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BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

IN THE MATTER OF THE APPLICATION OF ROCKY MOUNTAIN POWER FOR APPROVAL OF SOLICITATION PROCESS OF WIND RESOURCES	Docket No. 17-035-23

UAE'S PREFILED TESTIMONY OF F. STEVEN KNUDSEN

REGARDING PACIFICORP'S PROPOSED RFP

The Utah Association of Energy Users (UAE) hereby submits prefiled RFP Testimony of F. Steve Knudsen in this docket.

DATED this 13th day of September 2017.

HATCH, JAMES & DODGE

/s/ ___________________________
Gary A. Dodge
Attorneys for UAE

Certificate of Service

Docket No. 17-035-23

I hereby certify that a true and correct copy of the foregoing was served by email this 13th day of September 2017 on the following:

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BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

IN THE MATTER OF THE APPLICATION	)	
OF ROCKY MOUNTAIN POWER FOR	)	
APPROVAL OF SOLICITATION PROCESS	)	Docket No. 17-035-23
OF WIND RESOURCES	)	
	)	

RFP Testimony of F. Steve Knudsen

On Behalf of

Utah Association of Energy Users (UAE)

September 13, 2017

I. INTRODUCTION AND SUMMARY

Q. Please state your name and business address.

A. My name is F. Steven Knudsen

Q. By whom are you employed and in what capacity?

A. I am an independent consultant dba FSK Energy Consulting LLC. I provide energy consulting services focusing on power transmission, generation asset development, rates and regulation.

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

A. My testimony is being sponsored by the Utah Association of Energy Users ("UAE").

Q. Please describe your educational background.

A. In 1976, I received a bachelor's degree in Economics from the University of Oregon. In 1979, I received an MBA from Northwestern Kellogg Graduate School of Management.

Q. Please describe your professional experience and background.

A From 1983 until 1987 I was employed at Bonneville Power Administration (BPA) Office of Finance as a financial analyst and Revenue Requirements manager for BPA's 1987 Power and Transmission Rate Cases. From 1988-1989 I was employed in BPA's Office of Energy Resources where I supervised the development of load forecasts to support rate development and integrated resource planning. From 1990-1993 I was employed as a supervisor in BPA's Resource Planning Division where I was responsible for IRP development, as well as developing and conduction RFPs and bid evaluations. From 1994-1995 I was a BPA Account Executive responsible for sales of power and transmission to marketers and IPPs. From 1996-1999 I was employed by Pacific Gas Transmission as Director of Business Development. From 1999-2002 I was employed by PG&E National Energy Group as a Director of Market Development responsible for generation development, bidding into utility RFP's, and PPA contract negotiations. From 2003-2008 I was employed by BPA's Transmission Services where I was responsible for sales forecasting, transmission rate development, ATC policy, and Tariff implementation. From 2008 until 2014 I was employed as an Account Executive in BPA's Long Term Sales and Purchases Group responsible for business development, energy storage, and long-term structured transactions.

Q Have you previously filed testimony before this Commission?

A. No, I have not.

Q. Have you testified before other utility regulatory commissions?

A. I have testified before the Federal Energy Regulatory Commission (FERC) and in several Bonneville Power Administration rate cases.

Q. What is the purpose of your testimony?

A. My testimony will present UAE's response to PacifiCorp's Application and Comments in this docket, including the Supplemental Testimony of Rick T. Link submitted in this docket on August 31, 2017.

Q. Please summarize UAE's response to PacifiCorp's request for approval of PacifiCorp's proposed solicitation process.

A. PacifiCorp's "Supplemental Testimony" offers no new evidence that its revised RFP would lead to identification or procurement of the lowest cost resources. The RFP will not and cannot lead to a determination of the lowest cost resources unless it is opened up to bids from other types of renewable resources and resources located in other areas. Neither PacifiCorp's IRP, nor the IRP "Energy Vision 2020 Update," nor Mr. Link's Supplemental Testimony offers a sufficient basis to disqualify other types of renewable resources from bidding into the RFP. Only a comprehensive renewable RFP will permit the parties, the IE and the Commission to determine the lowest-cost options available.

