Decision 20-01-007 January 16, 2020

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Application of PacifiCorp (U901E), an Oregon company, for Approval of its Proposed Net Billing Tariff to Compensate Eligible Customers.	Application 19-04-013

DECISION APPROVING PACIFICORP'S NET BILLING PROPOSAL

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DECISION APPROVING PACIFICORP'S NET BILLING PROPOSAL

Summary

This decision approves the application of PacifiCorp d/b/a Pacific Power for its proposed net billing program, subject to certain modifications. The net billing program will replace PacifiCorp's net metering tariff. The net billing program will allow those customers with renewable distributed generation to receive a full retail rate credit for any consumption of their own generation. However, the net billing program differs from the net metering tariff in that the credit for generation exported to PacifiCorp's grid will be capped at a certain amount below the retail rate per kilowatt-hour, rather than being effectively credited at an amount equal to the current retail rate per kilowatt-hour.

The proceeding is closed.

1. Background

On April 19, 2019 PacifiCorp d/b/a Pacific Power (PacifiCorp) filed an application for approval of its proposed net billing program. The net billing program is designed to compensate operators of renewable distributed generation for 1) their avoided consumption of PacifiCorp's generation, and 2) their exports of surplus generation to PacifiCorp. In its application PacifiCorp sought to replace its Net Energy Metering (NEM) Program with the net billing program no later than June 30, 2020.

On May 24, 2019 the Utility Reform Network (TURN) filed a response to the application. A Prehearing Conference (PHC) was held on June 12, 2019 and the Public Advocates Office of the California Public Utilities Commission (Cal Advocates) was granted party status at that time. An Assigned Commissioner's Scoping Memo and Ruling (Scoping Memo) was filed on July 3, 2019.

At the PHC, parties agreed that testimony and hearings were unnecessary in this proceeding. Opening and reply comments, along with PacifiCorp's application, were to form the record of this proceeding.

TURN and the Solar Energy Industries Association (SEIA) served and filed opening comments on September 16, 2019.[1] Reply comments were served and filed on October 7, 2019 by TURN, Cal Advocates, and PacifiCorp. Upon that date the record of this proceeding closed.

2. Jurisdiction

Generally, the Commission has jurisdiction over the rates and tariffs used by PacifiCorp for its California customers pursuant to Public Utilities (Pub. Util.) Code Sections 701[2] and 451.[3]

3. Issues Before the Commission

The scoping memo set out the following issues as within the scope of this proceeding:

- Whether PacifiCorp's proposal for a net billing program for customers that install eligible renewable customer generation, including the methodology for calculating the proposed export credit and the peak and off-peak periods, is reasonable and should be approved.

[1] SEIA's motion for party status was filed on November 4, 2019 and granted on November 5, 2019. The e-mail ruling granting party status deemed SEIA's opening comments filed on September 16, 2019 as that was the date on which the opening comments were served. As the motion for party status was not filed until after the due date for reply comments, and SEIA served no reply comments on the parties by the due date, the email ruling granting SEIA party status proscribed reply comments from SEIA.

[2] Pub. Util. Code § 701 ("[t]he commission may supervise and regulate every public utility in the State and may do all things, whether specifically designated in this part or in addition thereto, which are necessary and convenient in the exercise of such power and jurisdiction").

[3] Pub. Util. Code § 451 ("[a]ll rules made by a public utility affecting or pertaining to its charges or service to the public shall be just and reasonable").

- Whether avoided distribution and transmission costs should be included in the calculation of a net billing export credit.
- Whether the impact of PacifiCorp's proposed net billing program on customers without eligible renewable customer generation is reasonable.
- Whether PacifiCorp's proposed closure of its NEM tariff to new customers is reasonable and should be approved.
- Whether PacifiCorp's proposed interconnection application fee for net billing customers is reasonable and should be approved.
- Whether PacifiCorp's proposed rules for assigning legacy status to customers of its current NEM tariff, and the duration of legacy treatment, are reasonable and should be approved.
- Whether the Commission should adopt a duration of service over which a customer taking service under the net billing tariff is eligible to continue taking service under that tariff.
- Whether PacifiCorp's proposal to recover the cost of exported energy credits through its annual Energy Cost Adjustment Clause application is reasonable and should be approved.
- Whether PacifiCorp's proposal to seek Commission approval of its net billing export credit rates through a Tier 1 advice letter filed annually on November 1 is reasonable and should be approved.
- Whether PacifiCorp's proposal contains sufficient consumer protections for customers participating in the net billing program.

This decision considers each of these issues below.

4. Summary of PacifiCorp's Net Billing Program Proposal

PacifiCorp's application for its net billing program argued that it is designed to encourage the adoption of distributed renewable energy in its territory, and ensure that non-participating PacifiCorp customers are not harmed by the existence of the program. Distributed renewable energy systems (or simply "systems" as used in this decision) exist on the customer's side of a utility meter and generate electricity using a renewable source. A common example of such systems is a solar photovoltaic system attached to a building's roof. This system generates electricity for the use of the building's residents and, if the generated electricity exceeds the electrical demand of the residents, the utility receives and uses the excess electricity.

In California, it is common for utilities to offer enrollment in a NEM Program to customers with such systems. By law, public utilities in California are required to offer NEM to their customers with distributed renewable energy systems subject to certain restrictions and caps.[4] Under a classic NEM structure, the total kilowatt-hours billed by the utility is reduced by the kilowatt-hours exported to the grid by the customer's system. This effectively compensates the customer the full volumetric retail rate per kilowatt-hour for any exported electricity.

The net billing program proposed by PacifiCorp to replace their NEM Program differs from NEM in that it does not credit the customer the full retail rate for electricity that is exported to PacifiCorp's grid. Instead, the payment to the customer for exported electricity is capped at a level that is substantially less than under the NEM Program. For example, PacifiCorp proposes to credit their net billing customers 3.3 cents for each kilowatt-hour exported to PacifiCorp's grid at 3 p.m., while a residential NEM customer in their territory that does not participate in the California Alternate Rates for Energy (CARE) Program effectively receives a credit of 17.3 or 15.3 cents for each kilowatt-hour of electricity that is exported.[5]

[4] Pub. Util. Code §§ 2827, et seq.

[5] TURN opening comments at 4. Somewhat inexplicably, PacifiCorp Schedule D (available at: https://www.pacificpower.net/content/dam/pcorp/documents/en/pacificpower/rates-

PacifiCorp argued that its proposal, and its substantial reduction in effective compensation for exported renewable energy, balances the costs and benefits of the net billing program by providing compensation to customers that generate excess electricity used by PacifiCorp that is based on costs PacifiCorp would otherwise expend to obtain electricity for those customers.[6]

While participating in the net billing program, the customer would receive export credits for any excess renewable generation they do not use on site and export to PacifiCorp's grid. In its application, PacifiCorp calculated illustrative export credit values of 4.4 cents/kilowatt-hour during peak hours and 3.3 cents/kilowatt-hour during off-peak hours.[7]

Electricity that is generated by the system and consumed onsite would offset electricity that the customer otherwise would have purchased from PacifiCorp. Any electricity supplied by PacifiCorp to the customer (i.e., when the system is not generating sufficient energy to satisfy the customer's onsite usage) would be charged at PacifiCorp's normal rate.[8]

The net billing program is proposed to be available to PacifiCorp customers meeting the following eligibility requirements:

- The customer owns and operates a renewable energy generation system, not exceeding one megawatt in capacity.[9]

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regulation/california/rates/D_Residential_Service.pdf) does not reflect these rates as it does not include the ECAC "tariff rate rider" included in the document cited by TURN. Exh. PAC-302 does appear to include an apparently accurate avoided average residential retail rate of 16.63 cents per kilowatt-hour.

[6] PacifiCorp application at 4-5.

[7] Exh. PAC-300 at 3; Exh. PAC-301 at 4.

[8] PacifiCorp application at 6-7.

[9] PacifiCorp clarified in its reply comments that a customer that signs a lease agreement or a power purchase agreement with a solar provider for a so-called "third party ownership" system

- The system is located on and connected to the customer's rented, leased, or owned establishment.
- The system is interconnected to and operates in parallel with PacifiCorp's transmission and distribution facilities.
- The system is sized primarily to offset part or all of the customer's own electrical requirements.
- The system utilizes the metering equipment required by PacifiCorp.
- The customer completes PacifiCorp's application for interconnection and executes an interconnection agreement with PacifiCorp.[10]

Beyond the reduced payment for exported electricity, certain other features of PacifiCorp's net billing proposal differ from the current NEM structure. PacifiCorp proposes to vary the export credit by time of day, with higher credits during hours of peak marginal generation prices on PacifiCorp's grid.[11] PacifiCorp also proposes to base its export credit on five separate elements, each with their own value. These elements are: 1) avoided energy costs, 2) avoided line losses, 3) integration costs, 4) avoided greenhouse gas (GHG) emission compliance costs, and 5) avoided renewables portfolio standard compliance costs. PacifiCorp proposed to update these export credit price elements, and therefore the net billing export credit value, in an annual Tier 1 advice letter filing.[12] Net billing program customers would receive an extra

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would be allowed to take advantage of the net billing program. (PacifiCorp reply comments at 18.)

[10] PacifiCorp application at 6.

[11] PacifiCorp proposes peak hours of 4 p.m. – 10 p.m. Monday-Friday, year-round (Exh. PAC-200 at 10).

