

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

LC 70

In the Matter of
PACIFICORP, dba PACIFIC POWER
2019 Integrated Resource Plan.

THE RENEWABLE ENERGY
COALITION'S OPENING
COMMENTS

I. INTRODUCTION

The Renewable Energy Coalition (the "Coalition") respectfully submits these Opening Comments for consideration by the Oregon Public Utility Commission (the "Commission" or "OPUC") in the matter of PacifiCorp's 2019 Integrated Resource Plan ("IRP"). In this IRP docket, PacifiCorp provided a data response that finally recognizes the value that qualifying facilities ("QFs") provide to its system when they renew their power purchase agreements ("PPAs"). The Commission should acknowledge this value and affirmatively direct PacifiCorp to assume in its IRP that all or a reasonable number of existing QFs will renew their contracts, and that these renewing QFs provide value to the Company and ratepayers. PacifiCorp currently assumes that no QFs will renew.

This assumption feeds into PacifiCorp's avoided cost pricing for renewing QFs. When existing QFs renew their contracts, they suddenly go from being paid for their capacity for years at the end of their prior PPAs, to being paid nothing for their capacity for years at the beginning of their new PPA. Nothing, practically speaking, has changed. The QF is still providing the same value to PacifiCorp's system, it is just no longer being paid for it. This absurd result must be remedied, especially in light of PacifiCorp's recent analysis confirming this conclusion.

The Coalition has been raising this issue since at least 2014, and despite Commission orders directing PacifiCorp to act on this issue, little real change has occurred in terms of compensating existing QFs for the capacity value they provide when they renew their contracts. In this 2019 IRP docket, however, PacifiCorp provided the results of some modeling that confirms the Coalition's assertions that QFs provide significant capacity value to PacifiCorp's system. In this modeling, PacifiCorp modeled the impact of renewing QFs on its resource acquisition decisions. The modeling reveals that by assuming that all existing QFs will renew their contracts at the end of their current PPAs, PacifiCorp would defer the acquisition of a simple-cycle combustion turbine ("SCCT") by three years. PacifiCorp should recognize the value QFs provide in its IRP and should appropriately compensate them for this value when they renew their PPAs.

II. DISCUSSION

The value that QFs provide to PacifiCorp and treatment of those QFs in the IRP is relevant because QF avoided cost prices often directly flow out of IRP assumptions. When a qualifying facility enters into a power purchase agreement with an Oregon utility, there is usually a period of time at the beginning of the contract during which the utility is "resource sufficient." In other words, a period of time in which the utility does not have an immediate need for resources. PacifiCorp is "resource deficient" during the later years when it needs resources. Generally, this resource need is reflected in avoided cost prices as higher prices in the later contract years because the QF can help defer those future capacity additions.

However, when an existing QF renews its contract, the current structure of avoided costs means that such QFs will *not* be compensated for the capacity value at the beginning

of a new or renewed contract. This is despite the QF having previously been providing significant capacity value to the utility and being compensated for that capacity value at the end of their last contract. PacifiCorp historically assumed that all small QFs renewed their contracts. After the Commission directed PacifiCorp to pay QFs for the value that they provide when they renew their contract, PacifiCorp changed its IRP assumptions to assume that no QF will renew their contract. PacifiCorp made this change solely to avoid compliance with the Commission's direction. As described below, this is an incorrect assumption, and PacifiCorp should be required to assume that QFs will renew their contracts and compensate them accordingly for this value provided.

A. The Existing QF Capacity Issue Has Been Before the Commission Since 2014

Existing QFs provide capacity value to PacifiCorp and should continue to be paid for that value when they renew their power purchase agreements commencing with the first day of the new project. This issue has been developed over the course of the last several years and PacifiCorp was already required to take steps towards addressing this issue as a follow-on to its 2017 IRP.

The Coalition has raised this issue in multiple prior proceedings and despite Commission rulings in their favor, the PacifiCorp failed to implement any changes. In UM 1610, the Commission agreed “that a certain amount of capacity may not be valued if utilities assume in their IRPs that existing QFs nearing contract expiration will automatically renew.”¹ This was in response to the QFs’ assertions that “[t]he utilities plan

¹ *In re Investigation into Qualifying Facility Contracting and Pricing*, Docket No. UM 1610, Order No. 16-174 at 19 (May 13, 2016).

in their IRPs on existing QFs to renew their contracts, thereby allowing deferral of capacity investments, yet QFs are not compensated for the capacity value associated with the deferral and are effectively providing it for free.”² The Commission then directed each utility to work with stakeholders to address this issue in its next IRP.³

In PacifiCorp’s next IRP, it asserted that it complied with the Commission’s order “by *not* assuming QFs will renew.”⁴ PacifiCorp then assumed that *no* QFs would renew their contracts. PacifiCorp changed its assumptions not based on any new information, but in order to avoid conducting any analysis or paying QFs for the value associated with those that renew their contracts.

The Commission acknowledged that “non-renewal may not be the best planning assumption when many (or most) QFs do, in fact, renew.”⁵ The Commission then, directed “PacifiCorp, Staff and parties [to] discuss a potential study of the capacity value of renewing QFs, and Staff shall bring this issue to a public meeting before the 2017 IRP Update.”⁶ The parties began working together in August through October of 2018. On October 22, 2018, the Coalition sent PacifiCorp an email with their recommendations.⁷ That is where this issue was left, until PacifiCorp filed this 2019 IRP.

In this IRP docket, the Coalition inquired into the status of PacifiCorp’s study in a data request, to which PacifiCorp responded on November 26, 2019 that it “has committed

² *Id.*

³ *Id.*

⁴ *In re PacifiCorp 2017 Integrated Resource Plan*, Docket No. LC 67, Order No. 18-138 (Apr. 27, 2018) (emphasis added).

⁵ *Id.*

⁶ *Id.* at Appendix A at 22.

⁷ Attachment A.

to running a study which assumes the renewal of [QFs] and will supplement the response. . . as soon as the results of the extended QFs study becomes available.”⁸

Therefore, despite being before the Commission since at least 2014 (Phase I of UM 1610), the Coalition raising it numerous times since then, and a lot of work already being done on this issue, PacifiCorp as of November 2019 had not even completed any sort of study. As discussed below, PacifiCorp provided a supplement to that data response the following monthy finally providing its study results. This has gone on long enough. PacifiCorp should be directed in this proceeding to use this analysis to appropriately account for the capacity value that existing QFs provide.

B. PacifiCorp Should Assume that All QFs Will Renew Their PPAs

It is not reasonable to assume that no QFs will continue operating and delivering power to PGE beyond their current PPA. Utilities “should consider all costs with a reasonable likelihood of being included in rates over the long term, which extends beyond the planning horizon and the life of the resource.”⁹

It is more likely than not that a QF will renew or seek to enter a new contract with PacifiCorp at the conclusion of its current contract. A new QF can often decide in which utility’s service territory it wants to locate in order to achieve the best outcome. However, once operational, the QF has fewer options to sell its electricity, because it will likely incur significant transmission charges if it wants to sell to a more distant utility. While some

⁸ Attachment B (PacifiCorp’s Response to Coalition Data Request 4 dated Nov. 26, 2019).

⁹ *Re Commission Investigation into Integrated Resource Planning*, Docket No. UM 1056, Order No. 07-047 Appendix A at 2 (Feb. 9, 2007).

QFs are able to sell to a more distant utility, the vast majority continue to sell to their interconnected utility. Therefore, existing QFs are more likely to renew or enter a new contract with the utility to which they are directly interconnected.

PacifiCorp's own records show that virtually all QFs will continue operating and renew their contracts. Of the thirty-six QFs that have had a PPA with PacifiCorp expire, only one has shut down.¹⁰ Nearly all have renewed or executed a new contract with PacifiCorp, and will continue to operate and provide significant value to PacifiCorp's system for years to come. For example, Biomass One, L.P., an approximately 30 MW biomass facility, initially executed a PPA with PacifiCorp in 1987, which expired in 2011, and is currently operating under a renewed contract that does not expire until 2036.¹¹ Farmers Irrigation District, which operates a 4.15 MW hydro facility, initially executed a PPA in 1983, which expired in 2010, and continues to operate under a renewed PPA expiring in 2025.¹² Middlefork Irrigation District, which operates a 3.7 MW hydro facility, initially began operations in 1983 and has also renewed its PPA through 2021.¹³ These QFs, and Coalition members, are examples of the types of businesses that have been providing PacifiCorp with power for decades yet are not fully compensated for the capacity value they provide.

¹⁰ Attachment B (PacifiCorp's Response to Coalition Data Request 1 and Attachment REC 1 dated Nov. 26, 2019). Note: one other QF appears to have renewed at the expiration of its initial PPA, but then apparently "self-terminated." It is not clear whether this QF has shut down completely or chose to sell to someone else.

¹¹ *Id.*

¹² *Id.*

¹³ *Id.*

These QFs show that a QF's lifespan significantly outlasts that of a single PPA. Many of these facilities are built to last 100 years, and a single PPA entered into now is only a maximum of 20 years long. It would be an extreme rarity for one of these plants to shut down after the initial PPA. This is especially true because many QFs likely acquire their up-front capital financing based only on the initial PPA, so continuing to operate beyond that first PPA, could theoretically be under much more favorable economics.

Therefore, it is more likely that all QFs will renew or that nearly all will renew, and at a minimum, PacifiCorp's default assumption that no QFs renew is not correct.

C. QFs Provide Significant Capacity Value to PacifiCorp

QFs provide significant value to PacifiCorp. PacifiCorp ultimately provided a study, which models QF renewals.¹⁴ The results appear significant.¹⁵ Assuming that all QF PPAs continued through the end of the study period, an SCCT that would have been constructed in 2026 is pushed out to 2029, and an additional SCCT replaces some battery storage in 2029.¹⁶

This analysis reveals that assuming QF renewals can have a major impact on PacifiCorp's forecasted capacity needs and the more fundamental point that the Coalition has been making since 2014: that existing QFs already provide significant capacity value and should be compensated for it when they renew.

¹⁴ See Attachment B (PacifiCorp's 1st Supplemental Response to Coalition Data Request 4 dated Dec. 18, 2019).

