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September 24, 2020

**VIA ELECTRONIC FILING**

Attention: Filing Center  
Public Utility Commission of Oregon  
P.O. Box 1088  
Salem, Oregon 97308-1088

**Re: UE 374 – In the Matter of PACIFICORP d/b/a PACIFIC POWER’S Request for a General Rate Revision.**

Attention Filing Center:

Attached for filing in the above-referenced docket is PacifiCorp’s Objection to the Oregon Citizens’ Utility Board’s Motion to Admit CUB/500.

Please contact this office with any questions.

Sincerely,

Katherine McDowell

Attachment

**BEFORE THE PUBLIC UTILITY COMMISSION  
OF OREGON**

UE 374

In the Matter of  
PACIFICORP d/b/a PACIFIC POWER  
Request for a General Rate Increase.

**PACIFICORP’S OBJECTION TO  
CUB’S MOTION TO ADMIT  
CUB/500**

**I. INTRODUCTION**

Pursuant to OAR 860-001-0420 and Administrative Law Judge (ALJ) Lackey’s September 14, 2020 Memorandum, PacifiCorp d/b/a Pacific Power (PacifiCorp or Company) objects to the Oregon Citizens’ Utility Board’s (CUB) Motion to Admit with respect to CUB/500, titled “Alternative Regulatory Methods and Firm Efficiency: Stochastic Frontier Evidence from the U.S. Electricity Industry.”<sup>1</sup> In its motion, CUB seeks to admit a cross-examination exhibit on which CUB offered no cross-examination, over PacifiCorp’s timely objection at hearing.

CUB’s motion does not address the general admissibility of CUB/500, identify the witness to whom the cross-examination exhibit was directed, or cite any authority for the proposition that a non-stipulated cross-examination exhibit may be admitted into the record when the party offering the exhibit waives cross-examination. These deficiencies alone justify denial of CUB’s motion.

In addition, CUB/500 lacks foundation and CUB improperly offers it as a cross examination exhibit when CUB made no attempt to question or impeach a PacifiCorp witness using the document. CUB is effectively offering CUB/500 as a supplementary exhibit to its pre-filed testimony, which is procedurally improper and unfair to PacifiCorp because it has no opportunity to respond. For these reasons, the Commission should deny CUB’s motion as to CUB/500. In the alternative, the Commission should condition the admission of CUB/500 on

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<sup>1</sup> CUB’s Motion to Admit at 2.

allowing the supplemental testimony of Mr. Frank Graves, attached as an exhibit to this objection, without opening the record to testimony from any other party—approximating the manner in which testimony would have been provided at hearing if CUB had properly availed itself of cross examination on CUB/500.

## II. BACKGROUND

CUB/500 appears to be an academic article, entitled “Alternative Regulatory Methods and Firm Efficiency: Stochastic Frontier Evidence from the U.S. Electricity Industry” written by Christopher R. Knittel. The article was published in 2001, almost twenty years ago, and is based upon data collected even further back, between 1981 and 1996. The article is not cited in testimony by any party, and its relevance to this case is not apparent—especially given the vintage of the article and of the study on which it relies. Because the article addresses cost-sharing mechanisms in utility regulation and because CUB opposes PacifiCorp’s Annual Power Cost Adjustment (APCA), PacifiCorp assumes the exhibit is being offered as additional testimony on the APCA in some way.

PacifiCorp communicated its objection to CUB/500 before the hearing, ensuring that CUB had the opportunity to designate cross-examination and seek to establish a foundation for the exhibit. CUB elected to waive all cross-examination related to CUB/500, and failed to articulate any basis for admissibility of this exhibit at hearing or in its motion to admit.

## III. ARGUMENT

Cross-examination is an opportunity to question an opposing party’s witness about that witness’s own testimony, or matters affecting that witness’s credibility.<sup>2</sup> It is not an opportunity

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<sup>2</sup> ORS 40.370(2) (“Cross-examination should be limited to the subject matter of the direct examination and matters affecting the credibility of the witness.”); *see also Peters v. Consol. Freight Lines, Inc.*, 157 Or 605, 610 (1937) (“It is a general principle that a witness cannot be cross-examined as to collateral or irrelevant matters, merely for the purpose of contradicting him by other evidence[.]”).

to supplement a party's own direct case.<sup>3</sup>

For cross-examination exhibits to be admissible, a party must lay the necessary foundation to authenticate the document and demonstrate that it is within the proper scope of cross-examination.<sup>4</sup> CUB failed to establish this foundation, and instead waived cross-examination of PacifiCorp's witnesses on the APCA.