[12] PacifiCorp application at 7-9.

0.2 cents per kilowatt-hour of exported electricity if they agree to transfer their renewable energy credits to PacifiCorp.[13]

Export credits may be rolled over by the customer until March of each year (or October for irrigation customers), after which the export credits would expire.[14] Export credits would not be allowed to reduce a customer's monthly "basic charge" (i.e., fixed charge), currently $7.20 per month for non-CARE residential customers.[15] A one-time $75 interconnection application fee for net billing customers, reflecting the cost of processing interconnection applications, would also apply.[16] This is equivalent to the current interconnection fee charged by Southern California Edison Company, and is less than the fees charged by Pacific Gas and Electric Company ($145) and San Diego Gas & Electric Company ($132).[17]

PacifiCorp also proposed to allow current NEM customers, as well as potential NEM customers that apply for interconnection and actually interconnect their systems before a certain date, to maintain their existing NEM tariff conditions for a 20-year period.[18]

PacifiCorp proposed to treat the sum of its payments for export credits under the net billing program as a cost to be recovered in PacifiCorp's Energy

[13] Exh. PAC-300 at 4. TURN points out that it is unlikely that a typical residential net billing customer would seek this extra 0.2 cents/kilowatt-hour in compensation, as PacifiCorp's proposal requires the net billing customer to register their system with the Western Renewable Energy Generation Information System at a cost of $50/year. TURN argues that the $50/year registration cost would outweigh any likely benefit. (TURN opening comments at 5.)

[14] Exh. PAC-300 at 5.

[15] Exh. PAC-300 at 6.

[16] Exh. PAC-300 at 9.

[17] Exh. PAC-300 at 11.

[18] Exh. PAC-300 at 6-7.

Cost Adjustment Clause (ECAC) filing with the Commission. PacifiCorp argued this is consistent with the recovery of surplus energy costs currently attributable to its NEM Program.[19]

PacifiCorp requested approval to implement its net billing program with an effective date 60 days after a Commission decision in this proceeding.[20]

5. Discussion

At the outset, it is important to note that this decision should not be regarded as precedent for any future Commission decision that may address the issue of compensation structures for distributed renewable energy systems. The decision in this proceeding is based solely on the record of this proceeding, and does not prejudice the ability of the Commission in the future to make a different determination on similar issues.

5.1. PacifiCorp's Statutory Obligations

PacifiCorp's application asserted that it was under no statutory obligation to continue offering the NEM Program to its customers and was entitled to propose an alternative program on its own motion. Nevertheless, SEIA's opening comments argued that PacifiCorp's application should be dismissed as it did not include an analysis of the alleged cost-shift that results from the NEM Program, or the cost-effectiveness of NEM in general.[21] In its reply comments, PacifiCorp reasserted its position that it is under no statutory obligation to continue its NEM Program, and therefore rejected SEIA's argument that it should

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[19] Exh. PAC-100 at 7.

[20] PacifiCorp reply comments at 2, fn 4.

[21] TURN argued that there is a cost-shift inherent to the NEM structure, quoting Commission Decision (D.) 16-01-044, and that this cost-shift led TURN to support PacifiCorp's proposal.

be required to complete a cost-effectiveness or cost-shift study in order to replace the NEM Program.[22]

Cal Advocates insisted that PacifiCorp is entitled to propose changes to its NEM Program without conducting the studies requested by SEIA as PacifiCorp is no longer under any statutory obligation to offer NEM to its customers.[23] Cal Advocates also pointed out that if the Commission rejected PacifiCorp's application on the grounds recommended by SEIA, customers wishing to install a distributed renewable energy system would have no compensation program to enroll in after the expiration of PacifiCorp's NEM Program on June 30, 2020.[24]

As noted by PacifiCorp, and confirmed by TURN and Cal Advocates, there is no statutory obligation for PacifiCorp to continue offering its NEM Program once the total rated generating capacity of NEM systems in its territory exceeds five percent of PacifiCorp's aggregate customer peak demand.[25] PacifiCorp's application stated that had 9.4 megawatts of interconnected customer generation participating in its NEM Program as of March 31, 2019, compared to a 7.9 megawatt "NEM cap" for PacifiCorp.[26] It is therefore the case that PacifiCorp is no longer under any legal obligation to offer a NEM tariff to its customers.[27] Nor is PacifiCorp under any legal obligation to propose an alternative to NEM,

[22] PacifiCorp reply comments at 5.

[23] Cal Advocates reply comments at 1-2.

[24] Cal Advocates reply comments at 3.

[25] Pub. Util. Code § 2827; PacifiCorp application at 2-4; TURN opening comments at 3; Cal Advocates reply comments at 1-2.

[26] PacifiCorp application at 4.

[27] *See also* D.13-11-026 at 2 ("[t]he Legislature has chosen to make the NEM program available only to a limited number of utility customers who meet specific criteria…. When a utility reaches its generation limit, no new customers can sign up for the NEM tariff offered by that utility").

as the statutory provisions related to a NEM successor tariff to be implemented after a utility's NEM cap is reached do not apply to PacifiCorp.

PacifiCorp's net billing proposal is, therefore, voluntary. PacifiCorp explained that its aim is to support cost-effective renewable energy and its customers' desire to participate in renewable energy programs, while ensuring that the costs of its renewable energy programs are not unfairly shifted to other customers.[28] This rationale is a reasonable basis for the Commission to consider and approve a voluntary distributed renewable energy program. No further analyses, such as those recommended by SEIA, are required to support PacifiCorp's application.

5.2. Appropriateness of Overall Net Billing Program Structure

The overall structure of the proposed net billing program is to pay customers with eligible renewable energy generation systems an export credit for any kilowatt-hours of electricity they export to PacifiCorp's grid. PacifiCorp's proposal allows net billing customers to avoid retail rate charges for any electricity they produce and consume onsite with their renewable energy generation system. PacifiCorp asserted that the avoided retail rate charges will supply the majority of the economic benefit of using a renewable energy generation system under the net billing tariff.[29] PacifiCorp proposed to base its export credit value on several elements that would be updated each year in an advice letter filing with the Commission, thus changing the value of the export credit on an annual basis.

[28] Exh. PAC-100 at 8.

[29] Exh. PAC-302.

This decision now turns to the various components of the net billing structure, beginning with the avoided retail rate feature.

5.2.1. Avoided Retail Rate Charges for Consumption Onsite

TURN reasoned that avoided payments of retail rates for electricity consumed onsite by a net billing customer would mean that different customers would see different benefits for the same amount of renewable energy produced. A CARE customer offsetting baseline electricity would see a benefit of 11.7 cents for a kilowatt-hour consumed onsite, while a non-CARE customer offsetting above baseline electricity would see a benefit of 17.3 cents for the same kilowatt-hour consumed onsite. TURN claimed that this is inequitable and, furthermore, allows net billing customers to escape paying their share of fixed system costs that are not avoided on a system-wide basis through the self-generation and self-consumption of renewable energy.[30]

PacifiCorp rejected TURN's arguments in its reply comments, holding that the proposed structure of the net billing program encourages customers to size their systems to meet their onsite demand and to modify their load to make better use of their generation, which in turn promotes efficiency and reduces the impact of the system on PacifiCorp's grid. PacifiCorp pointed out that net billing customers would be required to pay basic charges to contribute to PacifiCorp's costs, and that the avoidance of retail rate charges using self-generation is inherently fair and equitable, as it is similar to a situation where a customer choses to invest in energy efficiency measures.[31]

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[30] TURN opening comments at 3-4.

[31] PacifiCorp reply comments at 9-10.

With respect to TURN's argument regarding the reasonableness of tying net billing compensation to avoided retail rates, the Commission is not persuaded to modify PacifiCorp's proposal on that ground for two reasons. First, PacifiCorp applies a basic charge to each of its customers to collect revenue to partially pay for PacifiCorp's system costs, and these charges could not be avoided by net billing customers.[32] Therefore, even if a net billing customer generated enough electricity with their system to offset their entire usage for a month, the basic charge would ensure that some system costs are paid for by the net billing customer. Second, at this time there is insufficient record to consider a fundamental alteration of the existing principle adopted for NEM participants and those customers taking advantage of energy efficient technologies that they should enjoy the avoidance of retail rate charges for electricity they do not consume from a utility. It may be appropriate to alter this principle in the future but at this time the record is not sufficiently developed by TURN to allow for such reconsideration.

For these reasons, the feature of the proposed net billing tariff whereby a customer may avoid retail rate charges for consuming self-generated electricity onsite is reasonable and should be adopted.

5.2.2. PacifiCorp's Export Credit Methodology

In its comments, TURN argued that the net billing export credit was too low and failed to adequately compensate system owners for their exports. TURN asserted that the proposed export credit methodology failed to include some other values of distributed renewable generation. These other values include avoided need for generation capacity, avoided ancillary services costs,

[32] PacifiCorp reply comments at 10.

and avoided marginal transmission, sub-transmission, and distribution costs.[33] TURN did not calculate illustrative values for these avoided costs, but pointed out that some of them are included in the public tool developed by the Commission's Energy Division in Rulemaking (R.) 14-07-002.

