

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

UM 2011

In the matter of

PUBLIC UTILITY COMMISSION OF
OREGON,

General Capacity Investigation

RENEWABLE ENERGY
COALITION’S COMMENTS ON
STAFF’S CAPACITY VALUE BEST
PRACTICES UPDATED DRAFT

I. INTRODUCTION

The Renewable Energy Coalition (the “Coalition”) provides these comments in response to Staff’s Capacity Value Best Practices Updated Draft that was filed on September 30, 2021 (“Staff’s Updated Draft”). The Coalition is not repeating its prior comments in full, which are attached for reference.¹ In brief, the Coalition views Staff’s Updated Draft to measure resources’ capacity contributions and then assign value to them as concerning in two regards: 1) Staff’s Updated Draft measuring the capacity contributions of existing resources incorrectly; and 2) Staff’s Updated Draft assigns values to new resources incorrectly. Both concerns will undervalue and ultimately disincentivize the availability of clean resources to meet the utilities’ needs, particularly in light of HB 2021.

¹ Coalition’s Comments (Mar. 8, 2021); Coalition’s Reply Comments (Apr. 26, 2021); Redline Comments of the Coalition (Aug. 3, 2021) (all attached hereto as Attachment A).

II. COMMENTS

A. Existing Resources Should Be Measured Based on their Actual Contributions

The Coalition maintains its prior comments in opposition to the use of last-in/marginal Effective Load Carrying Capability (“ELCC”) for existing resources.² Existing resources should be evaluated based on the actual capacity contribution they provide and not based on the needs of a system built around the existing resources. Alternatively, the Coalition recommends that they be valued based on the marginal contribution measured when they first committed to serve, and not when they renewed their utility contract.

The Coalition recognizes and appreciates that Staff’s Updated Draft no longer subjects existing resources to a valuation ramp wherein capacity payments after contract renewal could automatically begin at zero.³ This appropriately recognizes that a resource which renews its contract does not have a period of time in which it will be constructed and its “on-line” date is certain. However, this change does not fix the other part of the equation wherein the capacity contribution is inappropriately measured.

B. The Valuation Ramp for New Resources Should Begin at the Time of Commitment, Not at the Time of Operations

The Coalition also maintains its position that the valuation ramp for new resources should begin based on when the resource commits itself to serve the utility’s needs and not based on when the resource comes online.⁴ This does not mean a facility would get paid before it comes online. It means a facility’s contributions, once

² Coalition’s Comments at 5-6 (Mar. 8, 2021); Coalition’s Reply Comments at 3-6 (Apr. 26, 2021); Redline Comments of the Coalition at 1-2 (Aug. 3, 2021).

³ Staff’s Updated Draft at Section 8(e).

⁴ E.g., Coalition’s Comments at 11-12 (Mar. 8, 2021).

operational, would be fully valued based on the need that resource is helping to meet. Staff's Updated Draft suggests only paying a portion of this value, which the Coalition cannot support.

The Coalition notes that it is not certain it understands new language in Staff's Updated Draft that:

If in any year the ramp-in capacity contribution value is less than the estimated capacity contribution value of that resource absent ramping in that year, then the ramp-in value for that resource shall not replace the capacity contribution value for that resource for that year.⁵

The Coalition looks forward to gaining clarity from Staff at the upcoming workshop.

III. CONCLUSION

The Coalition appreciates this opportunity to provide comments and looks forward to further engaging with Staff and other stakeholders to produce the most effective, accurate, and transparent capacity valuation methodology possible.

Dated this 20th day of October 2021.

Respectfully submitted,



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⁵ Staff's Updated Draft at Section 8(c).

Attachment A

**Renewable Energy
Coalition's Prior Comments**

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RENEWABLE ENERGY
COALITION'S COMMENTS

I. INTRODUCTION

The Renewable Energy Coalition (the “Coalition”) provides these comments in response to three filings from Public Utility Commission of Oregon (“OPUC” or the “Commission”) Staff in this investigation: 1) a whitepaper performed by consultant Energy + Environmental Economics (“E3”) and filed by Staff on December 15, 2020 (the “E3 Report”); 2) Staff’s Opening Comments filed on January 14, 2021; and 3) the Staff Response to Administrative Law Judge Memorandum filed on January 21, 2021 (the “Staff Memorandum”). Overall, the Coalition appreciates Staff’s efforts to move this proceeding forward in a collaborative, analytical way. However, the Coalition is concerned that uncertainty surrounding the purpose and goals of this proceeding may undermine the effectiveness of any technical analysis, discourage robust stakeholder participation, and ultimately fail to produce any improvements to how capacity is valued. This would be a disappointing result, and the Coalition asks that Staff clarify its long-term vision for this docket, including how this docket may intersect with other ongoing efforts.

In regard to the E3 Report and Staff’s recommendations, the Coalition is most concerned that there does not appear to be appropriate recognition of existing resources.

The discussion has focused almost entirely on new resources, which leaves unclear whether existing resources are being valued accurately or being undervalued. One issue that harms both existing and new resources is the sufficiency-deficiency demarcation, which the Coalition recommends be eliminated. While both E3 and Staff appear to recognize that the demarcation needs improvement, the proposed approaches are not ultimately workable.

Assuming that there continues to be a sufficiency-deficiency demarcation, the Coalition recommends that existing resources be exempt. When existing PPAs are renewed, the resource should immediately receive capacity payments, rather than be subjected to a sufficiency period. For new resources, the Coalition needs additional information to assess Staff's proposal to change sufficiency valuation, which could have the result of drastically undervaluing capacity. Staff refers to *net* cost, but it is not clear what is being netted out, or whether it is appropriate to exclude that amount.

As the docket proceeds, the Coalition is optimistic that it can produce a clear and transparent model that will be applicable across the utilities. The Coalition strongly believes that clarity and consistency will best uphold the public interest in this regard.

II. COMMENTS

A. Staff Should Clarify its Vision for This Docket

Before proceeding in this docket, the Coalition urges Staff to clarify their vision for this docket. When this docket was opened almost two years ago, the third and final question that Staff framed was "How should capacity be valued?"¹ The answer depends

¹ Order No. 19-155, App. A at 2 (Apr. 26, 2019).
For purposes of these comments, the term capacity can be understood using Staff's proposed definition: "given the absence of any transmission or distribution constraint, the ability to reliably and predictably deliver energy of a

upon the question of value *to whom*. One logical answer is ratepayers, who pay for capacity. However, Staff’s comments suggest this docket is not concerned with the costs that ratepayers face when there is an *absence* of capacity (i.e., power outages).² A second, equally logical, answer, is the sellers of capacity, including both the utilities and independent power producers, such as qualifying facilities (“QFs”). Sellers cannot sell unless they receive compensation that aligns with the costs of developing capacity. However, Staff asserts that this docket is not concerned with the matter of compensating for capacity, contrary to the apparent understanding of the hired consultant.³ Instead of either of the above, Staff appears to be considering the value of capacity *to the system*, with little regard to the value to customers or to sellers.⁴ It is unclear what purpose such an abstract approach might serve.

certain amount to an identified load, delivered at a certain time, for a certain duration, allowing the Loss of Load Probability (LOLP) to remain below a specified threshold.” Staff’s Opening Comments at 1.

