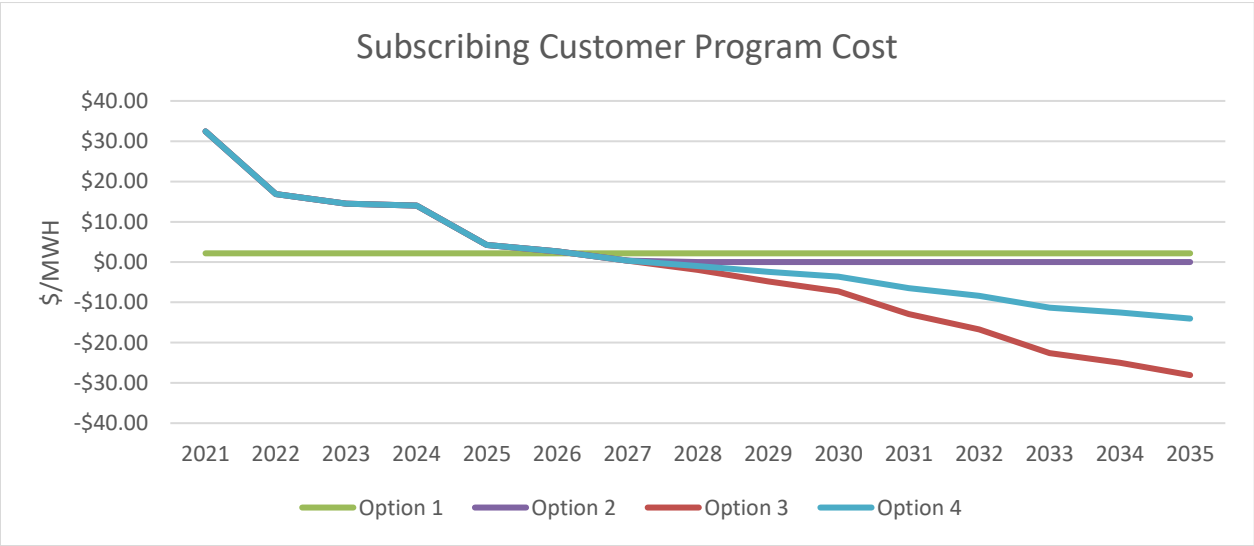
BEFORE THE PUBLIC UTILITY COMMISSION

OF OREGON

Docket No. UM 1953

In the Matter of PORTLAND GENERAL ELECTRIC, Investigation into Proposed Green Tariff	Staff's Reply to PGE's Response to Bench Request

Staff and PGE's recommended pricing methodology for a fixed energy credit are both the same. Staff is unaware what specific methodology PGE is modeling in its floating credit scenario, as a preferred method was not outlined by the Company either in its testimony or its response to the bench request. For the purposes of this Bench Request, Staff assumes PGE's methodology closely matches Staff's as the foregone cost of energy and the price of the energy credit are shown to move in lockstep. If PGE implements a different floating credit mechanism, the conclusions herein, which are based on Staff's methodology, could be affected. A perfect matching could only be accomplished using Staff's "MONET with and without" methodology as outlined in Staff/200, Gibbens/16.



The chart above utilizes the same assumptions as PGE for simplicity. Option 1 and 3 correspond to the fixed and floating credit, respectively, which PGE illustrated in its response to the Bench request.

Importantly, Staff and PGE have differing capacity credit methodologies. Staff continues to propose the use of the RECAP model utilized in PGE's IRP, while PGE proposes to use the QF methodology. However in the illustrative example above, both forecasts are assumed to be "correct" and as such there is no material difference in the credit to participants. Meaning that if both methodologies accurately forecast the value of capacity to the system, they would result in the same valuation. Options 2, 3, and 4 all provide the same result until the credit begins to eclipse the cost of the PPA. At this point (2027), Option 2 does not allow the credit to go negative, while Option 4 would allow for negative pricing but would split the overall cost savings between participants and COS customers.