Like TURN, SEIA contended that the net export methodology used by PacifiCorp does not account for certain values provided by distributed renewable energy systems. In particular, SEIA believed that avoided utility distribution and transmission costs, ancillary services costs, and generation capacity values should be considered for inclusion in the calculation of the export credit offered to net billing customers.[34]

With respect to concerns regarding the export credit elements and the methodology to determine them, PacifiCorp replied that the methodology proposed represented an incremental if imperfect improvement over the existing NEM Program. They reasoned that the proposed export credit methodology more accurately quantifies the true value of exported renewable energy when compared to the NEM method of simply crediting the customer at the full retail rate per kilowatt-hour.[35] In particular, PacifiCorp argued that the addition of particular elements to the export credit sought by TURN and SEIA were not necessary as the avoided retail rate charges already encompassed many of these values, and that in any event PacifiCorp's California service territory is not expected to have significant transmission and distribution investments to be deferred by distributed renewable energy systems.[36]

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[33] TURN opening comments at 5-6.

[34] SEIA opening comments at 4.

[35] PacifiCorp reply comments at 8.

[36] PacifiCorp reply comments at 12-13.

The most vexing feature of this application is determining whether the elements proposed by PacifiCorp for inclusion in the export credit valuation are reasonable. TURN and SEIA do not object to the elements proposed by PacifiCorp per se, but rather believe that additional elements should be included to more fully reflect the value provided by electricity generated by distributed renewable energy systems and exported to PacifiCorp. SEIA and TURN argued that these additional elements should include avoided need for generation capacity, avoided ancillary services costs, and avoided marginal transmission, sub-transmission, and distribution costs. PacifiCorp opposed the inclusion of any additional elements in its export credit methodology.

This decision finds that PacifiCorp has met its burden to define and describe the elements to be used in its export credit methodology, and also finds that PacifiCorp is under no legal burden to include other elements as recommended by TURN and SEIA. Furthermore, the record of this proceeding is not sufficient to judge the reasonableness of the additional elements proposed by TURN and SEIA. TURN's opening comments sought the inclusion of certain avoided costs in PacifiCorp's methodology based on an Energy Division public tool created for parties in R.14-07-002, but failed to demonstrate how these values apply specifically to PacifiCorp. Furthermore, PacifiCorp's reply comments revealed that there may not be a basis for the inclusion of an element of avoided transmission and distribution costs. PacifiCorp alleged that they plan little if any marginal transmission and distribution investments in their California territory, and opposing parties have not offered evidence to the contrary. While the electricity exported to PacifiCorp by distributed renewable energy systems may hypothetically help to defer investments in transmission, distribution, or generation capacity; there is no evidence before the Commission indicating that such exports actually avoid such costs in PacifiCorp's territory or the value of such avoidance on a kilowatt-hour basis.

At this time, the Commission does not adopt the proposals of TURN and SEIA to add additional elements to the export credit methodology beyond those originally proposed by PacifiCorp. There is insufficient record in this proceeding to determine if it is appropriate to include the additional elements or how to value the additional elements. Therefore, the export credit elements and valuation methodology as originally proposed by PacifiCorp should be approved.

5.2.3. PacifiCorp's Export Credit Update Process

SEIA objected to PacifiCorp's proposal to update the export credit each year in a Tier 1 advice letter filing, and argued that the export credit should be fixed for a five-year period to give net billing customers some price certainty. SEIA also contended that a Tier 3 advice letter be required to allow for "stakeholder input."[37] PacifiCorp argued against SEIA's proposal that the value of the export credit should be fixed for a five-year period, and claimed that its annual update process via a Tier 1 advice letter allows for a more accurate export credit value to be established.[38] PacifiCorp noted that if the value of the export credit is locked for a five-year period, then a value that is too low or too high when compared to the actual values of the underlying elements may be established for a period of several years. They further contended that a Tier 1

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[37] SEIA opening comments at 12.

[38] *See* Exh. PAC-200 at 12 (discussing how the largest components of the export credit value – avoided energy costs and avoided GHG compliance costs – vary annually and are considered in PacifiCorp's annual ECAC and GHG filing in August of each year).

advice letter allows for the stakeholder input sought by SEIA as parties may file protests to such an advice letter.[39]

The Commission shares PacifiCorp's concern that an export credit with a fixed value for more than one year may not accurately reflect the values underlying the credit. Therefore, PacifiCorp's request to update the net billing export credit on an annual basis is reasonable and should be approved.

In the context of PacifiCorp's proposal, an annual Tier 1 advice letter to update the export credit would be appropriate if PacifiCorp sought a change to its rates or tariffs that is either 1) in compliance with specific requirements of a Commission order where the wording of the change follows directly from the Commission order, or 2) pursuant to an index or formula that the Commission has approved for use in an advice letter, not including the first time the index or formula is used.[40]

Neither of these conditions apply to the content of the advice letter that PacifiCorp seeks to file initially. The annual export credit update advice letter proposed by PacifiCorp would utilize a formula approved by the Commission in this decision, and as stated in General Order 96-B the first application of that formula is not suitable for a Tier 1 advice letter filing.

Instead, General Order 96-B contemplates that the first application of a formula or index by a utility to change a rate or tariff should be considered in a Tier 2 advice letter.[41] This is appropriate in this case. A Tier 2 advice letter filing would allow parties to protest the initial application of the formula approved by this decision to set the net billing export credit, and give the Commission's

[39] PacifiCorp reply comments at 21-22.

[40] General Order 96-B, Energy Industry Rule 5.1.

[41] General Order 96-B, Energy Industry Rule 5.2(1).

Energy Division an opportunity to familiarize itself with the formula. The methodology proposed by PacifiCorp and adopted by this decision is described in detail in exhibit PAC-200. This exhibit is attached as Attachment A.

For the above reasons, the first advice letter from PacifiCorp setting the value of the net billing export credit shall be filed as a Tier 2 advice letter with the Commission's Energy Division. Thereafter, PacifiCorp shall file an annual export credit update advice letter with a Tier 1 designation on the November 1 of each year.

5.2.4. Time Variance of the Export Credit

PacifiCorp proposed to vary the value of the net billing export credit based on the time of day given evidence that the average hourly marginal generation price and line loss values faced by PacifiCorp vary by time of day, and taking into account the principle that compensation to net billing customers should reflect the value their exports provide to the system.[42] Electricity exported by an eligible system between 4 p.m. and 10 p.m. on weekdays would receive a higher export credit than electricity exported during all other hours. In its application, PacifiCorp calculated illustrative export credit values of 4.4 cents/kilowatt-hour during peak hours and 3.3 cents/kilowatt-hour during off-peak hours.[43]

SEIA argued that PacifiCorp should not use a time-varying export credit until it implements time-varying rates and installs time-varying capable meters more broadly for its customers.[44] Cal Advocates suggested that SEIA's request that time-varying rates and meters be deployed by PacifiCorp is moot as

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[42] Exh. PAC-200 at 8-11 (noting that renewable integration costs and GHG compliance costs are assumed to vary by hour of the day at the same ratios as the marginal generation price).

[43] Exh. PAC-300 at 3; Exh. PAC-301 at 4.

[44] SEIA opening comments at 2-3.

PacifiCorp already committed to installing meters capable of handling time-varying rates in its most recent general rate case application before the Commission.[45] PacifiCorp affirmed this, and stated that it has deployed meters capable of handling time-varying rates in its California territory, and therefore there is no reason to delay the implementation of time-varying export credits.[46]

Because PacifiCorp has deployed meters capable of managing time-varying rates, and because PacifiCorp provided evidence that some of the underlying elements of the net export credit value vary with the time of day, it is reasonable to vary the export credit by time of day as proposed. PacifiCorp's proposal in this regard should be approved.

PacifiCorp stated in its reply comments that while it does not currently offer time-varying rates for its residential customers in California, it anticipates including time-varying rate proposals in its next general rate case.[47] In order to ensure alignment of the export credit time-varying structure with peak and off-peak periods that may be adopted in PacifiCorp's next general rate case for its California customers generally, PacifiCorp shall file a Tier 2 advice letter to adjust the definition of the peak and off-peak hours for the net billing export credits in the event that PacifiCorp receives approval for different peak and off-peak hours in its next general rate case. This Tier 2 advice letter aligning the peak and off-peak periods, if necessary, shall be filed no later than 30 days after the issuance of a Commission decision in PacifiCorp's next general rate case.

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[45] Cal Advocates reply comments at 2-3.

[46] PacifiCorp reply comments at 16-17.

[47] PacifiCorp reply comments at 16.

5.2.5. Applicability of the GHG Adder Adopted in D.19-05-019

SEIA argued that PacifiCorp should modify its export credit methodology to include a GHG abatement value based on the GHG adder adopted by Commission D.19-05-019, arguing that the decision required such an adder be used in cost-effectiveness measures of distributed energy resources.[48] TURN argued that D.19-05-019 does not require the use of a specific GHG compliance cost value to be used in PacifiCorp's proposal.[49] PacifiCorp also disputed that the decision imposed any such requirement.[50]

D.19-05-019 adopted a GHG adder to be used as part of modified total resource cost (TRC), program administrator cost (PAC), and ratepayer impact measure (RIM) tests, and held that those tests shall be used in all cost-effectiveness analyses for electric sector distributed energy resources beginning on July 1, 2019, to the extent that such cost-effectiveness analyses are required.[51] PacifiCorp is under no obligation to provide a cost-effectiveness analysis in this proceeding, and as a result SEIA's argument on this point is moot. D.19-05-019 also allowed other Commission proceedings to avoid using these cost-effectiveness tests if specified in the relevant decision. Therefore, in order to avoid any ambiguity, this decision expressly prohibits the use of the TRC, PAC, or RIM tests in this proceeding.[52]

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48 SEIA opening comments at 5.

