BEFORE THE PUBLIC UTILITY COMMISSION

OF OREGON

UE 352

In the Matter of	)
	)
PACIFICORP, dba PACIFIC POWER,	)
	)
2019 Renewable Adjustment Clause.	)
	)

REBUTTAL AND CROSS-ANSWERING TESTIMONY
OF THE
OREGON CITIZENS' UTILITY BOARD

June 3, 2019

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OF OREGON

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In the Matter of PACIFCORP, dba PACIFIC POWER, 2019 Renewable Adjustment Clause.	))))))	REBUTTAL AND CROSS-ANSWERING TESTIMONY OF THE OREGON CITIZENS' UTILITY BOARD

Q. Please state your name, occupation, and business address.

A. My name is Bob Jenks. I am the Executive Director of the Oregon Citizens' Utility Board ("CUB"). My name is William Gehrke. I am an Economist employed by CUB. Our business address is 610 SW Broadway, Ste. 400 Portland, Oregon 97205.

Q. Please describe your educational background and work experience.

A. Mr. Jenks' witness qualification statement is found in exhibit CUB/201.

Mr. Gehrke's witness qualification statement is found in exhibit CUB/101.

Q. What is the purpose of your rebuttal and cross-answering testimony?

A. We respond to the issues raised by the PacifiCorp ("PAC" or "the Company") in its previously filed Opening Testimony and Reply Testimony. Additionally, we respond to arguments raised in the Opening Testimony of both the Alliance of Western Energy Consumers ("AWEC") and the Public Utility Commission of Oregon Staff ("Staff").

Q. How is your testimony organized?

A. Our testimony is organized as follows:

I. Return on Unrecovered Wind Generation Investment

II. Floor on Wind Production Tax Credits (PTCs)

III. Customer Protection Conditions

IV. Condition of the PTC Safe Harbor Equipment

V. Conclusion

I. Return on Unrecovered Wind Generation Investment

Q. Please summarize your position on this issue.

A. CUB proposes i) that undepreciated plant associated with the wind repowering be removed from base rates, and ii) that the removed plant should be recovered through a separate regulatory asset pursuant to ORS 757.140(2)(b). Later in this testimony, CUB details two potential carrying charges for the separate regulatory asset that would enable the Company to fairly recover its investment while accounting for the time value of money and would simultaneously protect customers from being overcharged for plant that is no longer in service. CUB opposes the Company earning its authorized rate of return on the unrecovered capital investment that is no longer used and useful in service to customers. In aligning with well-established Commission precedent, CUB does not oppose the Company recovering the return of its investment on the wind repowering removed plant.[1] As the analysis regarding recovering investments for plant that is no longer used and useful requires analysis of prior Commission precedent and relevant

[1] *See, e.g.,* OPUC Order No. 08-487.

statutes, CUB will appropriately address the legal issue associated with the Company's wind repowering unrecovered capital investment in briefing. However, we offer a reasonable resolution to the issue in this testimony.

Q. Please summarize the Company's position regarding the treatment of the unrecovered capital investment.

A. The Company proposes to leave base rates unchanged in this proceeding.[2] PAC states that since wind repowering requires the replacement of a significant portion of the existing wind turbine equipment, the recovery of and on the undepreciated costs of the replaced equipment is a key element of the project.[3] Additionally, PAC argues that barring the recovery of individual cost components would disincentivize the Company from undertaking routine maintenance and upgrades of its resources.[4] The Company also argues that there is no regulatory or policy justification for adjusting the Company's cost recovery of the undepreciated investment.[5] As will be detailed in this testimony, CUB takes issue with all these positions.

Q. Does CUB find that the wind repowering projects proposed in UE 352 to be prudent?

A. Yes. CUB supported acknowledgement of the wind repowering project in PacifiCorp's most recent IRP, LC 67.

[2] UE 352 – PAC/900/McDougal/1/ Lines 19-20.
[3] UE 352 – PAC/600/Lockey/8/Lines 8-10.
[4] UE 352 – PAC/600/Lockey/10/Lines 1-4.
[5] UE 352 – PAC/900/McDougal/1/Lines 14-16.

Q. Given that CUB finds the repowering projects to be prudent, does CUB oppose the Company collecting the return of its removed plant from wind repowering?

A. No. CUB does not oppose the Company collecting the return of its wind repowering removed plant because removing the plant was essential to requalify the wind facilities for new PTCs. The PTC benefit to customers was an essential component of CUB's support in LC 67. Therefore, CUB recommends that the utility be allowed to recover the return of its undepreciated investment, because CUB finds the project to be in the public interest. CUB's finding that the project was in the public interest includes the retirement of plant that was removed from service. This is consistent with ORS 757.140, which allows recovery in rates of a utility's undepreciated investment in utility plant when the plant's early retirement is in the public interest. CUB will expound upon the legal issues surrounding the collection of the return of the undepreciated investment in briefing.

Q. What does the Company argue about the Renewable Portfolio Standard ("RPS") and its associated automatic adjustment clause ratemaking mechanism?

A. The Company argues that the RPS is designed to allow utilities to recover in rates all prudently incurred costs associated with compliance with the RPS.[6] The Company asserts that investment in the replaced wind resources constitutes the fixed capital costs of RPS compliance-related resources.[7] Therefore, the Company is arguing that collecting a return *on* its undepreciated capital investment is akin to

[6] UE 352 – PAC/600/Lockey/9/Lines 5-6.
[7] UE 352 – PAC/600/Lockey/9/Lines 4-9.

a *cost* that it can collect pursuant to the RPS. The Company's argument is unavailing because CUB's proposal allows PAC to recover its cost in the replaced wind resources, while being compensated for the time value of money associated with the replaced wind resources. That is, CUB's proposal allows the Company to recover all of its *costs*, pursuant to the RPS. Profits are not costs. CUB is planning on further addressing this issue in briefing.

Q. Does the Company cite to prior Commission decisions that examine the recovery of costs associated with plant no longer in service?

A. Yes. The Company cites to Order No. 99-697 in docket UG 132 to incorrectly draw a comparison to this proceeding since that Order enabled the utility to earn a return on an investment in plant that was no longer used and useful. However, there are substantive differences that render Order No. 99-697 inapplicable in this case. It should be noted that UG 132 was an unusual case and when the Commission issued its order, it cited HB 3220 as a allowing "for the possibility of return on investment for plant no longer used or useful."[8]

Q. Is the repowering conducted by the Company the same type of project that was examined in UG 132?

A. No. The project at issues in UG 132 differs substantially from the wind repowering project. In that NW Natural rate case, the Commission examined a single project-a new customer information system. NW Natural was developing a new CIS in two phases: a custom CIS and an off the shelf CIS. The Company began developing a custom CIS but it was unable to serve customers adequately. After abandoning the

[8] OPUC Order No. 99-697, page 53.

custom CIS system, NW Natural purchased an off the shelf CIS system. In that case, the Commission found that the custom CIS was reasonably related to the off-the shelf CIS because they were both in reference to a single project. CUB would also like to note that this order was prior to the Trojan remand in 2008, which likely would have changed the outcome as the Trojan case was vetted by the Commission and several Oregon courts.