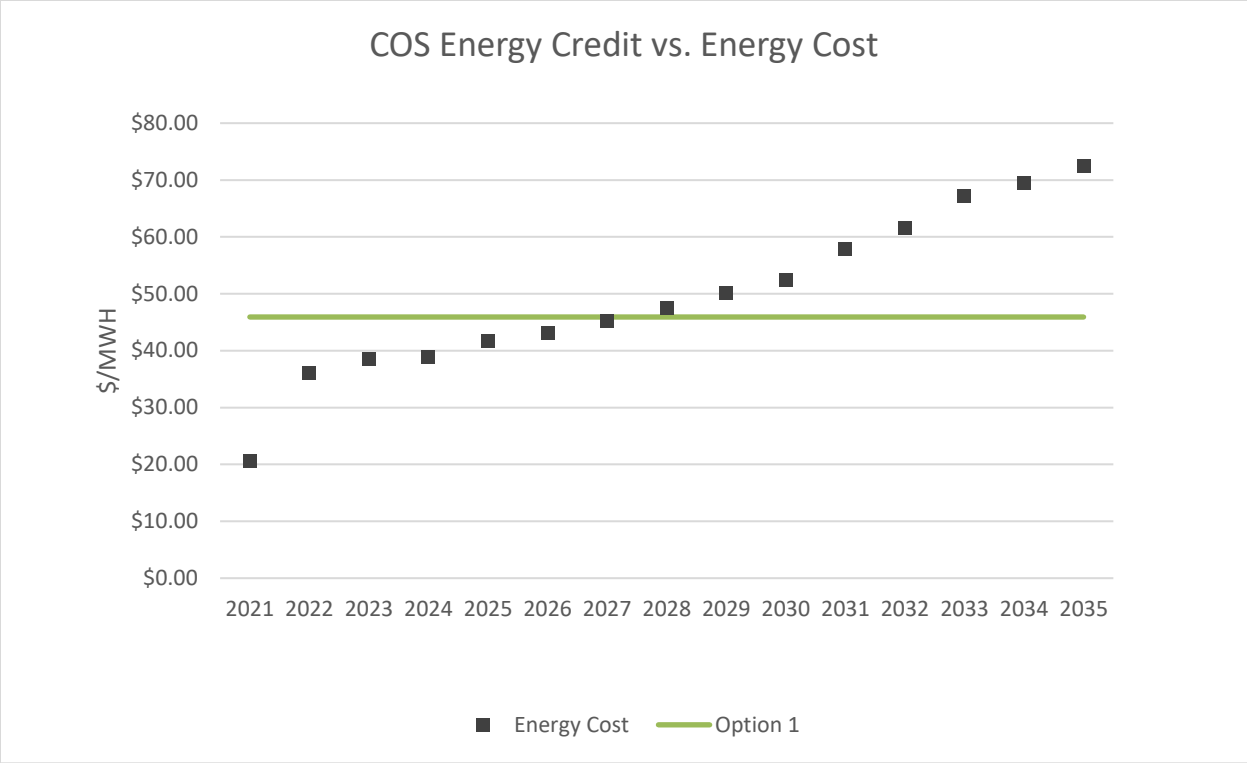
<u>Pricing Options utilizing Staff's recommended energy and capacity credit methodologies:</u>

Option 1: Fixed energy and capacity credit (Staff's preferred Option)

How it works: Under both a PGE PPA or "bring your own PPA" option, PGE would calculate the forecasted energy and capacity value based on the most recent IRP forecasts for each. These two values would be fixed for each participant at the time it subscribed to the program. If a customer decides to re-enroll after its initial subscription period or a new subscriber joins in a subsequent year, the credit would be calculated for that customer during the subscribed period using the most up-to-date IRP values (i.e. the methodology would be the same, but the value would likely be different).

What subscribers pay: Green tariff program subscribers continue to pay COS rates for the energy they use and the actual cost for their portion of the PPA. They will then be credited for the energy from the PPA according the fixed value set at the time of their entrance into the program.

What COS customers pay: Regular COS rates minus the regular cost to provide the same amount of energy as the PPA, which will be removed from the AUT forecast. In addition, Regular COS customers pay the energy and capacity credit to green tariff subscribers. The energy and capacity credit could be a net benefit or net cost depending on the forecast accuracy and market conditions.