¹⁵ The Coalition has not independently verified the accuracy of PacifiCorp's methodology in this study.

¹⁶ See Attachment B (PacifiCorp's 1st Supplemental Response to Coalition Data Request 4 dated Dec. 18, 2019).

D. The Commission Can Acknowledge the Value of Existing QF Capacity in Two Possible Ways

In the IRP process, the Commission should acknowledge that QFs provide significant capacity value to PacifiCorp and require that PacifiCorp recognize such value as well. While the Commission does not address QF avoided cost pricing in the IRP process, the assumptions made in the IRP often flow directly into the avoided costs. Here the Commission can direct PacifiCorp implement two possible solutions to compensate existing QFs for the significant capacity value they provide.

First, the Commission could require that PacifiCorp simply continue paying a QF the capacity payment at the beginning of their renewed PPA, i.e., there would be no “sufficiency period” at the beginning of the new contract. This is how the Idaho Public Utility Commission (“IPUC”) has addressed this issue. The IPUC “[found] it reasonable for utilities to establish capacity deficiency at the time the initial. . . contract is signed. As long as the QF renews its contract and continuously sells power to the utility, the QF is entitled to capacity based on the capacity deficiency date established at the time of its initial contract.”¹⁷ The IPUC reasoned that “[t]his adjustment recognizes that in ensuing contract periods, the QF is considered part of the utility’s resource stack and will be contributing to reducing the utility’s need for capacity.”¹⁸

¹⁷ *In re Idaho Power Company’s, Avista Corporation’s, and Rocky Mountain Power Company’s Petitions to Modify Terms and Conditions of PURPA Purchase Agreements*, IPUC Docket Nos. IPC-E-15-01, AVU-E-15-01, PAC-E-15-03, Order No. 33357 at 25-26 (Aug. 20, 2015).

¹⁸ *Id.* at 26.

Second, the Commission could direct PacifiCorp to determine exactly what capacity value the QFs provide, and simply compensate them for that value. The deferral of the construction of a SCCT by three years and the avoidance of battery storage is of significant value to PacifiCorp and its ratepayers. The Commission should not determine the specific amount of value at this time, but should allow Staff and stakeholders to review and vet PacifiCorp's analysis when the rates are actually calculated. This is what the Commission directed in UM 1610, but what has not occurred to date.

III. CONCLUSION

For the reasons articulated herein, the Commission should not acknowledge PacifiCorp's IRP assumptions and direct PacifiCorp to assume that QFs will renew or enter new contracts with PacifiCorp at the end of their current contracts.

Dated this 10th day of January 2020.

Respectfully submitted,

Sanger Law, PC



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Of Attorneys for Renewable Energy Coalition

Attachment A

October 22, 2018 Email

Regarding PacifiCorp IRP – Capacity Value of Renewing QFs

From: Irion Sanger irion@sanger-law.com
Subject: Re: PacifiCorp IRP - Capacity Value of Renewing QFs Planning Call - Follow-Up
Date: October 22, 2018 at 8:54 AM

To: Siores, Natasha Natasha.Siores@pacificorp.com

Cc: ANDRUS Brittany brittany.andrus@state.or.us, ana.boyd@sierraclub.org, Jenks, Bob (Oregon CUB) bob@oregoncub.org, brmullins@mwanalytics.com, MOORE Caroline caroline.f.moore@state.or.us, cesia.kearns@sierraclub.org, denise.saunders@pgn.com, docketts@oregoncub.org, docketts@renewablenw.org, esteb44@centurylink.net, Lockey, Etta Etta.Lockey@pacificorp.com, fjackson.stoddard@morganlewis.com, franco.albi@pgn.com, fred@nwenergy.org, gloria.smith@sierraclub.org, SIERMAN Jason * ODOE Jason.Sierman@state.or.us, johanna.riemenschneider@doj.state.or.us Johanna.RIEMENSCHNEIDER@state.or.us, jravenesanmarcos@yahoo.com, McVee, Matthew Matthew.McVee@pacificorp.com, michael@renewablenw.org, mike@oregoncub.org, nathan.sandvig@nationalgrid.com, Oregon Dockets OregonDockets@PacifiCorp.com, patrick.g.rowe@doj.state.or.us Patrick.G.ROWE@state.or.us, patrick.hager@pgn.com, pge.opuc.filings@pgn.com, proctereconomics@gmail.com, rkahn@nipcc.org, silvia@renewablenw.org, sknudsen@nipcc.org, sommer.moser@doj.state.or.us Sommer.MOSER@state.or.us, tcp@dvclaw.com, wendy.simons@oregon.gov, wendy@nwenergy.org, Ralston, Jessica Jessica.Ralston@PacifiCorp.com, LaBray, Shayleah Shayleah.LaBray@pacificorp.com, MacNeil, Daniel Daniel.MacNeil@pacificorp.com, Olson, Katherine Katherine.Olson@pacificorp.com, Marie Barlow marie@sanger-law.com, Mark Thompson mark@sanger-law.com

Natasha

Thanks for your patience.

We recommend the assignment be redrafted as:

PacifiCorp will present the IRP initial load and resource balance (L&R) assuming that QFs renew their contracts at the end of their terms, consistent with past IRPs.

For the purpose of valuing QF capacity, PacifiCorp will prepare an alternative initial L&R that uses the planning assumption that QFs do not renew at the end of their contract term.

In UM 1610, Mr. Higgins argued that the assumption that small QFs are presumed to extend their contracts upon expiration *should not be used in determining the value of QF capacity*, because doing so resulted in a logical circularity. To cure this, Kevin argued that, *for the purpose of valuing QF capacity*, PacifiCorp should develop an Alternative IRP scenario that re-determined the preferred resource portfolio absent the (assumed) renewing QFs in order to properly value the capacity that QFs would avoid. This exercise would be performed solely for the purpose of valuing QF capacity and was not intended to be a methodology change for the IRP.

Kevin's argument in UM 1610 was directed to QF *pricing*, not to the IRP per se. That is, Kevin did not challenge the reasonableness of the assumption for *planning purposes* that small QFs would renew their contracts. Therefore, there is no reason to change the planning assumptions in the IRP in response to Kevin's recommendation.

Thanks

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From: Irion Sanger <irion@sanger-law.com>
Date: Tuesday, October 16, 2018 at 7:39 AM
To: "Siores, Natasha" <Natasha.Siores@pacificcorp.com>
Cc: ANDRUS Brittany <brittany.andrus@state.or.us>, "ana.boyd@sierraclub.org" <ana.boyd@sierraclub.org>, Bob Jenks <bob@oregoncub.org>, "brmullins@mwanalytics.com" <brmullins@mwanalytics.com>, MOORE Caroline <caroline.f.moore@state.or.us>, "cesia.kearns@sierraclub.org" <cesia.kearns@sierraclub.org>, "denise.saunders@pgn.com" <denise.saunders@pgn.com>, "dockets@oregoncub.org" <dockets@oregoncub.org>, "dockets@renewablenw.org" <dockets@renewablenw.org>, "esteb44@centurylink.net" <esteb44@centurylink.net>, "Lockey, Etta" <Etta.Lockey@pacificcorp.com>, "fjackson.stoddard@morganlewis.com" <fjackson.stoddard@morganlewis.com>, "franco.albi@pgn.com" <franco.albi@pgn.com>, Fred Heutte <fred@nwenergy.org>, "gloria.smith@sierraclub.org" <gloria.smith@sierraclub.org>, SIERMAN Jason * ODOE <Jason.Sierman@state.or.us>, Johanna Riemenschneider <Johanna.RIEMENSCHNEIDER@state.or.us>, John Lowe <jravenesanmarcos@yahoo.com>, "McVee, Matthew" <Matthew.McVee@pacificcorp.com>, "michael@renewablenw.org" <michael@renewablenw.org>, "mike@oregoncub.org" <mike@oregoncub.org>, "nathan.sandvig@nationalgrid.com" <nathan.sandvig@nationalgrid.com>, Oregon Dockets <OregonDockets@PacifiCorp.com>, "patrick.g.rowe@doj.state.or.us" <Patrick.G.ROWE@state.or.us>, "patrick.hager@pgn.com" <patrick.hager@pgn.com>, "pge.opuc.filings@pgn.com" <pge.opuc.filings@pgn.com>, "proctereconomics@gmail.com" <proctereconomics@gmail.com>, Robert Kahn <rkahn@nippc.org>, Sidney Villanueva <sidney@sanger-law.com>, "silvia@renewablenw.org" <silvia@renewablenw.org>, "sknudsen@nippc.org" <sknudsen@nippc.org>, "sommer.moser@doj.state.or.us" <Sommer.MOSER@state.or.us>, "tcp@dvclaw.com" <tcp@dvclaw.com>, "wendy.simons@oregon.gov" <wendy.simons@oregon.gov>, "wendy@nwenergy.org" <wendy@nwenergy.org>, "Ralston, Jessica" <Jessica.Ralston@PacifiCorp.com>, "LaBray, Shayleah" <Shayleah.LaBray@pacificcorp.com>, "MacNeil, Daniel" <Daniel.MacNeil@pacificcorp.com>, "Olson, Katherine" <Katherine.Olson@pacificcorp.com>
Subject: Re: PacifiCorp IRP - Capacity Value of Renewing QFs Planning Call - Follow-Up

Natasha

Sorry for the delay. We are still reviewing and will provide our suggestions (if any) by the end of the week.

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On Oct 15, 2018, at 5:57 PM, Siores, Natasha <Natasha.Siores@pacificorp.com> wrote:

Thanks Brittany. Staff's were the only comments we received. Taking that into consideration we've revised our description as follows.

PacifiCorp will present the IRP initial load and resource balance (L&R) in two ways. The first initial L&R will use the planning assumption that QFs do not renew at the end of their contract term. For informational purposes, the second initial L&R will assume that all QFs renew through the end of the IRP study period.

In addition, the company will perform a sensitivity to assess portfolio expansion impacts and system costs. The first portfolio will use the planning assumption that QFs do not renew at the end of their contract term. For informational purposes, a comparative portfolio will assume that all QFs renew through the end of the IRP study period. In the comparative portfolio, renewal QF pricing is unknown and will be considered zero for modeling purposes.