PacifiCorp has offered no evidence that approval of its restrictive RFP is necessary because of purported time limitations. RMP has offered no sound reason why a robust RFP process cannot be completed within its proposed time frame. Even if short delays were necessary to accommodate a robust RFP, the delay would not pose a risk to recognition of 100% PTCs for the proposed wind resources, if they are ultimately shown to the most cost effective options.

PacifiCorp's RFP and bid evaluation approach as currently proposed are not capable of identifying the lowest cost resources. Among other things, they fail to take into account differentials in line losses and other costs and incremental wind integration costs. PacifiCorp has also failed to provide sound justifications for its proposed new transmission line segments, or to quantify or evaluate costs and impacts of additional congestion that will be created by its proposals.

In short, there is no way to determine whether PacifiCorp's proposed resources will most likely lead to the lowest-cost resources for Utah ratepayers unless the RFP is opened up to a robust, competitive process that considers resources of different types and in different locations.

Q. In your view, does Mr. Link's "Supplemental Testimony" adequately supplement the record to support Commission approval of the RFP?

A. No. I was disappointed by Mr. Link's testimony, in that is offered no new evidence in support of PacifiCorp's claim that the RFP as proposed "will most likely result in the acquisition, production and delivery of electricity at the lowest reasonable cost to [the utility's] retail customers" as required by Utah Code § 54-17-201(2)(c)(ii)(A). I thought the Commission's August 22, 2017 Order made it clear that the record is insufficient to support the findings of fact necessary under Utah's Energy Resource Procurement Act, Utah Code §§ 54-17-101, et seq. (the "Act") for approval of the RFP. I thus expected PacifiCorp to offer new evidence in support of its claim that the Wyoming wind resources are necessarily the lowest cost resources available. Instead, Mr. Link's testimony simply repeats what PacifiCorp been previously claimed in the Application and Comments in this docket and the IRP, including what it calls its "Energy Vision 2020

Update" attached to Mr. Link's testimony. None of that is new; all of it was already in the record.

The crux of the problem with PacifiCorp's RFP is that it does not comply with requirements for a Utah solicitation. The Act and Commission Rules are designed to ensure that a "robust set of bids" (Rule R746-420-3(8)(i)) will be received from a wide variety of resource types and owners/developers. By narrowly circumscribing the nature of resources solicited here to Wyoming wind resources capable to being delivered into a specific new set of transmission lines, several of which are major 230 kV lines (not 500 kV) that appear specifically designed to interconnect PacifiCorp's Benchmark Resources, the RFP will clearly not produce a robust set of diverse bids from which the Commission can determine whether the Wyoming Wind resources will produce "the lowest reasonable cost" to customers in comparison to other potentially-competitive resources, including Utah solar resources.[1]

In short, the RFP must solicit bids from resources other than a narrow sub-segment of Wyoming wind resources before it can be determined that the Wyoming wind resources, combined with over $700 million of new transmission rate base, will produce the lowest cost for customers. PacifiCorp resists this notion, not by demonstrating that other resources could not be competitive, but rather by pointing to its internal IRP

[1] I note that the Division of Public Utilities ("DPU") and the Independent Evaluator ("IE") also both concluded that opening up the RFP to other types of resources and resources in other areas is necessary to allow a determination as to whether the proposed Wyoming wind resources are economical (for example, see *Report of the Utah Independent Evaluator*, August 11, 2017, pages 5-6). While the IE was also concerned about PacifiCorp's claim that time is of the essence (for example, see *Id.*, at pages 3, 14, 20, 33), PacifiCorp's misleading claim in this regard is erroneous, as discussed on pages 9-11 below. Taking the time necessary to conduct a robust RFP will not put the economics of the project at risk, even if additional time is required.

analyses, as well as the results of a limited 2016 renewable RFP. Those analyses and results are not new and clearly do not demonstrate that the selected Wyoming wind resources will produce the lowest costs for customers.