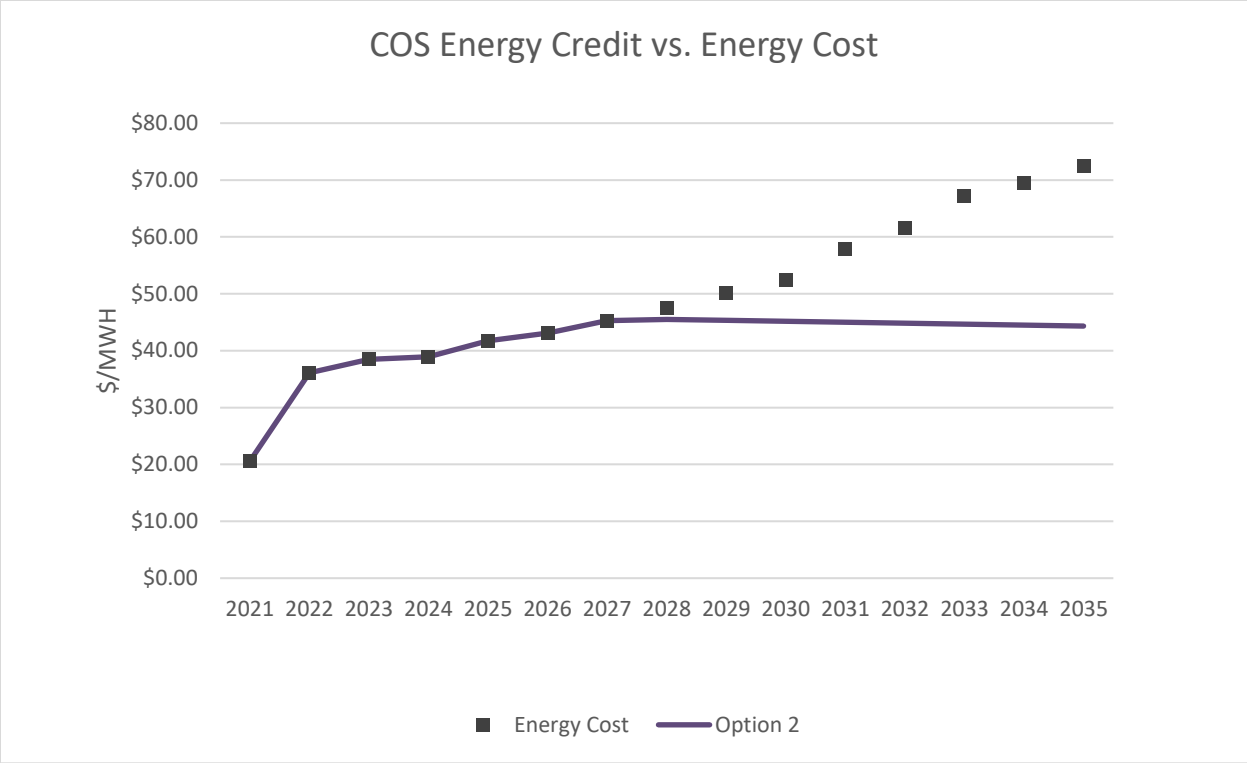
The fixed credit levelizes the cost of energy over the subscriber's subscription term. In an increasing price scenario, this results in paying higher prices in the short-term and lower prices in the long-term. This is effectively a hedge for COS customers and green tariff subscribers.

Option 2: Limited Floating Energy and Capacity Credit

How it works: Under both a PGE PPA or "bring your own PPA" option, PGE would calculate the energy credit and capacity credit for the first year of the program and provide participants with an estimated credit based on IRP forecasts. These two amounts would then be updated at regular intervals –the energy credit would be updated on an annual basis through the AUT and the capacity credit would be updated on a bi-annual basis following IRP acknowledgement.

What subscribers pay: Green tariff program subscribers continue to pay COS rates for the energy they use and the actual cost for their portion of the PPA. They will then be credited for the energy from the PPA according to the price difference between a MONET model run that includes the VRET PPA priced as free power (or a corresponding decrease to load) and a MONET model run that does not include the PPA. If the difference between the two MONET runs and the capacity credit is greater than the total cost of participation to a subscriber, then the credit will be equal to the total cost of participation. In this scenario, green tariff program subscribers simply pay COS rates.

What COS customers pay: Regular COS rates minus the regular cost to provide the same amount of energy as the PPA, which will be removed from the AUT forecast. In addition, Regular COS will pay the energy and capacity credit. Staff notes that because the credits are equal to the foregone energy while the green energy program is more expensive than PGE's regular power costs, COS customers ultimately pay regular COS rates. The energy credit will always be at or below regular COS rates, and as such, COS customers are held harmless. The capacity credit could be a net benefit or cost depending on the forecast accuracy.