Regards,
Natasha

-----Original Message-----

From: ANDRUS Brittany [<mailto:brittany.andrus@state.or.us>]

Sent: Tuesday, September 18, 2018 3:11 PM

To: ana.boyd@sierraclub.org; Jenks, Bob (Oregon CUB) <bob@oregoncub.org>; brmullins@mwanalytics.com; MOORE Caroline <caroline.f.moore@state.or.us>; cesia.kearns@sierraclub.org; denise.saunders@pgn.com; dockets@oregoncub.org; dockets@renewablenw.org; esteb44@centurylink.net; Lockey, Etta <Etta.Lockey@pacificorp.com>; fjackson.stoddard@morganlewis.com; franco.albi@pgn.com; fred@nwenergy.org; gloria.smith@sierraclub.org; irion@sanger-law.com; SIERMAN Jason * ODOE <Jason.Sierman@state.or.us>; johanna.riemenschneider@doj.state.or.us <Johanna.RIEMENSCHNEIDER@state.or.us>; jravenesanmarcos@yahoo.com; McVee, Matthew <Matthew.McVee@pacificorp.com>; michael@renewablenw.org; mike@oregoncub.org; Siores, Natasha <Natasha.Siores@pacificorp.com>; nathan.sandvig@nationalgrid.com; Oregon Dockets <OregonDockets@PacifiCorp.com>; patrick.g.rove@doj.state.or.us <Patrick.G.ROWE@state.or.us>; patrick.hager@pgn.com; pge.opuc.filings@pgn.com; proctereconomics@gmail.com; rkahn@nippc.org; sidney@sanger-law.com; silvia@renewablenw.org; sknudsen@nippc.org;

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Cc: Ralston, Jessica <Jessica.Ralston@PacifiCorp.com>; LaBray, Shayleah
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<Daniel.MacNeil@pacificorp.com>
Subject: [INTERNET] RE: PacifiCorp IRP - Capacity Value of Renewing QFs
Planning Call - Follow-Up

** STOP. THINK. External Email **

Hi, Natasha,

I view the proposed work below as the first step, as I believe it will provide MWs but not an associated financial value. I think we'll need to discuss ways to move that second part forward.

What do others think?

Thanks,

Brittany

From: Siores, Natasha [Natasha.Siores@pacificorp.com]
Sent: Tuesday, September 18, 2018 9:46 AM
To: dockets@oregoncub.org; Oregon Dockets; dockets@renewablenw.org;
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Cc: Ralston, Jessica; LaBray, Shayleah; MacNeil, Daniel; MOORE Caroline;
ANDRUS Brittany
Subject: RE: PacifiCorp IRP - Capacity Value of Renewing QFs Planning Call -
Follow-Up

Hello all,

Following up from our call two weeks ago, here is the description of the work we propose to do to address the value of renewing QF issue from the IRP Order that we discussed on our call.

· PacifiCorp will present the IRP initial load and resource balance (L&R) in two ways. The first initial L&R will use the planning assumption that QFs do not renew at the end of their contract term. For informational purposes, the second initial L&R will assume that all QFs renew through the end of the IRP study period.

Please let us know if there are questions or additional feedback on this. Thank you.

Regards,
Natasha

From: Siores, Natasha

Sent: Monday, August 27, 2018 8:42 AM

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Subject: PacifiCorp IRP - Capacity Value of Renewing QFs Planning Call - to be held 9/4

Hello LC 67 Parties,

We've managed to find a new date for this call.

PacifiCorp, REC and OPUC Staff have scheduled a call on September 4, 2018, from 3:30pm to 4:30pm, to address the following issue from the 2017 IRP Order. Please see call in information below.

"PacifiCorp, Staff and parties should discuss a potential study of the capacity value of renewing QFs, and Staff shall bring this issue to a public meeting before the 2017 IRP Update." (Appendix A, p. 22)

We plan to use this initial call to discuss how to approach this issue and to develop a plan and/or next steps. Note that the 2017 IRP Order was issued just a few days before the 2017 IRP Update was filed, so there was not an opportunity to discuss this and bring it to a public meeting before the 2017 IRP Update.

Date/Time:

Tuesday, September 4, 2018 from 3:30pm to 4:30 pm

Call-in Information:

Join by phone

(503) 813-5252 or (855) 499-5252

Conference ID: 979416

Regards,
Natasha

Natasha Siores

Pacific Power Regulatory Affairs

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[\[http://idoc.pacificorp.us/content/dam/intranet/media/cn/in_the_news/cccc/PP_REDTRI_BLACK_PYGtag.jpg\]](http://idoc.pacificorp.us/content/dam/intranet/media/cn/in_the_news/cccc/PP_REDTRI_BLACK_PYGtag.jpg)

Please use caution when opening links, attachments or responding to this email as it originated outside of PUC.

Attachment B

LC 70

PacifiCorp Response to the Coalition's Data Request No. 1,

Attachment REC 1,

PacifiCorp Response to the Coalition's Data Request No. 4,

and

PacifiCorp 1st Supplemental Response to Data Request No. 4

REC Data Request 1

Please provide a complete list of qualifying facility contracts that have entered into PPA with PacifiCorp since 1980 including the following information, and please provide all work papers in original electronic format:

- (a) Project Name
- (b) PPA execution date
- (c) Resource Type
- (d) Nameplate Capacity
- (e) Actual Commercial Operation Date
- (f) Contracted Commercial Operation Date
- (g) Type of PPA (Standard or Non-Standard)
- (h) Current PPA Expiration date
- (i) Whether the contract is for a new or existing project, and if renewing, then the dates for each contract
- (j) For QFs that began operating and whose contracts expired, whether the QF entered into a new contract with PacifiCorp, and, if not, why not.

Response to REC Data Request 1

The company objects to this data request on the basis that it is unduly burdensome and unlikely to lead to information relevant to review of the 2019 Integrated Resource Plan (IRP) proceeding. The IRP is forward looking, covering the period 2019 through 2038. Qualifying facilities (QF) included in the IRP are existing / executed QF power purchase agreements (PPA). The IRP does not make any assumptions for QF PPAs based on historical information. Without waiving these objections and based on the foregoing clarification, the company responds as follows:

Please refer to Attachment REC 1.

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
Plant Name	PPA Execution Date	Resource Type	Nameplate Capacity (MW)	Commercial Operation Date (COD)	Original COD	Type of PPA (Standard / Non-standard)	Current PPA Expiration Date	Vintage of PPA	Facility / PPA Status
Adams Solar Center, LLC	August 7, 2014	Solar	10.0	July 27, 2018	November 27, 2017	Standard	October 30, 2036	Original	Operating
Ballard Hog Farms Inc	September 22, 2003	Biogas	0.05	October 6, 2003	October 6, 2003	Standard	September 21, 2008	Original	PPA Expired
Ballard Hog Farms Inc	Renewal	Biogas	0.05	Existing	Existing	Standard	September 21, 2010	Renewal	PPA Expired
Ballard Hog Farms Inc	Renewal	Biogas	0.05	Existing	Existing	Standard	September 21, 2012	Renewal	PPA Expired
Ballard Hog Farms Inc	Renewal	Biogas	0.05	Existing	Existing	Standard	October 13, 2019	Renewal	Terminated -Convert to net metering
Bear Creek Solar Center, LLC	August 7, 2015	Solar	10.0	September 28, 2018	December 8, 2017	Standard	October 30, 2036	Original	Operating
Bell Mountain Hydro LLC (Ted Sorenson)	February 4, 2010	Hydro	0.28	February 4, 2010	December 1, 2009	Standard	August 31, 2029	Original	Operating
Bell Mountain Power (Jake Amy)	January 3, 1985	Hydro	0.45	December 1, 1986	January 3, 1985	Standard	December 31, 2021	Original	Operating
Beryl Solar	June 4, 2013	Solar	3.0	August 24, 2015	July 31, 2015	Standard	July 30, 2035	Original	Operating
Big Top LLC (QF)	December 19, 2008	Wind	1.65	August 1, 2009	March 24, 2009	Standard	January 29, 2029	Original	Operating
Biomass One, L.P.	April 30, 1987	Biomass	25.00	May 25, 1987	May 25, 1987	Non standard	December 31, 2011	Original	PPA Expired
Biomass One, L.P.	Renewal	Biomass	32.25	Existing	Existing	Non standard	October 30, 2036	Renewal	Operating
Birch Creek Hydro	August 21, 1984	Hydro	2.65	August 21, 1994	August 21, 1994	Standard	December 31, 2040	Original	Operating
Bly Solar Center, LLC	July 24, 2014	Solar	8.5	December 21, 2018	January 24, 2018	Standard	October 30, 2036	Original	Operating
Bogus Creek	March 11, 1983	Hydro	0.16	March 11, 1983	March 11, 1983	Unknown	December 31, 1997	Original	PPA Expired
Bogus Creek	Amended	Hydro	0.16	Existing	Existing	Unknown	December 31, 2040	Amended	Operating
Boswell Wind Project I	April 3, 2017	Wind	80.00	Not COD Yet	December 31, 2021	Non standard	December 30, 2040	Original	Development
Boswell Wind Project II	April 3, 2017	Wind	80.00	Not COD Yet	December 31, 2021	Non standard	December 30, 2040	Original	Development
Boswell Wind Project III	April 3, 2017	Wind	80.00	Not COD Yet	December 31, 2021	Non standard	December 30, 2040	Original	Development
Boswell Wind Project IV	April 3, 2017	Wind	80.00	Not COD Yet	December 31, 2021	Non standard	December 30, 2040	Original	Development
Buckhorn	June 4, 2013	Solar	3.0	December 23, 2015	July 31, 2015	Standard	July 30, 2035	Original	Operating
Bureau of Land Management - Rawlins Office	August 13, 2012	Wind	0.10	March 12, 2013	August 13, 2012	Standard	August 31, 2022	Original	Operating
Butter Creek Power LLC	December 19, 2008	Wind	4.95	August 1, 2009	March 12, 2009	Standard	January 29, 2029	Original	Operating
BYU Idaho	January 23, 2015	Natural Gas	5.60	September 30, 2015	August 1, 2015	Standard	July 31, 2017	Original	PPA Expired
BYU Idaho	Renewal	Natural Gas	5.60	Existing	Existing	Standard	September 28, 2037	Renewal	Operating
C Drop	October 18, 2011	Hydro	1.10	May 3, 2012	March 15, 2012	Standard	May 02, 2032	Original	Operating
Cargill, Q3 (Kettle Butte Dairy)	February 8, 2011	Biogas	1.70	June 14, 2011	February 26, 2011	Standard	February 28, 2021	Original	Operating
CDM Hydro	December 4, 1984	Hydro	6.00	March 1, 1986	December 4, 1984	Standard	March 31, 2021	Original	Operating
Cedar Valley	June 4, 2013	Solar	3.0	December 7, 2015	September 12, 2015	Standard	July 30, 2035	Original	Operating
Central Oregon Irrigation District	April 12, 1983	Hydro	6.00	September 1, 1989	September 1, 1989	Standard	December 30, 2020	Original	Operating
Central Oregon Irrigation District - Juniper Ridge	August 17, 2009	Hydro	5.00	October 4, 2010	October 4, 2010	Standard	August 01, 2030	Original	Operating
Chiloquin Solar	October 12, 2015	Solar	9.90	January 26, 2018	October 30, 2017	Standard	December 15, 2036	Original	Operating
Chopin Wind, LLC	May 4, 2014	Wind	10.0	October 1, 2016	June 1, 2016	Standard	May 29, 2036	Original	Operating
City of Albany, Dept of Public Works	April 4, 2008	Hydro	0.50	January 20, 2009	April 7, 2008	Standard	October 09, 2023	Original	Operating
City of Astoria	January 5, 2015	Hydro	0.03	April 8, 2015	February 10, 2015	Standard	December 18, 2029	Original	Operating
City of Buffalo	October 26, 1995	Hydro	0.20	August 1, 1997	August 1, 1997	Standard	December 31, 2015	Original	PPA Expired
City of Buffalo	Renewal	Hydro	0.20	Existing	Existing	Standard	December 31, 2021	Renewal	Operating
City of Portland, Portland Hydro Bureau	April 4, 2008	Hydro	0.03	November 1, 2012	December 1, 2011	Standard	February 28, 2027	Original	Operating
Commercial Energy Management	November 21, 1991	Hydro	0.90	May 1, 1993	January 1, 1992	Unknown	May 31, 2020	Original	Operating
Cottonwood Hydro (FKA Alta Energy)	October 23, 2003	Hydro	1.10	January 1, 2005	January 1, 2005	Standard	December 31, 2008	Original	PPA Expired
Cottonwood Hydro (FKA Alta Energy)	Renewal	Hydro	1.10	Existing	Existing	Standard	December 31, 2009	Renewal	PPA Expired
Cottonwood Hydro (FKA Alta Energy)	Renewal	Hydro	1.10	Existing	Existing	Standard	December 31, 2011	Renewal	PPA Expired
Cottonwood Hydro (FKA Alta Energy)	Renewal	Hydro	1.10	Existing	Existing	Standard	December 31, 2025	Renewal	Operating
Cypress Creek - Merrill Solar	June 29, 2015	Solar	10.0	Not COD Yet	December 1, 2018	Standard	November 17, 2031	Original	Construction
Deschutes Valley Hydro District	June 29, 1982	Hydro	4.30	January 1, 1985	November 15, 1982	Unknown	December 31, 2020	Original	Operating
Deschutes Valley Hydro District	Renewal	Hydro	4.30	Existing		Standard	December 31, 2035	Renewal	Renewal executed
Dorena Hydro	April 28, 2011	Hydro	6.10	December 11, 2014	December 1, 2012	Standard	November 30, 2032	Original	Operating
Douglas Country Forest Products	August 1, 2006	Biomass	6.25	August 1, 2006	August 1, 2006	Standard	July 31, 2008	Original	PPA Expired
Douglas Country Forest Products	Renewal	Biomass	6.25	Existing	Existing	Standard	July 31, 2010	Renewal	PPA Expired

