witness Chapman rightly assumes that RMP's subfunctionalization would perform like every other ECOSS, but it does not.

Q. DOES WITNESS CHAPMAN BELIEVE THAT RMP'S SUBFUNCTIONALIZATION FOLLOWS ITS CLASSIFICATION?

A. It appears so. Witness Chapman mentions that because "subfunctionalization occurs following classification of production and

transmission into demand and energy," that demand and energy shares should be preserved, and that RMP has done just that.[7]

Q. WHY DOES WITNESS CHAPMAN BELIEVE THIS?

A. It appears that Witness Chapman is referencing how Witness Meredith describes the process in direct testimony: "the Production and Transmission functions, which are broken out into demand-related and energy-related, were split into a further dimension of Fixed and Variable costs."[8] Witness Meredith makes it sound as though the costs were classified into energy and demand categories and then further subfunctionalized into fixed and variable categories. RMP maintains the labels energy and demand alongside fixed and variable throughout its ECOSS, giving the impression that the energy and demand labels are preserved for use in rate design.

Q. DOES RMP USE THE PRESERVED ENERGY AND DEMAND CATEGORIES IN RATE DESIGN?

A. No. Even if RMP preserves the P&T classification in the ECOSS, those classified energy and demand costs are not actually used for rate design when RMP transitions from the ECOSS to its rate unbundling step. The

[7] Chapman Rebuttal at 5.
[8] Meredith Direct at 4.

processes are separate, which is what allows the subfunctionalized-then-unbundled fixed and variable rate categories to deviate from the classified demand and energy categories, even if they are all preserved throughout the ECOSS.

Q. DO COST STUDIES USUALLY CLASSIFY THEN SUBFUNCTIONALIZE COSTS, AS RMP HAS SUGGESTED IT DID?

A. No. Subfunctionalization does not occur after classification in a standard ECOSS. First of all, an analyst has to functionalize P&T into P&T. Functionalization is how these functions are technically defined. This suggests that RMP's method first functionalizes, then classifies and allocates, and at the end of the study subfunctionalizes costs. This appears to be the necessary order of the process because one cannot classify cost until the cost functions are defined through functionalization. I am not aware of a cost study that first classifies then functionalizes or subfunctionalizes costs, nor have I seen an industry publication supporting this method, nor did RMP provide any examples as support. As I described earlier in this section, the steps are done in order for a good reason: to accurately reflect cost causation, not to maintain various parallel cost categories for different uses in rate design.

Q. DOES WITNESS CHAPMAN MISINTERPRET YOUR CONCERN WITH RMP'S DEVIATION FROM ITS ECOSS FOR RATE DESIGN?

A. Yes. Witness Chapman states that "unlike traditional COS studies, there is no one-to-one mapping of cost causes to retail charges, which, in [Witness Nelson's] view, complicates an understanding of the link between costs and prices."[9] However, I do not expect one-to-one mapping from a COS study to retail charges; I expect rate design simply to be informed by the results of a properly conducted ECOSS. As I have explained in my direct testimony, my rebuttal, and throughout this surrebuttal, RMP's proper demand and energy classifications do not inform its rate design. Instead, its fixed and variable sub-functions – which are unprecedented – guide its rate design.

Q. DOES WITNESS CHAPMAN MISINTERPRET YOUR CONCERN WITH DISTRIBUTION COSTS?

A. Yes. Witness Chapman states that "[Witness Nelson] also concludes that the fixed/variable approach, when applied to distribution costs, shifts costs in the direction of demand-related cost and away from energy-related cost."[10] However, RMP's subfunctionalization into fixed and variable categories was done to P&T, not distribution costs. My concern with shifted energy and demand categories is unrelated to distribution.

[9] Chapman Rebuttal at 5.
[10] Chapman Rebuttal at 6.

Witness Chapman is correct that I am separately concerned about distribution costs, specifically how RMP's rate design deviates from its distribution classification into demand and customer categories.

Q. WHAT DO YOU CONCLUDE ABOUT RMP'S P&T SUBFUNCTIONALIZATION?

A. RMP's P&T subfunctionalization does not belong in its ECOSS. First, it does not satisfy Witness Meredith's own COS methodology criteria. Second, RMP does not dispute that it results in a shift from energy to demand related cost recovery within rate design. Third, it is not well understood by other intervenors and lacks transparency. The subfunctionalization of P&T should be rejected.

b. Distribution subfunctionalization

Q. WHICH INTERVENOR REBUTTAL DO YOU RESPOND TO REGARDING DISTRIBUTION SUBFUNCTIONALIZATION?

A. I respond to RMP Witness Meredith and UAE Witness Justin Bieber about RMP's subfunctionalization of primary and secondary distribution costs.

Q. PLEASE SUMMARIZE RMP'S REBUTTAL TESTIMONY ON DISTRIBUTION SUBFUNCTIONALIZATION.

A. Witness Meredith briefly addresses this issue. He recounts RMP's process for subfunctionalizing FERC accounts 364 through 368 to primary and secondary voltage, although he does not explain *how* the items in those accounts are categorized as primary or secondary. He states that the decision occurs "in consultation with the Company's Distribution Engineering Standards department."[11] He then reveals that, since filing its direct testimony, RMP "determined that 35 foot class four poles should be considered secondary."[12] RMP does not explain this decision other than to say that it came out of "further review with the Company's Distribution Standards Engineering department."[13] RMP incorporates the new subfunctionalization into its updated rebuttal ECOSS, thereby changing FERC account 364 to 6.44% secondary when it was formerly 0.14% secondary.[14]

Q. HOW DO YOU RESPOND TO WITNESS MEREDITH?

A. Once again, Witness Meredith's ECOSS method has failed his own ECOSS criteria. Specifically, the process for subfunctionalizing between primary and secondary voltage is not "relatively simple and easy for stakeholders to understand." Indeed, after several rounds of discovery and testimony, RMP still has not clarified its analytical approach. It is not

[11] Meredith Rebuttal at 14.
[12] Meredith Rebuttal at 14.
[13] Meredith Rebuttal at 14.
[14] Exhibit RMP___(RMM-8R) and Exhibit RMP___(RMM-2).

possible for stakeholders to understand how RMP chooses whether equipment is primary or secondary – because RMP has consistently avoided explaining it. RMP's unsubstantiated decision to subfunctionalize even more costs as secondary in rebuttal again reinforces my original concerns.

Witness Meredith's new subfunctionalization for FERC account 364 implies that 35-foot class four poles only carry secondary conductors. However, Witness Meredith provided no evidence or explanation for this implicit assumption.

When compared to PacifiCorp's subfunctionalization of FERC account 364 in its other jurisdictions, this new and unjustified Utah subfunctionalization is concerning and inconsistent.

Table 1: PacifiCorp Treatment of Poles, Towers, Fixtures (Account 364)[15]

	Pacificorp 2019		RMP Rebuttal Proposal	
State	**Primary**	**Secondary**	**Primary**	**Secondary**
CA	98.72%	1.28%		
ID	99.99%	0.01%		
OR	98.91%	1.09%		
UT	99.86%	0.14%	93.56%	6.44%
WA	99.74%	0.26%		
WY	98.39%	1.61%		
Total	99.37%	0.63%		

[15] *See* RMP's response to OCS Data Request 8.21.