Q. How do you respond to Mr. Link's claim that the "Energy Vision 2020 Update" confirms that Wyoming wind resources are the lowest cost resources?

A. While I appreciate PacifiCorp's IRP planning processes and planning models, it is a fallacy to claim that the IRP process and scenario planning models used to test alternative portfolios can identify with any degree of certainty that procuring any given resource at a single geographic location on the PacifiCorp system will deliver the lowest cost resources, much less 1,270 MW of new wind located in a single geographic area. PacifiCorp's IRP analysis clearly does not demonstrate that Wyoming wind resources will have a lower cost than other resources, such as Southern Utah solar resources. Indeed, it does not even purport to do so. Rather, it attempts to compare some relatively recently updated cost projections for its proposed new wind and transmission resources against various IRP portfolios developed a year ago. While the lengthy, somewhat cumbersome, IRP process may be helpful in predicting attractive long-term resource alternatives, it is wholly inadequate for demonstrating the lowest cost resources at the current time. Only an open, robust, competitive RFP designed to attract a diverse set of bids can do that.

In any event, PacifiCorp's proposal to acquire significant new Wyoming wind and transmission resources cannot fairly be considered the product of a deliberative, public IRP process. Rather, PacifiCorp evaluated and selected these significant new wind resources in a vacuum after the public process was completed. UAE's concerns over PacifiCorp's last-minute IRP activities were summarized well in the following comments of the Oregon Public Utility Commission Staff:[2]

> The Commission expects the IRP process to be transparent and to allow for stakeholder input to the Company's preferred portfolio choice, as well as all the analysis the Company performs to reach this choice. In this IRP cycle, the Company essentially completed the public input process of seven public meetings, beginning in June 2016 and going through the end of the year. The Company then produced a draft Action Plan reflecting no new resource acquisition, as the Company's analysis projected no need for Additional resources in order to serve load reliably.
>
> It was only at the end of this process that the Company drastically altered its Action Plan to include both the repowering of 905 MW of existing Company-owned wind resources (Wind Repowering) and the purchase of 1,100 MW of new wind with the associated new transmission line (New Wind) that would enable transport of the New Wind power. These proposed capital investments are projected to cost approximately $3.5 billion. Despite the significance of these costs and unfamiliarity with the projects themselves in the context of the IRP, stakeholders had little to no time to review because it was brought to the table at the very end of the process.
>
> Staff is uncertain as to why the Company waited so long to introduce such major resource acquisitions, but in any case, Staff is concerned that the lack of stakeholder review violates a core IRP principle that fosters an open and participatory process and thus may pose a risk to ratepayers. The late inclusion of such a significant set of investments has deprived Staff and other stakeholders of the opportunity to preview that capital addition proposal and ask the Company questions prior to the filing of the IRP. Staff is further concerned with the late addition of these two Action Items (New Wind and Wind Repower) because the Company has no need to justify these resource acquisitions and makes no claim to have a need – it presents this $3.5 billion acquisition purely as a long-term economic benefit to customers over the course of twenty years.

Q. But didn't the 2017 IRP compare costs of wind, solar and other resources?

A. It purported to do so, but only at a certain snapshot in time—as of the Fall of 2016. Indeed, at that time the IRP assumed a cost for Utah tracking solar in the high $50-

[2] *Staff's Initial Comments*, Oregon PUC Docket No. LC 67, Executive Summary, page 1.

$65 per MWh range.[3] My understanding is that Southern Utah solar resources today have levelized pricing in or around the $30/MWh range. PacifiCorp's IRP "Energy Vision 2020 Update" used updated cost assumptions for its proposed Wyoming wind and transmission resources long after it had "locked down" the costs for all other resources. PacifiCorp failed to similarly update costs and assumptions for solar and other resources, making it meaningless to compare the updated costs of the proposed wind/transmission resources with the outdated costs of the other resources. Nothing in the IRP docket or this docket provides any analysis that could reasonably be relied upon to conclude that the proposed Wyoming wind and transmission resources are the lowest cost resources currently available.