Plant Name	PPA Execution Date	Resource Type	Nameplate Capacity (MW)	Commercial Operation Date (COD)	Original COD	Type of PPA (Standard / Non-standard)	Current PPA Expiration Date	Vintage of PPA	Facility / PPA Status
Douglas Country Forest Products	Renewal	Biomass	6.25	Existing	Existing	Standard	July 31, 2015	Renewal	PPA Expired
Douglas Country Forest Products	Renewal	Biomass	6.25	Existing	Existing	Standard	July 31, 2020	Renewal	Operating
Draper Irrigation Company	October 14, 2004	Hydro	0.51	October 14, 2004	September 1, 2004	Standard	October 13, 2006	Original	PPA Expired
Draper Irrigation Company	Renewal	Hydro	0.51	Existing	Existing	Standard	October 13, 2009	Renewal	PPA Expired
Draper Irrigation Company	Renewal	Hydro	0.51	Existing	Existing	Standard	October 13, 2012	Renewal	PPA Expired
Draper Irrigation Company	Renewal	Hydro	0.51	Existing	Existing	Standard	February 29, 2032	Renewal	Operating
Dry Creek	May 2, 1986	Hydro	4.00	April 1, 1987	May 2, 1986	Unknown	April 30, 2022	Original	Operating
Eagle Point Irrigation District (Nichols Gap)	September 28, 1983	Hydro	0.72	March 1, 1987	September 28, 1983	Unknown	December 31, 2021	Original	Operating
eBay - Solar	October 24, 2012	Solar	0.52	January 30, 2014	April 1, 2013	Standard	March 31, 2023	Original	Operating
EBD Hydro (Apple)	April 6, 2012	Hydro	2.99	June 11, 2015	April 15, 2013	Standard	April 14, 2028	Original	Operating
Elbe Solar Center, LLC	August 7, 2014	Solar	10.0	August 10, 2018	December 5, 2017	Standard	October 30, 2036	Original	Operating
Enterprise Solar LLC	June 12, 2014	Solar	80.0	July 29, 2016	October 31, 2016	Non standard	July 21, 2036	Original	Operating
Escalante Solar I LLC	June 12, 2014	Solar	80.0	August 31, 2016	October 31, 2016	Non standard	August 30, 2036	Original	Operating
Escalante Solar II LLC	June 12, 2014	Solar	80.0	August 31, 2016	October 31, 2016	Non standard	August 30, 2036	Original	Operating
Escalante Solar III LLC	June 12, 2014	Solar	80.0	August 31, 2016	October 31, 2016	Non standard	August 30, 2036	Original	Operating
ExxonMobil Production Company	February 21, 2005	Natural Gas	107.40	January 1, 2006	January 1, 2006	Non standard	December 31, 2006	Original	PPA Expired
ExxonMobil Production Company	Renewal	Natural Gas	107.40	Existing	Existing	Non standard	December 31, 2011	Renewal	PPA Expired
ExxonMobil Production Company	Renewal	Natural Gas	107.40	Existing	Existing	Non standard	December 31, 2013	Renewal	PPA Expired
ExxonMobil Production Company	Renewal	Natural Gas	107.40	Existing	Existing	Non standard	December 31, 2014	Renewal	PPA Expired
ExxonMobil Production Company	Renewal	Natural Gas	107.40	Existing	Existing	Non standard	December 31, 2016	Renewal	PPA Expired
ExxonMobil Production Company	Renewal	Natural Gas	107.40	Existing	Existing	Non standard	December 31, 2017	Renewal	PPA Expired
ExxonMobil Production Company	Renewal	Natural Gas	107.40	Existing	Existing	Non standard	December 31, 2018	Renewal	PPA Expired
ExxonMobil Production Company	Renewal	Natural Gas	107.40	Existing	Existing	Non standard	December 31, 2019	Renewal	Operating
ExxonMobil Production Company	Renewal	Natural Gas	107.40	Existing	Existing	Non standard	December 31, 2020	Renewal	Renewal executed
Falls Creek	March 30, 1983	Hydro	4.10	May 29, 1986	December 1, 1984	Unknown	December 31, 2019	Original	Alternate buyer 1/1/2020
Farm Power Misty Meadow	March 29, 2012	Biogas	0.75	May 6, 2013	March 29, 2012	Standard	September 30, 2027	Original	Operating
Farmers Irrigation	June 29, 1983	Hydro	4.15	June 29, 1987	June 29, 1983	Unknown	December 31, 2010	Original	PPA Expired
Farmers Irrigation	Renewal	Hydro	4.15	Existing	Existing	Standard	December 31, 2025	Renewal	Operating
Fiddler's Canyon 1	May 29, 2013	Solar	3.0	September 22, 2015	May 30, 2015	Standard	May 29, 2035	Original	Operating
Fiddler's Canyon 2	May 29, 2013	Solar	3.0	September 22, 2015	May 30, 2015	Standard	May 29, 2035	Original	Operating
Fiddler's Canyon 3	October 29, 2013	Solar	3.0	December 21, 2015	October 15, 2015	Standard	October 14, 2035	Original	Operating
Finley Bioenergy	October 24, 2007	Biogas	4.80	December 25, 2007	October 24, 2007	Standard	November 15, 2022	Original	Operating
Foote Creek II	June 15, 2014	Wind	1.80	June 18, 2014	Existing	Non standard	June 17, 2019	Original	PPA Expired
Foote Creek III	August 5, 2014	Wind	24.80	August 1, 2014	Existing	Non standard	July 31, 2019	Original	PPA Expired
Four Corners Windfarm LLC	June 16, 2009	Wind	10.00	September 11, 2009	September 11, 2009	Standard	June 30, 2029	Original	Operating
Four Mile Canyon Windfarm LLC	June 16, 2009	Wind	10.00	September 11, 2009	September 11, 2009	Standard	June 30, 2029	Original	Operating
Galesville Dam (Douglas County)	September 1, 1982	Hydro	1.80	February 1, 1987	September 1, 1982	Unknown	December 31, 2021	Original	Operating
Georgetown Irrigation	July 2, 1984	Hydro	0.33	December 1, 1985	December 15, 1984	Unknown	March 31, 2021	Original	Operating
Granite Mountain East	April 6, 2015	Solar	80.0	September 21, 2016	October 31, 2016	Non standard	August 11, 2036	Original	Operating
Granite Mountain West	April 6, 2015	Solar	50.4	September 30, 2016	October 31, 2016	Non standard	September 07, 2036	Original	Operating
Granite Peak	October 18, 2013	Solar	3.0	August 21, 2015	July 31, 2015	Standard	July 30, 2035	Original	Operating
Greenville	June 4, 2013	Solar	2.2	October 29, 2015	July 31, 2015	Standard	July 30, 2035	Original	Operating
Hill Air Force Base	January 10, 2005	Biogas	2.46	January 10, 2005	January 10, 2005	Standard	January 09, 2025	Original	Operating
Iron Springs Solar	April 6, 2015	Solar	80.0	August 15, 2016	October 31, 2016	Non standard	August 14, 2036	Original	Operating
J Bar 9 Ranch	August 15, 2011	Wind	0.10	November 17, 2011	October 31, 2011	Standard	October 31, 2016	Original	PPA Expired
J Bar 9 Ranch	Renewal	Wind	0.10	Existing	Existing	Standard	October 31, 2018	Renewal	PPA Expired
J Bar 9 Ranch	Renewal	Wind	0.10	Existing	Existing	Standard	December 31, 2020	Renewal	Operating
Kennecott Refinery	January 7, 2011	Waste Heat	7.54	January 7, 2011	January 7, 2011	Non standard	December 31, 2011	Original	PPA Expired
Kennecott Refinery	Renewal	Waste Heat	7.54	Existing	Existing	Non standard	December 31, 2012	Renewal	PPA Expired
Kennecott Refinery	Renewal	Waste Heat	7.54	Existing	Existing	Non standard	December 31, 2013	Renewal	PPA Expired
Kennecott Refinery	Renewal	Waste Heat	7.54	Existing	Existing	Non standard	December 31, 2014	Renewal	PPA Expired
Kennecott Refinery	Renewal	Waste Heat	7.54	Existing	Existing	Non standard	December 31, 2015	Renewal	PPA Expired