PacifiCorp's wind repowering project is a different situation than the NW Natural CIS program. The legacy wind generation resources have been in service for several years. For example, Leaning Juniper has served Oregon customers since September 2006. PAC's wind repowering is two separate wind projects, not two separate phases of the same project. Further, in order to comply with the 80/20 rule for PTC qualification, 80% of the fair market value of the repowered turbine must be comprised of new equipment costs. To CUB, if at least 80% of the project is new, it cannot be the same underlying project in the way that the NW Natural project in UG 132 was. The wind repowering project substantively differs from the CIS projects contemplated in UG 132.

Q. You noted that UG 132 was an unusual case. What was unusual about UG 132?

A. Based on CUB's experience, UG 132 was unusual for several reasons.

- The rate case came at the end of decade where customer growth was greater than 4%.[9] Because of the new revenue associated with load growth, NW

[9] http://www.fundinguniverse.com/company-histories/northwest-natural-gas-company-history/

Natural did not file a rate case for a decade.[10] CUB believed that even with new investment, NW Natural's rates were sufficient.

- The Commission provided NWN with a rate increase of $246,000 or 0.1% when NWN had been seeking almost $15 million.[11]
- The biggest issue in the case was the Company's requested ROE. The difference between Staff's recommendation and the Company's request was huge. NWN was seeking a ROE of 11.25% and Staff was recommending a ROE of 8.7%.[12]
- The outcome of the case cut NWN's authorized ROE by 200 basis points from the last rate case.[13]
- The CIS at issue in this case was an essential investment, because the old CIS system was not Y2K compliant.[14]
- HB 3220 passed during the case, reversing the Court decision that denied PGE a rate of return on its retired Trojan investment.

Q. What was HB 3220? Please provide some historical context.

A. After the Court of Appeals issued its decision on the Trojan litigation, which determined that a utility could not earn a return on retired plant, Portland General Electric turned to the legislature. In 1999, the Legislature passed HB 3220, which retroactively reversed that decision and allowed a return on retired plant. That statue would have gone into effect January 1, 2000. However, CUB and several

[10] https://www.nwnatural.com/uploadedFiles/General_Rate_Case_History_April_2019.pdf
[11] OPUC Order No. 99-697, page 1.
[12] OPUC Order No. 99-697, page 5.
[13] https://www.nwnatural.com/uploadedFiles/General_Rate_Case_History_April_2019.pdf
[14] OPUC Order No. 99-697, page 31.

other groups launched a referendum effort that was successful in collecting enough signatures to stop the measure from going into effect and placed it on the 2000 ballot as Ballot Measure 9.

During the November 2000 election, Oregon voted on the measure. The ballot title stated that Ballot Measure 9 "Authorizes Rates Giving Utilities Return on Investments In Retired Property." Oregon voters rejected giving utilities such a return by a vote of 1,208,545 (88.39%) voting no and 158,810 voting yes (11.61%). Because of the referendum, HB 3220 never went into effect and was rejected by voters.

Q. What did the Commission say about HB 3220 in the NWN rate case order?

A. The Commission included the text of HB 3220 in a footnote which stated that HB 3220 "expressly provides for the possibility of return on investment for plant no longer used or useful that would otherwise be prohibited by ORS 757.355."[15] While the Commission also found that the custom CIS and the off the shelf CIS were part of a single project that did become used and useful, the Commission incorrectly believed that the prohibition on allowing a return on investments that were not used and useful had been repealed. This incorrect logic is further evidence that Order No. 99-697 is inapplicable in this case, and PAC's attempt to link this proceeding to that one is unpersuasive.

Q. Are utilities allowed to earn a rate of return on property not presently used for utility service?

[15] *Supra,* note 8.

A. No. Utilities are not allowed to earn a profit on property not used for utility service but are able to recover the unrecovered capital investment (*i.e.,* return of) in plant that is retired in the public interest. CUB recommends that the unrecovered capital investments associated with repowering are put into a regulatory asset, with a carrying charge that could compensate the utility for the time value of money associated with its capital investment.[16]

Q. What is CUB's response to the Company's argument that since wind repowering requires the replacement of an existing turbine, the recovery of and on the undepreciated costs of the replaced equipment is a key element of the wind repowering project?

A. CUB's proposal will enable the Company to recover its initial investment associated with the undepreciated costs of the replaced equipment. Utility regulation rewards utilities for capital investments found to be prudent that remain presently used and useful by enabling them to earn a return on those investments. Over the useful life of the capital project, utilities can recover their investments and earn a rate of return, to reward the utilities shareholders and attract equity investments. Under Oregon regulatory view of retired property, utility shareholders are prohibited from earning a profit on an investment when the investment is no longer used and useful in the provision of utility service. The Company argues that the return on investment is essential to repowering. They are incorrect. Oregon's view on the retired property does not harm the utility. By allowing recovery of the investment and an adjustment to compensate for the time

[16] OPUC Order No. 08-487, pages 69-70.

value of money, the Company recovers its investment. However, it is prohibited from earning a profit on plant not used to serve customers.

Q. What is the implication for ratepayers if the Company is allowed to earn a profit on the unrecovered capital investment removed in the course of repowering?

A. If the Company is allowed to earn a profit on both the repowered equipment and removed equipment, the Company would be earning two profit streams on a single project. This has the potential to create damaging precedent that would overcharge customers now, and potentially in future proceedings.

Under PAC's wind repowering project, at least 80% of the market value of the repowered projects will be removed and replaced with new equipment. The removed equipment—that is no longer serving customers—had an estimated average life of 18.81 at repowering.[17] If the repowering project is approved in Oregon, the Company will earn a profit stream on $221,098,000 of Oregon allocated plant from repowering.[18] If the Company is allowed to earn a rate of return on the removed plant and the new repowered plant, it would receive profit from its investment into functionally two turbines, with only one turbine being used by customers. The Oregon allocated estimated value net book value of the removed plant at repowering is $152,938,054.[19] Under the Company's proposal, base rates would remain unchanged.[20] CUB's proposal would remove the

[17] This estimate is based on the Company's last approved depreciation study.
[18] UE 352 – PAC/401/McDougal/1/ Line 1/ Column D and H. This number is the summation of 1D and 1H.
[19] CUB Exhibit 202.
[20] UE 352 – PAC/900/McDougal/7/Lines 3-9.