When dealing with clearly admissible cross-examination exhibits such as data request responses or a witnesses' prior testimony on related issues, it is common practice for parties to stipulate to admissibility, which obviates the need for a party to establish an exhibit's foundation through cross-examination. On this basis, PacifiCorp stipulated to the admissibility of all of CUB's cross exhibits except CUB/500. PacifiCorp did not stipulate to CUB/500 because the authenticity and admissibility of this document are anything but clear.<sup>5</sup> CUB was therefore required to establish the foundation for CUB/500 as a prerequisite to its admission and failed to do so.

By waiving cross on PacifiCorp's APCA witnesses and not asking cross-examination questions about CUB/500, it is apparent that CUB is actually offering CUB/500 as a supplementary exhibit to its pre-filed testimony, not a cross-examination exhibit.<sup>6</sup> This is procedurally improper. Consistent with recent precedent, the Commission provided for a five-round schedule of testimony in this case.<sup>7</sup> As the Commission has explained, five rounds of testimony allow parties to

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<sup>3</sup> *Ah Doon v. Smith*, 25 Or 89, 93-94 (1893) ("It is true the party against whom a witness is called cannot, on cross-examination, go into an independent or affirmative case on his part, but must confine his examination to such facts connected with the direct examination[.]").

<sup>4</sup> ORS 40.505(2).

<sup>5</sup> Even if the document is self-authenticating under ORS 40.510, the Commission would still need to determine whether cross-examination on the document was proper under the rules of evidence. In fact, as noted in the 1981 Conference Commentary on the adoption of this rule, "Establishing the authenticity of the publication may, of course, still leave open questions of authority and responsibility for items therein contained."

<sup>6</sup> CUB/500 is not newly available information either, this is an article that has been available for at least twenty years.

<sup>7</sup> *In the Matter of Avista Corp. Request for a Gen. Rate Revision*, Docket UG 288, Order No. 16-109 at 22 (Mar. 15, 2016) (noting that, in response to the utility's reply testimony, "the issues have been identified and the testimony is more sharply focused"); see also *In the Matter of PacifiCorp, dba Pacific Power, 2017*

supplement their analysis in response to the Company's more detailed reply testimony, while still preserving the Company's opportunity to respond to new evidence. This opportunity to respond is especially crucial given that the Company bears the burden of persuasion to support its rate request in this case. Allowing CUB to introduce new evidence *after all five rounds of scheduled testimony are complete* is fundamentally inconsistent with the Commission's approved process for developing a full and fair record. As a result, admission of this exhibit would have a significant effect on future hearings before the Commission, by allowing un-rebuttable factual evidence into the record.

Finally, CUB's approach unfairly cut off PacifiCorp's ability to respond to the factual assertions in CUB/500 at hearing. PacifiCorp has attempted, at ALJ Lackey's direction, to prepare responsive testimony to accompany this objection, but it had to speculate regarding the exhibit's purpose. Such a process is wholly unfair and inconsistent with due process.<sup>8</sup> Nonetheless, PacifiCorp's witness Mr. Frank Graves has provided his response to CUB/500, had he been examined on CUB's cross-examination exhibit. Mr. Graves' testimony and a supporting declaration is attached as Exhibit A to this objection. If the Commission decides to allow CUB/500, it should not be admitted unless the supplementary testimony of Mr. Graves is also admitted, in which case no further testimony should be received.

#### IV. CONCLUSION

The Commission should decline to admit CUB/500 as it is inadmissible as a cross exhibit because it is presented without adequate foundation, and without sufficient opportunity for

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*Transition Adjustment Mechanism*, Docket UE 307, ALJ Ruling at 1 (July 1, 2016) (citing Order No. 16-109 and setting five rounds of testimony "to allow Staff and intervenors the opportunity not only to identify disagreements with the utility's application, but also to address the utility's more detailed response to those matters identified as in dispute").

<sup>8</sup> ORS 40.370(2) ("Cross-examination should be limited to the subject matter of the direct examination and matters affecting the credibility of the witness."); *see also Penn v. State*, 574 So 2d 1079, 1082 (Fla. 1991) ("If the defendant seeks to elicit testimony from an adverse witness which goes beyond the scope encompassed by the testimony of the witness on direct examination, other than matters going to credibility, he must make the witness his own.").

PacifiCorp to respond. In the alternative, the Commission should admit CUB/500 only if the supplementary testimony of Frank Graves on CUB/500, attached as Exhibit A, is also allowed.