Table 1 demonstrates that until RMP decided, without any explanation, to alter the subfunctionalization of FERC account 364, no other PacifiCorp jurisdiction categorized poles, towers, or fixtures as even 2% secondary. The average was under 1%. Now, RMP has categorized this account as over 6% secondary. Without evidence of accounting practices and engineering records to support this change, it is impossible to assess the reasonableness of such a subjective decision. It is also important to note the ECOSS impacts of the new subfunctionalization.

Table 2: ECOSS Results for Different Account 364 Subfunctionalizations[16]

Schedule No.	Description	Percent Change from Current Revenues	
		6.44% Secondary	*0.14% Secondary*
1	Residential	10.98%	10.75%
6	GS - Large	-3.87%	-3.61%
8	GS - Over 1 MW	-1.62%	-1.38%
7,11,12	Street & Area Lighting	-22.95%	-22.95%
9	GS - High Voltage	6.92%	6.92%
10	Irrigation	4.82%	5.24%
15	Traffic Signals	-6.30%	-6.17%
15	Outdoor Lighting	-31.01%	-30.99%
23	GS - Small	-5.80%	-5.92%
SpC	Customer 1	15.19%	15.19%
SpC	Customer 2	1.58%	1.58%
	Total Utah Jurisdiction	3.80%	3.80%

The third column in Table 2 displays RMP's rebuttal ECOSS results, when FERC account 364 is 6.44% secondary, while the last

[16] Workpaper OCS 5.1S

column shows the rebuttal ECOSS results when account 364 is back to its original 0.14% secondary. While the changes between the two are of course small, they are unmistakable. RMP's new subfunctionalization yielded higher revenue responsibility for the residential and small general service classes, and lower revenue responsibility for other commercial and industrial consumers. This change, as with many, appear to be in line with RMP's economic incentive to shift more costs onto the residential class to lower rates for its commercial and industrial customers.

Q. PLEASE SUMMARIZE UAE'S REBUTTAL TESTIMONY ON DISTRIBUTION SUBFUNCTIONALIZATION.

A. Witness Bieber claims several times that I do not provide evidence demonstrating the accuracy of my proposed changes to distribution subfunctionalization.

Q. HOW DO YOU RESPOND TO UAE?

A. My position is supported based on the principle that the Company has the burden of proving that its ECOSS methodologies are reasonable. RMP has not provided sufficient transparency to determine the reasonableness of its distribution subfunctionalization, which is something the Commission needs to ensure to set reasonable rates.

Q. DOES WITNESS BIEBER FIND RMP'S METHODOLOGY TRANSPARENT?

A. No. After critiquing my proposed distribution subfunctionalization, Witness Bieber goes on to question one of RMP's distribution classifications, stating that "basic logic would indicate that at least some amount of poles, towers, and fixtures in FERC Account 364 should be considered secondary."[17]

Q. DOES WITNESS BIEBER'S CONCERN WITH FERC ACCOUNT 364 CORROBORATE YOUR OVERALL POSITION?

A. Yes. Witness Bieber correctly characterizes my position, in his own words, that "without a transparent quantitative explanation of the costs, there is no way to know whether RMP's primary/secondary split calculations are accurate."[18] Witness Bieber then validates that very position by questioning RMP's classification for FERC account 364. Witness Bieber does not seem to recognize that he too is questioning RMP's methodology and that he too has no way to verify RMP's decisions because RMP has been insufficiently transparent. Witness Bieber chose not to make a subjective modification to demonstrate the impact of RMP's lack of transparency, while I did. We both have valid – almost identical –

[17] Witness Bieber at 18.
[18] Witness Bieber at 16.

arguments. For that reason, I support Witness Bieber's position that RMP should provide more information about distribution subfunctionalization.

Q. WHAT DO YOU CONCLUDE ABOUT RMP'S DISTRIBUTION SUBFUNCTIONALIZATION?

A. ECOSS methodologies need to be transparent, not kept in a black box. RMP has been unable to present a transparent distribution subfunctionalization methodology throughout multiple rounds of discovery and testimony. Given RMP's new, unexplained shift of FERC account 364 costs toward secondary subfunctionalization and Witness Bieber's rebuttal identification of RMP's lack of transparency, I recommend that the Commission require RMP to analytically demonstrate the reasonableness of its subfunctionalization. I also recommend that the Commission consider this when reviewing my alternate ECOSS in the revenue apportionment section of my surrebuttal, which includes a sensitivity for distribution subfunctionalization.

c. AMI functionalization

Q. DO INTERVENORS AGREE THAT AMI HAS IMPACTS AT THE PRODUCTION AND TRANSMISSION LEVEL?

A. Yes and no. Kroger Witness Richard Baudino and RMP Witness Meredith assert that customer metering is not related to production and

transmission. On the other hand, DPU Witness Chapman concludes that AMI-based capacity cost savings will accrue to production and transmission – though Witness Chapman believes that AMI benefits are "related predominantly to mitigation of peak loads."[19] UAE Witness Bieber argues that changing customer behavior might indeed avoid or defer some production and transmission investments but that these are hypothetical savings and therefore do not belong in an ECOSS.[20]

Q. HOW DO YOU RESPOND TO THE ABOVE ARGUMENTS?

A. I disagree with Witness Chapman's statement that AMI benefits are primarily related to peak load mitigation. AMI enables load shifting when combined with TOU rates and conservation voltage reduction – both of which are energy related benefits. Witness Bieber does not counter my core argument that AMI directly substitutes for P&T and how substitutes should be treated in an ECOSS. There should be nothing hypothetical about AMI meters enabling critical peak pricing that lowers demand requirements by 30 percent.[21] In Section VII, below, I discuss requirements that will help ensure that the benefits that AMI provides are tangible and that RMP is held accountable for realizing those benefits.

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[19] Chapman Rebuttal at 8.
[20] Bieber Rebuttal at 20.
[21] Faruqui, et. al. "Time-Varying and Dynamic Rate Design". The Regulatory Assistance Project (RAP) and The Brattle Group. http://www.raponline.org/wp-content/uploads/2016/05/rap-faruquihledikpalmer-timevaryingdynamicratedesign-2012-jul-23.pdf. At 28.

Q. DO INTERVENORS AGREE THAT AMI FUNCTIONALIZATION SHOULD FOLLOW THE "BENEFICIARY PAYS" PRINCIPLE?

A. Yes and no. Witness Chapman and Witness Bieber disagree with my position that broad electric system beneficiaries should pay for the new infrastructure, arguing that the customer with the advanced meter – in this case, residential – will benefit by reducing its own peak demand or participating in other savings programs. Witness Meredith asserts that if residential meters should be functionalized differently in recognition of their contribution to P&T, then so too should large customer meters be functionalized differently.

Q. HOW DO YOU RESPOND?

A. Witnesses Chapman and Bieber focus on how changes to load profiles attributable to AMI would alter class load profiles and therefore adjust energy and demand allocations accordingly. The witnesses appear to be arguing about the identification of the beneficiary and how it should be reflected in the ECOSS. However, both witnesses are incorrectly framing the issue by not addressing that investing in AMI is a substitute for P&T. The concept of how to deal with cost causation in the context of substitution is touched in the NARUC Manual in multiple areas.