² Staff’s Opening Comments at 9 (“In prior workshops, parties have commented that the determination of the cost of the capacity resource should include the benefits that a resource can provide, such as the resilience value of distributed resources during natural disasters. . . . Staff believes the value of resource attributes other than generation capacity could be explored in a future docket.”). The difference between capacity value and resilience value is currently ill-defined, and the Coalition would appreciate an opportunity to further explore these concepts and their overlap with Staff and stakeholders.

³ Staff’s Opening Comments at 2 (“Staff recognizes E3’s recommendations on compensation frameworks are beyond the scope of this docket.”); Staff Memorandum at 3.

⁴ Staff does not state that it is analyzing value to the system, but this is the Coalition’s understanding from Staff’s Comments. Relatedly, Staff may be evaluating the value of capacity to the utility as a purchaser (not seller), which is perhaps more concerning, as such an analysis would not consider utility biases to build rather than buy from third parties. *See* Staff’s Opening Comments at 4 (“Accurately computing the capacity contribution of a new resource *allows the utility to value* additional capacity investments appropriately and send clear market signals.”) (emphasis added); *see generally In re Pub. Util. Comm’n of Or. Investigation Regarding Performance-based Ratemaking Mechanisms to Address*

To analogize, consider a railroad. A railroad company might be willing to construct a new line, if it thinks customers will pay for it. Customers may be willing to pay more for a new line, if the ride is comfortable and the destination attractive. However, neither the railroad company, nor the customers, would ask whether the existing railroad tracks benefit from the new construction. It is unclear what benefit, if any, answering that question might ultimately provide to either the customers or the railroad company.

Assuming that Staff intends other OPUC proceedings will appropriately translate the value of capacity to the utility system into the value (read: cost) to ratepayers or the value (read: payment) to sellers, it is unclear how that will occur. Therefore, the Coalition asks Staff to clarify, perhaps through a multi-docket workplan. The Coalition appreciates Staff's guidance on the relationship of dockets relevant to the Commission's implementation of the Public Utility Regulatory Policies Act ("PURPA"), including Staff's indication that this docket may feed into Dockets No. UM 2000 and UM 2038, which are PURPA-specific.

However, this docket is *not* PURPA-specific, leaving it unclear whether—if at all—this docket may influence other non-PURPA specific dockets. The value of capacity should impact and influence integrated resource planning ("IRP"), energy efficiency, resource procurement and requests for proposal ("RFPs"), etc. The Coalition's understanding had been that this docket would have wide-ranging importance and would likely influence "all applications where capacity is relevant."⁵ The Coalition expects that

⁵ *Potential Build-vs.-buy Bias*, Docket No. UM 1276, Order No. 11-001 at 5 (Jan. 3, 2011) (acknowledging that utility build bias exists).
Order No. 19-155, App. A at 2 (quoting the Commission's direction in dockets UM 1910, UM 1911, and UM 1912 to open a *general* capacity investigation).

is a long list of potential dockets but would appreciate any guidance Staff can provide on this question.

The Coalition does not ask that Staff take a definitive position at this time, but it would be helpful to understand what dockets—if any—this proceeding *might* ultimately affect as well as what dockets are presumed to provide inputs to the methodology developed in this docket. The Coalition believes clarity on purpose is the only way to ensure stakeholders are adequately informed as to the proceedings that may affect their interests.

B. Neither E3 Nor Staff Consider Existing Resources

Existing resources should not be evaluated as if they do not exist. E3 proposes, and Staff supports, to evaluate capacity contribution based on “each resource’s *marginal* contribution to reducing loss-of-load events.”⁶ This approach may make sense for new resources, as the market should encourage the development of resources that best serve the *unmet* needs of the system. However, existing resources should be valued for their actual contribution, rather than their marginal contribution.⁷

The Coalition proposes that existing resources—including non-utility owned resources, such as the small-scale hydroelectric QFs that have been serving Oregon ratepayers since at least the 1980s—should be evaluated on the basis of the actual

⁶ Staff’s Opening Comments at 3 (emphasis added).

⁷ The E3 Report appears to assume that the capacity being valued is new capacity. *See* E3 Report at 10-11 (“In periods of sufficiency, a common approach to valuing capacity is to use the fixed operations and maintenance cost of the net resource cost resource. This approach is based on the cost to maintain existing capacity resources such that they are available to ensure system reliability, while also recognizing that the full cost of *new* capacity resources is an excessive measure of capacity value in times where sufficient resources are available.” (emphasis added)).

capacity contribution they provide standing alone. E3 provided a first-in-ELCC model approach that *might* achieve this goal.⁸ Alternatively, they should be evaluated on the basis of the marginal contribution to meeting peak demand needs measured at the time they were built, and not at the time of contract renewal.

C. Both E3 and Staff Look at the Current System, But Capacity Should Be Valued Based on the Needs of a Future Decarbonized System

Another concern that the Coalition has is that both E3 and Staff appear to conduct their analyses as though the current system is unlikely to substantially change. Note, for example, that neither the E3 Report nor Staff’s Comments substantively discuss: 1) the need to decarbonize the system; 2) Governor Brown’s Executive Order 20-04⁹ calling for the Commission and other agencies to facilitate decarbonization; nor 3) significant planned retirements of existing fossil fuel resources.¹⁰ The result of *not* considering these factors is the significant under-valuation of clean resources, including existing renewable energy facilities. That is a serious flaw in a valuation methodology. It is not appropriate to examine the current *system’s* needs when the current system is not designed to meet the future needs of ratepayers and the public interest generally, as represented by existing public policy directives.

To be effective, a capacity valuation methodology ought to consider how capacity needs may change over the course of resource lifetimes. It should also recognize that

⁸ E3 Report at 3.

⁹ See generally *Executive Order 20-04*, Oregon Public Utility Commission, <https://www.oregon.gov/puc/utilities/Pages/ExecutiveOrder20-04.aspx> (discussing the Executive Order and Commission’s response).