Company's profit stream from the removed plant at repowering. CUB's position is balanced because its enables to the Company to recover the cost of its initial investment, while not charging customers for two streams of profits on a single project. For the Company, it is able to replace one, aging profit stream with a brand new profit stream for the new equipment placed into service during repowering. This benefits the Company's shareholders. It would be inequitable—and as CUB will detail in briefing, illegal—for the Company to retain a profit stream for plant that has been removed from service.

Q. What is CUB's response to the Company's argument that barring the recovery of individual cost components would create a disincentive for the Company to undertake routine maintenance and upgrades of its resources?

A. The Company is conflating the widespread replacement of the Company's wind generation fleet (wind repowering) with upgrades on individual components on a single generation asset. In order for a facility to qualify for repowering, 80% of the fair market value of the repowered turbine must be comprised of new equipment costs. From a cost prospective, the value of repowered equipment is more than 50% of the value of fair market value of the repowered turbine. There is a difference between replacing an individual cost component and retiring and replacing the wind generation facility with a new unit.

Q. Does the Commission's treatment of past generation plant upgrades suggest a precedent that would control in this matter?

A. No. The Company describes turbine upgrades in UE 217 and UE 263. The Company argues that keeping wind repowering equipment in base rates is consistent with prior cases because no party raised concerns about the recovery of replaced turbines under ORS 757.355, and that the full costs of the turbine upgrades were included in rates without objection. There are thousands of line items examined in a general rate case. Silence on a past cost does not mean that CUB agrees with a cost in this instance.

Q. Is it true that not allowing utilities to earn a profit on undepreciated equipment will cause uncertainty when modernizing facilities through removal and replacement of existing equipment?

A. No. The Company wrongly implies that not allowing utilities to earn two streams of profit would hamper utilities from making upgrades to "modernize" equipment. If plant is not used and useful for the use of customers, then the utility is not allowed to earn a profit on unused equipment. If a facility truly needs to be modernized, the Company can invest capital in it, and, if the capital expenditure is prudent, it can create a new profit stream through the return on this capital investment while still recovering the investment in the retired capital investment. CUB fails to see the uncertainty this standard provides to the utility. Utilities are prohibited from earning a rate of return on plant that are not used to serve customers.

Q. What is CUB's response to the Company's argument that there is no regulatory or policy justification for adjusting the Company's cost recovery of the undepreciated investment?

A. In Opening Testimony, CUB clearly presented a policy justification for adjusting the Company's cost recovery of its undepreciated investment. Utilities earn a rate of return on capital investment in order to compensate its investors for the risks borne by owning and operating plant and equipment. Once the plant associated with retired wind equipment is removed from service, the Company no longer bears the risk associated with operating and maintaining the undepreciated capital equipment.

Q. What does CUB propose with regards to the undepreciated plant associated with repowering?

A. CUB proposes to amortize the undepreciated plant associated with repowering in a regulatory asset using a sinking fund amortization. CUB has two proposals for the carrying charge associated with repowering. The first proposal is a ten-year amortization, where the carrying charge on the regulatory asset is equal to the average yield of the 10-year United States treasury bond in December 2018. This carrying charge rate is a reasonable proxy for the time value of money. This proposal is enumerated in CUB/204.

To give the Commission another option, CUB has prepared an alternative for a longer amortization period. The second proposal has the amortization period matches the average depreciable life remaining on the capital equipment.[21] This carrying charge is a mixture of the Company's embedded cost of debt and a twenty-year United States treasury bond. The Company's cost of debt is 5.26% and it represents 48.49% of their capital structure. The remaining portion is the cost of equity. This portion represents the Company's profit on its investment.

[21] CUB Exhibit 205.

The remaining 51.51% will use the average yield of the 20-year treasury bond from December 2018 to compensate the Company's for the time value of money.[22] The use of treasury bond is typically used to represents the risk-free rate of interest. This proposal is enumerated in CUB/207.

While CUB does not propose any specific monetary adjustment, the Company's base rates would need to be updated for both proposals.

Beyond striking a fair balance between the Company's shareholders and customers, CUB's proposal is rooted in established Commission precedent. In UM 1712, PAC proposed closing its Deer Creek Mine after a determination that doing so was in the public interest. After the mine was closed and its assets were sold, PAC had $21 million in unrecovered, undepreciated investment.[23] In its Order, the Commission approved a 3.31% interest rate that was applied to the undepreciated investment balance.[24] This interest percentage rate was calculated by blending PAC's then currently authorized cost of debt and Treasury bond yields.[25] There, the Commission reasoned:

> [T]his interest rate reasonably reflects the time value of money, and does not represent a return on the undepreciated investment. Allowing PacifiCorp to recover its investment . . . with a rate set to reflect the time value of money, helps balance customer and utility interests by promoting least-cost planning and avoiding rate shock.[26]

[22] CUB Exhibit 206.
[23] OPUC Order No. 15-161 at 7.
[24] *Id*.
[25] *Id*.
[26] *Id.* at 8, citing *Gearhart v. Pub. Util. Comm'n of Oregon*, 356 Or 216, 250-51 (2014) and *In Re Portland General Electric Co.*, Docket Nos. DR 10, UE 88, and UM 989, Order No. 08-487 at 67 (Sept. 30, 2008).

CUB's proposal in this case follows the same logic that the Commission adopted in UM 1712. CUB believes PAC should be entitled to recover the return of its undepreciated investment. However, rather than earn a return on this undepreciated investment, the Company should be compensated for the time value of money to strike a fair balance between the Company and its customers. CUB's proposal does just that and aligns with past Commission practice in the retirement of PAC's Deer Creek Mine and PGE's Trojan plant.

Q. What has Staff proposed regarding the unrecovered wind capital investment?

A. Staff recommends that PacifiCorp's rates in Schedule 202 reflect the removal of return on plant that is no longer in service because it was removed as part of the repowering project.[27] Staff states that requiring ratepayers to pay both the return on and return of a capital investment is unfair because capital recovery is occurring outside of a general rate case.

Q. What is your response to Staff's testimony?

A. CUB agrees that the customers should not pay the return on investment associated with wind repowering. However, Staff's proposal in opening testimony does not compensate the Company for the time value of money. CUB's proposal to amortize the unrecovered capital investment with a carrying charge associated with a reasonable proxy for the time value of money.

Q. What has AWEC proposed regarding the unrecovered wind capital investment?

[27] UE 352 – Staff/100/Storm/66/Lines 16-18.