Q. PacifiCorp claims that it issued a 2016 renewable RFP that failed to produce any acceptable bids. Does that provide any meaningful evidence that the proposed new Wyoming wind and transmission resources are lowest cost?

A. No. As with the 2016 timeframe of the locked-down IRP assumptions, the limited 2016 renewable RFP[4] did not produce bids indicative of current prices. The 2016 renewable RFP was intended to solicit only resources that could achieve commercial operation by 2018 and that could be delivered into PacifiCorp's western balancing area. Solar prices have dropped dramatically since 2016, particularly in PacifiCorp's eastern

[3] For example, page 111 of the 2017 IRP, Table 6.2, reflects a first-year real-levelized "Total Resource Cost" in 2016 dollars for a 2019 Utah tracking solar facility of $51.39/MWh. Lines 306-307 on page 15 of the Direct Testimony of Daniel J. MacNiel on behalf of PacifiCorp in Utah PSC Docket No. 17-035-37, indicate that the IRP assumes that the cost of Utah tracking solar will range from $57-$64 per MWh from 2021–2027.

[4] A description of this 2016 limited renewable RFP is available at http://www.pacificorp.com/sup/rfps/2016-renewables-rfp.html.

balancing area. The only way to know whether Utah solar resources (and other potential resource options) may result in lower rates than the proposed Wyoming wind and transmission resources is to test the market now, in real time. The fact that PacifiCorp is so resistant to having its speculative resource price assumptions tested in the market should raise significant doubts and concerns for the Commission.

Q. How do you respond to Mr. Link's suggestion that opening up the RFP to other resources "would create an untenable delay that would jeopardize the ability to capture the full value of PTCs to provide benefits to customers, and potentially undermine the viability of the 2017R RFP"?[5]

A. It is not clear to what extent PacifiCorp is actually claiming that delays will necessarily occur with a robust RFP, or that any such delays would in fact jeopardize the ability of the wind resources to qualify for 100% PTC, or otherwise destroy the economics of its proposed resources. However, it appears that PacifiCorp may well be hoping that people will draw these conclusions and, indeed, PacifiCorp appears to have succeeded in causing concern along those lines.[6] However, any such claims or conclusions would be false. So long as PacifiCorp follows a continuous program of construction of the wind resources, or completes the wind resources by the end of the 2020 safe harbor period, the wind resources will qualify for 100% PTC, ***even if there are delays in interconnecting the wind resources to the new transmission lines***.[7]

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[5] Rick Link Supplemental Testimony, line 235-238, page 13.
[6] See footnote 1, above.
[7] It is clear to UAE that at least some PacifiCorp employees understand this fact, although to my knowledge it has not been openly acknowledged in this docket.

The IRS has issued explicit guidance on this issue. For example, Notice 2016-31, Internal Revenue Bulletin 2016-23, dated June 6, 2016,[8] confirms that construction disruptions or delays caused by transmission and interconnection-related delays are excused:

> (2) *Excusable disruptions*. Sections 4.06(2) and 5.02(2) of Notice 2013–29 provide a non-exclusive list of construction disruptions that will not be considered as indicating that a taxpayer has failed to maintain a continuous program of construction or continuous efforts to advance towards completion of the facility. This notice revises that list, which remains non-exclusive, and provides additional excusable disruptions:
>
> ….
>
> (e) interconnection-related delays, such as those relating to the completion of construction on a new transmission line or necessary transmission upgrades to resolve grid congestion issues that may be associated with a project's planned interconnection….