49 TURN reply comments at 3.

50 PacifiCorp reply comments at 14.

51 D.19-05-019 at 2, 25.

52 *See* D.19-05-019 at Ordering Paragraph (OP) 1, OP2.

5.2.6. TURN's Value of Distributed Energy Tariff Proposal

In its opening comments, TURN advanced an alternative proposal for a program to replace NEM that it refers to as a "Value of Distributed Energy Tariff" or VODE tariff. Such a tariff would charge customers the utility's retail rate for any electricity used by the customer, including energy produced by the system and consumed onsite, while crediting all of the system's generation at a rate "based on the long-term value of onsite renewable generation to the utility and non-participants."[53] This would disconnect the customer's compensation for renewable energy from the retail rate structure of the utility.

TURN did not specifically seek the VODE tariff for PacifiCorp in this case, but rather requested that this decision allow PacifiCorp to use a VODE tariff in the future should it wish to replace the net billing program.[54] PacifiCorp argued in reply comments that they do not believe it is appropriate to implement a VODE tariff at this time, and that they are concerned with the potential $3,000 per meter cost for the infrastructure required to support a VODE tariff. PacifiCorp recommended considering this option if and when the net billing program is revisited.[55]

This decision does not take a position on the future structure of PacifiCorp's net billing program. PacifiCorp may apply to the Commission to make modifications to its net billing program at any time.

5.2.7. Duration of Service Concerns

SEIA suggested that there should be a set period of time during which a customer taking service under the net billing tariff would be eligible to continue

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[53] TURN opening comments at 2-3.

[54] TURN opening comments at 3.

[55] PacifiCorp reply comments at 7.

taking service under that tariff (referred to in the scoping memo as a "duration of service").[56] PacifiCorp rejected the idea that the net billing tariff should have a set duration of service given the lack of a statutory requirement to offer net billing in the first instance. Instead, PacifiCorp argued that the appropriate time to consider a duration of service for net billing customers would be when a replacement for the net billing program is proposed by PacifiCorp.[57]

It is true that PacifiCorp is voluntarily offering the net billing program to its customers with distributed renewable energy systems. However, the Commission has held in a previous decision that a duration of service requirement is generally necessary "to allow customers to have a uniform and reliable expectation of stability of the NEM structure under which they decided to invest in their customer-sited renewable [distributed generation] systems."[58] The duration of service requirement of D.16-01-044 was applied to both NEM customers and NEM successor tariff customers, despite the fact that the law required no such duration of service requirement for NEM successor tariff customers. This indicates that the Commission views the duration of service requirement as an important policy that should be applied to all customers using distributed renewable energy systems and taking advantage of utility tariffs to receive some compensation for the electricity they may export to the utility.

Therefore, in order to align existing policy regarding duration of service with PacifiCorp's new net billing program, this decision finds that PacifiCorp must offer the net billing tariff to customers that enroll in the program for a

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[56] *See* SEIA opening comments at 11.

[57] PacifiCorp reply comments at 5.

[58] D.16-01-044 at 100.

period of at least 20 years from the date of their interconnection.[59] This duration of service requirement only applies to net billing customers and does not apply to NEM customers that apply before the deadline of March 1, 2020 established by this decision (even if those NEM customers are eventually transferred to net billing on March 1, 2040). The duration of service for PacifiCorp's existing NEM tariff is discussed further in this decision.

Furthermore, this duration of service requirement applies only to service under the net billing program, not to any other aspect of the customer's bill such as, for example, PacifiCorp's basic charge. To avoid any misunderstanding, the Commission reiterates its observation in D.15-07-001 that customers do not have any entitlement to the continuation of any particular underlying rate design, or particular rates. The 20-year period designated in this decision applies only to a customer's ability to continue service under the net billing program established by this decision.[60]

5.3. Clarification for Third-Party Owned Systems

In its reply comments, PacifiCorp offered to modify its draft net billing tariff to clarify that a customer is eligible for the tariff if they own and operate, lease, or purchase the output of the renewable electricity generation facility. Such a clarification is desirable and would create certainty for lessors and lessees of distributed renewable energy systems that such systems would be eligible for PacifiCorp's net billing tariff. PacifiCorp shall make the clarification to its net billing tariff as suggested in its reply comments on this issue.

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[59] *See* D.16-01-044 at 100-101, Col 14.

[60] D.16-01-044 at 100-101.

5.4. NEM Closure Date and Legacy NEM Treatment

In its application, PacifiCorp proposed to allow existing NEM customers to remain on NEM until January 1, 2040. At that time, all existing NEM customers would be transitioned to the net billing tariff.[61] In order to qualify for the legacy treatment, PacifiCorp stated that customers must apply for NEM interconnection before January 1, 2020 (the date PacifiCorp proposed to close its NEM Program to new applications) and must be successfully interconnected by January 1, 2021.[62]

While supportive of PacifiCorp's legacy NEM proposal in general, SEIA commented that when setting a standard for meeting the January 1, 2021 deadline, the standard "mechanically complete" should be applied in lieu of successful interconnection. SEIA argued that a standard of mechanically complete is within the control of the system owner and installer.[63] PacifiCorp disagreed with SEIA's recommendation, noting that it would be difficult for PacifiCorp to determine when a system was mechanically complete, and continued to recommend using the originally proposed standard of "successfully interconnected."[64]

In comments on the proposed decision, PacifiCorp expressed support for a deadline for successful interconnection in order to provide administrative certainty to both PacifiCorp and potential NEM customers. PacifiCorp proposed a revised deadline of March 1, 2023 for a NEM applicant to achieve successful interconnection in order to address SEIA's concerns that a customer may not be

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[61] Exh. PAC-301 at 10.

[62] Exh. PAC-100 at 5; PacifiCorp reply comments at 20.

[63] SEIA opening comments at 11.

[64] PacifiCorp reply comments at 20-21.

able to successfully interconnect in the original 12-month window proposed by PacifiCorp. The revised proposal of PacifiCorp is reasonable and should be adopted, as it grants administrative certainty to PacifiCorp and potential NEM customers concerning their ability to take advantage of the legacy NEM tariff. However, no matter how long it takes for the interconnection to be completed, PacifiCorp's NEM Program will expire on March 1, 2040 and no customer shall receive NEM compensation after that time, regardless of their actual date of interconnection.[65]

The deadlines for interconnection applications proposed by PacifiCorp must be altered given the timing of this decision. Because the Commission's decision on PacifiCorp's application was not submitted for public review and comment until December 2019, potential NEM customers did not have sufficient notice of the changes made to PacifiCorp's NEM Program to support a January 1, 2020 deadline for NEM applications. Potential NEM customers may have assumed that the existing deadline of June 30, 2020 would apply, or may have believed that the Commission would substantially revise PacifiCorp's proposal.

In order to supply sufficient notice to potential NEM customers of the impending closure of NEM and the need to apply for interconnection to receive legacy treatment, PacifiCorp shall not close its existing NEM Program to new applications until March 1, 2020. In order to receive legacy NEM treatment, a NEM applicant must have achieved successful interconnection by March 1, 2023. This also means that PacifiCorp's legacy NEM program shall expire on March 1, 2040, rather than January 1, 2040 as originally proposed.

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[65] This necessarily means that the usual 20-year legacy NEM period for legacy NEM customers is truncated for those customers successfully interconnecting after March 1, 2020.

5.5. Net Billing Program Start Date

In accordance with PacifiCorp's proposal, there should be a one month delay between the closure of the NEM Program to new customers and the opening of the net billing program in order to allow PacifiCorp to make system changes necessary for it to process application fees.[66] Therefore, PacifiCorp shall open its net billing program to its customers on April 1, 2020.

5.6. One-time $75 Interconnection Fee

PacifiCorp proposed that each net billing customer applying to interconnect an eligible system pay a one-time $75 fee to cover PacifiCorp's average administrative cost for processing an interconnection application in California.[67] SEIA stated its belief that PacifiCorp's proposed $75 interconnection fee was reasonable.[68] No other party commented on this element of PacifiCorp's proposal.

Because PacifiCorp provided evidence showing that the $75 fee represented its average cost to process an interconnection application in California, and because the Commission previously approved equal or greater interconnection application fees for other California utilities, PacifiCorp's proposal for a one-time $75 interconnection application fee for net billing customers is reasonable and should be approved.

5.7. Recovery of Export Credit Costs Through the ECAC Application

PacifiCorp proposed to treat the sum of its payments for export credits under the net billing program as a cost to be recovered in PacifiCorp's annual

[66] Exh. PAC-300 at 7.

[67] Exh. PAC-300 at 9-11.

[68] SEIA opening comments at 11.

ECAC filing with the Commission, submitted on August 1 of each year. PacifiCorp argued this is consistent with the recovery of surplus energy costs currently attributable to its NEM Program.[69] No party objected to this proposal.

Because PacifiCorp's proposal to recover export credit costs through the ECAC application process mimics the current process for recovering costs attributable to its NEM Program, the proposal is reasonable and should be adopted.