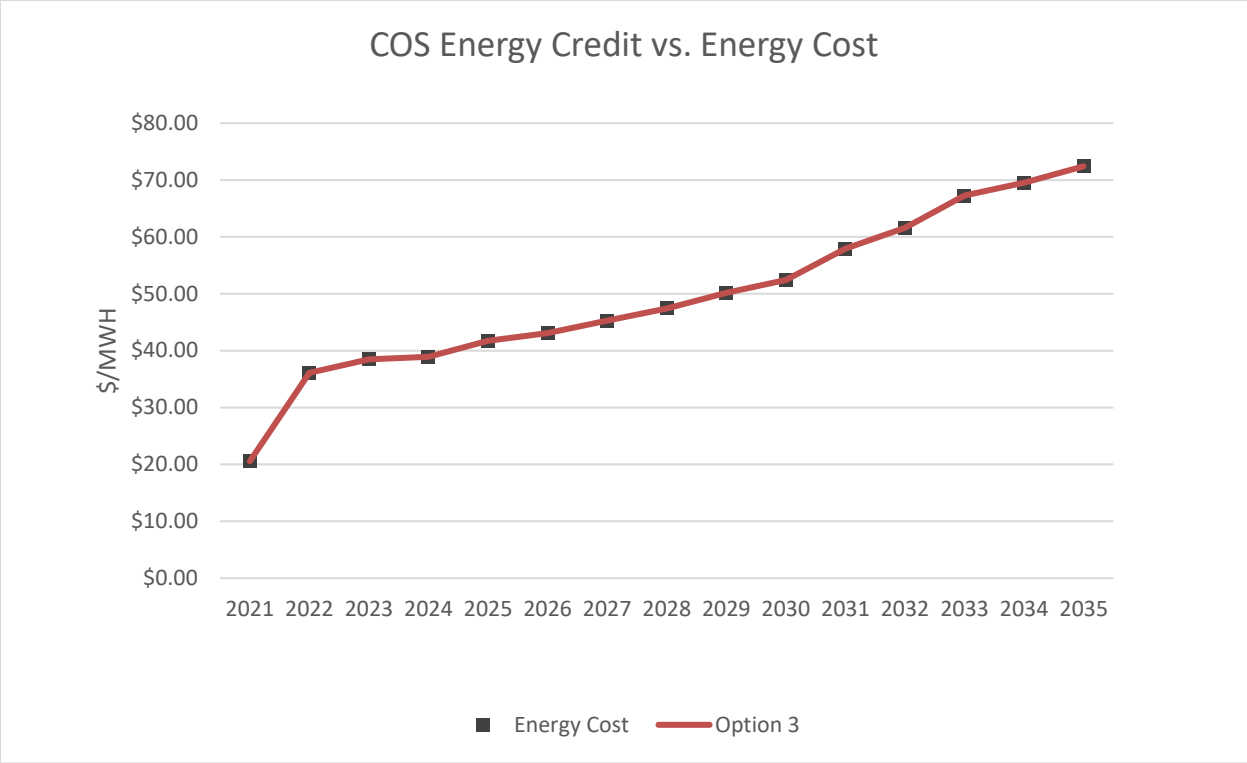
When prices are increasing and the PPA price is fixed, Option 2 will keep COS power prices below foregone costs for the period nearing the end of the PPA timeline. The point at which the line flattens means that subscribers are recovering exactly the cost of the VRET program—they pay no more or no less than COS customers.

Option 3: Freely Floating Energy and Capacity Credit

How it works: Same as Option 2.

What subscribers pay: Green tariff program subscribers continue to pay their COS rates for the energy they use and the actual cost for their portion of the PPA. They will then be credited for the energy from the PPA according to the price difference between a MONET model run that includes the VRET PPA priced as free power (or a corresponding decrease to load) and a MONET model run that does not include the PPA.

What COS customers pay: Regular COS rates minus the regular cost to provide the same amount of power as the PPA, which will be removed from the AUT forecast. In addition, they will pay the energy and capacity credit. The energy credit is equal to the cost of foregone power, meaning that COS customers will continue to pay COS rates. The capacity credit could be a net benefit or cost depending on the forecast accuracy; however, provided an unbiased forecast, the capacity credit should result in no overall impact to COS rates.