A. AWEC recommends that the recovery of the wind repowered resources be approved for recovery, but be offset by the accumulated depreciation that has accrued since rates were last established in UE 263.[28] Based on CUB's understanding of the AWEC proposal, AWEC proposes to update all plant associated with the wind facilities for accumulated depreciation. AWEC recommends amortizing the regulatory asset balance using the sinking fund method. As noted by AWEC, the sinking fund method takes an interest accruing balance and converts the balance into a single levelized payment.[29]

Q. What is your response to AWEC's testimony?

A. CUB does not have a position on AWEC's proposal at this time.

II. Floor on Production Tax Credits (PTCs)

Q. What does CUB propose regarding the level of PTCs included in rates in this proceeding?

A. CUB proposes to withdraw this issue from consideration in this proceeding. As PTCs are a variable benefit associated with wind generation, CUB will appropriately address this issue in UE 356, the 2020 Oregon Transition Adjustment Mechanism ("TAM").

Q. Why did CUB initially present this issue in the RAC?

A. CUB is concerned about the quantity risk associated with this project. As described by Staff, quantity risk is the risk that "actual capacity factors or generated electricity after repowering are less than PacifiCorp included in its analyses."[30]

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[28] UE 352 – AWEC/100/Mullins/13/ Lines 19-21.
[29] UE 352 – AWEC/100/Mullins/19/ Lines 13-16.
[30] UG 352 – Staff/100/Storm/55/ Lines 6-7.

Normally, capital investments are examined and eventually brought into rates in a general rate case proceeding. Previously, the Company filed general rate cases concurrently with power cost cases.[31] This happens every year PAC comes in for a general rate case since the TAM is an annual filing. Since the wind repowering projects are being included in the RAC instead of a general rate case, the appropriate venue to discuss issues related to the benefits of the wind repowering was unclear to CUB. Since this remains a significant outstanding concern for CUB, we wanted to raise the issue in this proceeding

Q. Why is CUB addressing the floor on PTCs in the 2020 TAM?

A. Since CUB is not proposing to include the PTC benefits in this proceeding, and, since PTC benefits are historically addressed in the TAM, CUB will address the issue in UE 356.

III. Consumer Protection Conditions

Q. What is CUB's response to the Company regarding CUB's proposed Consumer Protection Conditions?

A. After reviewing the Company's response testimony, CUB withdraws the following conditions:

1. The Company bears the risk of PTC qualification.
2. All liquidated damages received by PacifiCorp flow back to customers.
3. Construction cost cap.

[31] *See Generally In the Matter of PacifiCorp, dba Pacific Power, Request for General Revision*, Docket No. UE 246 and *In the Matter of PacifiCorp, dba Pacific Power, 2013 Transition Adjustment Mechanism*, Docket No. 245.

The Company has adequately addressed these conditions in testimony. CUB reserves the right to raise issues related to PTC qualification and liquidated damages in future proceedings.

IV. The Condition of the Safe Harbor PTC Equipment

Q. Please summarize your position on this issue.

A. CUB has reviewed the Company's Data Responses including records related to the storage of safe harbor PTC equipment. As part of the prudence review process, CUB investigated the storage of the safe harbor PTC equipment to determine whether it had begun to depreciate or degrade while in storage in a manner that would impact its performance. After reading the Reply Testimony of Timothy Hemstreet, CUB believes the Company demonstrated that the PTC safe harbor equipment was stored in a prudent manner.

Q. Why did CUB ask additional discovery data requests regarding safe harbor PTC equipment?

A. In discovery, CUB asked the Company to provide a narrative explanation of how the Company stored its safe harbor equipment purchases. The explanation provided by the Company was terse, and CUB was unsure whether the PTC safe harbor equipment was stored prudently. At the time of CUB's Opening Testimony, there was insufficient information to determine if the Company storage of the safe harbor equipment was prudently conducted. CUB believed additional analysis was necessary.

Q. What evidence has CUB reviewed in order to determine the prudence of the storage of the safe harbor equipment?

A. CUB has reviewed the inspection forms for the Company's safe-harbor purchases from Vestas and General Electric. CUB found significant evidence of the safe harbor equipment being properly maintained and protected while in storage. CUB was also concerned that the equipment was being stored outdoors, exposed to the elements. The Company has assuaged these concerns by detailing how the capital equipment is stored.[32] CUB appreciates the Company providing information associated with this capital investment and responding to CUB concerns about the condition of the safe harbor equipment.

V. Conclusion

Q. Does this conclude your testimony?

A. Yes.

[32] UE 352 – PAC/700/Hemstreet/10/Lines 17-19.

WITNESS QUALIFICATION STATEMENT

NAME: Bob Jenks

EMPLOYER: Oregon Citizens' Utility Board of Oregon

TITLE: Executive Director

ADDRESS: 610 SW Broadway, Suite 400
Portland, OR 97205

EDUCATION: Bachelor of Science, Economics
Willamette University, Salem, OR

EXPERIENCE: Provided testimony or comments in a variety of OPUC dockets, including UE 88, UE 92, UM 903, UM 918, UE 102, UP 168, UT 125, UT 141, UE 115, UE 116, UE 137, UE 139, UE 161, UE 165, UE 167, UE 170, UE 172, UE 173, UE 207, UE 208, UE 210, UE 233, UE 246, UE 283, UG 152, UM 995, UM 1050, UM 1071, UM 1147, UM 1121, UM 1206, UM 1209, UM 1355, UM 1635, UM 1633, and UM 1654. Participated in the development of a variety of Least Cost Plans and PUC Settlement Conferences. Provided testimony to Oregon Legislative Committees on consumer issues relating to energy and telecommunications. Lobbied the Oregon Congressional delegation on behalf of CUB and the National Association of State Utility Consumer Advocates.

Between 1982 and 1991, worked for the Oregon State Public Interest Research Group, the Massachusetts Public Interest Research Group, and the Fund for Public Interest Research on a variety of public policy issues.

MEMBERSHIP: National Association of State Utility Consumer Advocates
Board of Directors, OSPIRG Citizen Lobby
Telecommunications Policy Committee, Consumer Federation of America
Electricity Policy Committee, Consumer Federation of America
Board of Directors (Public Interest Representative), NEEA

UE 352 / PacifiCorp
May 16, 2019
CUB Data Request 30

CUB Data Request 30

Refer to UE 352/PAC/900/McDougal/Page 4/ Lines 6-10, please provide all workpapers used to identify the undepreciated net book value of the plant amount for the replaced equipment at $587 million.

Response to CUB Data Request 30

Please refer to the company's response to AWEC Data Request 009. The $587 million used on UE 352/PAC/900/McDougal/Page 4/Lines 6-10 is the sum of the Estimated Net book Replaced at Repower Date column from the table below.