Dated this 24<sup>th</sup> day of September 2020.



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**BEFORE THE PUBLIC UTILITY COMMISSION  
OF OREGON**

**UE 374**

**PACIFICORP**

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**Exhibit A to  
PacifiCorp's Objection to CUB's Motion to Admit CUB/500**

Supplemental Testimony of Frank C. Graves and Declaration

**September 24, 2020**

Docket No. UE 374  
Exhibit PAC/4600  
Witness: Frank C. Graves

**BEFORE THE PUBLIC UTILITY COMMISSION  
OF OREGON**

**PACIFICORP**

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**Supplemental Testimony of Frank C. Graves**

**September 2020**



1 **Q. Are you the same Frank C. Graves who previously submitted testimonies in this**  
2 **proceeding on behalf of PacifiCorp d/b/a Pacific Power (PacifiCorp or**  
3 **Company)?**

4 A. Yes.

5 **Q. What is the purpose of this supplemental testimony?**

6 A. I respond to the academic study on the effects of incentive mechanisms on power  
7 plant performance in the United States electricity industry during the 1981-1996 time  
8 frame that was submitted by the Citizens' Utility Board (CUB) as cross examination  
9 exhibit CUB/500. Among its findings are that "results with respect to the 'modified'  
10 fuel pass-through programs imply that providing some incentive to keep fuel costs  
11 below expectations increases efficiency" when compared to traditional fuel cost pass-  
12 through programs.<sup>1</sup> By "modified" programs, the author is referring to fuel pass-  
13 through programs that allow only a portion of fuel cost changes to be passed through,  
14 resulting in some opportunity (and risk) for the utility to bear a share of the gains or  
15 losses from actual costs being different from the projected amounts.

16 It appears the study is being offered to support CUB's belief that the Power  
17 Cost Adjustment Mechanism (PCAM) creates those desirable incentives. However,  
18 significant market and power system changes have developed in the past two decades  
19 (since the 1981-1996 study period), rendering the paper's conclusions obsolete and  
20 irrelevant to the current era of vastly different power markets and technologies.

21 Specifically, there have been substantial revisions to the roles and operating  
22 efficiency of power plants, including the formation of regional power pools and the

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<sup>1</sup> CUB/500 at 6.

1 energy imbalance market, the transition away from fixed fuel contracts to more  
2 dynamic spot pricing, significant increases in environmental restrictions and new  
3 mechanisms for air quality control, and the remarkable increase in renewable energy  
4 deployment (which is a main cause for net power costs (NPC) under-recovery).  
5 Neither the types of improvements Dr. Knittel studies nor the context in which those  
6 arose are similar to today's needs or conditions.

7 Even if we ignore those industry developments, the study's findings are still  
8 not applicable to the issues at hand. First, the study makes assumptions that are  
9 necessary to operationalize the econometric model but are not reflective of real-world  
10 complications. For example, the productivity metric (net megawatt hour (MWh)  
11 output from the plants) used by the study to show improvement is too simple for then  
12 and now; simply maximizing output is not a measure of usefulness or value. The  
13 study also does not distinguish between design variations of the incentive  
14 mechanisms, nor consider the presence or effectiveness of *ex post* prudence reviews,  
15 nor address the uncontrollable nature of certain risks. Finally, the paper does not  
16 account for the effects of numerous policy changes implemented during the study  
17 period.<sup>2</sup>

18 **Q. Please describe the key assumptions and results of this study.**

19 A. The paper was published in 2001 and it relies on output data on coal and gas-fired  
20 power plants using data from 1981-1996. The author also uses a very basic Cobb-

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<sup>2</sup> For this reason, the “difference-in-differences” method has become the preferred method to analyze policy effectiveness. In such a framework, we would compare the estimated difference in observed outcomes of power plants that were exposed to the new policy (in this case, the “modified” fuel pass-through program) with power plants not exposed to the new policy (also called the control group), both before and after the introduction of the new policy.

1 Douglas production function to characterize the performance frontier.<sup>3</sup> Dr. Knittel  
2 then uses an extended form of regression to fit plant and firm-level output data to the  
3 Cobb-Douglas function and to regional factors that include indicator variables (on-off  
4 switches) for the presence of various kinds of incentives. These incentives include  
5 performance targets for heat rates, availability and the like, as well as risk-sharing  
6 mechanisms that set a target and share costs above and below that target between  
7 customers and shareholders. Dr. Knittel calls the latter “modified programs”, in that  
8 they are modified from simple, unshared flow-through of fuel costs — which was the  
9 predominant practice in that time.<sup>4</sup> Dr. Knittel extends the normal regression  
10 specification (formula) by including an error term for inefficiency, which captures  
11 whether a plant which is doing worse than average is doing so systematically,  
12 reflecting possible inefficiency. The study then relates this term to the variables for  
13 the incentive programs to decide if they help reduce inefficiency and increase output  
14 relative to having no incentive program.