While I use the beneficiary pays principle to explain the concept of re-functionalizing AMI, one can also view this issue from a cost causation

perspective, with its basis in the idea of substitution. The NARUC Electric Manual states that “to the extent that transmission investment enables a utility to avoid line losses, some portion of transmission may be classified as energy related.”[22] This excerpt is explaining how transmission can substitute for other energy-related assets, such as generation, and that is why a portion of its costs can be considered energy related. Likewise, AMI investment is a substitute for production and transmission investments. These costs are incurred for various reasons, which are represented by their respective classifications.[23]

In fact, the NARUC Manual also says that “it may be possible to identify some energy component of the cost” of the electric distribution system.[24] Even 30 years ago, NARUC clearly stated that the distribution system is demand-related, energy-related, and customer-related. Functionalizing AMI as production, transmission, and distribution allows the meter costs to be appropriately classified into energy and demand in alignment with the cost causation associated with each respective function.

I agree with Witness Meredith that larger, non-residential meters are also capable of measuring time-varying energy and demand and that

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[22] National Association of Regulatory Utility Commissioners, Electric Utility Cost Allocation Manual, January 20 (1992). (hereinafter “NARUC Manual”) at 21.
[23] Functionalizing versus classifying AMI differently to reflect substitution is partly a practical one.
[24] NARUC Manual at 21.

an argument could be made that the additional cost of that metering enables demand charges with benefits beyond distribution. Indeed, the NARUC Manual makes this very point when it says that meters "may also be classified using a demand component to show that larger-usage customers require more expensive metering equipment."[25] My AMI functionalization recommendation is a logical extension of the argument made by Witness Meredith and the NARUC Manual.

d. P&T classification

Q. PLEASE SUMMARIZE THE INTERVENOR REBUTTAL TESTIMONY YOU WILL RESPOND TO REGARDING P&T CLASSIFICATION.

A. Witness Baudino critiques my proposal to classify P&T as 40 percent demand-related and 60 percent energy-related as having "no basis,"[26] while Witness Bieber claims that the 40:60 split is "arbitrary" and that I didn't provide evidence that it accurately reflects RMP's P&T.

Witness Chapman notes that the "time is approaching" to review the rule that currently classifies RMP's P&T costs as 25 percent energy-related and 75 percent demand-related. Witness Meredith proposes a COS "collaborative review" after this rate case in which parties can

[25] "NARUC Manual at 96.
[26] Baudino Rebuttal at 5.

discuss and consider alternatives “that best reflect the current and evolving status of the electric industry.”[27]

Q. HOW DO YOU RESPOND TO THE ABOVE ARGUMENTS?

A. With respect to Witnesses Baudino and Bieber concerns, given the modern power system transition, my 40:60 proposal is likely to be a superior subjective split than RMP’s 25:75 proposal.

I appreciate that RMP and DPU acknowledged the importance of reviewing COS methods, including P&T classification, but they are vague about when that review should take place and they clearly discourage any consideration in this docket. However, it would be inappropriate to ignore the effects of the rapidly changing power system on the hugely costly production and transmission functions. I would echo OCS Witness Michele Beck’s rebuttal testimony that the PSC should consider the changing resource mix and its present implications for cost causation when making its decision on revenue allocation in this case.[28]

e. Distribution classification

Q. PLEASE SUMMARIZE THE INTERVENOR TESTIMONY YOU WILL RESPOND TO IN THIS SECTION.

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[27] Meredith Rebuttal at 9.
[28] Beck Rebuttal at 4.

A. In his rebuttal, Witness Chapman reiterates his direct testimony position that it is "standard approach" to classify FERC account 368 (line transformers) as partly demand-related and partly customer-related.[29] Witness Bieber supports Witness Chapman's recommendation to use the minimum size or minimum system methods to classify costs in FERC accounts 364 through 368.

Q. HOW DO YOU RESPOND TO WITNESSES CHAPMAN AND BIEBER?

A. In my rebuttal testimony, I extensively disputed the idea that these methods for distribution classification are standard practice and explained why they are not reasonable approaches.[30] Intervenors have not provided any new argumentation in favor of these methods, so my rebuttal testimony still stands.

III. MARGINAL COST OF SERVICE STUDY ("MCOSS")

Q. PLEASE SUMMARIZE THE INTERVENOR TESTIMONY YOU WILL RESPOND TO IN THIS SECTION.

A. RMP Witness Meredith identifies my concern with the Company's decision to treat portions of distribution poles, conductors, and line transformers as customer-related, but does not further address this issue. Witness

[29] Chapman Rebuttal at 10.
[30] Nelson Rebuttal at 11.

Meredith disagrees with my rejection of using a regression to estimate customer costs, stating that "the Company's transformer regression has been well accepted for many years in Oregon and California."[31]

Q. HOW DO YOU RESPOND TO WITNESS MEREDITH?

A. Poles and transformers should not be considered customer related. Utilities and commissions in MN and NH do not consider transformers or poles a marginal customer cost.[32]

Additionally, using regression as the method for estimating customer costs is flawed. I have reviewed numerous regressions and have generally found the approach to be highly susceptible to subjective data cleaning and regression specification decisions.[33]

IV. REVENUE APPORTIONMENT

Q. PLEASE SUMMARIZE THIS SECTION.

[31] Meredith Rebuttal at 18.
[32] "Marginal Customer-related plant addition costs measure the marginal cost to connect a customer, which includes the current installed cost of a meter and a service." *See* Marginal Cost Testimony of Melissa F. Bartos in Docket No. DE 19-064: Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty Utilities Distribution Service Rate Case. April 30, 2019 at 10. *See also* MN PUC Docket No. 15-1033.
[33] Direct Testimony of Ron Nelson in Docket No. DE 19-064: In the matter of Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty Utilities Petition for Permanent Rate Increase. December 6, 2019. At 58.

A. I first respond to rebuttal testimony from Witnesses Bieber and Meredith. Then I present the OCS' proposed revenue apportionment for this case.

Q. WHAT DO YOU RESPOND TO FROM WITNESS BIEBER?

A. Witness Bieber suggests that my decision to wait until surrebuttal to propose a revenue apportionment was a "strategy" that places other parties at an unfair disadvantage.[34]

Q. HOW DO YOU RESPOND TO WITNESS BIEBER?

A. With such a significant disparity between revenue requirement positions, an intervenor that proposed a revenue apportionment in direct testimony would likely update it in surrebuttal.

Q. HAS WITNESS MEREDITH CHANGED HIS REVENUE APPORTIONMENT SINCE DIRECT TESTIMONY?

A. Yes. In his rebuttal testimony, Witness Meredith proposes a new rate spread midpoint to reflect RMP's revised proposed price increase of $72 million. Although RMP's updated rebuttal ECOSS shows extremely little change in the rate of return index amongst the customer classes, RMP also decided to change the rate spread distribution. RMP raised the

[34] Bieber Rebuttal at 7.

relative percent increase for the residential class and decreased it for general service.