PacifiCorp clearly has plenty of time over the next 3+ years to complete all of the proposed wind resources before the end of 2020 to qualify for 100% PTC. PacifiCorp acknowledges that the claimed critical path of its proposed construction schedule is not construction of the wind resources, but rather permits, rights of way and construction of the six transmission line segments.[9] I seriously question whether a robust RFP process would even threaten PacifiCorp's proposed schedule. I suspect PacifiCorp's schedule has a reasonable amount of leeway built into it, such that a robust RFP process would not be problematic for completion of the entire project by the end of 2020. Even if that were not the case, however, a short delay in the date when PTC benefits might start to be realized

[8] See https://www.irs.gov/irb/2016-23_IRB/ar07.html.
[9] For example, see Exhibit RMP ___ (RAV-10) accompanying Rick Vail's testimony in support of PacifiCorp's Application in Utah PSC Docket 17-035-40.

to allow the transmission and interconnection processes to be completed will not affect the economics of the project in any material way.

PacifiCorp is asking the Commission to rely upon incomplete and outdated analyses, and upon PacifiCorp's unsubstantiated claims that Wyoming wind resources are the lowest cost options and that its proposed RFP and evaluation process will produce fair and comparable analyses of a wide array of options—claims that are highly dubious. A far better option is to let a competitive market place demonstrate the lowest cost resources.

Q. Why do you consider dubious PacifiCorp's claims that the Wyoming resources are the most cost effective and that its proposed RFP and evaluation methods will produce fair and comparable evaluations?

A. There are several reasons, in addition to those discussed above. One significant example is that PacifiCorp is ignoring the sizable cost advantage of locating resources closer to load. Locating resources far from load results in high transmission line losses, the cost of which is not considered in the IRP or RFP analyses. IRP planning (simulation) models like the SO model used for the PacifiCorp IRP normally default to annual average loss factors when simulating operation of the system because the models are not capable of internally calculating transmission losses, and the benefits of increased geographical granularity of transmission losses may have limited benefits in an IRP context. When it comes to evaluating competing resources through an RFP process, however, it is critical—and standard practice—to evaluate specific resources based upon their geographic locations, along with associated impacts on grid-wide losses.

Using a license from PowerWorld, I commissioned and oversaw power flow line loss studies in order to illustrate the real impacts of locating resources in alternative locations on the PacifiCorp system.[10] The results confirm that locating new resources in Wyoming far from load would result in materially higher real system power losses in critical winter and summer peak conditions. The following table shows the results of those power flow studies, and depicts the relative increase or decrease in real power losses for new resources at a number of possible receipt points on PacifiCorp's high voltage (230 kV and above) transmission system, as compared to the proposed Wyoming resources. Differential losses are shown for both a heavy winter load day and a heavy summer load day:

	Incremental Losses By New Resource Location Compared to New Wyoming Resources	
LOCATION	**Heavy Winter Day**	**Heavy Summer Day**
Bridger	0.0%	0.0%
NORTHERN IDAHO		
Goshen 345 kV	-9.1%	-11.3%
SOUTHERN IDAHO		
Adelaide 345 kV	-10.5%	-10.4%
Hemmingway 500 kV	-11.2%	-8.8%
Populus 345 kV	-8.5%	-9.3%
SOUTHERN OREGON		
Captain Jack/Malin 500 kV	-11.7%	-7.0%
Ponderosa 500	-9.6%	-0.5%
SOUTHERN UTAH		
Three Peaks 345 kV	-10.9%	-9.1%
Pinto 345 kV	-9.0%	-11.0%

Source: Approved WECC TEPPC Operating Powerflow cases 18HS3 and 18HW4

[10] A description of the PowerWorld Simulator model that was used to produce these results is available at https://www.powerworld.com/products/simulator/overview.

This chart shows that locating a resource at a number of possible other locations closer to load—including in Utah—would provide significant benefits in the form of lower losses—indeed, at a magnitude around 10%. In other words, a new resource located in Southern Utah, for example, would provide about 10% more energy and capacity on heavy winter and summer load days than the identically sized resource located in Wyoming.