Facility	Original value being Replaced	Estimated Accumulative Reserve at Repower Date	Estimated Net Book Replaced at Repower Date	Estimated Replacement Cost
Glenrock I	$116,952,332	($44,899,854)	$72,052,477	$1,479,000
Seven Mile Hill I	$131,382,281	($46,539,318)	$84,842,963	$1,683,000
Seven Mile Hill II	$27,105,247	($9,586,572)	$17,518,675	$331,500
High Plains	$145,932,412	($51,308,936)	$94,623,476	$1,683,000
McFadden Ridge	$37,402,088	($13,257,969)	$24,144,119	$484,500
Leaning Juniper	$107,016,060	($45,289,711)	$61,726,349	$2,010,000
Marengo I	$167,445,463	($71,696,920)	$95,748,543	$2,340,000
Marengo II	$86,385,845	($34,956,430)	$51,429,415	$1,170,000
Goodnoe Hills	$135,844,803	($50,836,563)	$85,008,240	$1,410,000
		Total	$587,094,257	

Carrying Charge Calculation:	10 Year Treasury
	10-Year
Annual Yield as of: Thursday, December 6th 2018	2.87
Annual Yield as of: Thursday, December 13th 2018	2.91
Average Yield	2.89

Carrying Charge	2.89

Amortization schedule for Regulatory Asset at Ten Year Treasury Bond

Amortization Inputs:	
Oregon SE	26.05%
Net Book Value for October Plant	$ 236,140,465
Oregon Allocated Plant for October 1st, Effective Date	$ 61,514,591
Net Book Value of November Plant	$ 350,953,793
Oregon Allocated Plant for December 1st, Effective Date	$ 91,423,463.08

Amortization Schedule:

Carrying Charge 2.89%

		Ending Balance	Interest	Equal Payment
2019	October	$ 61,514,591		
2019	November	$ 61,662,739	$ 148,148	
2019	December	$ 153,234,349	$ 148,504	$ 1,471,874
2020	January	$ 152,131,515	$ 369,039	$ 1,471,874
2020	February	$ 151,026,024	$ 366,383	$ 1,471,874
2020	March	$ 149,917,870	$ 363,721	$ 1,471,874
2020	April	$ 148,807,048	$ 361,052	$ 1,471,874
2020	May	$ 147,693,551	$ 358,377	$ 1,471,874
2020	June	$ 146,577,372	$ 355,695	$ 1,471,874
2020	July	$ 145,458,504	$ 353,007	$ 1,471,874
2020	August	$ 144,336,943	$ 350,313	$ 1,471,874
2020	September	$ 143,212,680	$ 347,611	$ 1,471,874
2020	October	$ 142,085,709	$ 344,904	$ 1,471,874
2020	November	$ 140,956,025	$ 342,190	$ 1,471,874
2020	December	$ 139,823,619	$ 339,469	$ 1,471,874
2021	January	$ 138,688,487	$ 336,742	$ 1,471,874
2021	February	$ 137,550,621	$ 334,008	$ 1,471,874
2021	March	$ 136,410,014	$ 331,268	$ 1,471,874
2021	April	$ 135,266,660	$ 328,521	$ 1,471,874
2021	May	$ 134,120,553	$ 325,767	$ 1,471,874
2021	June	$ 132,971,686	$ 323,007	$ 1,471,874
2021	July	$ 131,820,052	$ 320,240	$ 1,471,874
2021	August	$ 130,665,644	$ 317,467	$ 1,471,874
2021	September	$ 129,508,456	$ 314,686	$ 1,471,874
2021	October	$ 128,348,481	$ 311,900	$ 1,471,874
2021	November	$ 127,185,713	$ 309,106	$ 1,471,874
2021	December	$ 126,020,144	$ 306,306	$ 1,471,874
2022	January	$ 124,851,768	$ 303,499	$ 1,471,874
2022	February	$ 123,680,578	$ 300,685	$ 1,471,874
2022	March	$ 122,506,568	$ 297,864	$ 1,471,874

2022 April	$ 121,329,730	$ 295,037	$ 1,471,874
2022 May	$ 120,150,058	$ 292,202	$ 1,471,874
2022 June	$ 118,967,545	$ 289,361	$ 1,471,874
2022 July	$ 117,782,185	$ 286,514	$ 1,471,874
2022 August	$ 116,593,969	$ 283,659	$ 1,471,874
2022 September	$ 115,402,892	$ 280,797	$ 1,471,874
2022 October	$ 114,208,946	$ 277,929	$ 1,471,874
2022 November	$ 113,012,125	$ 275,053	$ 1,471,874
2022 December	$ 111,812,421	$ 272,171	$ 1,471,874
2023 January	$ 110,609,829	$ 269,282	$ 1,471,874
2023 February	$ 109,404,339	$ 266,385	$ 1,471,874
2023 March	$ 108,195,947	$ 263,482	$ 1,471,874
2023 April	$ 106,984,645	$ 260,572	$ 1,471,874
2023 May	$ 105,770,425	$ 257,655	$ 1,471,874
2023 June	$ 104,553,281	$ 254,730	$ 1,471,874
2023 July	$ 103,333,206	$ 251,799	$ 1,471,874
2023 August	$ 102,110,192	$ 248,861	$ 1,471,874
2023 September	$ 100,884,233	$ 245,915	$ 1,471,874
2023 October	$ 99,655,322	$ 242,963	$ 1,471,874
2023 November	$ 98,423,451	$ 240,003	$ 1,471,874
2023 December	$ 97,188,613	$ 237,036	$ 1,471,874
2024 January	$ 95,950,801	$ 234,063	$ 1,471,874
2024 February	$ 94,710,008	$ 231,082	$ 1,471,874
2024 March	$ 93,466,227	$ 228,093	$ 1,471,874
2024 April	$ 92,219,451	$ 225,098	$ 1,471,874
2024 May	$ 90,969,671	$ 222,095	$ 1,471,874
2024 June	$ 89,716,882	$ 219,085	$ 1,471,874
2024 July	$ 88,461,076	$ 216,068	$ 1,471,874
2024 August	$ 87,202,246	$ 213,044	$ 1,471,874
2024 September	$ 85,940,383	$ 210,012	$ 1,471,874
2024 October	$ 84,675,482	$ 206,973	$ 1,471,874
2024 November	$ 83,407,534	$ 203,927	$ 1,471,874
2024 December	$ 82,136,533	$ 200,873	$ 1,471,874
2025 January	$ 80,862,471	$ 197,812	$ 1,471,874
2025 February	$ 79,585,340	$ 194,744	$ 1,471,874
2025 March	$ 78,305,134	$ 191,668	$ 1,471,874
2025 April	$ 77,021,844	$ 188,585	$ 1,471,874
2025 May	$ 75,735,464	$ 185,494	$ 1,471,874
2025 June	$ 74,445,986	$ 182,396	$ 1,471,874
2025 July	$ 73,153,403	$ 179,291	$ 1,471,874
2025 August	$ 71,857,706	$ 176,178	$ 1,471,874
2025 September	$ 70,558,889	$ 173,057	$ 1,471,874
2025 October	$ 69,256,944	$ 169,929	$ 1,471,874
2025 November	$ 67,951,863	$ 166,794	$ 1,471,874
2025 December	$ 66,643,640	$ 163,651	$ 1,471,874
2026 January	$ 65,332,266	$ 160,500	$ 1,471,874
2026 February	$ 64,017,733	$ 157,342	$ 1,471,874