¹⁰ See E3 Report at 1-23 (not discussing these issues); Staff’s Opening Comments at 1-21 (not discussing these issues); *but see* Staff’s Opening Comments at 5, 7 (passing references to decarbonization and retirements without incorporating those into the capacity valuation approach).

natural forces, like wind, water, and sun, will play an increasingly important role in a non-fossil-fuel powered future. Thus, the future system will need to be prepared to meet capacity needs without the present-day luxury of merely turning up the dial on a fossil fuel plant. Recognizing these factors will ensure that the market gets the appropriate signals it needs to drive investment in the resources that, paired with uncertain motive forces, are most likely to best meet those changing needs. Considering that many capacity resources are long-lived, these market signals need to be improved and made transparent as soon as possible.

This also raises issues relating to compensation. The Coalition understands that Staff believes questions of compensation are outside the scope of this docket. However, it is difficult to see how a more effective capacity valuation methodology will ultimately benefit ratepayers or the public interest if even the most “valuable” resources are not fairly and equitably compensated. So long as compensation frameworks continue to be biased in favor of utility-owned resources, a better valuation methodology will not produce the optimal outcomes for meeting capacity needs.

D. The Sufficiency/Deficiency Approach is Fundamentally Flawed, and Neither E3 Nor Staff’s Proposed Fixes Go Far Enough

The sufficiency-deficiency demarcation has been, and continues to be, fundamentally flawed. Both E3 and Staff appear to assume the demarcation is necessary and appropriate, but the Coalition disagrees. The demarcation is an arbitrary and flawed paradigm, because capacity is not only relevant on a yearly basis. Considering the actual use and relevance of capacity in meeting grid demands, capacity is relevant every time the utility dispatches the marginal generator unit to maintain grid balance and meet peak demand (or actively avoids such dispatch). The Coalition recommends: 1) eliminating

the demarcation; and 2) adopting instead a valuation methodology that appropriately recognizes the value of capacity at all times, including the value for maintaining ongoing supply and demand balance for grid stability.

1. The Sufficiency/Deficiency Approach is Fundamentally Flawed

One problem with the demarcation is that it is utility-controlled and therefore subject to utility gaming. Utilities set the demarcation during their IRP, and the chosen demarcation signals the market that acquisitions during a sufficiency period (rather than the deficiency period) are unnecessary and therefore not valuable. These signals are incorporated into the compensation frameworks for non-utility owned resources. One would expect that, if the demarcation was accurate, utilities would follow the same market signals and not acquire resources during the sufficiency period.

In practice, utilities *frequently* acquire resources during the sufficiency period and when they claimed not to need new resources. One perverse result of these acquisitions is that, in the utility's next IRP, the utility can set an even later start date for its deficiency period because they acquired resources in advance of when they planned to do so or in advance of actual need. This further discourages the market from meeting ratepayer needs. Ultimately, the demarcation allows utilities to de-value non-utility owned resources, even when the utility's own actions demonstrate that the actual market value is much higher.

Consider the following examples:

- In 2008, during their recently determined sufficiency periods, both PacifiCorp and PGE acquired significant new resources, specifically the 520 MW

Chehalis gas plant and 406 MW Port Westward combined cycle plant, respectively.¹¹

- In 2015 and 2016, PacifiCorp argued that it was renewable resource sufficient for the next 20-plus years, even though it had recently testified to the legislature that SB 1547 would require it to acquire several hundred megawatts of renewable resources in the near term. While arguing that there was no need for capacity, the utility was actively soliciting renewable capacity in an RFP.¹²
- In 2017, PGE proposed to reduce avoided cost payments based on a 2025 renewable deficiency date. Simultaneously, PGE was soliciting renewable capacity with an online date no later than December 31, 2020. This created a false sufficiency period of four years wherein PGE anticipated needing capacity but proposed not to pay for it.¹³
- In 2018, PacifiCorp revised its IRP from assuming no acquisitions for more than 20 years to anticipating acquiring over 1,300 MW of new capacity coming online in 2021. Despite this significant reversal, PacifiCorp did not propose to revise its demarcation or avoided cost pricing.¹⁴

¹¹ These examples are discussed further in Docket No. UM 1396, ICNU/100, Falkenberg/4.

¹² This example is discussed further in *In re PacifiCorp, Application to Update Schedule 37 QF Information*, Docket No. UM 1729, Comments of the Community Renewable Energy Association and the Coalition at 7-12 (July 1, 2016).

¹³ This example is discussed further in *In re PGE Application to Update Schedule 201 QF Information*, Docket No. UM 1728, Comments of the Community Renewable Energy Association and the Coalition at 8-14 (May 11, 2018).

¹⁴ This example is discussed further in Docket No. UM 1729, the Coalition, Community Renewable Energy Association, and Northwest & Intermountain Power Producers Coalition's Comments on Staff Report at 2-4 (Mar. 23, 2018).

Unsurprisingly, there has been significant stakeholder pushback against the utilities' demarcation selections for more than a decade. The Coalition has been advocating against the utility-controlled demarcation since at least 2010.¹⁵ Testimony from other non-utility stakeholders, including Oregon industrial customers, continues to ring true today:

Again, there should be no major distinction between the resource acquisition practices of utilities for the RFP and IRP process, or self build options and for payments to QFs. Inevitably, a "separate but equal" paradigm is not equal, and in recent years utilities have continued to acquire new baseload and peaking resources while claiming that they were capacity sufficient for QF purposes. This is likely little more than a manifestation of the problem of utilities traditional hostility toward non-company owned generation, and favoring the self build option over purchased power. This utility behavior should be discouraged, rather than encouraged, by the OPUC. QFs should not have payments based on different assumptions or methodologies than the utility uses for its IRP, or resource acquisition process. Utilities that are chronically short on capacity and are actively acquiring new capacity should not be considered to be capacity sufficient.¹⁶

Today, the Coalition continues to urge the Commission to rethink this harmful policy.

2. Neither E3 Nor Staff's Proposed Fixes Go Far Enough

E3 proposes an approach that does not avoid utility gaming. E3 proposes that the deficiency period begin when load exceed the mandated Planning Reserve Margin ("PRM").¹⁷ However, E3 recognizes that utilities "commonly hold reserves in excess of this level."¹⁸ Thus a utility could continue its status quo approach of holding and

¹⁵ *E.g., In re Investigation into Determination of Resource Sufficiency, Pursuant to Order No. 06-538, Docket No. UM 1396, Order No. 10-488 at 7 (Dec. 22, 2010) ("REC urges the Commission to consider measures to prevent the utilities from 'gaming' their major resource acquisitions...").*

¹⁶ *See generally* Docket No. UM 1396, ICNU/100, Falkenberg/8-9.

¹⁷ Staff's Opening Comments at 5.

¹⁸ E3 Report at 9.

acquiring excess reserves,¹⁹ and there might never be a deficiency period. The Coalition agrees with Staff insofar as Staff proposes to *not* adopt E3’s approach.