5.8. Impact on Non-participating Customers

With respect to the impact of the net billing proposal on non-participating customers, PacifiCorp asserted in its application that one of rationales for the net billing program is to hold non-participating customers economically indifferent by compensating electricity exports from participating customers at a level that fairly reflects the value of the electricity.[70] PacifiCorp stated that "the interests of all customers must be balanced in the design of a customer generation structure that is fair and equitable to all."[71] PacifiCorp further asserted that its net billing proposal "represents a step change reduction in cost shifting relative to [NEM]…."[72]

TURN argued in their reply comments that PacifiCorp's current NEM Program results in a cost shift to non-NEM customers of approximately $835/NEM customer/year as of 2017.[73] While contending that the export credit proposed by PacifiCorp is too low, TURN did claim that the NEM cost shift (and

[69] Exh. PAC-100 at 7.

[70] Exh. PAC-100 at 8.

[71] Exh. PAC-100 at 9.

[72] PacifiCorp reply comments at 10.

[73] TURN reply comments at 2.

implicitly the need for a reduction in the same) was one of the reasons it supported PacifiCorp's efforts to restructure its NEM Program.[74] TURN further argued that the incentives under the net billing program to install energy storage may adversely affect non-participating customers.[75] Concerns regarding the impact of energy storage installation on non-participating customers are addressed in Section 4.10 below.

SEIA generally questioned PacifiCorp's assertion that its NEM Program shifted costs onto non-NEM customers.[76] SEIA further argued that without a cost-benefit analysis of the NEM Program and the proposed net billing proposal, it was impossible to determine if non-participating ratepayers would be overly helped or harmed by the existence of the net billing program.[77]

This decision does not make a specific finding regarding a cost shift from NEM customers to non-NEM customers both because it is not relevant and because the record is not sufficiently developed to make a finding.[78] The question set out by the scoping memo is whether the *net billing program* will have reasonable impacts on non-participating customers.

PacifiCorp has provided evidence that the export rate that will be paid to net billing customers, and paid for largely by non-participating customers, represents costs that non-participating customers would have otherwise incurred if the electricity was not supplied by the net billing customer. While parties

[74] TURN reply comments at 1.

[75] TURN opening comments at 5.

[76] *See* SEIA opening comments at 2.

[77] SEIA opening comments at 10.

[78] Only TURN set out specific estimates of a PacifiCorp NEM cost shift in its reply comments, and these estimates were not subject to examination or challenge by SEIA.

disagreed with the some of the values assigned by PacifiCorp to the elements of its export credit, no intervenor claimed that the values were too high and therefore prejudicial to non-participating customers. Given the lack of evidence or record indicating that non-participating customers would pay above cost for the electricity supplied by net billing customers, this decision finds that the impact of PacifiCorp's net billing proposal on non-participating customers is reasonable.

Because this decision previously found that the feature of the proposed net billing tariff whereby a customer may avoid retail rate charges for consuming self-generated electricity onsite is reasonable and should be adopted, this decision also holds that the impact on non-participating customers of such retail rate avoidance is reasonable in the absence of evidence to the contrary.

5.9. Consumer Protections

The scoping memo sought comments from the parties on whether PacifiCorp's proposal contained sufficient consumer protections for customers participating in the net billing program. SEIA commented that it was concerned that the annual adjustments to the export credit would be difficult for customers to understand, and that the lack of certainty regarding the future values of the export credit did not advance the Commission's consumer protection goals.[79] No other party directly addressed this issue.

Although no party raised the issue, D.18-09-044 stated the following regarding the solar information disclosure packet intended to provide basic consumer protections in the NEM context:

> [The solar information disclosure packet] requirement only applies to the three large electric utilities and not to the smaller

[79] SEIA opening comments at 12.

> electric utilities, Bear Valley Electric Service (BVES), Liberty Utilities, and PacifiCorp. Per Public Utilities Code Section 2827(c)(4)(A), any electric utility with less than 100,000 service connections is not obligated to provide NEM to its customers when 'combined total peak demand of all electricity used by eligible customer-generators served by all the electric utilities in that service area furnishing net energy metering to eligible customer-generators exceeds 5 percent of the aggregate customer peak demand of those electric utilities.' Since these smaller electric utilities may not be offering a NEM program, we do not find it necessary to include them in this requirement. However, we encourage BVES, Liberty Utilities, and PacifiCorp to enact similar requirements in their interconnection portals if they are offering NEM.[80]

This language from D.18-09-044 indicates that the Commission wishes to encourage PacifiCorp to take advantage of the consumer information disclosure materials developed by the Commission in the NEM proceeding. PacifiCorp is therefore encouraged to verify that net billing customers have received and read the Solar Energy System Disclosure Document and the California Solar Consumer Protection Guide prior to interconnection. Pursuant to the Ordering Paragraphs of D.18-09-044, the Commission's Energy Division is responsible for developing and refining these documents, and PacifiCorp is encouraged to contact Energy Division to receive the latest versions of these documents.

5.10. Tracking Net Billing Energy Storage Installations

TURN voiced general concern with the potential incentives provided by the net billing program for the installation of energy storage systems to avoid onsite usage. TURN recommended that PacifiCorp be directed to model the impact of the net billing proposal on energy storage incentives, and that the

[80] D.18-09-044 at 2, fn 1.

Commission consider possible mitigations for cost shifts attributable to the net billing incentives (e.g., an enrollment cap). TURN also recommended that PacifiCorp track and report on the number of net billing systems that also utilize storage systems, and determine the costs and benefits of such customer systems to PacifiCorp's system as a whole.[81]

PacifiCorp's reply comments agreed with TURN's proposal that PacifiCorp should collect data on the installation of energy storage by net billing customers and provide this information to the Commission and stakeholders, along with a recommendation regarding whether a cap should be placed on energy storage installations.[82]

PacifiCorp's offer is a reasonable way to track energy storage systems participating in PacifiCorp's net billing program and should be adopted. PacifiCorp shall collect data on the installation of energy storage by net billing customers and provide this information to the Commission and stakeholders, along with a recommendation regarding whether a cap should be placed on energy storage installations, in its annual export credit update advice letter filed in November 1 of each year, beginning in 2021.

6. Outstanding Motions

PacifiCorp attached several exhibits to its application: PAC-100 (direct testimony of Etta Lockey), PAC-200 (direct testimony of Daniel J. MacNeil), PAC-201 (value of export credit summary), PAC-300 (direct testimony of Robert M. Meredith), PAC-301 (proposed Schedule NB-136 and proposed revisions to Schedule NEM-35), PAC-302 (average savings for energy generated

[81] TURN opening comments at 6-7.

[82] PacifiCorp reply comments at 3, 15-16.

under proposed net billing program), PAC-303 (estimated payback period under proposed net billing program), and PAC-304 (calculation of application fee). While PacifiCorp did not specifically move to have these exhibits received as evidence, no party objected to the testimony. Consequently, this decision accepts the exhibits attached to the application as part of the record of this proceeding.

All other motions not previously ruled on are deemed denied.

7. Comments on Proposed Decision

The Proposed Decision of Administrative Law Judge (ALJ) Doherty in this matter was mailed to the parties in accordance with Section 311 of the Public Utilities Code and comments were allowed under Rule 14.3 of the Commission's Rules of Practice and Procedure (Rules). Comments were filed on January 2, 2020 by PacifiCorp and TURN. Reply comments were not filed by any party. Changes have been made to this decision in response to party comments.

8. Assignment of Proceeding

Genevieve Shiroma is the assigned Commissioner and Patrick Doherty is the assigned ALJ in this proceeding.

Findings of Fact

1. PacifiCorp had 9.4 megawatts of interconnected customer generation participating in its NEM Program as of March 31, 2019, compared to a 7.9 megawatt "NEM cap" for PacifiCorp.

2. Even if a net billing customer generated enough electricity with their system to offset their entire usage for a month, the basic charge would ensure that some system costs are paid for by the net billing customer.

3. There is insufficient record in this proceeding to determine that it is appropriate to include additional elements to PacifiCorp's proposed net billing export credit or how to value the additional elements.

4. An export credit with a fixed value for more than one year may not accurately reflect the values underlying the credit.

5. The annual export credit update advice letter proposed by PacifiCorp would utilize a formula approved by the Commission in this decision, and as stated in General Order 96-B the first application of that formula is not suitable for a Tier 1 advice letter filing.

6. General Order 96-B contemplates that the first application of a formula or index by a utility to change a rate or tariff should be considered in a Tier 2 advice letter.

7. PacifiCorp has deployed meters capable of managing time-varying rates in its California service territory.

8. Some of the underlying elements of the net export credit value vary with the time of day.

9. D.19-05-019 adopted a GHG adder to be used as part of modified TRC, PAC, and RIM tests, and held that those tests shall be used in all cost-effectiveness analyses for electric sector distributed energy resources beginning on July 1, 2019, to the extent that such cost-effectiveness analyses are required.

10. PacifiCorp is under no obligation to provide a cost-effectiveness analysis in this proceeding.

11. The Commission has held in previous decisions concerning the NEM Program that a duration of service requirement is generally necessary to allow customers to have a uniform and reliable expectation of stability of the NEM structure under which they decided to invest in their customer-sited renewable distributed generation systems.

12. The duration of service requirement of D.16-01-044 was applied to both NEM customers and NEM successor tariff customers, despite the fact that the law required no such duration of service requirement for NEM successor tariff customers.

13. Clarifying that a customer is eligible for the net billing program if they own and operate, lease, or purchase the output of the renewable electricity generation facility is desirable and would create certainty for lessors and lessees of distributed renewable energy systems that such systems would be eligible for PacifiCorp's net billing tariff.