Specifically, in its initial filing, RMP proposed that the residential class should have a revenue increase two percentage points above the rate spread midpoint and that Schedules 6 and 8 should have a revenue increase one percentage point below the rate spread midpoint.[35] In the rebuttal filing, RMP proposed that the residential class should have a revenue increase three percentage points above the rate spread midpoint and that Schedules 6 and 8 should have a revenue increase two percentage points below the rate spread midpoint. Schedules 23 and 15 receive no base revenue increase, which is about 0.71 percentage points lower than the original rate spread. Other than the residential rate recommendation, the proposal to give Schedule 9 the same increase as Schedule 11 is completely unreasonable and unexplained. RMP's ECOSS shows Schedule 9 needing an increase of almost 7% to get to cost, while Schedule 11 needs under a 5% increase—an almost 50% differential. I assess this further and demonstrate that RMP appears to be shielding Schedule 9 from a reasonable rate increase with no explanation. Witness Meredith explains that this change is in response to the wishes of the large customers Walmart and Kroger.[36]

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[35] Meredith Direct at 11-12.
[36] Meredith Rebuttal at 5-6.

Q. HOW DO YOU RESPOND TO THIS CHANGE?

A. RMP's updated revenue apportionment appears to be more influenced by large customer testimony than by changes to ECOSS results. Without any ECOSS based analysis, RMP heeded the "feedback" of a single set of customer interests and reduced class responsibility accordingly. [37] Claiming "progress toward cost of service," RMP then raised the relative responsibility of the residential class, despite their ECOSS demonstrating the same relative class performance as in RMP's initial filing.[38] Table 3 below shows the revenue RMP has proposed to collect from schedules 1, 6, and 8 under its new rebuttal rate spread compared to what it would have collected from those classes if it had maintained its rate spread from direct testimony.

Table 3: Comparison of RMP's Proposed Rate Spreads *

	Revenue Change Under Rebuttal Rate Spread	Revenue Change Using Original Rate Spread	Difference
Residential	$49,059	$41,753	$7,306
Schedule 6	$8,919	$14,120	-$5,201
Schedule 8	$2,513	$3,979	-$1,466

*All numbers in $000

[37] Meredith Rebuttal at 5.
[38] Meredith Rebuttal at 6.

The two, seemingly small, rate spread changes described above transfer $7.3 million, or over 10% of RMP's entire revenue requirement increase, onto the residential class. The magnitude of this shift simply cannot solely be justified by the "feedback" from a single set of customer interests. This revenue apportionment change should not be approved under any circumstances.

Q. PLEASE DISCUSS OCS'S PROPOSED REVENUE APPORTIONMENT.

A. The OCS's revenue apportionment is informed by its proposed revenue requirement and proposed ECOSS changes and other scenarios discussed below. Table 4 below provides RMP's rebuttal ECOSS results.

Table 4: RMP Rebuttal ECOSS Results[39]

Schedule No.	Description	Annual Revenue	Rate of Return Index	Total Cost of Service	Increase (Decrease) to = ROR	Percentage Change from Current Revenues
1	Residential	730,624,117	0.84	810,821,743	80,197,626	10.98%
6	General Service - Large	520,136,533	1.22	499,984,714	(20,151,820)	-3.87%
8	General Service - Over 1 MW	146,556,965	1.15	144,189,274	(2,367,692)	-1.62%
7,11,12	Street & Area Lighting	8,495,896	2.22	6,545,701	(1,950,196)	-22.95%
9	General Service - High Voltage	268,905,448	0.90	287,522,468	18,617,020	6.92%
10	Irrigation	17,699,554	0.98	18,553,053	853,499	4.82%
15	Traffic Signals	802,613	1.32	752,049	(50,564)	-6.30%
15	Outdoor Lighting	1,155,315	2.73	797,023	(358,292)	-31.01%
23	General Service - Small	138,042,124	1.28	130,038,023	(8,004,102)	-5.80%
SpC	Customer 1	31,382,220	0.68	36,148,877	4,766,657	15.19%
SpC	Customer 2	31,485,131	1.05	31,982,900	497,769	1.58%
	Total Utah Jurisdiction	1,895,285,918	1.00	1,967,335,825	72,049,907	3.80%

[39] Exhibit RMP_(RMM-1R)

Q. HOW DO THE ECOSS RESULTS CHANGE UNDER OCS'S RECOMMENDED STEP 2 REVENUE REQUIREMENT?

A. Table 5 below displays the ECOSS results under the OCS recommended step 2 revenue requirement and associated ROR.

Table 5: ECOSS Results with OCS Recommended Revenue Requirement[40]

Schedule No.	Description	Annual Revenue	Return Index	Cost of Service	(Decrease) to = ROR	Change from Current Revenues
1	Residential	730,624,117	0.85	762,002,061	31,377,944	4.29%
6	General Service - Large	520,136,533	1.21	471,803,917	(48,332,616)	-9.29%
8	General Service - Over 1 MW	146,556,965	1.14	136,822,020	(9,734,946)	-6.64%
7,11,12	Street & Area Lighting	8,495,896	2.20	6,236,028	(2,259,869)	-26.60%
9	General Service - High Voltage	268,905,448	0.89	273,816,091	4,910,643	1.83%
10	Irrigation	17,699,554	0.97	17,514,100	(185,455)	-1.05%
15	Traffic Signals	802,613	1.34	708,840	(93,773)	-11.68%
15	Outdoor Lighting	1,155,315	2.72	762,167	(393,149)	-34.03%
23	General Service - Small	138,042,124	1.26	123,405,460	(14,636,665)	-10.60%
SpC	Customer 1	31,382,220	0.69	34,333,475	2,951,256	9.40%
SpC	Customer 2	31,485,131	1.05	30,624,651	(860,481)	-2.73%
	Total Utah Jurisdiction	1,895,285,918	1.00	1,858,028,809	(37,257,110)	-1.97%

Q. HOW DO THE ECOSS RESULTS CHANGE WHEN YOU INCORPORATE YOUR RECOMMENDED ECOSS CHANGES ALONG WITH THE OCS'S REVENUE RECOMMENDATION?

A. Table 6 demonstrates the ECOSS results when both the OCS revenue requirement and ECOSS modifications are incorporated.

[40] Workpaper OCS 5.2S. The revenue adjustments were based off the JAM download workpaper from OCS Witness Ramas, "CONFIDENTIAL_UT GRC JAM - STEP2 Ramas_Surrebuttal_PrimaryROR".

Table 6: ECOSS Results with OCS Recommended Revenue and Model Alterations[41]

Schedule No.	Description	Annual Revenue	Rate of Return Index	Total Cost of Service	Increase (Decrease) to = ROR	Percentage Change from Current Revenues
1	Residential	730,624,117	0.97	723,999,559	(6,624,558)	-0.91%
6	General Service - Large	520,136,533	1.17	478,530,869	(41,605,665)	-8.00%
8	General Service - Over 1 MW	146,556,965	1.02	142,725,419	(3,831,546)	-2.61%
7,11,12	Street & Area Lighting	8,495,896	1.77	6,800,665	(1,695,232)	-19.95%
9	General Service - High Voltage	268,905,448	0.73	290,287,459	21,382,011	7.95%
10	Irrigation	17,699,554	0.83	18,592,249	892,694	5.04%
15	Traffic Signals	802,613	1.26	726,538	(76,075)	-9.48%
15	Outdoor Lighting	1,155,315	1.71	925,620	(229,695)	-19.88%
23	General Service - Small	138,042,124	1.30	121,699,454	(16,342,671)	-11.84%
SpC	Customer 1	31,382,220	0.53	36,562,456	5,180,236	16.51%
SpC	Customer 2	31,485,131	0.47	37,178,521	5,693,390	18.08%
	Total Utah Jurisdiction	1,895,285,918	1.00	1,858,028,809	(37,257,110)	-1.97%

Table 6 demonstrates that the three reasonable ECOSS adjustments discussed in my direct testimony bring the Residential class rate of return index up from 0.84 to 0.97. The Small General Service class continues to pay well above its cost across all modeling assumptions, and the Irrigation class goes from essentially paying its cost of service to slightly under paying. Additionally, the High Voltage General Service class moves from 0.90 to .073 demonstrating the class is far from paying its cost under all modeling assumptions, including RMP's.