Instead, Staff proposes a different approach. Staff’s approach may reduce utility gaming, but it may make the end result even more unfair. Instead of looking at market conditions, Staff proposes a general three-year ramp for every resource acquisition. In the year one, the utility would be deemed sufficient; in year four, the utility would be deemed deficient. In years two and three, the resource would receive partial capacity payments.

If the Commission retains the resource sufficiency/deficiency approach, then the Coalition supports the use of partial capacity payments that increase as the deficiency date approaches. This question of a three-year ramp cannot be analyzed in isolation to how it will be used to compensate non-utility owned generation (utility owned generation is always fully compensated for its capacity value). However, it is unclear when “year one of a PPA” might be. The Coalition recommends it begin at contract execution.

Staff appears to propose “year one of a PPA” should begin at commercial operations, and Staff’s proposal could have a less fair result than the current status quo. For example, a QF signing a PPA with PGE in 2021 could expect to select a commercial

¹⁹ Notably, it is unclear the Commission would ever find such measures to be imprudent. As Staff notes, “additional resources will always increase reliability, even during the sufficiency period.” Staff’s Opening Comments at 8. The Coalition does not dispute Staff’s statement, which the Coalition notes was once Staff’s reasoning to pay QFs for capacity during sufficiency periods. *In re Investigation relating to Elec. Util. Purchases from QFs*, Docket No. UM 1129, Order No. 05-584 at 23 (May 13, 2005) (“Staff disagrees with the premise that a utility need not pay a QF for capacity during a resource surplus period, however. Staff maintains that QF capacity during a resource surplus period has value to the utility, as the utility can sell capacity into market or use the additional capacity to improve reliability.”).

operation date in three years, or 2024. PGE’s current deficiency period begins in 2025.²⁰ Thus, the QF could come online, have a single year of sufficiency period pricing in 2024, and then receive full deficiency period pricing in 2025. By contrast, under Staff’s proposal *if it begins at commercial operations*, the QF would not receive full deficiency pricing until 2027, two years later than the current status quo. The Coalition would oppose this approach, if it is what Staff is in fact proposing.

E. There Should Never be a Sufficiency Period for Existing Resources

A second, arguably worse, problem with the sufficiency-deficiency demarcation is how it devalues existing resources that are not owned by the utility. For example, existing QFs generally renew their contracts, as the Commission’s contract terms do not align with the expected economic life of QF resources.²¹ Existing QFs have limited opportunity to time their renewal contract with a time period that matches a utility determined deficiency date. When QFs renew their contracts, the utilities stop paying capacity payments and treat the QF as a new acquisition in a sufficiency period. This is inequitable, as between utility and non-utility-owned generation, and fails to compensate existing QFs for the capacity that they provide the utility and their cost of service ratepayers.

Stopping capacity payments to QFs after contract renewal is also harmful.

Existing QFs, such as small-scale hydroelectric resources, are already built and

²⁰ PGE, Schedule 201 at Sheet No. 201-24.

²¹ E3 appears to agree that the most fair policy would be to set contract length based on the economic life of the resource. E3 Report at 10 (“E3 contemplates that locking in capacity values over the economic life of the resource, and setting contract lengths equal to the economic life of the resource, offers opportunities to third-party resource developers that are comparable to the opportunities offered to the utilities”).

operational, and tend to have small carbon footprints. Overtime there will be a modest amount of small scale solar and wind facilities that will enter into renewal contracts. Stopping capacity payments could mean that some QF can no longer afford to operate and might have to shut down. As Oregon moves to decarbonize its utility system, it does not make sense to have a policy that increases the likelihood that existing renewable capacity to go off-line.

The Coalition strongly recommends eliminating the sufficiency-deficiency demarcation. At minimum, the Commission should eliminate the sufficiency-deficiency demarcation for existing resources.

F. Assuming there is a Sufficiency-Deficiency Demarcation, the Coalition Supports Staff's Proposal to Change How Capacity is Valued during the Sufficiency Period for New Resources

Staff proposes to value capacity during sufficiency periods based on the fixed operations and maintenance cost of the lowest net cost resource instead of market pricing.²² The Coalition understands that different utilities can have significantly differing calculations for the fixed operations and maintenance cost. Unless Staff is also proposing to clarify and make more transparent how these calculations are set, it is difficult to say whether Staff's proposed change will improve the process or create greater uncertainty and room for utility gaming. Further, as discussed in the prior section, the Coalition disagrees with viewing existing resources as being in a sufficiency period.

The Commission should also consider the recent approach adopted by the Washington Utilities and Transportation Commission (the "Washington Commission") in

²² Staff's Opening Comments at 3.

2019. The Washington Commission retained the sufficiency-deficiency demarcation but choose to value capacity based on the next capacity resource and not market purchases. The Washington Commission adopted a staff recommendation²³ that the value of avoided costs of capacity should not be based on market purchases but a more reasonable, simple to understand, and transparent methodology.²⁴ Staff recognized “that the emerging state policy may require utilities to move away from fossil-fueled plants in the future. However, it is reasonable to assume that a simple-cycle combustion turbine will remain a marginal capacity plant for the foreseeable future.”²⁵ Regardless of whether the next capacity resource is a peaking gas plant or storage, capacity payments should be based on an actual resource and not market purchases.

G. Assuming there is a Sufficiency-Deficiency Demarcation, the Coalition Does Not Support Staff’s Proposal to Undervalue Capacity During the Deficiency Period

Staff proposes to set the value of capacity during deficiency periods “equal to lowest net cost of capacity resource.”²⁶ The net cost is an appropriate metric for identifying the avoided *resource* but may not be appropriate for identifying the avoided *costs*. The Coalition would agree that capacity payments should not duplicate energy payments, but it is unclear from the E3 Report and Staff’s Comments what would and

²³ *In re Amending, Adopting, and Repealing Sections of WAC 480-106 and 480-107 Relating to PURPA*, Docket No. U-161024, General Order R-597, Order Amending, Adopting and Repealing Rules Permanently at 4 (June 12, 2019) (“The suggested changes and Staff’s recommendations for rejecting or accepting the suggested changes are included in Appendix A. We agree with Staff and adopt these recommendations.”).

²⁴ Docket No. U-161024, Staff Adoption Hearing Memorandum, Attachment C at 13 and 14 (Comment Summary and Staff’s Response) (April 25, 2019) (Staff rejected PacifiCorp’s and Puget Sound Energy’s recommendations to not use a simple-cycle combustion turbine for the capacity value of market purchases).

²⁵ *Id.* at 13.