Accurately reflecting this 10% cost and capacity benefit of acquiring resources closer to load is absolutely required in any meaningful RFP evaluation process, and doing so would most likely eliminate any ratepayer benefits of building new generation and transmission resources in Wyoming, especially give the relatively small PVRR benefits claimed by PacifiCorp for the Wyoming wind/transmission proposal.

The importance of considering <u>differential</u> transmission losses in the bid evaluation process is ignored by PacifiCorp, both in its IRP and in its RFP. Without testing the market for available resources located in other areas, and referencing loss studies to determine differential losses, along with other cost differentials, there is simply no way to determine whether the proposed Wyoming wind resources will produce lower costs than available resources located in other areas.

Q. Are there other reasons to be dubious of PacifiCorp's claims?

A. Yes. PacifiCorp also fails to adequately address wind integration costs associated with its proposed acquisition of massive amounts of new Wyoming Wind. PacifiCorp has significantly understated the costs of WECC-required operating reserves associated with integrating over 1,000 MW of new wind resources. Wind integration costs associated with required operating/balancing reserves represent a significant cost of wind resources and many studies have found that these wind integration costs per MW increase as more renewable resources are added to a system. Failure to consider actual wind integration costs, which are recovered through FERC-jurisdictional transmission rates, in any cost analysis of comparative resources will by definition lead to an overestimation of ratepayer benefits.

When evaluating the claimed ratepayer benefits of the proposed new wind, PacifiCorp included variable wind integration costs (regulation) of only $0.573/MWh.[11] At the same time, however, PacifiCorp recently argued before FERC that its costs to provide balancing reserves for wind resources justify a fixed annual charge of $10,120 per year for regulation—a rate that went into effect on July 22, 2017, subject to refund.[12] At this price, the effective cost per MWh charged to a new 41.5% capacity factor wind resource would be $2.78/MWh, or 5 times (approximately $10 million/year) higher than PacifiCorp assumed in its IRP/RFP analyses. Proper inclusion of incremental wind integration costs, which are grossly understated in PacifiCorp's analyses, would significantly reduce, if not eliminate, any claimed benefit to ratepayers from the proposed new wind and transmission resources.

Q. Do you have concerns over the alleged need for new transmission lines that PacifiCorp proposes to build?

[11] See 2017 IRP, page 20.
[12] See FERC Docket #ER-219, March 2017; and FERC Docket #EL17-27.

A. Yes. First, Mr. Link incorrectly claims that "PacifiCorp's transmission system in eastern Wyoming is so constrained that no additional generation can be interconnected.[13] Congestion is a transmission concept that is largely irrelevant when identifying the system impacts of interconnecting a generator requesting Energy Resource Interconnection Service (ER Service) pursuant to PacifiCorp's OATT.[14] ER Service does not give the interconnection customer any rights to transmission service, which must be requested separately pursuant to the OATT. The OATT requires PacifiCorp to study the local area reliability impacts of a new generator requesting interconnection, but generally prohibits denying ER Service based upon transmission constraints or transmission congestion, whether real or not. A major reason FERC established a generator's right to ER Service in the OATT is to prevent jurisdictional transmission providers from discriminating against parties seeking to interconnect new resources. PacifiCorp is obligated to interconnect new resources that request energy resource interconnection service, including in Wyoming. In fact, at the same time Mr. Link is claiming no ability to interconnect new generation in Wyoming, PacifiCorp Transmission continues to offer new interconnections in Wyoming. For example, just a few months ago, PacifiCorp Transmission agreed to interconnect an 80 MW renewable resource in the immediate vicinity of PacifiCorp's benchmark wind resources (Casper Substation) with modest network upgrade costs (under $6 million).[15]

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[13] Rick Link Supplemental Testimony, lines 140-141, page 7.
[14] See *PacifiCorp Open Access Transmission Tariff, FERC Electric Tariff Volume No. 11*, Updated February 13, 2017 ("**OATT**"), available at http://www.oasis.oati.com/ppw/.
[15] Large Generator Interconnection Report for Interconnection Customer #0784, April 11, 2017, available at http://www.oasis.oati.com/PPW/PPWdocs/pacificorplgiaq.htm.