[41] Workpaper OCS 5.2S

Comparing Tables 5 and 6 is interesting because it demonstrates how significantly the subjective assumptions made within RMP's ECOSS can impact rate spread. The results of ECOSSs not only vary greatly due to subjective assumptions, as demonstrated in my rebuttal testimony but they also differ through time.

Q. PLEASE SUMMARIZE THE ECOSS RESULTS YOU EVALUATED.

A. Table 7 summarizes the previously discussed ECOSS results, plus RMP's rebuttal revenue requirement ECOSS with OCS' methodological changes, as well as an ECOSS representing the revenue midpoint between OCS and RMP's recommendations.

Table 7: ECOSS Scenario Comparison[42]

	Percentage Change from Current Revenues				
Description	RMP Rebuttal	RMP Rebuttal w/ OCS ECOSS Methods	RMP Rebuttal w/ OCS Revenue	RMP Rebuttal w/ OCS Revenue & ECOSS Methods	Revenue Midpoint w/ OCS ECOSS Methods
Residential	10.98%	5.88%	4.29%	-0.91%	2.15%
General Service - Large	-3.87%	-2.77%	-9.29%	-8.00%	-5.25%
General Service - Over 1 MW	-1.62%	2.29%	-6.64%	-2.61%	0.17%
Street & Area Lighting	-22.95%	-15.79%	-26.60%	-19.95%	-18.07%
General Service - High Voltage	6.92%	12.91%	1.83%	7.95%	10.81%
Irrigation	4.82%	11.53%	-1.05%	5.04%	8.35%
Traffic Signals	-6.30%	-1.92%	-11.68%	-9.48%	-7.14%
Outdoor Lighting	-31.01%	-15.76%	-34.03%	-19.88%	-17.86%

[42] Workpaper OCS 5.3S

General Service - Small	-5.80%	-6.78%	-10.60%	-11.84%	-9.26%
Customer 1	15.19%	22.13%	9.40%	16.51%	19.59%
Customer 2	1.58%	23.41%	-2.73%	18.08%	21.04%
Total Utah Jurisdiction	3.80%	3.80%	-1.97%	-1.97%	0.92%

684

685 **Q. WHAT REVENUE APPORTIONMENT DOES OCS PROPOSE IN THIS**

686 **CASE?**

687 A. I propose two approaches to revenue apportionment; one under a rate

688 decrease, as recommended by the OCS, and the other under a rate

689 increase that represents an approximate midpoint between the OCS and

690 RMP.

691

692 *Table 8: OCS Recommended Rate Spread*[43]

	Rate Spread	
Description	OCS Decrease	Mid-Point Revenue
Residential	-0.51%	1.25%
General Service - Large	-3.00%	0.40%
General Service - Over 1 MW	-1.40%	0.60%
Street & Area Lighting	-10.00%	0.00%
General Service - High Voltage*	-0.50%	1.53%
Irrigation	-0.50%	1.28%
Traffic Signals	-8.00%	0.25%
Outdoor Lighting	-10.00%	0.00%
General Service - Small	-9.50%	0.00%
Customer 1	-0.50%	0.92%
Customer 2	-0.50%	0.92%
Rate increase	-1.97%	0.92%
* includes Schedules 31 and 21		

693

[43] Workpaper OCS 5.3S

694

695 **Q. WHAT WERE THE PRIMARY FACTORS THAT YOU CONSIDERED TO**
696 **INFORM YOUR RATE SPREAD RECOMMENDATION?**

697 A. I consider the factors I recommended in direct testimony, such as
698 gradualism, alongside the various ECOSS and revenue scenarios.[44] As
699 demonstrated in the Table 8 above, when apportioning the rate decrease,
700 I ensured that each class shared in the rate decrease. More specifically, I
701 set a minimum rate decrease at 0.5 percent for classes that were
702 consistently found to not be paying full cost. Classes that were
703 consistently found to be paying over cost received at most a 10 percent
704 decrease. Then I grouped the remainder of the classes above or below
705 the average decrease based on the results of the OCS ECOSS results.
706 When apportioning a rate increase, I follow a similar process. I
707 ensured that no class received a rate decrease, while relying more heavily
708 on the approximately mid-point ECOSS results. Because there is an
709 increase, I do not give a class a decrease for equity and customer
710 confusion reasons. I assign Schedule 9 (High Voltage General Service)
711 the highest rate increase because, for the last 10 years, it has been the
712 worst performing class and is not paying its costs based on the above
713 scenarios.[45] It is unclear why RMP does not pay more attention to this

[44] Nelson Direct at 56.
[45] *See* Nelson Rebuttal Table 1 for historical ECOSS results.

class' poor performance and instead focuses on increasing residential rates. Then I group rate increases and decreases closely around the average increase. These approaches support interclass equity, gradualism, and help to avoid customer confusion.

If the PSC assigns a different rate increase or decrease, I recommend they proportionally scale my revenue apportionments.[46]

V. RATE DESIGN

a. Rate unbundling

Q. WHICH INTERVENORS DO YOU RESPOND TO IN THIS SECTION?

A. I respond to RMP Witness Meredith. The DPU, UAE, and others did not address unbundling in their rebuttals. This means that the OCS is the only party that has identified the precedent-setting changes that RMP has introduced to ratemaking via its unbundling proposal as a significant issue in this case.

Q. PLEASE SUMMARIZE WITNESS MEREDITH'S REBUTTAL ON UNBUNDLING.

A. Witness Meredith correctly characterizes my concerns with the unbundling proposal: that it enables a dissociation between ECOSS classification

[46] Revenue apportionment percentages can be found in Workpaper OCS 5.3S.

results and rate design, which allows for significant rate design changes, including reduced cost collection from volumetric rate components.

Witness Meredith does not rebut my direct testimony on the consequences of the unbundling proposal. He instead diverts attention to a narrow reason why rate unbundling could be beneficial and whether that particular application is transparent. Witness Meredith states, for the first time in this rate case, that the Company's unbundling proposal is intended to better track the collection of EBA costs. In fact, RMP now claims this is "probably the most significant reason why the Company wanted to separate retail rates into fixed and variable supply."[47] To deflect attention from the methods used and results of RMP's approach, Witness Meredith explores whether EBA costs are well defined as applied to RMP's unbundled categories, and claims that rate unbundling will be useful for developing new clean energy programs.

Q. DOES WITNESS MEREDITH DISPUTE YOUR DIRECT TESTIMONY ANALYSIS ON THE IMPACTS OF RMP'S PROPOSED UNBUNDLING?

A. No. Witness Meredith did not deny the facts presented in my direct testimony showing that RMP's rate unbundling shifts cost collection from energy to demand related rate components. As a result, Figure 1 of my

[47] Meredith Rebuttal at 20.

direct testimony remains unrebutted.[48] The figure demonstrates a clear departure from designing rates on cost-based information from an ECOSS.