14. Because the Commission's decision on PacifiCorp's application was not submitted for public review and comment until December 2019, potential NEM customers did not have sufficient notice of the changes made to PacifiCorp's NEM Program to support a January 1, 2020 deadline for NEM applications.

15. It is necessary to supply sufficient notice to potential NEM customers of the impending closure of NEM and the need to apply for interconnection to receive legacy treatment.

16. PacifiCorp's proposed $75 interconnection application fee represented its average cost to process an interconnection application in California, and the Commission previously approved equal or greater interconnection application fees for other California utilities.

17. PacifiCorp's proposal to recover export credit costs through the ECAC application process mimics the current process for recovering costs attributable to its NEM Program.

18. The export rate that will be paid to net billing customers, and paid for largely by non-participating customers, represents costs that non-participating

customers would have otherwise incurred if the electricity was not supplied by the net billing customer.

Conclusions of Law

1. This decision should not be regarded as precedent for any future Commission decision that may address the issue of compensation structures for distributed renewable energy systems. The decision in this proceeding is based solely on the record of this proceeding, and does not prejudice the ability of the Commission in the future to make a different determination on similar issues.

2. There is no statutory obligation for PacifiCorp to continue offering its NEM Program once the total rated generating capacity of NEM systems in its territory exceeds five percent of PacifiCorp's aggregate customer peak demand.

3. PacifiCorp is no longer under any legal obligation to offer a NEM tariff to its customers.

4. PacifiCorp is not under any legal obligation to propose an alternative to NEM, as the statutory provisions related to a NEM successor tariff to be implemented after a utility's NEM cap is reached do not apply to PacifiCorp.

5. The feature of the proposed net billing tariff whereby a customer may avoid retail rate charges for consuming self-generated electricity onsite is reasonable and should be adopted.

6. PacifiCorp has met its burden to define and describe the elements to be used in its export credit methodology, and PacifiCorp is under no legal burden to include other elements as recommended by TURN and SEIA.

7. The net billing export credit elements and valuation methodology as originally proposed by PacifiCorp should be approved.

8. PacifiCorp's request to update the net billing export credit on an annual basis is reasonable and should be approved.

9. PacifiCorp's proposal to vary the value of the net billing export credit based on the time of day, such that electricity exported by an eligible system between 4 p.m. and 10 p.m. on weekdays would receive a higher export credit than electricity exported during all other hours, is reasonable and should be approved.

10. This decision expressly prohibits the use of the TRC, PAC, or RIM tests in this proceeding.

11. PacifiCorp may apply to the Commission to make modifications to its net billing program at any time.

12. The Commission views the duration of service requirement as an important policy that should be applied to all customers using distributed renewable energy systems that take advantage of utility tariffs to receive some compensation for the electricity they may export to the utility.

13. PacifiCorp customers do not have any entitlement to the continuation of any particular underlying rate design, or particular rates. The 20-year duration of service period for net billing customers designated in this decision applies only to a customer's ability to continue service under the net billing program established by this decision.

14. The revised proposal of PacifiCorp to impose a deadline of March 1, 2023 for a NEM applicant to achieve successful interconnection in order to receive legacy NEM treatment is reasonable and should be adopted, as it grants administrative certainty to PacifiCorp and potential NEM customers concerning their ability to take advantage of the legacy NEM tariff.

15. There should be a one-month delay between the closure of the NEM Program to new customers and the opening of the net billing program in order to

allow PacifiCorp to make system changes necessary for it to process application fees.

16. PacifiCorp's proposal for a one-time $75 interconnection application fee for net billing customers is reasonable and should be approved.

17. PacifiCorp's proposal to recover export credit costs through the ECAC application is reasonable and should be approved.

18. The impact of PacifiCorp's net billing proposal on non-participating customers is reasonable.

19. The Commission wishes to encourage PacifiCorp to take advantage of the consumer information disclosure materials developed by the Commission in the NEM proceeding.

20. Collection by PacifiCorp of data on the installation of energy storage by net billing customers and provision of this information to the Commission and stakeholders, along with a recommendation regarding whether a cap should be placed on energy storage installations, is a reasonable way to track energy storage systems participating in PacifiCorp's net billing program and should be adopted.

O R D E R

IT IS ORDERED that:

1. PacifiCorp d/b/a Pacific Power shall implement its net billing program as proposed in its application, subject to the modifications made in the Ordering Paragraphs of this decision. PacifiCorp d/b/a Pacific Power shall file a conforming Tier 2 advice letter implementing its net billing program as soon as practicable after the issuance of this decision.

2. The first advice letter from PacifiCorp d/b/a Pacific Power (PacifiCorp) setting the value of the net billing export credit shall be filed as a Tier 2 advice

letter with the Commission's Energy Division. Thereafter, PacifiCorp shall file an annual export credit update advice letter with a Tier 1 designation on November 1 of each year.

3. PacifiCorp d/b/a Pacific Power (PacifiCorp) shall file a Tier 2 advice letter to adjust the definition of the peak and off-peak hours for the net billing export credits in the event that PacifiCorp receives approval for different peak and off-peak hours in its next general rate case. This Tier 2 advice letter aligning the peak and off-peak periods, if necessary, shall be filed no later than 30 days after the issuance of a Commission decision in PacifiCorp's next general rate case.

4. PacifiCorp d/b/a Pacific Power shall offer the net billing tariff to customers that enroll in the net billing program for a period of at least 20 years from the date of their interconnection.

5. PacifiCorp d/b/a Pacific Power shall clarify in its net billing tariff that a customer is eligible for the net billing program if they own and operate, lease, or purchase the output of the renewable electricity generation facility.

6. PacifiCorp d/b/a Pacific Power shall not close its existing net energy metering program to new applications until March 1, 2020.

7. PacifiCorp d/b/a Pacific Power shall ensure that in order to receive legacy net energy metering program (NEM) treatment, a NEM applicant must have achieved successful interconnection by March 1, 2023.

8. The legacy net energy metering (NEM) program used by PacifiCorp d/b/a Pacific Power (PacifiCorp) shall expire on March 1, 2040. No PacifiCorp customer shall receive NEM compensation after that time, regardless of their actual date of interconnection.

9. PacifiCorp d/b/a Pacific Power shall open its net billing program to its customers on April 1, 2020.

10. PacifiCorp d/b/a Pacific Power shall collect data on the installation of energy storage by net billing customers and provide this information to the Commission and stakeholders, along with a recommendation regarding whether a cap should be placed on energy storage installations, in its annual export credit update advice letter filed in November 1 of each year, beginning in 2021.

11. Application 19-04-013 is closed.

This order is effective today.

Dated January 16, 2020, at San Francisco, California.

MARYBEL BATJER
President
LIANE M. RANDOLPH
MARTHA GUZMAN ACEVES
CLIFFORD RECHTSCHAFFEN
GENEVIEVE SHIROMA
Commissioners

ATTACHMENT A

Exhibit PAC-200

Application No. 19-04-___
Exhibit PAC/200
Witness: Daniel J. MacNeil

BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF CALIFORNIA

PACIFICORP

Direct Testimony of Daniel J. MacNeil

Value of Export Credit

April 2019

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ATTACHED EXHIBITS

Q. Please state your name, business address, and present position with PacifiCorp d/b/a Pacific Power.

A. My name is Daniel J. MacNeil. My business address is 825 NE Multnomah Street, Suite 600, Portland, Oregon 97232. My present position is Resource and Commercial Strategy Adviser.

I. QUALIFICATIONS

Q. Briefly describe your education and professional experience.

A. I received a Master of Arts degree in International Science and Technology Policy from George Washington University and a Bachelor of Science degree in Materials Science and Engineering from Johns Hopkins University. Before joining the company, I completed internships with the U.S. Department of Energy's Office of Policy and International Affairs and the World Resources Institute's Green Power Market Development Group. I have been employed by the company since 2008, first as a member of the net power costs group, then as manager of that group from June 2015 until September 2016. In my current role, I provide analytical expertise on a broad range of topics related to the company's resource portfolio and obligations, including oversight of the calculation of avoided cost pricing in the company's jurisdictions.

Q. Have you testified in previous regulatory proceedings?

A. Yes. I have provided testimony in Utah, Wyoming, Oregon, and Federal Energy Regulatory Commission dockets.

II. PURPOSE OF TESTIMONY AND RECOMMENDATION

Q. What is the purpose of your testimony?

A. My testimony supports the company's proposal to create Schedule NB-136, Net Billing Service, under which customers would be compensated for generation in excess of their own load that is exported to the company's system based upon the company's avoided cost. I address three primary issues. First, I describe the elements, methodology, and calculation of the export credit value. Second, to better ensure compensation is consistent with exported volumes, I describe on-peak and off-peak time of export definitions that differentiate between periods of higher and lower avoided costs. Finally, I address how the export credit will be updated going forward.

Q. Have you prepared a summary of the proposed export credit values?

A. Yes. A summary of the export credit results is shown in Exhibit PAC 201.

III. EXPORT CREDIT METHODOLOGY

Q. What elements are included in the value of the proposed customer generation export credit?

A. The proposed export credit includes the following elements related to the impact of exported volumes on the company's system dispatch:

- **Avoided Energy Cost:** When customer generation is exported to the grid, the company can reduce the output of its generation resources or reduce the volume of its market purchases. The resulting reduction in fuel expense and purchased power cost is the avoided energy cost.
- **Avoided Line Losses:** Line losses are the difference between the total generation injected into the grid, and the total metered volume at customer

sites. As a result, a kilowatt-hour produced by a generator is not equivalent to a kilowatt-hour delivered to a customer. The company's avoided energy costs are typically measured based on generation and market purchases at transmission voltages, while the metered volumes for residential generation exports are measured at the secondary voltage level. It is appropriate to adjust avoided energy costs to account for the resulting avoided line losses.