Second, PacifiCorp no longer even claims any benefits of the proposed transmission line in moving power out of Wyoming to load.[16] Adding the proposed 500 kV and 230 kV segment upgrades will not increase transfer capability out of Wyoming to PacifiCorp's loads; rather they will just move the congestion west a few miles. The proposed 500 kV upgrade, which begins at the Jim Bridger substation and heads east, would reduce local area congestion in central Wyoming but would not expand the system west of Bridger, which is often already congested. The introduction of new wind resources will create even more congestion in moving resources out of Wyoming to load.

Q. Has PacifiCorp estimated or otherwise quantified the potential for higher production costs and increased curtailments that would result from increased transmission congestion west of Bridger caused by new wind resources?

A. Not so far as I can determine. While PacifiCorp acknowledges an increase in curtailments if the proposed wind and transmission is built in Wyoming, PacifiCorp's analyses do not appear to recognize any increased production costs that would inevitably result if over 1,200 MW of new wind were added in Wyoming without increasing the system's ability to move additional Wyoming generation to load. One example of such increased production costs would result from the need for significant curtailments. When the Bridger West path is operating close to its transfer limits, significant congestion relief will likely require curtailments at Jim Bridger, an important wind balancing resource on the PacifiCorp system. It is likely that Jim Bridger generation will often be required to

[16] Link Supplemental Testimony, lines 145-147, page 8. "The new transmission will "create the potential for further increases to the transfer capability out of eastern Wyoming with the construction of additional segments of the Energy Gateway transmission project."

hold balancing reserves for system reliability, potentially forcing curtailment of wind generation instead of coal, with the associated loss of PTC and other benefits for Utah ratepayers. As best I can tell, none of these additional costs has been estimated or considered in PacifiCorp's IRP and RFP cost analyses. These costs would need to be considered before a reasonable comparison could be made to generation at other locations.

Q. What benefits does PacifiCorp claim from the new transmission lines?

A. Mr. Link claims that the "new transmission will relieve [local area] congestion, provide voltage support, improve reliability, enhance PacifiCorp's ability to comply with mandated reliability and performance standards, reduce line losses, and create potential for further increases to the transfer capability out of eastern Wyoming *with construction of additional segments of the Energy Gateway Transmission project.*"[17] Mr. Link thus acknowledges that significant incremental transmission investment will be required to add additional transfer capability out of Wyoming, a benefit not provided by the proposed Aeolus-Bridger transmission line.

Q. Mr. Link also appears to claim benefits in the form of relieving local congestion and voltage support. Prior to issuing the 2017R RFP (accompanied by a proposal to spend $700 million on new transmission lines), had PacifiCorp publicly expressed concerns over local area congestion and voltage issues in Wyoming?

A. Not that I can determine. Local area transmission planning is done through a two-year public process for developing and reviewing local area transmission needs and

[17] Rick Link Supplemental Testimony, lines 141-147, pages 7-8 (emphasis added).

establishing local area transmission plans as detailed in Attachment K of PacifiCorp's OATT. The most recent local area transmission plan for Southern Wyoming was a 2011 study that recommended only $400,000 in total system improvements, and notably did not identify any critical voltage issues.[18] PacifiCorp has never updated the 2011 Study or otherwise introduced a proposal for a 500 kV local transmission expansion project through the public Attachment K planning process required by PacifiCorp's OATT.

Q. Do you have other concerns with the way in which PacifiCorp has pursued construction of these significant new wind and transmission resources without showing a need for them and without testing the market through a robust RFP?