²⁶ Staff’s Opening Comments at 3.

would not be included in the net cost for capacity. The Coalition hopes Staff will further clarify their proposal here, including how the proposal will differ from the current status quo.

H. The Coalition Supports Clear and Transparent Modeling Practices for All Utilities

The Coalition strongly recommends that this docket aim to establish a clear and transparent model. No model will be perfectly accurate. Accepting that reality, it makes sense to prioritize transparency over complexity.

In addition, the Coalition recommends that the same model be applied for all utilities. Requiring consistent use of the same model will reduce the opportunity for gaming as well as reduce the costs and difficult of Staff and stakeholders to review and understand the models.

Each utility may (and likely should) have different inputs and assumptions. However, the use of different inputs and assumptions does not necessarily mean the model itself needs to be different. The Coalition disagrees with Staff that distinct models are needed for at least Portland General Electric Company and PacifiCorp.

However, the Coalition would be willing to not oppose an exemption if a utility demonstrates good cause. Given Idaho Power's small footprint in Oregon, the Coalition would like to understand better whether it would be feasible for Idaho Power to use the same model.

I. The Coalition Supports Continuing in a Non-Contested Case Process

The Coalition believes the issue of proceeding as a contested or non-contested case was adequately resolved by the Administrative Law Judge's Ruling on January 29,

2021.²⁷ The Ruling states that “a continuation of the non-contested, Staff-led process will facilitate a more collaborative and inclusive approach to policy development, and will provide participants with further opportunities to reach consensus where possible prior to the Commission determining whether to open a rulemaking.”²⁸ Nonetheless, the Coalition finds it appropriate to reiterate that it strongly opposes the use of a contested case proceeding for generic investigations.

III. CONCLUSION

The Coalition appreciates this opportunity to provide comments and encourages Staff to clarify the importance of this docket to facilitate continued robust stakeholder engagement. The Coalition also recommends specific changes to existing Commission policy and Staff’s proposed capacity valuation methodologies, as discussed above.

Dated this 8th day of March 2021.

Respectfully submitted,



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²⁷ ALJ Ruling at 2 (Jan. 29, 2021).

²⁸ ALJ Ruling at 2 (Jan. 29, 2021).

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RENEWABLE ENERGY
COALITION'S REPLY COMMENTS

I. INTRODUCTION

The Renewable Energy Coalition (the "Coalition") provides these reply comments in response to other stakeholders' written and oral comments, particularly those at the March 17, 2020 workshop. The Coalition's primary concerns continue to be the treatment of existing resources and the current sufficiency-deficiency demarcation approach to valuation and compensation for capacity. In Oregon, the utilities do not pay for capacity during the sufficiency period. They pay for capacity only during the deficiency period. The utilities should pay for capacity during all times, whether sufficient or not. Oregon's approach is particularly harmful to existing contracted resources when they renew their contracts and stop receiving capacity payments until the next deficiency date. The Coalition maintains this treatment substantially undervalues capacity, is inequitable, and is inconsistent with public policy goals. In prior comments, the Coalition identified Washington's policies as an alternative model. Another useful example to consider is Idaho, as the Coalition explains below.

Besides this specific concern, the Coalition's overall impression is that there is hope among non-utility stakeholders that this docket is headed in the right direction, tempered by the recognition that there is much work yet to be done. This broad

sentiment is indicative of underlying concerns with the utilities' current capacity valuation methodologies. By contrast, the Joint Utilities¹ appear to disagree that there is any problem to be solved, implicitly suggesting this docket is no more than an academic exercise. The Coalition disagrees with the Joint Utilities on this fundamental point and finds it necessary in these reply comments to acknowledge the importance of this nearly two-year-old docket and the progress made to date.

In terms of work yet to be done, the Coalition takes this opportunity to express its appreciation for the efforts to date of other stakeholders, including the Public Utility Commission of Oregon ("OPUC" or the "Commission") Staff. Staff largely addressed the Coalition's concerns about how Staff will apply the results of this docket in other regulatory proceedings. The Coalition was concerned that a narrow scope could have discouraged robust stakeholder participation, but Staff has clarified that this proceeding will have a wide-ranging impact on capacity issues. The Coalition is thankful that the comments in this round were generally both robust and forward-thinking.

There are significant concerns to be addressed, some of which stakeholders (the Coalition included) have been unable to fully evaluate due to a lack of information or clarity about Staff's proposal. While the Coalition is not taking a position at this time on most of the technical concerns raised in other stakeholders' comments, the Coalition is sympathetic to the concerns raised in those comments and looks forward to engaging further with Staff and other stakeholders to produce the most effective, accurate, and transparent capacity valuation methodology possible.

¹ Portland General Electric Company, PacifiCorp dba Pacific Power, and Idaho Power Company filed comments together as the "Joint Utilities."

II. COMMENTS

A. The Coalition Generally Maintains its Concerns with the Treatment of Existing Resources and the Sufficiency-deficiency Demarcation Approach

The Coalition noted in prior comments that this docket has not yet adequately considered problems with Oregon’s sufficiency-deficiency demarcation approach, particularly its impact on existing non-utility owned resources. The Coalition maintains that the status quo in Oregon is in dire need of improvement, as the current policy undervalues the capacity of these resources upon contract renewal. The Coalition maintains that this treatment is inequitable and inconsistent with public policy goals.

The Coalition maintains that: 1) existing non-utility owned resources should receive full capacity payments when they renew their contracts; and 2) utilities should base capacity payments on the actual capacity contribution of the resource standing alone. Renewing resources have, for a long time, become imbedded in the purchasing utility’s stack of capacity resources, and remain so imbedded on renewal. They should not be plucked out and put in a holding pattern when they in fact continue to provide the capacity they have always provided. E3 provided a first-in-ELCC model approach that *might* achieve this goal.² Alternatively, purchasing utilities should evaluate the resource based on its marginal contribution to meeting peak demand needs measured at the time when the resource was built and *not* at the time of contract renewal. Renewable Northwest calls this a “vintaged marginal” approach.³ The Coalition agrees with Renewable Northwest that this approach should “enable a degree of revenue certainty for

² Energy + Environmental Economics, Principles of Valuation at 3-4 (2002) [hereinafter E3 Report].

³ Comments of Renewable Northwest Regarding E3’s Report and Staff’s Comments at 6 (Mar. 8, 2021).

developers” and provide “additional financial stability that a purely marginal approach doesn’t.”⁴ However, the Coalition is not certain it understands Renewable Northwest’s statement that locking in ELCC values for “too long” might be harmful and “resemble[] long-term contracting.”⁵ If Renewable Northwest means that long-term contracts should have a “vintaged marginal” ELCC, the Coalition agrees (both for the contract and any renewal), but it is not clear whether that is Renewable Northwest’s position.