RMP does not dispute that unbundling causes a shift away from volumetric cost collection. Instead, RMP denies that this outcome was the Company's *plan*.[49] RMP claims that I "misunderstood the Company's intentions." However, even if RMP's intentions were not to transfer cost collection away from energy-related and toward demand-related, that is the result. There is no misunderstanding with respect to the facts of my quantitative analysis.

Q. HOW DO YOU RESPOND TO RMP'S NEW FOCUS ON EBA COSTS?

A. Although the EBA costs were not the stated point of unbundling in Witness Meredith's direct testimony, RMP's rebuttal is very focused on using EBA costs to justify the unbundling proposal and to prove that the proposal is transparent. If tracking EBA costs is suddenly the "main reason" for unbundling, then I have several concerns about using the EBA as a basis for rate design.[50]

[48] "Comparison of cost-based energy to unbundled variable supply rate components." Nelson Direct at 69.
[49] "Is it the Company's plan to use unbundling to shift more costs from energy to demand and raise the basic charge for residential customers?" See Meredith Rebuttal at 20.
[50] Meredith Rebuttal at 20.

Q. DOES THE EBA SATISFY RATE DESIGN PRINCIPLES AS A PROXY FOR ENERGY RELATED COSTS?

A. No. The EBA does not satisfy rate design principles because it is not a proxy for energy related costs. Rate design is informed by energy related costs and the EBA does not include all of these costs.

Furthermore, if the EBA were to be used as the kWh measurement, the costs within the EBA would need to be further evaluated from a rate design perspective, not just under a cost recovery perspective as they have been previously. For example, it would not likely be appropriate to include PTCs within the EBA – lowering energy costs below the variable cost claimed by RMP. Additionally, as indicated by the ECOSS, kWh rate should include some P&T related costs to send an efficient price signal. Basing the kWh off of the EBA will not lead to the same price signals. Finally, with respect to sending an efficient price signal, it is unclear to me whether all applicable costs that should be in the EBA are in the EBA.

Q. WHY DOES WITNESS MEREDITH ASSERT THE TRANSPARENCY OF EBA COST CATEGORIES?

A. Witness Meredith says that RMP could have named its fixed and variable unbundled categories “Generation (non EBA)” and “Base EBA”. Witness Meredith also says that he “do[es] not understand how [I] can claim these

794 categories are not transparent. The costs that are included in the EBA are
795 very well defined in Schedule 94."[51]
796 Witness Meredith has misunderstood my concern about
797 transparency. The fact is that ratemaking has used energy related costs to
798 inform the kWh rate component for as long as I am aware. RMP is
799 attempting to move away from this ratemaking approach with no analytical
800 support other than "RMP recovers these costs in a rider." Therein lies the
801 lack of transparency. RMP is attempting to make a precedent setting to
802 change to ratemaking based on little to no analytical support.
803
804 **Q. IS IT APPROPRIATE TO DESIGN RATES BASED ON A DISTRIBUTED**
805 **ENERGY RESOURCE (DER) PROGRAM DESIGN?**
806 A. No, it is not. RMP touts that unbundling will help with program design, but
807 only a small percentage of customers will participate in these programs.
808 Allowing RMP to design broad customer class rates in a way that is
809 designed to meet this narrow programmatic goal will likely lead to favoring
810 RMP-owned resources, as opposed to demand-side or other DERs.
811
812 **Q. WHAT DO YOU CONCLUDE ABOUT RMP'S UNBUNDLING**
813 **PROPOSAL?**

[51] Meredith Rebuttal at 21.

A. I maintain my position that the impacts of RMP's unbundling are not transparent. I quantified those impacts in my direct testimony and Witness Meredith did not dispute the analysis. The only decipherable response to my analysis was that "The unbundled rate categories segmented the different prices, but did not really influence the total price in … rate design."[52] Witness Meredith's response is completely subjective—"not really influenc(ing)" is distinct from did not. Witness Meredith did not quantify the impact, but I quantified the difference in rate components.

The unbundling proposal, which is made possible by RMP's P&T subfunctionalization step, creates a new and un-vetted rate design paradigm in Utah. I am not opposed to unbundled rates in principle, but it must be a transparent process that intervenors can easily understand. Even in rebuttal, intervenors are misinterpreting or ignoring the mechanics of RMP's proposal. The PSC should not adopt a ratemaking process that only RMP says it understands.[53] I strongly urge that the Commission reject RMP's P&T subfunctionalization and rate unbundling.

[52] Meredith Rebuttal at lines 466-467.

[53] I am the only intervenor to analyze RMP's proposal from subfunctionalization through to rate unbundling and RMPs suggests that I "misunderstand" its proposal, leaving RMP as the only intervenor claiming to understand this process.

b. Interruptible rate pilot

Q. PLEASE SUMMARIZE THE INTERVENOR TESTIMONY YOU WILL RESPOND TO IN THIS SECTION.

A. Witness Meredith asserts that the interruptible pilot is conservatively priced, is not a discount to large customers, and should not be included in RMP's IRP. Witness Meredith agrees that the reporting requirements I recommended in direct testimony are appropriate, but says that they should not be provided annually, but rather only in a final program evaluation.[54]

Q. HOW DO YOU RESPOND TO WITNESS MEREDITH?

A. I continue to recommend that the PSC require a more comprehensive pilot framework that would allow RMP to test its pricing and demand response (DR) pilot more flexibly, while also holding RMP accountable.

In RMP's response to OCS Data Request 27.7, RMP also provided information on other programs that it offers in other states. The information provided demonstrated that RMP appears to offer superior interruptible tariffs in other states that offer a suite of options, similar to those recommended by the DPU. Regardless, RMP offering these as justifications for price setting in Utah is not persuasive. As is obvious from the tariffs provided, the services being provided in other states differ

[54] Meredith Rebuttal at 56.

significantly. For example, the Company's tariffs in Oregon provide longer interruptible periods, which clearly provides more value.

Reporting at the end of a pilot is acceptable, but RMP does not provide an end date. This omission provides another example of why a better framework is needed. My other direct testimony recommendations for pilot design are still applicable.

I will also add that my pilot framework recommendations are consistent with pilot frameworks either in development or approved by commissions in Connecticut, Hawaii, New York, and Vermont.

c. Residential rate design

Q. WHAT ISSUES DO YOU RESPOND TO IN THIS SECTION?

A. I respond to RMPs arguments for including line transformers in the customer charge and RMP's bill impact analysis. I also clarify the OCS' position on residential rate design tradeoffs.

Q. WHY DOES RMP CLAIM LINE TRANSFORMERS SHOULD BE IN THE CUSTOMER CHARGE?

A. Witness Meredith asserts that the cost of line transformers should be included in the customer charge, making several arguments intended to show that transformers are largely based on the number of customers. For example, RMP argues that line transformers "are typically used by a small

number of residential customers [and] sized conservatively considering the maximum peak capacity that the Company expects each home could use."[55] RMP also explains that "Volumetric energy usage up or down will not impact the Company's cost of providing this service."[56]

Q. HOW DO YOU REPSOND TO WITNESS MEREDITH?

A. RMP's transformer investments do not solely depend on its customer count and are in fact impacted by diverse customer usage. In response to a discovery request, RMP provided its distribution planning criteria, which states that "service transformers are sized to serve peak coincidental load."[57] Coincidental peak load is determined by summing the individual customer peak demands and multiplying by a coincidence factor. RMP's transformers are therefore certainly not "directly related to the number of customers served,"[58] which is how the NARUC manual defines customer costs.