2026	March	$	62,700,035	$	154,176	$	1,471,874
2026	April	$	61,379,163	$	151,003	$	1,471,874
2026	May	$	60,055,110	$	147,821	$	1,471,874
2026	June	$	58,727,868	$	144,633	$	1,471,874
2026	July	$	57,397,430	$	141,436	$	1,471,874
2026	August	$	56,063,788	$	138,232	$	1,471,874
2026	September	$	54,726,934	$	135,020	$	1,471,874
2026	October	$	53,386,860	$	131,801	$	1,471,874
2026	November	$	52,043,559	$	128,573	$	1,471,874
2026	December	$	50,697,023	$	125,338	$	1,471,874
2027	January	$	49,347,244	$	122,095	$	1,471,874
2027	February	$	47,994,214	$	118,845	$	1,471,874
2027	March	$	46,637,926	$	115,586	$	1,471,874
2027	April	$	45,278,371	$	112,320	$	1,471,874
2027	May	$	43,915,542	$	109,045	$	1,471,874
2027	June	$	42,549,431	$	105,763	$	1,471,874
2027	July	$	41,180,030	$	102,473	$	1,471,874
2027	August	$	39,807,331	$	99,175	$	1,471,874
2027	September	$	38,431,326	$	95,869	$	1,471,874
2027	October	$	37,052,007	$	92,555	$	1,471,874
2027	November	$	35,669,366	$	89,234	$	1,471,874
2027	December	$	34,283,396	$	85,904	$	1,471,874
2028	January	$	32,894,087	$	82,566	$	1,471,874
2028	February	$	31,501,433	$	79,220	$	1,471,874
2028	March	$	30,105,424	$	75,866	$	1,471,874
2028	April	$	28,706,054	$	72,504	$	1,471,874
2028	May	$	27,303,313	$	69,134	$	1,471,874
2028	June	$	25,897,194	$	65,755	$	1,471,874
2028	July	$	24,487,689	$	62,369	$	1,471,874
2028	August	$	23,074,789	$	58,975	$	1,471,874
2028	September	$	21,658,487	$	55,572	$	1,471,874
2028	October	$	20,238,773	$	52,161	$	1,471,874
2028	November	$	18,815,640	$	48,742	$	1,471,874
2028	December	$	17,389,080	$	45,314	$	1,471,874
2029	January	$	15,959,085	$	41,879	$	1,471,874
2029	February	$	14,525,645	$	38,435	$	1,471,874
2029	March	$	13,088,753	$	34,983	$	1,471,874
2029	April	$	11,648,401	$	31,522	$	1,471,874
2029	May	$	10,204,580	$	28,053	$	1,471,874
2029	June	$	8,757,282	$	24,576	$	1,471,874
2029	July	$	7,306,498	$	21,090	$	1,471,874
2029	August	$	5,852,220	$	17,596	$	1,471,874
2029	September	$	4,394,440	$	14,094	$	1,471,874
2029	October	$	2,933,148	$	10,583	$	1,471,874
2029	November	$	1,468,338	$	7,064	$	1,471,874
2029	December	$	(0)	$	3,536	$	1,471,874

Calculation of Weighted Average of Remaining Life of Wind Plant

Column	[A]	[B]	[C]	[D]	[E]
Source	UM 1647	UE 352	[C] = [A] - [B]	[D] = [C] / 12	
	Retirement Date	Repower Date	Life Left (Months)	Life Left (Years)	Estimated Net Book Replaced
Leaning Juniper	December-36	October-19	206	17.17	$ 16,079,714
Seven Miles Hill I	December-38	October-19	230	19.17	$ 22,101,592
Seven Miles Hill II	December-38	October-19	230	19.17	$ 4,563,615
Glenrock I	December-38	October-19	230	19.17	$ 18,769,671
Goodnoe Hills	December-38	December-19	228	19.00	$ 22,144,647
High Plains	December-39	December-19	240	20.00	$ 24,649,415
McFadden Ridge	December-39	December-19	240	20.00	$ 6,289,543
Marengo I	December-37	December-19	216	18.00	$ 24,942,495
Marengo II	December-37	December-19	216	18.00	$ 13,397,363

Weighted Average Deprecable Life of Repowered Wind Generation
18.81 Years

Convert 18.81 years to months
225.72 Round -> 226

Carrying Charge Calculation:	18.83 Year Amortization		

Capital Structure	Authorized Captial Structure	Capital Cost	Weighted Cost
Debt	48.49%	5.26%	2.55%
Preferred	0.02%	6.75%	0.00%
Common	51.49%	9.80%	5.05%
		Total	7.60%

Capital Structure	Authorized Captial Structure	Cost	Weighted Cost
Debt	48.49%	5.26%	2.55%
Preferred	0.02%	3.03%	0.00%
Common	51.49%	3.03%	1.56%
		Total	4.11%

Carrying Charge	**4.11%**

	20-Year
Annual Yield as of: Thursday, December 6th 2018	3.01
Annual Yield as of: Thursday, December 13th 2018	3.05
Average Yield	3.03

Amortization schedule for Regulatory Asset at Weighted Average Life of Plant

Amortization Inputs:		
Oregon SE		26.05%
Net Book Value for October Plant	$	236,140,465
Oregon Allocated Plant for October 1st, Effective Date	$	61,514,591
Net Book Value of November Plant	$	350,953,793
Oregon Allocated Plant for December 1st, Effective Date	$	91,423,463

Amortization Schedule:

Carrying Charge 4.11%

		Ending Balance	Interest	Equal Payment
2019	October	$ 61,514,591	$ -	$ -
2019	November	$ 61,725,279	$ 210,687	$ -
2019	December	$ 153,359,429	$ 211,409	$ 975,862
2020	January	$ 152,908,823	$ 525,256	$ 975,862
2020	February	$ 152,456,673	$ 523,713	$ 975,862
2020	March	$ 152,002,975	$ 522,164	$ 975,862
2020	April	$ 151,547,723	$ 520,610	$ 975,862
2020	May	$ 151,090,911	$ 519,051	$ 975,862
2020	June	$ 150,632,535	$ 517,486	$ 975,862
2020	July	$ 150,172,589	$ 515,916	$ 975,862
2020	August	$ 149,711,068	$ 514,341	$ 975,862
2020	September	$ 149,247,966	$ 512,760	$ 975,862
2020	October	$ 148,783,278	$ 511,174	$ 975,862
2020	November	$ 148,316,998	$ 509,583	$ 975,862
2020	December	$ 147,849,121	$ 507,986	$ 975,862
2021	January	$ 147,379,642	$ 506,383	$ 975,862
2021	February	$ 146,908,555	$ 504,775	$ 975,862
2021	March	$ 146,435,855	$ 503,162	$ 975,862
2021	April	$ 145,961,535	$ 501,543	$ 975,862
2021	May	$ 145,485,591	$ 499,918	$ 975,862
2021	June	$ 145,008,017	$ 498,288	$ 975,862
2021	July	$ 144,528,807	$ 496,652	$ 975,862
2021	August	$ 144,047,955	$ 495,011	$ 975,862
2021	September	$ 143,565,457	$ 493,364	$ 975,862
2021	October	$ 143,081,306	$ 491,712	$ 975,862
2021	November	$ 142,595,498	$ 490,053	$ 975,862
2021	December	$ 142,108,025	$ 488,390	$ 975,862