The Coalition identified Washington’s policies as an alternative model to Oregon’s current approach. In brief summary, the Washington Utilities and Transportation Commission retained the sufficiency-deficiency demarcation but choose to value capacity during *both* sufficiency and deficiency periods based on the next capacity resource and not market purchases.⁶ The sufficiency period capacity resource is a gas peaker.

The Coalition notes that Idaho’s approach is another useful example to consider. Similar to Oregon’s avoided cost rate methodology, the Idaho Public Utilities Commission’s (“Idaho Commission”) avoided cost rates include resource sufficiency and deficiency periods, but the Idaho Commission differentiates its methodology between new and existing projects. For new (but not existing) qualifying facilities (“QFs”) in Idaho, similar to both new and existing Oregon QFs, the initial years result in a resource sufficiency period where the rates are based on market purchases and do not include meaningful capacity payments. This result occurs because the QF is only paid for

⁴ Comments of Renewable Northwest Regarding E3’s Report and Staff’s Comments at 6 (Mar. 8, 2021).

⁵ *Id.*

⁶ Coalition Comments at 13-14.

capacity “at such time that the utility becomes capacity deficient”, which almost never includes the early contract years.⁷

The Idaho and Oregon Commission’s policies significantly diverge in terms of existing projects being paid for capacity when they renew their contracts. The Idaho Commission recognizes the fact that all, or nearly all, existing QFs renew their contracts, which reduces the utility’s need to purchase new capacity resources. The Idaho Commission explained:

By including a capacity payment only when the utility becomes capacity deficient, the utilities are paying rates that are a more accurate reflection of a true avoided cost for the QF power. However, we find merit in the argument made by the Canal Companies that contract extensions and/or renewals present an exception to the capacity deficit rule that we adopt today. It is logical that, if a QF project is being paid for capacity at the end of the contract term and the parties are seeking renewal/extension of the contract, the renewal/extension would include immediate payment of capacity. An existing QF’s capacity would have already been included in the utility’s load and resource balance and could not be considered surplus power. Therefore, we find it reasonable to allow QFs entering into contract extensions or renewals to be paid capacity for the full term of the extension or renewal.⁸

The Idaho Commission specifically reaffirmed that policy in an order that lowered the contract term.⁹ The Idaho Commission continued its policy that existing QFs that renew their contracts would be paid capacity during the sufficiency period. In addition, the Idaho Commission clarified that utilities should treat new QFs that renew their contracts as existing QFs in most circumstances, so they will be paid capacity in

⁷ See *in re the Commission’s Review of PURPA QF Contract Provisions*, IPUC Case No. GNR-E-11-03, Order No. 32697 at 21-22 (Dec. 18, 2012) clarified in Order No. 32871 (Aug. 9, 2013).

⁸ *Id.*

⁹ *In re Idaho Power Company’s Petition to Modify Terms and Conditions of PURPA Purchase Agreements*, IPUC Case Nos. IPC-E-15-01, AVU-3-15-01, PAC-E-15-03, Order No. 33357 at 25-26.

most of the years for renewal contracts. The Idaho Commission explained that:

We recognize that a new two-year contract would be unlikely to reach a capacity deficiency date. Therefore, we find it reasonable for utilities to establish capacity deficiency at the time the initial IRP-based 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. For example, if the QF comes on-line in 2017 and the utility is capacity deficient in 2020, the QF would be eligible for capacity payments in the second year of its second contract and thereafter if in continuous operation. This 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. This mitigates the concern that short-term contracts will not contribute to the avoidance of utility capacity/generation.¹⁰

Existing QFs should be paid for capacity when they renew their contracts. This is consistent with how utilities plan their operations and with the benefits that existing QFs provide to the utilities.

B. This Docket is Important

The Commission opened this docket almost two years ago to establish “a methodology that looks to the characteristics of capacity a resource provides” and could be “used across multiple dockets and technologies for valuing capacity brought to the electric system.”¹¹ At the public meeting that launched this proceeding, the Commission recognized the goal of developing an “apples to apples” comparison of capacity across technology types, while “keeping our eye on the fact that [the grid] is changing [and] what we need in five years will be different from what we need in ten years.”¹² Chair

¹⁰ *Id.*

¹¹ Order No. 19-155, App. A at 4 (Apr. 26, 2019).

¹² OPUC Public Meeting at 1:50-11:51 (Apr. 23, 2019), recording available at https://oregonpuc.granicus.com/MediaPlayer.php?view_id=2&clip_id=389

Decker recognized this valuation has come up in multiple dockets for multiple resource types, so the hope for this docket is to develop “some common principles and ways to refresh our approach.”¹³

The Joint Utilities’ comments suggest that this docket is unnecessary. The Joint Utilities appear to suggest that no capacity valuation methodology will improve upon the existing Integrated Resource Plan (“IRP”) methodologies and that this docket should not consider proposed changes.¹⁴ In sum, the Joint Utilities’ comments leave the impression that this docket will have no practical benefit and is no more than an academic exercise. The Coalition disagrees.

If the utilities’ IRP methodologies were already perfect at comparing the capacity values of different resources, then the Coalition might agree this docket may be unnecessary. However, the methodologies are *not* perfect. The Staff Report noted that there were “disparate approaches” in different dockets, *including* “utility IRP planning and the determination of a sufficiency/deficiency demarcation.”¹⁵

In prior comments, the Coalition asked Staff to clarify its vision for this docket and potential applications. Before the March 17, 2021 workshop, Staff circulated a document listing potential applications, including “IRP proxy resources.”¹⁶ The Coalition thanks Staff for providing this clarity and agrees that this docket could and

¹³ *Id.*

¹⁴ Joint Utilities’ Initial Comments in Response to E3 Report and Staff’s Opening Comments at 4-7 (discussing the IRP methodologies as the end-all, be-all methodologies, stating that any new methodology should be benchmarked against the IRP methodology, and concluding that any changes to the IRP methodologies should be considered in the IRP process rather than this docket).

¹⁵ Order No. 19-155, App. A at 2.

¹⁶ Staff Agenda for the March 17, 2021 Workshop, App. at 1 (on file with author). The Coalition notes this document does not yet appear on the docket.

probably should inform how utility IRPs treat proxy resources. That is one of several meaningful applications of this docket.¹⁷

By contrast with the Joint Utilities' comments, other stakeholders' comments were generally optimistic about the methodology under discussion, albeit with the recognition that it needs further adjustments. For instance, both Renewable Northwest and NW Energy Coalition expressed approval for using the Effective Load Carrying Capability ("ELCC") approach. However, their comments highlight several areas that need improvement, as discussed further in the next section.¹⁸ The Coalition believes that non-utility stakeholders' engagement in this process evinces a broad consensus that there is room for improvement, and this docket can and hopefully will be a meaningful vehicle for change.