Plant Name	PPA Execution Date	Resource Type	Nameplate Capacity (MW)	Commercial Operation Date (COD)	Original COD	Type of PPA (Standard / Non-standard)	Current PPA Expiration Date	Vintage of PPA	Facility / PPA Status
Kennecott Refinery	Renewal	Waste Heat	7.54	Existing	Existing	Non standard	December 31, 2016	Renewal	PPA Expired
Kennecott Refinery	Renewal	Waste Heat	7.54	Existing	Existing	Non standard	December 31, 2017	Renewal	PPA Expired
Kennecott Refinery	Renewal	Waste Heat	7.54	Existing	Existing	Non standard	December 31, 2018	Renewal	PPA Expired
Kennecott Refinery	Renewal	Waste Heat	7.54	Existing	Existing	Non standard	December 31, 2019	Renewal	Operating
Kennecott Refinery	Renewal	Waste Heat	7.54	Existing	Existing	Non standard	December 31, 2020	Renewal	Renewal executed
Kennecott Smelter	September 22, 2004	Waste Heat	31.80	October 1, 2004	October 1, 2004	Non standard	December 31, 2005	Original	PPA Expired
Kennecott Smelter	Renewal	Waste Heat	31.80	Existing	Existing	Non standard	December 31, 2006	Renewal	PPA Expired
Kennecott Smelter	Renewal	Waste Heat	31.80	Existing	Existing	Non standard	December 31, 2007	Renewal	PPA Expired
Kennecott Smelter	Renewal	Waste Heat	31.80	Existing	Existing	Non standard	December 31, 2008	Renewal	PPA Expired
Kennecott Smelter	Renewal	Waste Heat	31.80	Existing	Existing	Non standard	December 31, 2009	Renewal	PPA Expired
Kennecott Smelter	Renewal	Waste Heat	31.80	Existing	Existing	Non standard	December 31, 2010	Renewal	PPA Expired
Kennecott Smelter	Renewal	Waste Heat	31.80	Existing	Existing	Non standard	December 31, 2011	Renewal	PPA Expired
Kennecott Smelter	Renewal	Waste Heat	31.80	Existing	Existing	Non standard	December 31, 2012	Renewal	PPA Expired
Kennecott Smelter	Renewal	Waste Heat	31.80	Existing	Existing	Non standard	December 31, 2013	Renewal	PPA Expired
Kennecott Smelter	Renewal	Waste Heat	31.80	Existing	Existing	Non standard	December 31, 2014	Renewal	PPA Expired
Kennecott Smelter	Renewal	Waste Heat	31.80	Existing	Existing	Non standard	December 31, 2015	Renewal	PPA Expired
Kennecott Smelter	Renewal	Waste Heat	31.80	Existing	Existing	Non standard	December 31, 2016	Renewal	PPA Expired
Kennecott Smelter	Renewal	Waste Heat	31.80	Existing	Existing	Non standard	December 31, 2017	Renewal	PPA Expired
Kennecott Smelter	Renewal	Waste Heat	31.80	Existing	Existing	Non standard	December 31, 2018	Renewal	PPA Expired
Kennecott Smelter	Renewal	Waste Heat	31.80	Existing	Existing	Non standard	December 31, 2019	Renewal	Operating
Kennecott Smelter	Renewal	Waste Heat	31.80	Existing	Existing	Non standard	December 31, 2020	Renewal	Renewal executed
Klamath Falls Solar 1 (FKA Ewauna Solar LLC)	August 8, 2014	Solar	0.8	July 12, 2016	September 30, 2015	Standard	September 29, 2035	Original	Operating
Klamath Falls Solar 2 (FKA Ewauna Solar 2 LLC)	June 5, 2015	Solar	2.9	December 16, 2017	November 30, 2017	Standard	November 29, 2037	Original	Operating
Lacomb Irrigation (CHI)	October 28, 1982	Hydro	0.96	January 1, 1984	January 1, 1984	Unknown		Original	PPA Expired
Lacomb Irrigation (Lacomb PPA Renegotiated)	June 19, 1998	Hydro	0.96	July 1, 1987	Existing	Unknown	December 31, 2022	Amended	Operating
Laho #1	October 18, 2013	Solar	3.0	July 14, 2015	July 31, 2015	Standard	July 30, 2035	Original	Operating
Lake Siskiyou (Box Canyon)	March 14, 1983	Hydro	5.00	August 1, 1986	March 14, 1983	Unknown	December 31, 2020	Original	Operating
Latigo Wind	July 3, 2013	Wind	60.0	March 11, 2016	May 1, 2015	Non standard	April 30, 2035	Original	Operating
Loyd Fery	June 28, 1985	Hydro	0.04	June 28, 1985	June 28, 1985	Unknown	June 30, 2003	Original	PPA Expired
Loyd Fery	Renewal	Hydro	0.04	Existing	Existing	Standard	June 30, 2004	Renewal	PPA Expired
Loyd Fery	Renewal	Hydro	0.04	Existing	Existing	Standard	June 30, 2005	Renewal	PPA Expired
Loyd Fery	Renewal	Hydro	0.04	Existing	Existing	Standard	June 30, 2006	Renewal	PPA Expired
Loyd Fery	Renewal	Hydro	0.04	Existing	Existing	Standard	June 30, 2007	Renewal	PPA Expired
Loyd Fery	Renewal	Hydro	0.04	Existing	Existing	Standard	June 30, 2008	Renewal	PPA Expired
Loyd Fery	Renewal	Hydro	0.04	Existing	Existing	Standard	June 30, 2009	Renewal	PPA Expired
Loyd Fery	Renewal	Hydro	0.04	Existing	Existing	Standard	June 30, 2010	Renewal	PPA Expired
Loyd Fery	Renewal	Hydro	0.04	Existing	Existing	Standard	June 30, 2011	Renewal	PPA Expired
Loyd Fery	Renewal	Hydro	0.04	Existing	Existing	Standard	June 30, 2012	Renewal	PPA Expired
Loyd Fery	Renewal	Hydro	0.04	Existing	Existing	Standard	June 30, 2013	Renewal	PPA Expired
Loyd Fery	Renewal	Hydro	0.04	Existing	Existing	Standard	June 30, 2014	Renewal	PPA Expired
Loyd Fery	Renewal	Hydro	0.04	Existing	Existing	Standard	June 30, 2015	Renewal	PPA Expired
Loyd Fery	Renewal	Hydro	0.04	Existing	Existing	Standard	June 30, 2016	Renewal	PPA Expired
Loyd Fery	Renewal	Hydro	0.04	Existing	Existing	Standard	June 30, 2017	Renewal	PPA Expired
Loyd Fery	Renewal	Hydro	0.04	Existing	Existing	Standard	June 30, 2018	Renewal	PPA Expired
Loyd Fery	Renewal	Hydro	0.04	Existing	Existing	Standard	June 30, 2019	Renewal	PPA Expired
Loyd Fery	Renewal	Hydro	0.04	Existing	Existing	Standard	June 30, 2020	Renewal	Operating
Luckey, Paul	April 27, 1983	Hydro	0.05	January 1, 1987	April 27, 1983	Unknown	December 31, 2018	Original	Shutdown
Luckey, Paul	Renewal	Hydro	0.05	January 1, 1987	April 27, 1983	Unknown	December 31, 2020	Renewal	Shutdown
Mariah Wind	April 1, 2014	Wind	10.0	Not COD yet	December 1, 2018	Standard	August 31, 2030	Original	Not built/terminated
Marsh Valley Hydro & Electric Company	November 21, 1986	Hydro	1.70	November 21, 1986	November 21, 1986	Standard	March 28, 2028	Original	Operating
Meadow Creek Project Company - Five Pine	January 4, 2012	Wind	40.00	December 22, 2012	December 22, 2012	Standard	December 30, 2032	Original	Operating
Meadow Creek Project Company - North Point	January 4, 2012	Wind	80.00	December 11, 2012	December 11, 2012	Standard	December 30, 2032	Original	Operating