2022 January	$	141,618,882	$	486,720	$	975,862
2022 February	$	141,128,065	$	485,045	$	975,862
2022 March	$	140,635,566	$	483,364	$	975,862
2022 April	$	140,141,380	$	481,677	$	975,862
2022 May	$	139,645,502	$	479,984	$	975,862
2022 June	$	139,147,925	$	478,286	$	975,862
2022 July	$	138,648,645	$	476,582	$	975,862
2022 August	$	138,147,654	$	474,872	$	975,862
2022 September	$	137,644,947	$	473,156	$	975,862
2022 October	$	137,140,519	$	471,434	$	975,862
2022 November	$	136,634,363	$	469,706	$	975,862
2022 December	$	136,126,473	$	467,973	$	975,862
2023 January	$	135,616,844	$	466,233	$	975,862
2023 February	$	135,105,469	$	464,488	$	975,862
2023 March	$	134,592,343	$	462,736	$	975,862
2023 April	$	134,077,459	$	460,979	$	975,862
2023 May	$	133,560,812	$	459,215	$	975,862
2023 June	$	133,042,395	$	457,446	$	975,862
2023 July	$	132,522,203	$	455,670	$	975,862
2023 August	$	132,000,229	$	453,889	$	975,862
2023 September	$	131,476,468	$	452,101	$	975,862
2023 October	$	130,950,912	$	450,307	$	975,862
2023 November	$	130,423,557	$	448,507	$	975,862
2023 December	$	129,894,395	$	446,701	$	975,862
2024 January	$	129,363,421	$	444,888	$	975,862
2024 February	$	128,830,628	$	443,070	$	975,862
2024 March	$	128,296,011	$	441,245	$	975,862
2024 April	$	127,759,562	$	439,414	$	975,862
2024 May	$	127,221,276	$	437,577	$	975,862
2024 June	$	126,681,147	$	435,733	$	975,862
2024 July	$	126,139,167	$	433,883	$	975,862
2024 August	$	125,595,332	$	432,027	$	975,862
2024 September	$	125,049,633	$	430,164	$	975,862
2024 October	$	124,502,066	$	428,295	$	975,862
2024 November	$	123,952,623	$	426,420	$	975,862
2024 December	$	123,401,298	$	424,538	$	975,862
2025 January	$	122,848,085	$	422,649	$	975,862
2025 February	$	122,292,978	$	420,755	$	975,862
2025 March	$	121,735,969	$	418,853	$	975,862
2025 April	$	121,177,052	$	416,946	$	975,862
2025 May	$	120,616,221	$	415,031	$	975,862
2025 June	$	120,053,469	$	413,111	$	975,862
2025 July	$	119,488,790	$	411,183	$	975,862
2025 August	$	118,922,176	$	409,249	$	975,862
2025 September	$	118,353,623	$	407,308	$	975,862
2025 October	$	117,783,121	$	405,361	$	975,862
2025 November	$	117,210,666	$	403,407	$	975,862

2025 December	$	116,636,250	$	401,447	$	975,862
2026 January	$	116,059,867	$	399,479	$	975,862
2026 February	$	115,481,510	$	397,505	$	975,862
2026 March	$	114,901,171	$	395,524	$	975,862
2026 April	$	114,318,845	$	393,537	$	975,862
2026 May	$	113,734,525	$	391,542	$	975,862
2026 June	$	113,148,203	$	389,541	$	975,862
2026 July	$	112,559,874	$	387,533	$	975,862
2026 August	$	111,969,529	$	385,518	$	975,862
2026 September	$	111,377,162	$	383,496	$	975,862
2026 October	$	110,782,766	$	381,467	$	975,862
2026 November	$	110,186,335	$	379,431	$	975,862
2026 December	$	109,587,861	$	377,388	$	975,862
2027 January	$	108,987,337	$	375,338	$	975,862
2027 February	$	108,384,756	$	373,282	$	975,862
2027 March	$	107,780,111	$	371,218	$	975,862
2027 April	$	107,173,396	$	369,147	$	975,862
2027 May	$	106,564,602	$	367,069	$	975,862
2027 June	$	105,953,724	$	364,984	$	975,862
2027 July	$	105,340,753	$	362,892	$	975,862
2027 August	$	104,725,683	$	360,792	$	975,862
2027 September	$	104,108,506	$	358,685	$	975,862
2027 October	$	103,489,215	$	356,572	$	975,862
2027 November	$	102,867,803	$	354,451	$	975,862
2027 December	$	102,244,263	$	352,322	$	975,862
2028 January	$	101,618,587	$	350,187	$	975,862
2028 February	$	100,990,768	$	348,044	$	975,862
2028 March	$	100,360,799	$	345,893	$	975,862
2028 April	$	99,728,673	$	343,736	$	975,862
2028 May	$	99,094,381	$	341,571	$	975,862
2028 June	$	98,457,917	$	339,398	$	975,862
2028 July	$	97,819,273	$	337,218	$	975,862
2028 August	$	97,178,441	$	335,031	$	975,862
2028 September	$	96,535,415	$	332,836	$	975,862
2028 October	$	95,890,186	$	330,634	$	975,862
2028 November	$	95,242,748	$	328,424	$	975,862
2028 December	$	94,593,092	$	326,206	$	975,862
2029 January	$	93,941,211	$	323,981	$	975,862
2029 February	$	93,287,097	$	321,749	$	975,862
2029 March	$	92,630,743	$	319,508	$	975,862
2029 April	$	91,972,141	$	317,260	$	975,862
2029 May	$	91,311,283	$	315,005	$	975,862
2029 June	$	90,648,162	$	312,741	$	975,862
2029 July	$	89,982,769	$	310,470	$	975,862
2029 August	$	89,315,098	$	308,191	$	975,862
2029 September	$	88,645,140	$	305,904	$	975,862
2029 October	$	87,972,887	$	303,610	$	975,862