15 **Q. In your view, is this a sound approach to the question Dr. Knittel is trying to**  
16 **address?**

17 A. It is a useful approach for understanding regulatory influences in that time period,  
18 though even for that timeframe it has many limitations, as suggested above. More  
19 specifically:

20 1. Dr. Knittel analyzes the drivers of a very simple, one-dimensional metric of  
21 productivity (net MWh output from the plants). This is because Dr. Knittel is  
22 interpreting them all as “baseload plants” whose sole purpose is to be run as

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<sup>3</sup> This is a generic representation of how manufacturing productivity in all industries (but not power plants specifically) tends to be related to size of facility (or capital invested) and to labor involved.

<sup>4</sup> Notably, Dr. Knittel does not discuss what kinds of *ex post* prudence reviews or periodicity are involved in confirming the incentive metrics, and his modified programs are not further differentiated into how the risks are shared.

1 much as possible. That certainly described the main purpose of many large  
2 coal and gas-fired plants back in 1981-96, but by no means all of them, and it  
3 overlooks how they could be providing capacity value with low utilization or  
4 providing system balancing services in regions with lots of hydro or nuclear  
5 power as a base. These outputs are not valued in Dr. Knittel's scheme.

6 2. Dr. Knittel's productivity Cobb-Douglas function was developed in the 1930s  
7 to understand factory efficiencies, mostly on the basis of conceptual appeal  
8 (diminishing returns, constant returns to scale, etc.) rather than empirical  
9 support. It is widely used in general economic studies, but is not always well  
10 suited to the regulated electric industry. For instance, the Cobb-Douglass  
11 function assumes that adding more labor to a production facility will always  
12 increase its output – not a good description of a power plant.

13 3. Dr. Knittel appropriately recognizes that the same kinds of plants in different  
14 parts of the country cannot be expected to perform similarly, and the study  
15 provides regional variables for capturing this distinction. However, this is a  
16 very complex problem, and the study does not appear to fully address it. For  
17 example, in certain parts of the country, siting and constructing a new plant is  
18 expensive and slow, so upgrading existing plants is preferable. That would be  
19 an improvement in efficiency, but not arising because of regional differences  
20 in the incentive mechanisms referenced in the study. Thus some portion of  
21 the study results may reflect uncontrolled regional system differences, not  
22 efficiency or incentives. Nonetheless, for the time frame and purpose of  
23 expanding the discussion of what kinds of regulation are effective it is a useful  
24 study.

25 While this may have been a useful study when it was published, that does not mean  
26 that it is informative for the current situation, which involves vastly different needs  
27 and economic influences on plant performance.<sup>5</sup>

28 **Q. What are your concerns about the age of the dataset Dr. Knittel analyses?**

29 A. As noted above, the study relies on power plant data from 1981-1996, which while  
30 within living memory is actually an almost pre-historic time frame in relation to  
31 several subsequent, extremely significant changes in the power industry fuel and  
32 power market structure and competition, environmental regulation, and technology:

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<sup>5</sup> I also believe there are important differences in "modified programs" that Dr. Knittel ignores and which may make his finding not applicable to Oregon's PCAM.

- 1           2. The first Independent System Operator (Pennsylvania-New Jersey-Maryland  
2           or PJM) was not established until 1997 and the California Independent System  
3           Operation (CAISO) was not in operation until 1998, both after the entire data  
4           period of Dr. Knittel's study. The formation of those and subsequent similar  
5           power pools had a huge impact on efficiency. For example, coal plants that  
6           were "large" for small power systems previously operated on their own, and  
7           now tend to have higher capacity factors in a large, regional integrated  
8           market. Even if a plant did not join such a market, the presence of those  
9           markets had the effect of spreading innovations and inducing much more  
10          inter-regional trading and efficiency.
  
- 11          2. Beginning in the middle of the 1990s, many economic penalties and controls  
12          were placed on air quality attainment by power plants. These include acid  
13          rain-motivated restrictions on sulfur dioxide and nitrogen oxide (but trading in  
14          those rights, affecting marginal costs and dispatch), much tighter particulate  
15          and ozone restrictions, required controls for hazardous metals like mercury,  
16          and in some places carbon dioxide (CO<sub>2</sub>) limits or CO<sub>2</sub> emissions prices.  
17          These radically shifted the relative economic value of different types of plants  
18          and in some regions even reversed the dispatch order of coal versus gas plants.
  