Q. HOW DO YOU RECOMMEND THAT LINE TRANSFORMERS BE TREATED?

A. I maintain my direct testimony recommendation that line transformer costs be excluded from RMP's monthly customer charge.

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[55] Meredith Rebuttal at 32.
[56] Meredith Rebuttal at 32.
[57] Attachment OCS 27.5 (PacifiCorp DA 411 General-Residential Electrical Demand).
[58] NARUC Manual at 20.

Q. DOES RMP INCLUDE A BILL IMPACT ANALYSIS IN REBUTTAL?

A. Yes. Witness Meredith created a new bill impact analysis intended to address my concern about harmful bill impacts for residential customers with low consumption. RMP's analysis presents the dollar and percent price changes under RMP's new rates for residential customers with 12 monthly bills in 2019. Witness Meredith argues that the 10% of customers with the highest bill increases ($5.25/month) face only "modestly" higher increases than the average bill increase ($2.94/month). According to Witness Meredith, "the bill impacts for larger residential customers were larger than this difference" when tiered energy charges were widened.[59]

Q. HOW DO YOU RESPOND TO RMP'S BILL IMPACT JUSTIFICATION?

A. Witness Meredith's bill impact analysis appears to suggest that large customers in the past have faced greater bill increases than small customers will face under RMP's proposed rate changes in this case. However, RMP should not be comparing customer bill impacts in absolute dollar terms, but rather by percent bill change. Analysis with percentage changes is more appropriate in most cases because it creates a normalized comparison, while nominal dollars do not. A dollar increase for

[59] Meredith Rebuttal at 26.

a small customer can represent a much higher percentage bill change than a dollar increase would represent for a larger customer.

The data that RMP provided in rebuttal supports this point. RMP demonstrates that the $5.25 price increase for the decile of customers with the highest price change represents a 5.9% bill increase. Witness Meredith does not mention that the highest price increase almost certainly affects the residential customers with the lowest consumption, as shown in Figure 2 of my direct testimony.[60] Meanwhile, the decile of customers with the lowest monthly price change – which would be made up of large customers who consume well over 1,000 kWh, as shown in Figure 2 of my direct testimony – see a bill decrease of $3.03, or -2.1%.

Q. DOES THE OCS PROPOSE THAT THE COMMISSION PRIORITIZE MITIGATING BILL IMPACTS ON LOW USE CONSUMERS?

A. Yes. The OCS strongly opposes the severity of the bill impacts for low use customers that will result from RMP's proposals. Together, RMP's increased customer service charge and transition from three to two inclining block tiers disproportionately harm customers with lower consumption, as I demonstrated in my direct testimony. The OCS supported RMP's two-tier rate proposal in direct testimony under the

[60] Nelson Direct at 76.

expectation that the RMP would amend its excessive bill impacts for low use customers.[61] The primary way to do so is to remove line transformer costs from the customer charge by adopting my recommended customer charges from direct testimony. A lower customer service charge is critical for reducing the significant bill impacts on low use customers.

RMP did not agree to lower its customer service charge nor propose any other way to mitigate disproportionate low use customer bill impacts. If the Commission does not adopt the OCS' customer charge recommendation, the OCS recommends that the Commission continue with the three-tier structure to relieve bill impacts for low-usage customers. The OCS' objective is to create reasonable bill impacts and for that reason does not support both change to a two-tier and raising customer charge more than my suggested $1 increase for single family residential in the same proceeding.

Q. PLEASE SUMMARIZE YOUR RESIDENTIAL RATE DESIGN SURREBUTTAL.

A. RMP has insufficiently defended its subjective decision to include line transformer costs in the customer service charge. RMP's proposed customer charge contributes to excessive bill impacts for low use

[61] See Witness Anderson Direct Testimony Phase II at 11: "the OCS does not object to moving to a two-tier rate for both summer and winter seasons so long as the overall rate structure and specific rate calculations do not result in the disproportionate increase on low users proposed by RMP."

customers, which RMP's rebuttal bill impact analysis does not negate. I recommend that the Commission accept the OCS' proposal to lower RMP's proposed customer charge. If the Commission does not do so, it should instead order RMP to return to a three-tier rate structure to mitigate RMP's disproportionate rate design impacts on small consumers.

Q. HOW DID WITNESS MEREDITH RESPOND TO YOUR RECOMMENDATION THAT THE PSC REQUIRE RMP TO DEVELOP AN ADVANCED RATE DESIGN ROADMAP?[62]

A. Witness Meredith agreed that the "development of a robust plan for future rate design offerings is a very good idea. However, instead of a roadmap brought forth by the Company as Mr. Nelson recommends, I think an inclusive stakeholder process would be preferred so that interested parties could share their input and collaborate with the Company."

Q. PLEASE RESPOND TO WITNESS MEREDITH.

A. I appreciate Witness Meredith's thoughtful response. I agree that a stakeholder process would add value to an advanced rate design roadmap. However, I recommend that an advanced rate design roadmap filing be the first step of the stakeholder process. The advanced rate design roadmap is necessary before the stakeholder process because

[62] Nelson Direct at lines 2024-2076.

stakeholders do not have critical information needed to meaningfully engage in a stakeholder process. For example, Witness Meredith stated, "AMI is close enough in the future that it does not make sense to launch new time varying rate options now which would use conventional meters. At the same time, AMI deployment is also far enough out that designing specific proposals now would be premature."[63] This example demonstrates that RMP has not provided clear information as to when it will be able to implement advanced rate designs. The timeline for implementation and additional investments needed for advanced rate design would be critical components of an advanced rate design roadmap along with the other components listed in my direct testimony.

VII. AMI PROJECT

Q. WHICH INTERVENOR DO YOU RESPOND TO IN THIS SECTION?

A. I respond to RMP Witness Curtis B. Mansfield, regarding RMP's proposed AMI Project and the associated cost-benefit analysis.

Q. PLEASE SUMMARIZE WITNESS MANSFIELD'S REBUTTAL.

A. Witness Mansfield addressed my request for the Commission to require additional process and my critique of RMP's cost-benefit model.

[63] Meredith Rebuttal lines 1261-1266.

Q. PLEASE SUMMARIZE AND RESPOND TO WITNESS MANSFIELD'S RESPONSES TO YOUR REQUEST FOR ADDITIONAL PROCESS.

A. Witness Mansfield made numerous claims related to my analysis that demonstrates ratepayers could use additional information and process to ensure that maximum benefits are derived from RMP's investment in AMI and other grid modernization investments.

First, Witness Mansfield claims that, because a past process intended to "monitor the Company's actions in evaluating smart grid technology" was discontinued six years ago, "a similar process … would not be a prudent use of resources." Given that the process Witness Mansfield focused on was apparently "evaluating smart grid technology," I find the current circumstances significantly different.[64] Under the current circumstance, RMP is not evaluating an investment, it is actively making an investment decision of several tens of millions of dollars. Nothing is hypothetical about RMP proposal to invest millions in AMI so stakeholders will be able to focus on RMP's tangible investment plans.