2029	November	$	87,298,332	$	301,307	$	975,862
2029	December	$	86,621,466	$	298,997	$	975,862
2030	January	$	85,942,282	$	296,679	$	975,862
2030	February	$	85,260,772	$	294,352	$	975,862
2030	March	$	84,576,928	$	292,018	$	975,862
2030	April	$	83,890,741	$	289,676	$	975,862
2030	May	$	83,202,205	$	287,326	$	975,862
2030	June	$	82,511,310	$	284,968	$	975,862
2030	July	$	81,818,049	$	282,601	$	975,862
2030	August	$	81,122,413	$	280,227	$	975,862
2030	September	$	80,424,395	$	277,844	$	975,862
2030	October	$	79,723,986	$	275,454	$	975,862
2030	November	$	79,021,178	$	273,055	$	975,862
2030	December	$	78,315,964	$	270,648	$	975,862
2031	January	$	77,608,333	$	268,232	$	975,862
2031	February	$	76,898,280	$	265,809	$	975,862
2031	March	$	76,185,794	$	263,377	$	975,862
2031	April	$	75,470,868	$	260,936	$	975,862
2031	May	$	74,753,493	$	258,488	$	975,862
2031	June	$	74,033,661	$	256,031	$	975,862
2031	July	$	73,311,364	$	253,565	$	975,862
2031	August	$	72,586,593	$	251,091	$	975,862
2031	September	$	71,859,340	$	248,609	$	975,862
2031	October	$	71,129,596	$	246,118	$	975,862
2031	November	$	70,397,352	$	243,619	$	975,862
2031	December	$	69,662,601	$	241,111	$	975,862
2032	January	$	68,925,333	$	238,594	$	975,862
2032	February	$	68,185,540	$	236,069	$	975,862
2032	March	$	67,443,213	$	233,535	$	975,862
2032	April	$	66,698,343	$	230,993	$	975,862
2032	May	$	65,950,923	$	228,442	$	975,862
2032	June	$	65,200,942	$	225,882	$	975,862
2032	July	$	64,448,393	$	223,313	$	975,862
2032	August	$	63,693,266	$	220,736	$	975,862
2032	September	$	62,935,553	$	218,149	$	975,862
2032	October	$	62,175,245	$	215,554	$	975,862
2032	November	$	61,412,333	$	212,950	$	975,862
2032	December	$	60,646,808	$	210,337	$	975,862
2033	January	$	59,878,661	$	207,715	$	975,862
2033	February	$	59,107,883	$	205,084	$	975,862
2033	March	$	58,334,465	$	202,444	$	975,862
2033	April	$	57,558,398	$	199,796	$	975,862
2033	May	$	56,779,673	$	197,138	$	975,862
2033	June	$	55,998,281	$	194,470	$	975,862
2033	July	$	55,214,213	$	191,794	$	975,862
2033	August	$	54,427,459	$	189,109	$	975,862
2033	September	$	53,638,011	$	186,414	$	975,862

2033 October	$	52,845,859	$	183,710	$	975,862
2033 November	$	52,050,993	$	180,997	$	975,862
2033 December	$	51,253,405	$	178,275	$	975,862
2034 January	$	50,453,086	$	175,543	$	975,862
2034 February	$	49,650,025	$	172,802	$	975,862
2034 March	$	48,844,214	$	170,051	$	975,862
2034 April	$	48,035,643	$	167,291	$	975,862
2034 May	$	47,224,303	$	164,522	$	975,862
2034 June	$	46,410,184	$	161,743	$	975,862
2034 July	$	45,593,276	$	158,955	$	975,862
2034 August	$	44,773,571	$	156,157	$	975,862
2034 September	$	43,951,058	$	153,349	$	975,862
2034 October	$	43,125,728	$	150,532	$	975,862
2034 November	$	42,297,571	$	147,706	$	975,862
2034 December	$	41,466,578	$	144,869	$	975,862
2035 January	$	40,632,739	$	142,023	$	975,862
2035 February	$	39,796,043	$	139,167	$	975,862
2035 March	$	38,956,482	$	136,301	$	975,862
2035 April	$	38,114,046	$	133,426	$	975,862
2035 May	$	37,268,724	$	130,541	$	975,862
2035 June	$	36,420,507	$	127,645	$	975,862
2035 July	$	35,569,385	$	124,740	$	975,862
2035 August	$	34,715,348	$	121,825	$	975,862
2035 September	$	33,858,385	$	118,900	$	975,862
2035 October	$	32,998,488	$	115,965	$	975,862
2035 November	$	32,135,645	$	113,020	$	975,862
2035 December	$	31,269,848	$	110,065	$	975,862
2036 January	$	30,401,084	$	107,099	$	975,862
2036 February	$	29,529,346	$	104,124	$	975,862
2036 March	$	28,654,621	$	101,138	$	975,862
2036 April	$	27,776,901	$	98,142	$	975,862
2036 May	$	26,896,174	$	95,136	$	975,862
2036 June	$	26,012,431	$	92,119	$	975,862
2036 July	$	25,125,662	$	89,093	$	975,862
2036 August	$	24,235,855	$	86,055	$	975,862
2036 September	$	23,343,000	$	83,008	$	975,862
2036 October	$	22,447,087	$	79,950	$	975,862
2036 November	$	21,548,106	$	76,881	$	975,862
2036 December	$	20,646,046	$	73,802	$	975,862
2037 January	$	19,740,896	$	70,713	$	975,862
2037 February	$	18,832,647	$	67,613	$	975,862
2037 March	$	17,921,286	$	64,502	$	975,862
2037 April	$	17,006,804	$	61,380	$	975,862
2037 May	$	16,089,190	$	58,248	$	975,862
2037 June	$	15,168,433	$	55,105	$	975,862
2037 July	$	14,244,522	$	51,952	$	975,862
2037 August	$	13,317,448	$	48,787	$	975,862

2037	September	$	12,387,197	$	45,612	$	975,862
2037	October	$	11,453,761	$	42,426	$	975,862
2037	November	$	10,517,128	$	39,229	$	975,862
2037	December	$	9,577,287	$	36,021	$	975,862
2038	January	$	8,634,226	$	32,802	$	975,862
2038	February	$	7,687,936	$	29,572	$	975,862
2038	March	$	6,738,405	$	26,331	$	975,862
2038	April	$	5,785,622	$	23,079	$	975,862
2038	May	$	4,829,575	$	19,816	$	975,862
2038	June	$	3,870,254	$	16,541	$	975,862
2038	July	$	2,907,647	$	13,256	$	975,862
2038	August	$	1,941,743	$	9,959	$	975,862
2038	September	$	972,531	$	6,650	$	975,862
2038	October	$	(0)	$	3,331	$	975,862