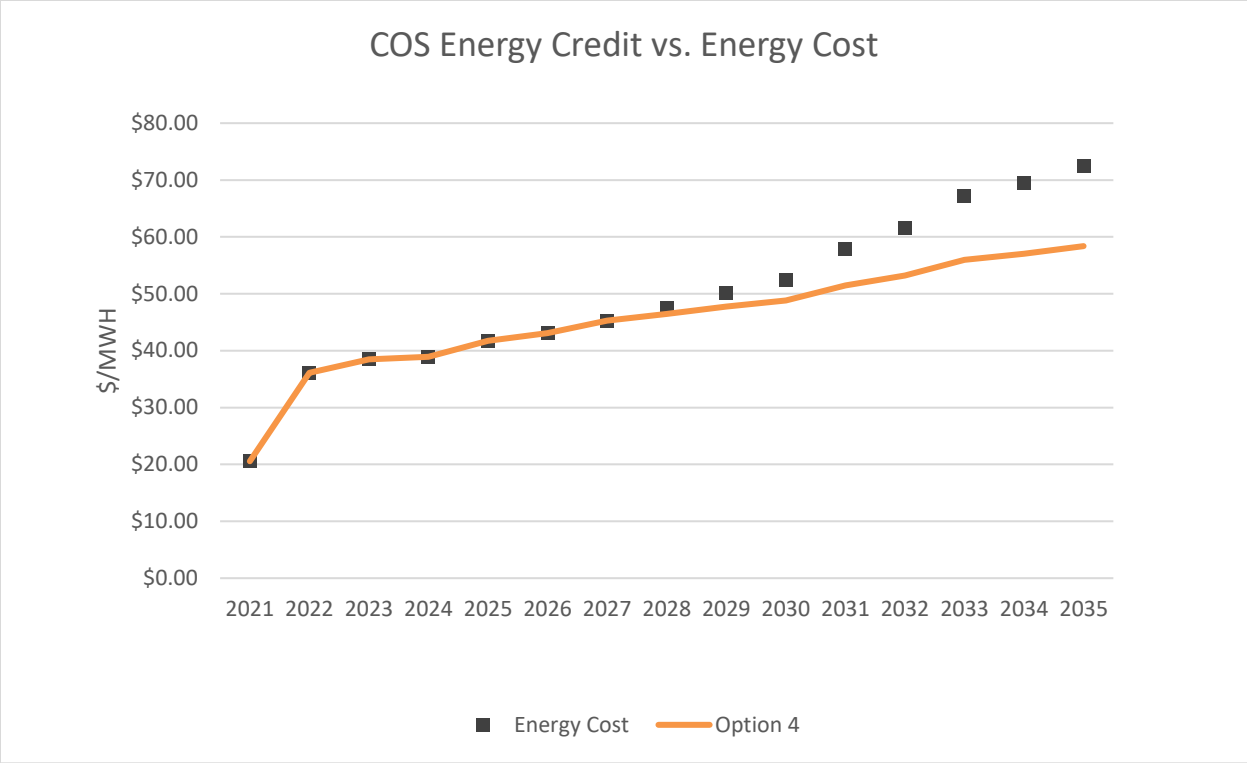
Option 3 matches energy cost and the price paid by COS customers exactly.