A. Yes. For example, it appears that, while regulators, ratepayers and potential competitors were not notified of PacifiCorp's plans until well into 2017, PacifiCorp was quietly developing plans, investing millions of dollars on wind assets to meet a "safe harbor" for federal production tax credits, acquiring wind sites, and submitting interconnection requests. Only a robust, fair RFP process open to renewable resources of different kinds and in different locations can now ensure that the process will be fair or the results appropriate.

In addition, while acquisition of billions of dollars of unneeded resources would create significant ratepayer risks, PacifiCorp projects only modest benefits, particularly over the 20-year evaluation horizon—the horizon used in the IRP and thus the only appropriate or comparable evaluation horizon. Indeed, PacifiCorp admits that even based on its own assumptions, the new wind and transmission resources will likely not be

[18] See http://www.oasis.oati.com/PPW/PPWdocs/Southern-Wyo-2011.pdf.

economical if natural gas prices remain low and CO_2 taxes are not high[19]—results that are certainly possible, if not probable. In addition, PacifiCorp's proposal to purchase these significant long-term fixed-price renewable resources cannot be reconciled with the "fixed-price risk" arguments that PacifiCorp aggressively advanced in Docket 15-035-53.[20] PacifiCorp has offered no reasonable explanation for its sudden change of heart on this issue.

There are also remaining concerns over whether the benchmarks and PPAs can be evaluated on a fair and comparable basis as required by Commission Rule R746-420-3(8)(i). While some progress has been made with the help of the IE in addressing inherent differences in benefits and risks for benchmarks and PPAs, additional steps are still necessary, including eliminating any language in the RFP purporting to leave evaluations or results to PacifiCorp' "sole discretion," eliminating the proposed disqualification of bidders who have litigated or threatened litigation against PacifiCorp, and assigning benchmark bids cost responsibility for the proposed extensions of PacifiCorp's 230 kV transmission system that are designed to support those benchmarks.

Q. In conclusion, in your opinion has PacifiCorp justified its demand that it be permitted to acquire over $1 billion in new Wyoming wind resources without first undergoing a comprehensive RFP process?

A. No. The procurement process will be fundamentally unfair to Utah residents and ratepayers unless available low-cost solar and other resources are allowed to compete on

[19] For example, see Table 4.2, page 24, 2017 IRP Energy Vision 2020 Update.
[20] For example, see Direct Testimony of Paul Clements, filed May 11, 2015 in UPSC Docket 15-035-53, lines 431-535, pages 21-25.

a fair and equitable basis with PacifiCorp's proposed wind/transmission project. The *only* way to know whether the RFP will most likely lead to identification of the lowest-cost resources is if the RFP is opened up to competitive resources of different types and in different locations. Moreover, given PacifiCorp's admission that the new wind resources are not cost effective without the new transmission lines, and vice versa, a fair competitive bid process will also require consideration of other transmission upgrades to relieve congestion.

In addition,, no determination is possible that the proposed wind resources are most likely to lead to the acquisition of the most economic available resources absent a meaningful evaluation of differences in transmission line losses for resources located in different areas, a realistic evaluation of wind integration costs, and consideration of production cost impacts of increased transmission congestion. Also, additional steps remain necessary to ensure comparability in the evaluation of benchmarks and PPA bids.

Simply stated, the relatively minor economic benefits projected by PacifiCorp for its project are nowhere near sufficiently compelling to warrant forcing ratepayers to take a $2+ billion risk on new resources that have not even been shown to be necessary without at least clear market confirmation that those resources represent the most economical options available. Moreover, given that the risk of delay that may (or may not) be required to accommodate a robust RFP process is, at worst, a short potential delay in receiving 100% PTC benefits—and not the loss of 100% PTC benefits—there is no justification whatsoever from a ratepayer perspective not to require PacifiCorp to devote the time and attention necessary to provide parties, the IE and the Commission with all information necessary to make a proper determination that only the lowest cost resources will be acquired for the benefit of Utah ratepayers.

Q. Does this conclude your testimony?

A. Yes, it does.