Witness Mansfield goes further to claim that AMI investments could be investigated in the integrated resource planning (IRP) or demand-side management (DSM) forums. These forums already have extremely complex issues for parties to analyze; incorporating AMI and grid

[64] Mansfield Rebuttal at lines 74-79.

modernization would be overly burdensome to parties and inconsistent with best practices in other states.

Second, Witness Mansfield claims that AMI is a proven technology with over 100 million installations throughout the United States. While I agree that AMI is a proven technology, its functionalities and associated costs vary. While the US has seen 100 million AMI installations, under 7 million of those installations were done by utilities that followed through to provide customers with basic time-of-use (TOU) pricing structures. This essentially stranded hundreds of millions of dollars in potential benefits.[65] Some utilities make various excuses for not rolling out TOU rates, while others, similar to RMP, have not sequenced technological investments in a way that allows for timely rollout of TOU rates. For example, Duke Energy in North Carolina rolled out AMI meters years ago but did not update its meter data management system. To this day, Duke cannot implement TOU rates to its residential class as a result. To summarize, just because a utility installs an AMI meter does not mean that a ratepayer benefits from the installation. For this reason, regulators need to hold utilities accountable before and during AMI implementation.

Third, Witness Mansfield disagrees with my suggestion that the PSC consider a demand response target or requirement coincident with

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[65] Amhad Faruqui spoken during day 2 of Brattle's "The Load Flexibility Symposium." October 21, 2020. Available at: https://www.brattle.com/news-and-knowledge/events/brattle-hosts-symposium-on-load-flexibility-in-the-energy-sector

any AMI approval. Witness Mansfield claims that the Company "has already demonstrated a commitment to evaluating and developing demand response programs so a new target or requirement is unnecessary," and provides a list of demand response projects that the Company has or is analyzing.[66] RMP's focus on evaluating, developing, and analyzing demand response, as opposed to offering and scaling services is why targets or requirements are useful tools for regulators to help motivate utilities to provide tangible benefits over a discrete time period.

Finally, Witness Meredith rebuts my request for RMP to provide *full* Green Button Connect My Data functionality to its customers. Specifically, Witness Meredith claims that RMP "currently provides Green Button functionality." However, this statement is extremely misleading, as was the discovery provided by RMP on the subject, because having "some" Green Button functionality is distinct from providing all Green Button Connect My Data functionality. For example, RMP does not appear to provide authorized third-party access based on affirmative (opt-in) customer consent and control—a key functionality to enable innovation and third-party services.[67] The PSC should order RMP to provide *all* Green Button Connect My Data functionality.

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[66] Mansfiled Rebuttal lines 109-123.
[67] Mansfield Rebuttal at lines 148-150 notes that information is "available to customers," suggesting that third-party access is not possible or contemplated.

Q. PLEASE SUMMARIZE AND RESPOND TO WITNESS MANSFIELD'S RESPONSES TO YOUR COST-BENEFIT ANALYSIS?

A. Witness Mansfield's critique of my analysis of RMP's cost-benefit analysis ultimately highlights RMP's own failure to respond to stakeholder data requests transparently and comprehensively.

Witness Mansfield criticized my analysis for (1) assuming that net benefits remain constant and (2) assuming a 20- versus 25-year investment life. Witness Mansfield failed to acknowledge that the OCS requested RMP's cost-benefit analysis, and that RMP's own analysis omitted each of these assumptions.[68] In fact, RMP provided a sparse spreadsheet with hard coded numbers with no explanation. I made the most reasonable assumptions I could with the information provided. RMP has not provided the "detailed financial analysis" reference by Witness Mansfield nor has RMP justified its own key assumptions, such as the 7.5% escalation of net benefits.

My direct testimony should not be interpreted as an exhaustive analysis of RMP's cost-benefit analysis. In fact, most of my criticisms on RMP's lack of process are directly related to its insufficient cost-benefit analysis. Many of these concepts should have been incorporated into the study. For example, RMP did not include the undepreciated lives of the

[68] *See* RMP's response to OCS Data Request 5.16 and attachment.

meters that will be retire early. Nor did RMP include billing upgrades required to enable TOU rates.

Q. DID WITNESS MANSFIELD HAVE ANY OTHER CLAIMS?

A. Yes. Witness Mansfield claimed that my analysis conflicted with OCS Witness Donna Ramas. Specifically, Witness Mansfield's states, "as acknowledged in the testimony of OCS witness Ms. Ramas, the Company began the project in 2018 and has already placed into service approximately $22 million in project costs." Witness Mansfield's claims, in his footnote six, that his view is supported in Witness Ramas' direct testimony at lines 990-1022.

Q. HOW DO YOU RESPOND TO WITNESS MANSFIELD'S CLAIM?

A. I find it to be factually incorrect. The referenced portion of Witness Ramas's direct testimony does not state the AMI Project began in 2018 nor that the Company has placed $22 million into service. In fact, Witness Ramas appears to provide evidence that clearly contradicts Witness Mansfield's claim.

Exhibit OCS 22D contains RMP's response to OCS DR 11.1 and the associated attachments. Said attachment shows that $1.2 million was included in FERC Account 106 - completed plant not classified in December 2018. The attachment also shows that as of the end of the base year in this case (i.e., 12/31/19) only $1,225,650 was included in

plant in service for the project. The response also shows that the during 2020 (through 6/2020) RMP had booked $523,829 to FERC Account 106 - Completed Plant not Classified for the "AMI-Utah Energy Usage Web." This information indicates that some form of *de minimis* AMI investments may have begun prior to this proceeding but nothing close to $22 million and not in 2018.

Lastly, Witness Mansfield claimed that I "erroneously state(d) that, 'Due to COVID RMP has delayed the start of the AMI project until the end of 2022.'"[69] This is a similar and also false claimed according to RMP's response to OCS Data Request 11.1, which states that, "The Utah Advanced Metering Infrastructure (AMI) project was delayed till the end on 2022 due to cybersecurity concerns, vendor recommended technology changes and COVID-19 pandemic related issues. Current forecasts project $27.4 million in capital expenditures and plant placed in service for 2022."[70] RMP previously provided information that contradicts the claims made by Witness Mansfield.

[69] Mansfield Rebuttal at lines 229-230.
[70] See Ramas Direct, OCS Exhibit 22D.

Q. HOW DOES WITNESS MANSFIELD ATTEMPT TO ASSUAGE CONCERNS RELATED TO YOUR RECOMMENDATION TO HOLISTICALLY AND PROACTIVELY ANALYZE RMP'S AMI AND GRID MODERNIZATION INVESTMENTS?

A. Witness Mansfield promotes a regulatory approach where the PSC would review the costs and benefits associated with discrete projects brought forward by the utility.

Q. HOW TO YOU RESPOND TO RMP'S RECOMMENDATION FOR PIECEMEAL REGULATORY REVIEW?

A. Permitting RMP to selectively bring components of a larger grid modernization plan forward, as opposed to reviewing a comprehensive grid modernization strategy with all required investments, will lead to a game of "hide the ball." Regulators will not see a complete accounting of the costs of grid modernization nor be able to hold RMP accountable for realizing the broad scope of benefits that can be—but rarely are—achieved with grid modernization.

VII. CONCLUSION

Q. DOES THIS CONCLUDE YOUR SURREBUTTAL TESTIMONY?

A. Yes.