Plant Name	PPA Execution Date	Resource Type	Nameplate Capacity (MW)	Commercial Operation Date (COD)	Original COD	Type of PPA (Standard / Non-standard)	Current PPA Expiration Date	Vintage of PPA	Facility / PPA Status
Middlefork Irrigation District	June 29, 1983	Hydro	3.70	September 29, 1983	September 29, 1983	Unknown	December 31, 2005	Original	PPA Expired
Middlefork Irrigation District	Renewal	Hydro	3.70	Existing	Existing	Standard	December 31, 2006	Renewal	PPA Expired
Middlefork Irrigation District	Renewal	Hydro	3.70	Existing	Existing	Standard	December 31, 2021	Renewal	Operating
Milford 2	April 4, 2014	Solar	3.0	December 21, 2015	October 15, 2015	Standard	October 14, 2035	Original	Operating
Milford Flat	October 18, 2013	Solar	3.0	July 23, 2015	July 31, 2015	Standard	July 30, 2035	Original	Operating
Mink Creek Hydro	May 21, 1985	Hydro	2.70	December 1, 1986	May 21, 1985	Unknown	March 31, 2022	Original	Operating
Monroe Hydro (Apple)	April 9, 2012	Hydro	0.3	June 9, 2016	April 1, 2015	Standard	August 31, 2028	Original	Operating
Mountain Energy	June 17, 1985	Hydro	0.05	January 1, 1986	June 17, 1985	Unknown	December 31, 2004	Original	PPA Expired
Mountain Energy	Renewal	Hydro	0.05	Existing	Existing	Standard	December 31, 2005	Renewal	PPA Expired
Mountain Energy	Renewal	Hydro	0.05	Existing	Existing	Standard	December 31, 2006	Renewal	PPA Expired
Mountain Energy	Renewal	Hydro	0.05	Existing	Existing	Standard	December 31, 2007	Renewal	PPA Expired
Mountain Energy	Renewal	Hydro	0.05	Existing	Existing	Standard	December 31, 2022	Renewal	Operating
Mountain Wind 1	July 14, 2006	Wind	60.90	July 2, 2008	July 2, 2008	Non standard	July 01, 2033	Original	Operating
Mountain Wind 2	July 23, 2006	Wind	79.80	September 29, 2008	September 29, 2008	Non standard	September 29, 2033	Original	Operating
Nicholson Sunnybar Ranch	June 27, 1985	Hydro	0.35	April 1, 1986	June 27, 1985	Unknown	April 30, 2021	Original	Operating
Norwest Energy 2 LLC (Neff)	May 29, 2015	Solar	9.9	December 31, 2016	December 31, 2016	Standard	November 17, 2031	Original	Operating
Norwest Energy 4 LLC (Bonanza)	May 29, 2015	Solar	6.0	February 27, 2019	July 31, 2018	Standard	November 17, 2031	Original	Operating
Norwest Energy 7 LLC (Eagle Point)	May 29, 2015	Solar	9.9	12/30/17	September 9, 2017	Standard	November 17, 2031	Original	Operating
Norwest Energy 9 LLC (Pendleton)	June 29, 2015	Solar	6.6	11/30/18	July 31, 2018	Standard	November 17, 2031	Original	Operating
O.J. Power Company	March 4, 1986	Hydro	0.26	January 1, 1987	March 4, 1986	Unknown	January 31, 2022	Original	Operating
Obsidian Renewables LLC - Black Cap Solar II	July 30, 2014	Solar	8.0	November 30, 2016	December 31, 2016	Standard	November 30, 2036	Original	Operating
Obsidian Renewables LLC - Ivory Pine Solar	July 30, 2014	Solar	10.0	Terminated	December 31, 2016	Standard		Original	Not built/terminated
Obsidian Renewables LLC - Sprague River Solar	July 30, 2015	Solar	7.0	Terminated	December 31, 2016	Standard		Original	Not built/terminated
OR Solar 1 (Sprague River Solar)	June 11, 2015	Solar	10.0	Terminated	November 1, 2016	Standard		Original	Not built/terminated
OR Solar 2 (Agate Bay Solar)	June 11, 2015	Solar	10.0	Not COD yet	October 31, 2017	Standard	October 31, 2036	Original	Construction
OR Solar 3 (Turkey Hill Solar)	June 11, 2015	Solar	10.0	December 30, 2017	December 15, 2017	Standard	October 31, 2036	Original	Operating
OR Solar 4 (Bly Solar)	June 17, 2015	Solar	10.0	Terminated	November 1, 2016	Standard			Not built/terminated
OR Solar 5 (Merrill)	June 17, 2015	Solar	8.0	January 12, 2018	December 15, 2017	Standard	October 31, 2036	Original	Operating
OR Solar 6 (Lakeview)	June 17, 2015	Solar	10.0	December 18, 2017	December 15, 2017	Standard	October 31, 2036	Original	Operating
OR Solar 8 (Dairy)	June 11, 2015	Solar	10.0	March 14, 2018	December 15, 2017	Standard	October 31, 2036	Original	Operating
Orchard Wind Farm 1, LLC	June 30, 2016	Wind	10.0	Not COD yet	October 1, 2020	Standard	September 30, 2040	Original	Construction
Orchard Wind Farm 2, LLC	June 30, 2016	Wind	10.0	Not COD yet	October 1, 2020	Standard	September 30, 2040	Original	Construction
Orchard Wind Farm 3, LLC	June 30, 2016	Wind	10.0	Not COD yet	October 1, 2020	Standard	September 30, 2040	Original	Construction
Orchard Wind Farm 4, LLC	June 30, 2016	Wind	10.0	Not COD yet	October 1, 2020	Standard	September 30, 2040	Original	Construction
Oregon Environmental Industries	August 16, 2006	Biogas	3.20	January 17, 2007	September 7, 2007	Standard	July 31, 2022	Original	Operating
Oregon Institute of Technology	April 9, 2010	Geothermal	0.28	April 9, 2010	April 15, 2010	Standard	March 17, 2030	Original	Operating
Oregon State University	November 23, 2010	Natural Gas	6.50	November 12, 2010	January 15, 2011	Standard	June 30, 2020	Original	Operating
Oregon Trail Windfarm LLC	December 19, 2008	Wind	9.90	August 1, 2009	March 31, 2009	Standard	January 15, 2029	Original	Operating
Orem Family Wind	April 1, 2014	Wind	10.0	December 1, 2018	September 1, 2015	Standard	August 31, 2030	Original	Not built/terminated
OSLH - Collier Solar	June 29, 2015	Solar	9.9	February 1, 2017	November 18, 2016	Standard	November 17, 2031	Original	Operating
Pacific Canyon Windfarm LLC	December 19, 2008	Wind	8.25	August 1, 2009	March 31, 2009	Standard	January 22, 2029	Original	Operating
Pavant Solar	April 11, 2014	Solar	50.0	December 30, 2015	December 31, 2015	Non standard	December 30, 2035	Original	Operating
Pavant Solar II LLC	March 25, 2015	Solar	50.0	November 22, 2016	December 1, 2016	Non standard	November 30, 2036	Original	Operating
Pioneer Wind Park I LLC	April 11, 2014	Wind	80.00	October 27, 2016	June 30, 2016	Non standard	October 26, 2036	Original	Operating
Power County Wind Park North	August 18, 2010	Wind	22.50	December 23, 2011	December 23, 2011	Standard	December 22, 2031	Original	Operating
Power County Wind Park South	August 18, 2010	Wind	22.50	December 23, 2011	December 23, 2011	Standard	December 22, 2031	Original	Operating
Preston City Hydro	February 24, 1982	Hydro	0.40	December 1, 1982	February 24, 1982	Unknown	December 31, 2017	Original	PPA Expired
Preston City Hydro	Renewal	Hydro	0.40	Existing	Existing	Standard	December 31, 2032	Original	Operating
Quichapa 1	October 29, 2013	Solar	3.0	December 13, 2016	May 30, 2016	Standard	May 29, 2036	Original	Operating
Quichapa 2	October 29, 2013	Solar	3.0	December 23, 2016	June 30, 2016	Standard	June 29, 2036	Original	Operating
Quichapa 3	October 29, 2013	Solar	3.0	December 23, 2016	July 29, 2016	Standard	July 28, 2036	Original	Operating
RES Ag- Oak Lea	November 29, 2009	Biogas	0.17	December 5, 2011	December 5, 2011	Standard	November 30, 2026	Original	Operating