C. More Work is Needed to Address Stakeholders' Concerns

While the Coalition looks forward to seeing this docket progress, it is evident that there are substantial concerns that need addressing. As noted at the workshop, stakeholders could not fully evaluate certain components of Staff's proposed methodology and understand how it would change the status quo. Further, several stakeholders have identified concerns with the methodology. For instance, the NW

¹⁷ The Coalition agrees with Staff that this generic proceeding should consider capacity valuation across applications, including but not limited to Public Utility Regulatory Policy Act ("PURPA") matters. The Coalition maintains that a generic proceeding is most likely to produce a fair perspective across all applications, and the Joint Utilities' opposition is not persuasive on this point. *See* Joint Utilities' Initial Comments in Response to E3 Report and Staff's Opening Comments at 2-4 (suggesting that several topics under discussion in this docket ought instead to be resolved in dockets UM 2000 or AR 631 and not resolved in this proceeding).

¹⁸ Comments of NW Energy Coalition at 3 (Mar. 8, 2021); Comments of Renewable Northwest Regarding E3's Report and Staff's Comments at 3.

Energy Coalition outlined concerns with: data availability and quality; comparators (like the Planning Reserve Margin and Cost of New Entry metrics); composite resources like solar plus storage; evaluation of space and time and the changing grid; and changing procurement practices from one resource to portfolio procurements.¹⁹ While the Coalition is not taking a position at this time on most of the technical concerns raised in other stakeholders' comments, the Coalition is sympathetic to the concerns raised. To be sure, the Coalition shares at least some of these concerns, as noted in earlier comments.²⁰ The Coalition agrees with and supports Obsidian Renewables' comments, particularly the concerns with: 1) equity between utility and non-utility generation in terms of valuation and compensation; 2) planning for the future system rather than the existing system; 3) considering whether fossil-fueled plants will be able to operate indefinitely into the future; and 4) modeling delivery constraints.²¹

III. CONCLUSION

The Coalition appreciates this opportunity to provide comments and looks forward to further engaging with Staff and other stakeholders to produce the most effective, accurate, and transparent capacity valuation methodology possible.

¹⁹ Comments of NW Energy Coalition at 3-4.

²⁰ *E.g.*, Coalition's Comments at 6-7 (discussing the need to consider the changing system).

²¹ Obsidian Renewables Comments at 1-2 (Mar. 8, 2020).

Dated this 26th day of April 2021.

Respectfully submitted,



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Via Electronic Mail

August 3, 2021

Filing Center
Public Utility Commission of Oregon
201 High St. SE
Salem, OR 97301

Re: In the Matter of PUBLIC UTILITY COMMISSION OF OREGON, General Capacity
Investigation
Docket No. UM 2011

Dear Filing Center:

Enclosed please find the Renewable Energy Coalition's (the "Coalition's") proposed revisions to Staff's straw proposal on the valuation of capacity in the above captioned docket. The comment bubbles in the document provide additional context on the proposed revisions and cross-reference to the Coalition's previously filed comments in this matter.

Respectfully submitted,

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**Value of Capacity
July 15 UM 2011 Workshop**

Redline comments of the Renewable Energy Coalition

August 3, 2021

Using E3's Principles of Capacity Valuation Report and stakeholders' filed comments and workshop discussions, Staff makes this preliminary straw proposal for calculating the value of capacity contribution when comparing resource options in an RFP or IRP and when calculating avoided costs for non-competitively procured, non-utility resources e.g., PURPA, Energy Efficiency cost-effectiveness, Demand Response cost effectiveness, RVOS, VRET, ~~IRPs~~.

Requirements for calculating the value of capacity contribution

1. The value of capacity of all non-~~standard~~ rate based resources (including for hybrid resources) will be determined using the resource type's Effective Load Carrying Capability (ELCC) multiplied by the cost of capacity. There should be more than one "resource type" for solar (for example fixed vs single axis tracking, and Willamette Valley vs Eastern Oregon), and there may be more than one resource type for wind. Hybrid projects are likely to have very different characteristics from each other, increasing a need for multiple base types.
 - ~~1-a.~~ For new resources only, the value of capacity shall be incremented and decremented during resource sufficiency periods as follows:
 - ~~a-i.~~ For PGE, Idaho Power and PAC, the value of capacity for a non-utility resource shall increase in increments over the first three years after contract execution of operation: 0 in year 1, 1/3 in year 2 and 2/3 in year 3, and 100 percent in year four forward.¹
 - ~~a.~~ For IPCo, the value of capacity shall ramp up by 1/10 for each of ten years.
 - ii. The percentages and ramp rate should be reviewed no less than once every three years. Beginning in 2026, the number of ramp years can be reconsidered if there are significant changes to the utility's acquisition rate of major resources. A major resource is one resource or aggregate of resources with a duration greater than five years and aggregate output greater than ~~100-80~~ MW.²
 2. The determination of the cost of capacity ~~resource~~ shall be based on the avoided cost of procuring that renewable or non-renewable capacity from the least cost capacity resource reasonably available, using the following considerations:
 - a. The cost of the resource, in dollars per MW, when based on the sole consideration of providing capacity;
 - b. Ability to operate and deliver to the utility's Oregon jurisdiction; and

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Commented [A1]: The Renewable Energy Coalition is not taking a position on the use of ELCC or any other technical methodology at this time. Please see the Coalition's reply comments filed April 26, 2021 at pages 2-3. However, it notes it has concerns with the use of ELCC, particularly as it has been implemented by the utilities to date.

Commented [A2]: The Renewable Energy Coalition recommends that existing resources receive the full value of capacity upon contract renewal. Please see the Coalition's comments filed March 8, 2021 at pages 12-13 and reply comments filed April 26, 2021 at pages 3-6.

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Commented [A3]: The Renewable Energy Coalition recommends that Staff re-evaluate the appropriate number of years for Idaho Power Company in light of the most recent IRP showing no resource need and the present RFP for acquisition as early as 2023. Idaho Power's sudden change from no capacity need to an immediate capacity need demonstrates that Idaho Power should be treated no differently than PGE and PacifiCorp.

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Commented [A4]: The Renewable Energy Coalition recommends that any ramp begin at contract execution and not at commercial operations. Please see the Coalition's comments filed March 8, 2021 at pages 11-12.

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¹ See the Appendix for an illustrative capacity value example.
² UM 1182, In the Matter of Investigation into Competitive Bidding Process, Order No. 06-446, at 3, OAR 860-089-0100(1).

c. The comparison to costs of other resources including the time period over which the resource can be built.