- **Integration Cost:** The company uses flexible resources to accommodate fluctuations in the balance of its system attributable to load, wind, solar, and other resources that are not under the company's control. Integration costs represent the cost of holding reserves with flexible resources to reliably maintain the load and resource balance.
- **Avoided Greenhouse Gas (GHG) Compliance Cost:** The non-emitting resources which will be eligible for export credits reduce PacifiCorp's system GHG emissions and GHG compliance costs.
- **Avoided Renewable Portfolio Standard (RPS) Compliance Cost:** Those customers who choose to register their generator and sell renewable energy credits for their exported generation to the company will reduce RPS compliance costs.

Q. How does the company propose calculating avoided energy costs?

A. In California, the company currently uses avoided cost rates approved by the Public Utility Commission of Oregon for determining avoided costs for standard qualifying facility resources up to at least three megawatts (MW) in nameplate capacity. The use of Oregon avoided cost rates is reasonable since the company's California service territory is contiguous with a significant portion of its Oregon service territory. Both areas are served by the same resources and are subject to comparable transmission constraints. Avoided energy costs will reflect the forecasted electricity market prices underlying the approved rates and would be used in determining the proposed export credit values. To account for the non-firm nature of the proposed tariff, avoided energy values would reflect market prices for electricity with a non-firm price adjustment of 93 percent, also from the qualifying facility contracting procedures applied in Oregon.

Q. Why is non-firm pricing appropriate?

A. Firm contracts would include credit terms, security deposits, performance guarantees, liquidated damages, default provisions, and termination rights that are not found in the proposed Net Billing tariff. Those contractual terms protect the utility and non-participating customers from non-performance and are essential to mitigating the risks associated with long-term contracts. However, since exporting customers are under no obligation to deliver any volumes, non-firm valuations are appropriate. If a customer desires a firm or longer term contractual arrangement for their generation, it has the option of self-certifying as a qualifying facility (QF) and obtaining a contract under the applicable QF tariff.

Q. Are the monthly avoided energy costs sufficient for determining an export credit?

A. No. To accurately value export volumes, the company is proposing distinct on-peak and off-peak rates, as discussed later in my testimony. Since the market price forecast used in Oregon for standard avoided costs does not have hourly granularity, an alternative hourly price shaping methodology is required.

Q. What hourly price shaping methodology do you propose?

A. To create an hourly shape, the company proposes using the results of Energy Imbalance Market (EIM) operations. Specifically, PacifiCorp proposes using a blend of 15-minute EIM load aggregation point prices for the most recent 36-month period, in this instance, the 36 months ending December 2018. The blend of market prices includes PacifiCorp East, PacifiCorp West, and Malin, and each is weighted based on forecasted market transaction activity in these areas. The blending methodology is specified by the Public Utility Commission of Oregon and is also incorporated in the determination of the avoided energy costs described above.

The historical EIM data is used to create a market price "scalar" based on the average market prices in a month during a given hour, relative to the average market price in that month during all hours. For instance, if the average market price during hour-ending 10 in May is $18/megawatt-hour (MWh), and the average market price during all hours in May is $20/MWh, then the scalar for hour-ending 10 in May would be 90 percent.[1] The average of the 24 hourly scalars for a given month is always 100 percent.

Q. What is the proposed avoided energy value?

A. The average value of avoided energy during 2020 is $22.62/MWh. Values are further distinguished by on-peak and off-peak periods, as discussed later on in my testimony.

[1] $18/MWh / $20/MWh = 90 percent

Q. How does the company propose calculating avoided line losses?

A. The line losses incorporated in the company's current rates are from its 2009 Analysis of System Losses for California. That study identified line losses specific to the following interconnection levels:

- Transmission: 4.53 percent
- Primary: 7.311 percent
- Secondary: 11.433 percent

The company has used the results from power flow studies to calculate a marginal loss by load level and then fit it to a 12 month by 24 hour profile for each of the above interconnection levels. The result is an estimate of avoided line losses that can be differentiated for specific on-peak and off-peak periods.

Q. What level of avoided line losses are included in the proposed export credit calculation?

A. The proposed export credit is expected to be applied to resources interconnected at secondary voltage levels. However, the exported volumes will need to be transferred across the secondary distribution system to other customers. As a result, they will incur some line losses, and will therefore not be avoiding the entire line losses associated with serving load on the secondary distribution system. Instead, the company proposes crediting exports for avoiding the next higher voltage level, *i.e.*, primary voltage.

Q. What is the value of the proposed avoided line losses?

A. The average value of avoided line losses during 2020 is $2.23/MWh. Values are further distinguished by on-peak and off-peak periods, as discussed later on in my testimony.

Q. What integration cost does the company propose incorporating in the export credit value?

A. It is anticipated that most of the resources exporting under the proposed program will be solar generators. The company's 2017 Integrated Resource Plan (IRP) includes a Flexible Reserve Study,[2] which identifies how much flexible capacity is required to compensate for variations in load and resources, as well as the cost of that capacity. The company proposes that the solar integration cost of $0.60/MWh (in 2016 dollars) assumed in the 2017 IRP be included in the export credit calculation. After escalating at inflation, the proposed integration cost is $0.65/MWh during 2020.

Q. What are the proposed avoided GHG compliance costs?

A. Since only non-emitting resources will be eligible for export credits under the proposed program, this element accounts for the benefits of incorporating those resources in PacifiCorp's portfolio. PacifiCorp proposes that avoided GHG compliance costs be calculated using the most recent publicly available values from PacifiCorp's Energy Cost Adjustment Clause and Greenhouse Gas-Related Forecast and Reconciliation of Costs and Revenue filing (ECAC and GHG filing). The most recent filing was submitted on August 1, 2018, in docket A.18-08-001. That filing

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[2] 2017 PACIFICORP INTEGRATED RESOURCE PLAN, Volume II, Appendix F: Flexible Reserve Study (April 4, 2017), *available at* http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Integrated_Resource_Plan/2017_IRP/2017_IRP_VolumeII_2017_IRP_Final.pdf.

contained the company's non-confidential emissions intensity value for 2016, and the forecasted compliance price for 2019.

Q. What is the value of the proposed avoided GHG compliance costs?

A. The value of the proposed avoided GHG compliance costs during 2020 is $10.96/MWh.

Q. What are the proposed avoided RPS compliance costs?

A. When eligible resources provide renewable energy credits (RECs) to PacifiCorp they reduce PacifiCorp's cost of procuring RECs to meet its RPS obligations. Resources must be registered for their RECs to be eligible for RPS compliance and asset owners with small expected volumes may choose not to register. Therefore, this component will be an optional adder to the export credit that will only apply to resources that deliver eligible RECs to PacifiCorp. The proposed avoided RPS compliance costs reflect a recent forecast used in the Marginal Cost of Service Study conducted as part of PacifiCorp's 2019 General Rate Case.

Q. What is the value of the proposed avoided RPS compliance costs?

A. For those resources that choose to provide RPS-eligible RECs to PacifiCorp, the value of avoided RPS compliance costs during 2020 is $2.00/MWh.

Q. Have you prepared a summary of the export credit results?

A. Yes. A summary of the export credit results is shown in Exhibit PAC/201.

IV. ON-PEAK AND OFF-PEAK DEFINITIONS

Q. What is the purpose of distinguishing between on-peak and off-peak hours?

A. The company's marginal costs vary significantly over the course of the day. In addition, a customer's export output will also vary over the course of the day. If a customer exports during a part of the day with a relatively high value, it will provide greater benefits than if that customer exports during a part of the day with a relatively low value. Distinguishing periods with different value ensures that exporting customers receive appropriate compensation consistent with the value they provide to the system. This also provides customers with an incentive to adjust their load profiles to make better use of their own generation resources, as avoided purchases still avoid the full cost-based retail rate.

Q. Are any on-peak and off-peak definitions currently in place that are applicable to residential customers?

A. No. However, the official Western Electricity Coordinating Council on-peak definition is 6:00 a.m. to 10:00 p.m. Pacific Prevailing Time (PPT), excluding Sundays and holidays.[3] A similar definition is used for on-peak demand charges for large general service customers under Schedule AT-48, spanning 6:00 a.m. to 10:00 p.m. PPT, Monday through Friday.