Plant Name	PPA Execution Date	Resource Type	Nameplate Capacity (MW)	Commercial Operation Date (COD)	Original COD	Type of PPA (Standard / Non-standard)	Current PPA Expiration Date	Vintage of PPA	Facility / PPA Status
Roseburg Forest Products - Dillard	June 1, 2011	Biomass	20.00	Existing	Existing	Non standard	December 31, 2013	Original	PPA Expired
Roseburg Forest Products - Dillard	Renewal	Biomass	20.00	Existing	Existing	Non standard	December 31, 2014	Renewal	PPA Expired
Roseburg Forest Products - Dillard	Renewal	Biomass	20.00	Existing	Existing	Non standard	December 31, 2015	Renewal	PPA Expired
Roseburg Forest Products - Dillard	Renewal	Biomass	20.00	Existing	Existing	Non standard	December 31, 2019	Renewal	PPA Expired
Roseburg Forest Products - Dillard	Renewal	Biomass	20.00	Existing	Existing	Non standard	December 31, 2016	Renewal	PPA Expired
Roseburg Forest Products - Dillard	Renewal	Biomass	20.00	Existing	Existing	Non standard	December 31, 2017	Renewal	PPA Expired
Roseburg Forest Products - Dillard	Renewal	Biomass	20.00	Existing	Existing	Non standard	December 31, 2018	Renewal	PPA Expired
Roseburg Forest Products - Dillard	Renewal	Biomass	20.00	Existing	Existing	Non standard	December 31, 2028	Renewal	Operating
Roseburg Forest Products - Weed	November 15, 2010	Biomass	10.00	November 18, 2010	November 18, 2010	Standard	June 30, 2011	Original	PPA Expired
Roseburg Forest Products - Weed	Renewal	Biomass	10.00	Existing	Existing	Standard	June 30, 2012	Renewal	PPA Expired
Roseburg Forest Products - Weed	Renewal	Biomass	10.00	Existing	Existing	Standard	June 30, 2018	Renewal	PPA Expired
Roseburg Forest Products - Weed	Renewal	Biomass	10.00	Existing	Existing	Standard	June 30, 2028	Renewal	Operating
Roseburg LFG	February 18, 2011	Biogas	1.60	December 20, 2011	June 20, 2011	Standard	April 30, 2032	Original	Operating
Sage Solar I	July 3, 2017	Solar	20.00	September 30, 2019	October 1, 2019	Non standard	September 30, 1939	Original	Operating
Sage Solar II	July 3, 2017	Solar	20.00	September 13, 2019	October 1, 2019	Non standard	September 30, 1939	Original	Operating
Sage Solar III	July 3, 2017	Solar	20.00	September 13, 2019	October 1, 2019	Non standard	September 30, 1939	Original	Operating
Sand Ranch Windfarm LLC	January 19, 2008	Wind	9.90	August 1, 2009	March 31, 2009	Standard	January 15, 2029	Original	Operating
Santiam Hydro Control District	September 30, 1983	Hydro	0.16	October 1, 1985	September 30, 1983	Unknown	December 31, 2019	Original	PPA Expired
Shiloh Ingram Warm Springs Ranch	March 5, 1986	Hydro	0.95	March 14, 1986	March 14, 1986	Unknown	March 31, 2021	Original	Operating
Simplot Phosphates, LLC	January 1, 2002	Waste Heat	9.50	January 1, 2007	January 1, 2007	Standard	December 31, 2013	Original	PPA Expired
Simplot Phosphates, LLC	June 25, 2018	Waste Heat	13.00	July 1, 2018	July 1, 2018	Non standard	December 31, 2021	Renewal	Operating
Slate Creek	January 1, 1982	Hydro	4.20	January 1, 1985	January 21, 1982	Unknown	December 31, 2018	Original	PPA Expired
Slate Creek	January 1, 1982	Hydro	4.20	January 1, 1985	January 21, 1982	Non standard	December 31, 2033	Renewal	Operating
South Millford	May 29, 2013	Solar	3.0	April 1, 2015	May 30, 2015	Standard	January 14, 2035	Original	Operating
Spanish Fork Wind Park 2	June 30, 2006	Wind	18.90	July 31, 2008	July 31, 2008	Non standard	July 30, 2028	Original	Operating
Sprague Hydro (North Fork Sprague)	September 26, 1980	Hydro	0.75	September 1, 1989	September 28, 1983	Unknown	December 31, 2021	Original	Operating
St. Anthony	December 20, 2012	Hydro	0.50	October 11, 2014	November 30, 2013	Standard	November 29, 2033	Original	Operating
Stahlbush Island Farms	March 19, 2009	Biogas	1.60	June 24, 2009	April 17, 2009	Standard	5/31/11	Original	PPA Expired
Stahlbush Island Farms	Renewal	Biogas	1.60	Existing	Existing	Standard	May 31, 2014	Renewal	PPA Expired
Stahlbush Island Farms	Renewal	Biogas	1.60	Existing	Existing	Standard	September 30, 2014	Renewal	PPA Expired
Stahlbush Island Farms	Renewal	Biogas	1.60	Existing	Existing	Standard	May 31, 2017	Renewal	PPA Expired
Stahlbush Island Farms	Renewal	Biogas	1.60	Existing	Existing	Standard	May 31, 2019	Renewal	PPA Expired
Stahlbush Island Farms	Renewal	Biogas	1.60	Existing	Existing	Standard	May 31, 2021	Renewal	Operating
Sunnyside Cogeneration Associates	January 30, 1987	Waste Coal	53.00	September 1, 1993	September 1, 1993	Unknown	August 31, 2023	Original	Operating
Surprise Valley Electrification Co. (Paisley Geothermal)	August 15, 2016	Geothermal	3.70	September 1, 2016	September 1, 2016	Standard	August 31, 2021	Original	Terminated for non-performace
Swalley Irrigation District	September 4, 2009	Hydro	0.75	April 23, 2010	November 10, 2009	Standard	January 03, 2030	Original	Operating
Sweetwater Solar, LLC	February 23, 2016	Solar	80.00	December 28, 2018	November 1, 2018	Non standard	December 27, 2038	Original	Operating
Tata Chemical (FKA General Chemical)	September 15, 1989	CHP	16.00	September 15, 1989	September 15, 1989	Unknown	December 31, 2013	Original	PPA Expired
Tata Chemical (FKA General Chemical)	Renewal	CHP	32.00	Existing	Existing	Non standard	December 31, 2018	Renewal	PPA Expired
Tata Chemical (FKA General Chemical)	Renewal	CHP	32.00	Existing	Existing	Non standard	December 31, 2038	Renewal	Operating
Tesoro Refining and Marketing Company	August 27, 2004	Natural Gas	25.00	September 15, 2004	September 15, 2004	Non standard	December 31, 2006	Original	PPA Expired
Tesoro Refining and Marketing Company	Renewal	Natural Gas	25.00	Existing	Existing	Non standard	December 31, 2007	Renewal	PPA Expired
Tesoro Refining and Marketing Company	Renewal	Natural Gas	25.00	Existing	Existing	Non standard	December 31, 2008	Renewal	PPA Expired
Tesoro Refining and Marketing Company	Renewal	Natural Gas	25.00	Existing	Existing	Non standard	December 31, 2009	Renewal	PPA Expired
Tesoro Refining and Marketing Company	Renewal	Natural Gas	25.00	Existing	Existing	Non standard	December 31, 2010	Renewal	PPA Expired
Tesoro Refining and Marketing Company	Renewal	Natural Gas	25.00	Existing	Existing	Non standard	December 31, 2011	Renewal	PPA Expired
Tesoro Refining and Marketing Company	Renewal	Natural Gas	25.00	Existing	Existing	Non standard	December 31, 2012	Renewal	PPA Expired
Tesoro Refining and Marketing Company	Renewal	Natural Gas	25.00	Existing	Existing	Non standard	December 31, 2013	Renewal	PPA Expired
Tesoro Refining and Marketing Company	Renewal	Natural Gas	25.00	Existing	Existing	Non standard	December 31, 2014	Renewal	PPA Expired
Tesoro Refining and Marketing Company	Renewal	Natural Gas	25.00	Existing	Existing	Non standard	December 31, 2015	Renewal	PPA Expired
Tesoro Refining and Marketing Company	Renewal	Natural Gas	25.00	Existing	Existing	Non standard	December 31, 2016	Renewal	PPA Expired
Tesoro Refining and Marketing Company	Renewal	Natural Gas	25.00	Existing	Existing	Non standard	December 31, 2017	Renewal	PPA Expired

Plant Name	PPA Execution Date	Resource Type	Nameplate Capacity (MW)	Commercial Operation Date (COD)	Original COD	Type of PPA (Standard / Non-standard)	Current PPA Expiration Date	Vintage of PPA	Facility / PPA Status
Tesoro Refining and Marketing Company	Renewal	Natural Gas	25.00	Existing	Existing	Non standard	December 31, 2018	Renewal	PPA Expired
Tesoro Refining and Marketing Company	Renewal	Natural Gas	25.00	Existing	Existing	Non standard	December 31, 2019	Renewal	Operating
Tesoro Refining and Marketing Company	Renewal	Natural Gas	25.00	Existing	Existing	Non standard	December 31, 2020	Renewal	Renewal executed
Thayn Ranch Hydro	April 1, 1992	Hydro	0.48	April 1, 1992	April 1, 1992	Unknown	December 31, 2035	Original	Operating
Three Peaks Power	August 15, 2015	Solar	80.0	December 9, 2016	October 31, 2016	Non standard	December 14, 2036	Original	Operating
Three Sisters Irrigation District (Watson Hydro) (200 kW)	May 8, 2018	Hydro	0.20	November 5, 2018	September 1, 2018	Standard	August 31, 2038	Original	Operating
Three Sisters Irrigation District (Watson Hydro) (700 kW)	February 18, 2014	Hydro	0.70	August 22, 2014	May 1, 2014	Standard	August 31, 2038	Original	Operating
Threemile Canyon Wind I LLC	June 19, 2009	Wind	9.90	June 20, 2009	June 19, 2009	Standard	June 19, 2010	Original	PPA Expired
Threemile Canyon Wind I LLC	Renewal	Wind	9.90	Existing	Existing	Standard	December 31, 2010	Renewal	PPA Expired
Threemile Canyon Wind I LLC	Renewal	Wind	9.90	Existing	Existing	Standard	June 30, 2011	Renewal	PPA Expired
Threemile Canyon Wind I LLC	Renewal	Wind	9.90	Existing	Existing	Standard	December 31, 2011	Renewal	PPA Expired
Threemile Canyon Wind I LLC	Renewal	Wind	9.90	Existing	Existing	Standard	June 30, 2012	Renewal	PPA Expired
Threemile Canyon Wind I LLC	Renewal	Wind	9.90	Existing	Existing	Standard	December 31, 2012	Renewal	PPA Expired
Threemile Canyon Wind I LLC	Renewal	Wind	9.90	Existing	Existing	Standard	June 30, 2013	Renewal	PPA Expired
Threemile Canyon Wind I LLC	Renewal	Wind	9.90	Existing	Existing	Standard	December 31, 2013	Renewal	PPA Expired
Threemile Canyon Wind I LLC	Renewal	Wind	9.90	Existing	Existing	Standard	June 19, 2014	Renewal	PPA Expired
Threemile Canyon Wind I LLC	Renewal	Wind	9.90	Existing	Existing	Standard	August 31, 2029	Renewal	Operating
TMF Biofuels	February 16, 2012	Biogas	4.80	December 31, 2012	February 21, 2012	Standard	April 30, 2023	Original	Operating
Tooele Army Depot (Wind 1)	May 10, 2016	Wind	1.70	11/7/16	November 7, 2016	Standard	May 9, 2026	Original	Operating
Tooele Army Depot (Wind 2)	May 10, 2016	Wind	1.90	11/7/16	November 7, 2016	Standard	May 9, 2026	Original	Operating
Tumbleweed Solar, LLC (Saturn Power Corporation)	October 12, 2015	Solar	9.90	12/28/17	November 6, 2017	Standard	December 15, 2036	Original	Operating
Utah Red Hills Renewable Park	September 27, 2013	Solar	80.0	December 16, 2015	January 1, 2017	Non standard	December 30, 2036	Original	Operating
Wagon Trail LLC	December 19, 2008	Wind	3.30	September 1, 2009	March 31, 2009	Standard	August 31, 2029	Original	Operating
Ward Butte Windfarm LLC	December 19, 2008	Wind	6.60	September 1, 2009	March 31, 2009	Standard	August 31, 2029	Original	Operating
Wasatch Integrated Waste Management District (FKA Davis County)	April 1, 1994	Biogas	1.60	April 1, 1994	April 1, 1994	Unknown	December 31, 2012	Original	PPA Expired
Wasatch Integrated Waste Management District (FKA Davis County)	December 21, 2012	Biogas	1.60	April 1, 1994	April 1, 1994	Unknown	December 31, 2023	Renewal	Self-terminated by QF
Weber County, State of Utah	December 16, 2004	Biogas	0.95	July 26, 2008	December 16, 2004	Standard	December 26, 2023	Original	Operating
Woodline Solar LLC	June 5, 2015	Solar	8.0	December 31, 2017	November 30, 2017	Standard	November 29, 2037	Original	PPA Expired
Yakima Tieton (Cowiche)	June 12, 1985	Hydro	1.47	June 12, 1985	June 12, 1985	Unknown	December 31, 2005	Original	PPA Expired
Yakima Tieton (Cowiche)	Renewal	Hydro	1.47	Existing	Existing	Standard	December 31, 2008	Renewal	PPA Expired
Yakima Tieton (Cowiche)	Renewal	Hydro	1.47	Existing	Existing	Standard	December 31, 2011	Renewal	PPA Expired
Yakima Tieton (Cowiche)	Renewal	Hydro	1.47	Existing	Existing	Standard	December 31, 2015	Renewal	PPA Expired
Yakima Tieton (Cowiche)	Renewal	Hydro	1.47	Existing	Existing	Standard	December 31, 2020	Renewal	Operating
Yakima Tieton (Orchards)	June 12, 1985	Hydro	1.47	June 13, 1985	June 12, 1985	Unknown	December 31, 2005	Original	PPA Expired
Yakima Tieton (Orchards)	Renewal	Hydro	1.47	Existing	Existing	Standard	December 31, 2008	Renewal	PPA Expired
Yakima Tieton (Orchards)	Renewal	Hydro	1.47	Existing	Existing	Standard	December 31, 2011	Renewal	PPA Expired
Yakima Tieton (Orchards)	Renewal	Hydro	1.47	Existing	Existing	Standard	December 31, 2020	Renewal	Operating