Option 4: Sharing Floating Energy and Capacity Credit

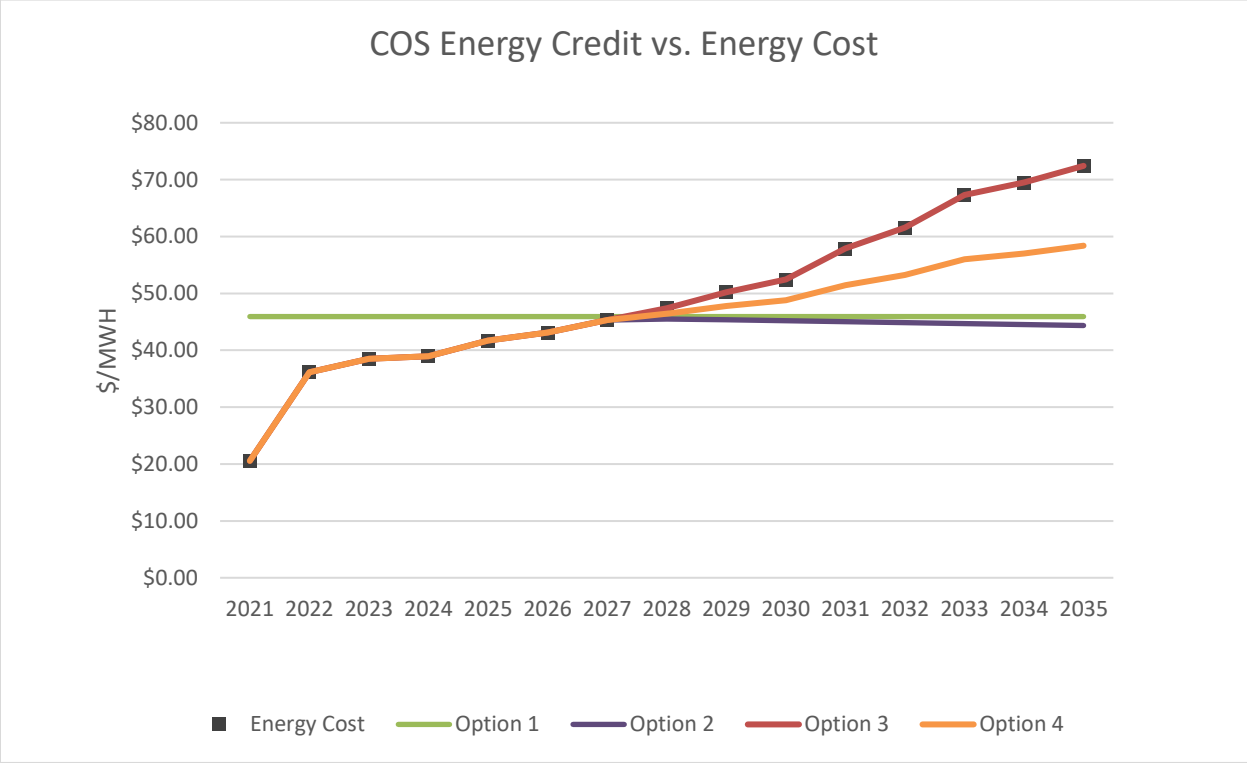
How it works: Same as Option 2

What subscribers pay: Green tariff program subscribers continue to pay their COS rates for the energy they use and the actual cost for their portion of the PPA. They will then be credited for the energy from the PPA according to the price difference between a MONET model run that includes the VRET PPA priced as free power (or a corresponding decrease to load) and a MONET model run that does not include the PPA. In circumstances where the green tariff program cost is less than PGE's power cost, subscribers will pay half of the difference.

What COS customers pay: Regular COS rates minus the regular cost to provide the same amount of energy as the PPA, which will be removed from the AUT forecast. In addition, COS customers pay the energy and capacity credit. The energy credit will always be at regular COS rates or less than COS rates; as such, COS customers are always better off. The capacity credit could be a net benefit or net cost depending on the forecast accuracy.



Option 4 splits the energy cost savings between COS and participants. As such, as prices increase, the gap between realized cost and replacement energy cost grows.

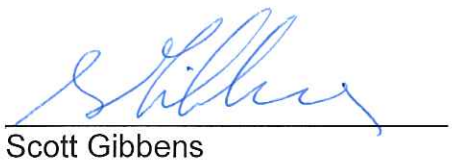


Pricing Methodologies in Varying Market Conditions

The conclusions drawn from varying market conditions mirror PGE's response.[1] In any mechanism that a forecast is made, if market prices are higher than expected, the result is a benefit for COS customers to the detriment of VRET participants. The exact opposite is true when prices are lower than expected. That is, if market prices are lower than expected, VRET customers benefit to the detriment of COS customers. Staff notes that because COS customers' rates are based on a one-year forecast, they also experience similar risks from differences in market price expectations. When prices are higher than expected, customers benefit to the detriment of PGE shareholders and vice versa. Shareholders and COS customers mitigate this risk somewhat through the PCAM; however, this mechanism is designed to change rates only in extreme cases and as such does not trigger rate changes in most market expectation errors. Option 2 and Option 4 are only different from Option 3 when the credit is greater than the total cost of the VRET program. The difference in expectation between actual and realized market prices has no effect on the differences between Staff's floating price options (Options 2 and 3). This is not the case for all floating mechanisms, however. A real-time spot market valuation would subject COS customers to greater variability in power costs than they currently have now under the AUT structure. The AUT effectively averages a year's worth of market prices into rates, as the spot market changes, COS customers see no change in their rates.[2] However, in a real-time credit mechanism, COS customers would be subject to any changes in the spot market. Other mechanisms which rely on other means to update the credit would likewise see changes to COS and participant rates due to mismatches in the expected prices set in the AUT and the credit price set in whatever methodology chosen.

This concludes Staff's reply.

Dated at Salem, Oregon, this 13th day of November, 2018.



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Energy Rates, Finance and Audit

[1] PGE's response to UM 1953 Bench Request, page 3.

[2] As noted earlier, Staff assumes that most spot market changes will not trigger a PCAM rate change. In the extreme, they could results in changes to COS rates.