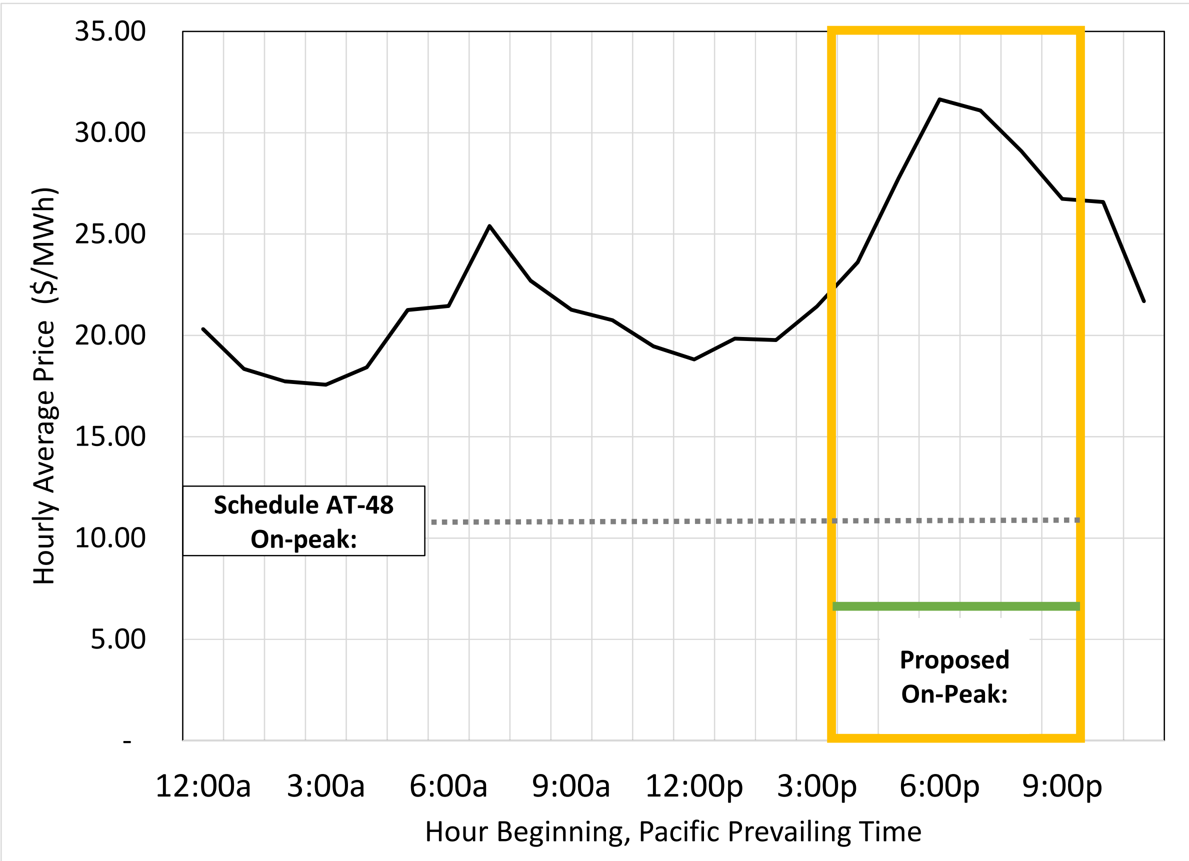
Q. What on-peak and off-peak definitions do you propose?

A. As previously discussed, the average EIM scalars by hour show a wide variation in prices across the day, as shown in Figure 1. Ideally the value within each period should be as uniform as possible, so that whenever a customer delivers in a given period, the benefits are similar. At the same time, good ratemaking principles would suggest that the on-peak and off-peak definitions be easy for customers to understand and aligned with existing programs where possible. With that in mind, PacifiCorp is

[3] NORTH AMERICAN ENERGY STANDARDS BOARD, Business Practice WEQ IIPTF (2004), *available at* https://www.naesb.org//pdf/weq_iiptf050504w6.pdf.

proposing that on-peak be defined as 4:00 p.m. to 10:00 p.m. PPT, Monday through Friday. All hours other than on-peak hours are considered off-peak hours.

Figure 1: Hourly Energy Price Shape



Q. In what way are the proposed definitions an improvement over the traditional on-peak definition?

A. The proposed definition has a wider spread between on-peak and off-peak than the existing definitions. For instance, with a 6:00 a.m. to 10:00 p.m. PPT on-peak definition, energy prices for on-peak hours are only 18 percent higher than off-peak hours. This occurs because this definition includes hours in the middle of the day when prices are comparable to the lowest-priced hours in the middle of the night. By comparison, the proposed definitions have energy prices for on-peak hours that are

37 percent higher than off-peak hours. This indicates that the proposed definitions are more uniformly distinguishing between periods of high value and low value, so that deliveries during the proposed period provide more similar benefits.

Q. Which of the export credit elements are differentiated between on-peak and off-peak periods?

A. The energy, line loss, integration, and GHG elements are differentiated between on-peak and off-peak periods. Energy and line losses are readily differentiated as the underlying source data has hourly granularity. Integration costs and GHG emissions intensity are based on annual average values. Integration reflects the cost of holding back flexible resources that could otherwise be used to serve customer load or support wholesale sales. Higher hourly energy prices imply higher costs for integration and higher GHG emissions, so these elements have been differentiated using the same ratios as the energy element.

Q. Which of the export credit elements are not differentiated between on-peak and off-peak periods?

A. RPS compliance costs are not differentiated between on-peak and off-peak periods. RPS compliance is based on the retirement of RECs that can be produced at any point in a given year. As a result, the timing of the energy production during the year does not impact the compliance value. The use of a single RPS compliance value will also simplify the handling of this optional element.

Q. What are the proposed export credit values?

A. Details on the proposed export credit values are shown in Exhibit PAC/201.

V. UPDATING EXPORT CREDIT RATES

Q. Will a customer's export credit be fixed or will it be updated?

A. The company is proposing that the export credit be updated annually by filing a tier 1 advice letter proposing rates for effect January 1; this tier 1 advice letter would be filed on November 1st. This will ensure that the export credit payments continue to be consistent with the company's avoided cost and will be consistent with the non-firm nature of the output. This will also allow all customers participating under Schedule NB-136, Net Billing Service, to receive the same export credit rates, reducing the administrative complexity of assorted vintages of export credit rates and on-peak/off-peak definitions.

Q. What factors drive the timing of an annual export credit update?

A. The proposed export credit values include avoided energy costs based on inputs from published avoided cost rates which are typically updated each summer. Data for avoided GHG compliance costs is from the company's annual ECAC and GHG filing, which occurs in August. Since these are the two largest elements in the export credit value, it would be reasonable to update export credit rates each year to incorporate the most recent information. Given both of these inputs are typically updated in the summer, the proposed November 1st filing date would incorporate relatively recent data for these elements. Data for avoided line losses, integration costs, avoided RPS compliance costs, or other inputs would be updated to reflect the most recent information available at the time the annual update is prepared, and some of these inputs may not change every year.

Q. Does this conclude your direct testimony?

A. Yes.

Application No. 19-04-___
Exhibit PAC/201
Witness: Daniel J. MacNeil

BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF CALIFORNIA

PACIFICORP

Direct Testimony of Daniel J. MacNeil

Value of Export Credit Summary

April 2019

PacifiCorp
State of California
Export Credit Summary by Element

Month	On-Peak Energy $/MWh	On-Peak Losses $/MWh	On-Peak Integration $/MWh	On-Peak GHG $/MWh	On-Peak Total $/MWh	Off-Peak Energy $/MWh	Off-Peak Losses $/MWh	Off-Peak Integration $/MWh	Off-Peak GHG $/MWh	Off-Peak Total $/MWh	Average* Total $/MWh
1/1/2020	$32.27	$3.79	($0.79)	$13.26	$48.54	$25.40	$2.73	($0.62)	$10.43	$37.95	$39.91
2/1/2020	$31.92	$3.51	($0.85)	$14.30	$48.88	$22.92	$2.37	($0.61)	$10.26	$34.94	$37.35
3/1/2020	$26.25	$2.64	($0.85)	$14.29	$42.34	$18.81	$1.81	($0.61)	$10.24	$30.26	$32.40
4/1/2020	$22.48	$2.14	($0.85)	$14.31	$38.08	$16.03	$1.48	($0.61)	$10.21	$27.10	$29.11
5/1/2020	$20.73	$1.94	($0.82)	$13.88	$35.72	$15.48	$1.35	($0.61)	$10.36	$26.58	$28.13
6/1/2020	$19.07	$1.87	($0.74)	$12.48	$32.68	$16.23	$1.46	($0.63)	$10.62	$27.68	$28.59
7/1/2020	$29.40	$3.26	($0.82)	$13.77	$45.60	$22.04	$2.16	($0.61)	$10.32	$33.90	$36.07
8/1/2020	$39.84	$4.33	($0.97)	$16.31	$59.51	$24.10	$2.33	($0.59)	$9.87	$35.71	$39.74
9/1/2020	$31.07	$3.08	($0.82)	$13.91	$47.23	$23.01	$2.02	($0.61)	$10.30	$34.71	$37.01
10/1/2020	$25.13	$2.31	($0.73)	$12.37	$39.08	$21.64	$1.87	($0.63)	$10.65	$33.53	$34.52
11/1/2020	$28.38	$2.98	($0.76)	$12.77	$43.37	$23.50	$2.25	($0.63)	$10.57	$35.70	$37.04
12/1/2020	$33.36	$3.91	($0.76)	$12.83	$49.33	$27.39	$2.96	($0.62)	$10.53	$40.26	$41.95
Annual*	$28.32	$2.98	($0.81)	$13.69	**$44.18**	$21.38	$2.07	($0.61)	$10.36	**$33.20**	$35.16
RPS					$2.00					$2.00	$2.00
Annual w/RPS					**$46.18**					**$35.20**	$37.16

Definitions:

On-Peak 4pm-10pm PPT Mon-Fri
Off-Peak All other
* Average values reflects equal delivery in all hours