REC Data Request 4

Please refer to Oregon Public Utility Commission Order No. 18-138 from LC 67, PacifiCorp's 2017 IRP, page 12, where it notes:

In addition. Renewable Energy Coalition asserts that the company should be required to actually study the capacity benefits that qualifying facilities (QFs) provide, as directed in docket UM 1610. PacifiCorp responds that it has complied with the order by not assuming QFs will renew. We acknowledge that non-renewal may not be the best planning assumption when many (or most) QFs do, in fact, renew, but question the value of additional studies of the capacity of renewing QFs. We direct Staff to work with intervenors and bring this issue to a public meeting so that we can make a decision regarding whether a new study of existing QF capacity would be useful and how existing QF contract renewals should be modeled in the IRP.

What is the status of PacifiCorp's efforts to model the capacity value of QFs?

Response to REC Data Request 4

The company has committed to running a study which assumes the renewal of qualifying facilities (QF), and will supplement the response to this data request as soon as the results of the extended QFs study becomes available.

REC Data Request 4

Please refer to Oregon Public Utility Commission Order No. 18-138 from LC 67, PacifiCorp's 2017 IRP, page 12, where it notes:

In addition. Renewable Energy Coalition asserts that the company should be required to actually study the capacity benefits that qualifying facilities (QFs) provide, as directed in docket UM 1610. PacifiCorp responds that it has complied with the order by not assuming QFs will renew. We acknowledge that non-renewal may not be the best planning assumption when many (or most) QFs do, in fact, renew, but question the value of additional studies of the capacity of renewing QFs. We direct Staff to work with intervenors and bring this issue to a public meeting so that we can make a decision regarding whether a new study of existing QF capacity would be useful and how existing QF contract renewals should be modeled in the IRP.

What is the status of PacifiCorp's efforts to model the capacity value of QFs?

1st Supplemental Response to REC Data Request 4

In further support of the company's response to REC Data Request 4 dated November 26, 2019, the company provides the following supplemental response:

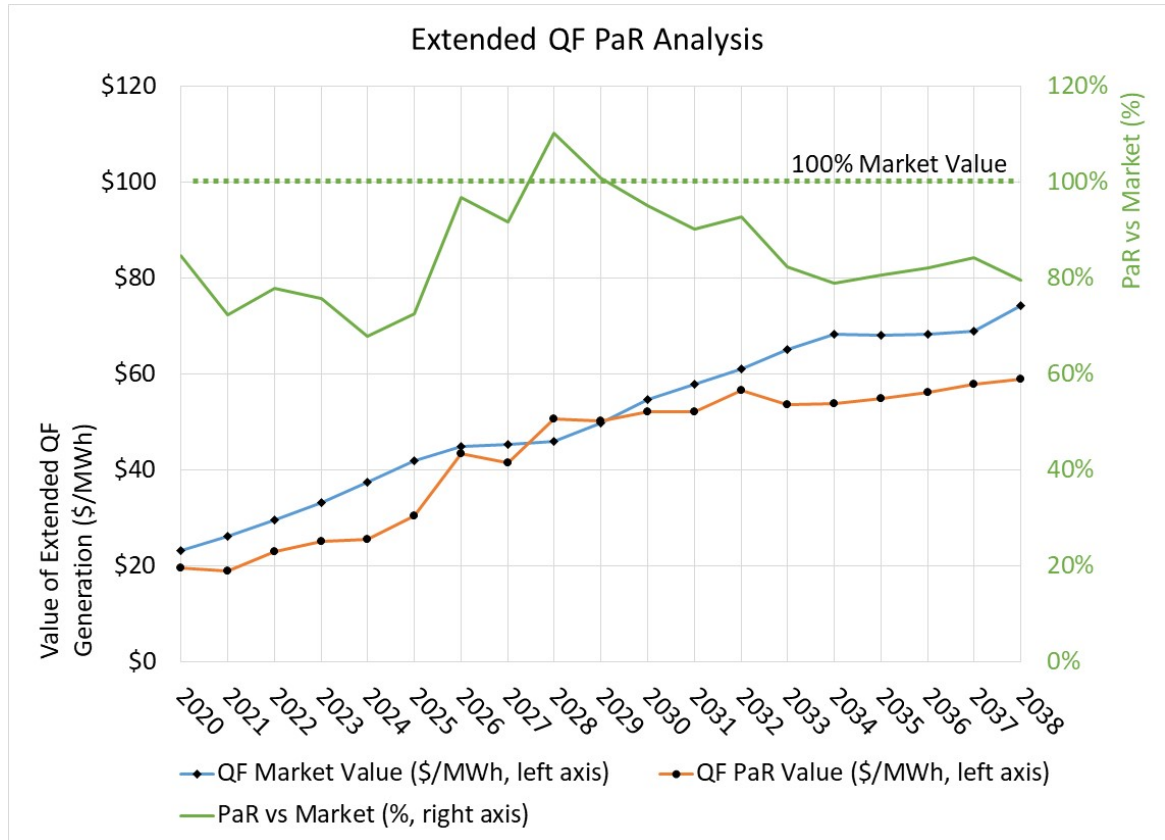
Please refer to Confidential Attachment REC 4 1st Supplemental which provides PacifiCorp's renewal of qualifying facilities (QF) study. Information regarding this study is provided below:

The company prepared a study which assumed the renewal of QFs modeled in the 2019 Integrated Resource Plan (IRP). This study was based on the assumptions used in the 2019 IRP Preferred Portfolio (P45CNW-MMR) but with the added assumption that all QF power purchase agreements (PPA) would continue at zero cost from the end of their existing contract through the end of the study period (December 31, 2038). With the QF PPAs extended, a 2026 simple-cycle combustion turbine (SCCT) resource shifts from 2026 to 2029, and an additional SCCT replaces some battery storage in 2029. Full details on the portfolio changes are provided in work papers provided in Confidential Attachment REC 4.1, specifically file "Renewal of QFs Study Att 1 CONF."

The same methodology used for the development of the 2019 IRP Preferred Portfolio was used for this study, including a pre-reliability System Optimizer model (SO model) run, 16 Planning and Risk (PaR) model runs to identify and establish incremental flexible capacity reliability requirements, and a final reliability SO model run. The extended QF SO model reliability portfolio was run in PaR as a 20-year stochastic run. Details on the results are provided in Confidential Attachment REC 4.1, specifically folder "Work Papers CONF." A comparison of the Extended QF PPA stochastic results to the 2019 IRP

Preferred Portfolio results is provided in Confidential Attachment REC 4.1, file “Renewal of QFs Study Att 2 CONF.”

Given the range of QF resource types being extended, it is difficult to interpret the aggregate results with regard to specific resource types. To facilitate this analysis, the company calculated the market value of the generation from all extended QF PPAs, based on an average of the modeled hourly market prices for the Palo Verde (PV) and Mid-Columbia (Mid-C) market hubs as provided in Confidential Attachment REC 4.1, file “Renewal of QFs Study Att 3 CONF.” This calculation helps distinguish between the value of solar generation and the value of baseload generation. Comparing the aggregate hourly market value to the PaR model results can provide a sense of the value of the extended QF resources relative to market prices. As shown in the figure below, the hourly market value of extended QFs exceeds the value identified by the PaR model for all years except 2028 and 2029.



Confidential information is designated as Protected Information under Order No. 18-216 and may only be disclosed to qualified persons as defined in that order.

Despite PacifiCorp's diligent efforts, certain information protected from disclosure by the attorney-client privilege or other applicable privileges or law may have been included in its responses to these data requests. PacifiCorp did not intend to waive any applicable privileges or rights by the inadvertent disclosure of protected information, and PacifiCorp reserves its right to request the return or destruction of any privileged or protected materials that may have been inadvertently disclosed. Please inform PacifiCorp immediately if you become aware of any inadvertently disclosed information.