4.3. Resource capacity value will be calculated accounting for each of the yearly annual ELCC values for that resource type.³

a. The capacity contribution in terms of MW is not discounted over time.

b. For existing resources only, all yearly ELCC values shall be set equal to the highest yearly ELCC value in the existing resource's prior contract(s). If no yearly ELCC value exists, the ELCC values shall be set equal to an ELCC value determined based on the system conditions that existed at the time that the existing resource first committed, via contract or otherwise, to sell to the utility.

4. Any data used must be made available for verification.

5. The OPUC will hire a third party expert to audit and report on each utilities' ELCC modeling in each IRP to confirm common understanding and conformity to these standards. One or more workshops would be held. Suggestions for improvement would be encouraged.

Commented [A5]: The Renewable Energy Coalition recommends that the capacity contribution of existing resources be evaluated based on the actual capacity contribution they provide and not based on the needs of a system built around the existing resources. Alternatively, the Coalition recommends that they be valued based on the marginal contribution measured when they first committed to serve, and not when they renewed their utility contract. Please see the Coalition's comments filed March 8, 2021 at 5-6 and reply comments filed April 26, 2021 at 3-6.

Other issues discussed by stakeholders that Staff choose not to include in Straw proposal:

1. Rate design for capacity payments
 - a. Fixed versus per kWh payments
 - b. On-peak and off-peak pricing periods

³ For example see E3's December 15, 2020 Principles of Capacity Valuation Report at 18: year 1 ELCC of 25% multiplied by year 1 capacity price of \$30/kW-year and year 2 ELCC of 44.4% multiplied by year 2 capacity price of \$100/kW-year. This pattern of yearly ELCC values and yearly capacity costs would continue for year 3 and beyond.

Appendix

Illustrative capacity value example

As described above in Staff's straw proposal, the capacity value is calculated as the ELCC multiplied by the cost of capacity and decremented during the first three years ramp-in for PGE and PAC. Staff proposes to use this calculation for all non-standard rate based resources including PURPA, Energy Efficiency, Demand Response, RVOS, and VRET. At our April 30, 2021 UM 2011 Workshop, Energy Trust presented the impact this calculation change would have on energy efficiency avoided costs.⁴ Energy Trust found that decrementing during the first three years had the biggest impact on short lived energy efficiency measures and measures where avoided generation capacity deferral value is a big proportion of total avoided cost.

To prepare an illustrative example of the capacity value calculation, Staff worked with PURPA avoided cost rates because the yearly series of the cost of capacity data is readily available. This PURPA example is indicative of the other non-utility resources. From PAC's current avoided cost prices, the costs of capacity are:⁵

Table 1: PAC's avoided capacity cost

year	2026	2027	2028	2029	2030
avoided firm capacity costs \$/kW-yr	\$100	\$102	\$105	\$107	\$110

As an approximation, Staff trended these values backwards to 2024. For a resource coming online in 2024, the capacity value is row A multiplied by row B multiplied by row C in Table 2. For simplicity Staff used PAC's current wind capacity contribution as the ELCC in each year.

Table 2: calculated value of wind capacity for PAC with Staff's standard resource deficiency assumption

row year	2024	2025	2026	2027	2028	2029	2030
avoided firm capacity costs \$/kW-yr	\$ 93	\$ 96	\$100	\$102	\$105	\$107	\$110
B ELCC	54.5%	54.5%	54.5%	54.5%	54.5%	54.5%	54.5%
C ramp-in	0	1/3	2/3	1	1	1	1
D value of capacity	\$ -	\$ 17	\$ 36	\$ 56	\$ 57	\$ 58	\$ 60

The capacity values in row D of Table 2 are in units of per kW per year of nameplate capacity. To make the results more familiar, Staff applied the calculation method to PAC's QF capacity adder input used for total capacity plus energy payments for a hypothetical QF. A direct comparison to the current capacity adder is impossible because for PURPA avoided costs, the capacity value is embedded into the market price during the resource sufficiency period, so Figure 1 instead displays total QF compensation per MW.

Figure 1 was made using the following inputs/assumptions:

- PAC's current standard avoided cost prices have a resource deficiency date of 2026.

⁴ Note that: aligning with Staff's ELCC modeling standards straw proposal, Energy Trust's methodology is used instead of ELCC based on data availability.

⁵ UM 1729, PAC's June 8, 2020 Supplemental filing, page 10.

Commented [A6]: The Renewable Energy Coalition understands this Appendix to provide an illustrative capacity value example based on Staff's straw proposal. The Coalition is not revising the example, but it maintains all of its suggestions above.

- Assumes a 37.2 percent capacity factor for both on and off peak periods.
- Assumes QF contract signing in 2020, to match when the prices were approved, and 2024 online date.

Figure 1: Wind non-renewable annual QF avoided cost payments at hypothetical 37.2% capacity factor

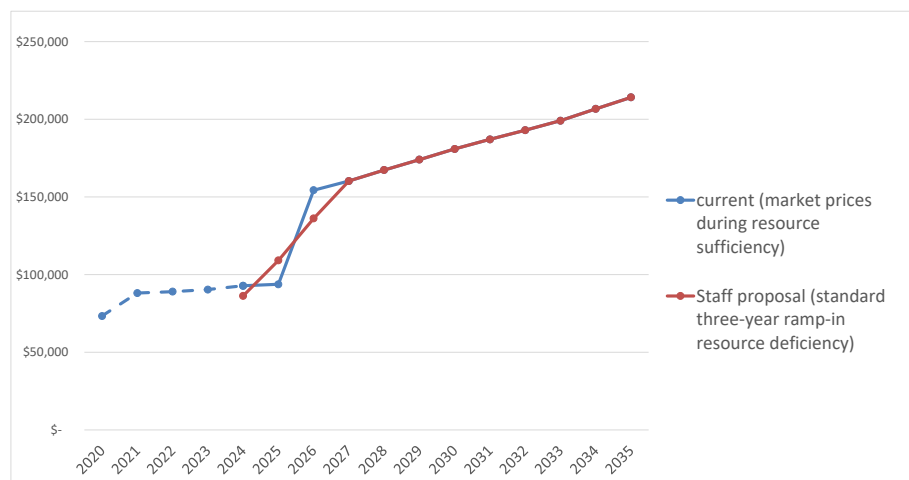


Table 3: 15 year nominal levelized price (\$/MWh) at 6.92% discount rate

	Current, at hypothetical assumptions ⁶	Staff proposal (standard three-year-ramp-in resource deficiency)
For 2024 online date, 2024 - 2038	\$51.97	\$51.72

⁶ Note: differs from the actual current value because of Staff's simplifying assumption that the on-peak capacity factor equals the off-peak capacity factor.