- 19          3. Dr. Knittel's dataset period falls well prior to the dramatic penetration of  
20          renewables in the last decade, which is a main cause of PacifiCorp's NPC  
21          under-recovery and has changed fossil plant use patterns enormously. This  
22          change is so dramatic that there is really no meaningful use of the term  
23          "baseload" any more. The goal of maximizing output for coal and gas plants,  
24          is virtually unheard of now as a basis for system planning or performance  
25          evaluations. Instead, the key desire for such plants now is that they be flexible  
26          enough to run efficiently at low capacity factors when renewables and other  
27          lower cost resources (including large volumes of balancing transactions with  
28          other regional entities) are available, and then to provide rapid ramping when  
29          they are not. These performance features are not even considered in Dr.  
30          Knittel's study.
  
- 31          4. Dr. Knittel's study period also is primitive with respect to the amount and  
32          pace of real-time operating information and information technology  
33          processing capacity that is now available on the state of need for, and the  
34          performance capabilities of, the plants themselves. Modern intelligent  
35          controls and plant monitoring, as well as variety and speed of updates of price  
36          signals for their use, are vastly more sophisticated.

37  
38          As a result of studying this pre-modern period, Dr. Knittel finds large improvements  
39          possible from incentives (up to 9.5-24.8 percent increases in annual output with  
40          incentives) which would be preposterous today. Of course, the study was not

1 intended to apply to current conditions, but as a result of these enormous industry  
2 changes, it provides almost no insights for today.

3 **Q. What are your concerns about the way incentive mechanisms are analyzed in**  
4 **this study?**

5 A. I have two concerns. First, the devil is in the details, and important ones may be  
6 missing. If the study were being done with current incentives, the author would code  
7 both Oregon and Wyoming the same way, as “1” for the at-risk fuel pass-through  
8 variable. However, the mechanisms are very different in the two states, which leads  
9 to significant differences in actual outcomes for PacifiCorp (hence in differential  
10 relevance to Dr. Knittel’s incentives’ analysis). The study also does not seem to  
11 distinguish between the presence/strength of ex-post prudency reviews in fuel  
12 adjustment clauses. Thus, it is too simplified to inform whether the details of the  
13 Oregon structure are useful or not.

14 Second, the study implicitly assumes that the at-risk amounts under the  
15 “modified program” incentives are at least partly controllable and have a fair chance  
16 of being fully recoverable. If that is not the case, e.g. because the mechanisms may  
17 apply to uncontrollable costs, or because they are very asymmetrical in recovery or  
18 they inadvertently do not cover all prudent costs, then they create unwanted  
19 alternative motivations. That is, rather than incentivizing plant improvements, they  
20 tend to motivate risk-avoidance and even “gaming” of the incentive formula if there  
21 is too much risk and it is asymmetric. PacifiCorp’s power cost recovery mechanism  
22 in Oregon, the PCAM, has all three of those design problems, so Dr. Knittel’s results  
23 likely do not fit the Oregon risk-sharing context. The Oregon risk-sharing is skewed

1           against the Company, and fixing that would not result in losing the purported benefits  
2           of a good incentive system.

3   **Q.    Does this conclude your supplemental rebuttal testimony?**

4   **A.    Yes.**

**BEFORE THE PUBLIC UTILITY COMMISSION  
OF OREGON**

**UE 374**

In the Matter of  
  
PACIFICORP d/b/a PACIFIC POWER  
  
Request for a General Rate Revision.

**DECLARATION OF  
FRANK C. GRAVES**

1           I, FRANK C. GRAVES, declare under penalty of perjury under the laws of the state of  
2 Oregon:

3           1. My name is Frank C. Graves. I am employed by the Brattle Group, Inc., as  
4 Principal.

5           2. I am the same Frank C. Graves who previously filed testimony on behalf of  
6 PacifiCorp in this matter.

7           3. The supplemental testimony accompanying this declaration is true and accurate  
8 based on my information and belief.

9           I hereby declare that the above statement is true to the best of my knowledge and belief,  
10 and that I understand it is made for use as evidence before the Public Utility Commission of  
11 Oregon and is subject to penalty for perjury.

12           SIGNED this 23<sup>d</sup> day of September, 2020, at Boston, Massachusetts.

Signed: 