

PUBLIC UTILITY COMMISSION OF OREGON
STAFF REPORT
PUBLIC MEETING DATE: September 27, 2016

REGULAR _____ CONSENT X EFFECTIVE DATE _____ Upon Commission Approval

DATE: September 27, 2016

TO: Public Utility Commission

FROM: John Crider ^{JC}
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THROUGH: Jason Eisdorfer and Michael Dougherty ^m

SUBJECT: OREGON PUBLIC UTILITY COMMISSION STAFF: (Docket No. UM 1432). Establish the Alternative Compliance Payment Rate for 2018 and 2019 Pursuant to ORS 469A.180.

STAFF RECOMMENDATION:

Staff recommends the Commission adopt a renewable portfolio standard (RPS) alternative compliance payment (ACP) rate of \$90 per MWh for 2018 and 2019 for Portland General Electric, PacifiCorp, and all electricity service suppliers, pursuant to ORS 469A.180

DISCUSSION:

Issue

Whether to adopt the proposed ACP rate of \$90 per megawatt-hour (MWh) for 2018 and 2019 for Portland General Electric (PGE), PacifiCorp, and all electricity service suppliers (ESS).

Applicable Law

Under ORS 469A.180, an electric company or an ESS may elect to comply with the RPS by making an ACP. Under ORS 469A.180(1), the Commission shall establish the ACP rate in dollars per MWh.

Under ORS 469A.180(2):

"In establishing an alternative compliance rate, the commission shall set the rate to provide adequate incentive for the electric company or electricity service

supplier to purchase or generate qualifying electricity in lieu of using alternative compliance payments to meet the renewable portfolio standard applicable to the company or supplier.”

Further under ORS 469A.180(2), Commission considerations to set the ACP rate must include:

“the cost of qualifying electricity, contracts that the electric company or electricity service supplier has acquired for future delivery of qualifying electricity and the number of unbundled renewable energy certificates that the company or supplier anticipates using in the compliance year to meet the renewable portfolio standard applicable to the company or supplier.”

OAR 860-083-0500(1) requires that no later than October 1 of even-numbered calendar years the Commission will set an ACP for the next even-numbered compliance year and the following odd-numbered year. As a result, the ACP recommended in this Staff Report is for 2018 and 2019.

Discussion and Analysis

The ACP is intended to incent the electric company or ESS to purchase or generate qualifying electricity in lieu of using ACPs to meet the renewable portfolio standard. Staff recommends that the Commission set the rate at the lowest rate needed to incent the utilities and ESSs to purchase or generate qualifying electricity. Below are some considerations on determining the ACP rate:

- Regional REC wholesale prices: PGE’s 2015 RPS Compliance Report reports the average weighted cost of unbundled renewable energy certificates (REC) at about \$3.30 per MWh. (An unbundled REC represents the environmental attributes of the underlying power that is generated but is purchased separately from the power).
- National REC retail prices: As reported in the 2016 U.S. Energy Information Administration (EIA) Annual Energy Outlook, the latest reported prices for RECs range from \$1.50 to about \$25.00 per MWh. (Please see Table on Page 5)
- Western energy markets: The PacifiCorp 2015 Integrated Resource Plan (IRP) Update included market electricity price forecasts for the Mid-Columbia and Palo Verde trading hubs. For 2018 and 2019, the average price at these hubs is around \$30 per MWh.
- EIA Energy Outlook (2016): Includes estimates of the average levelized costs for generation facilities entering service in 2022. The costs are presented in 2016

dollars per MWh without continued tax credits. The costs for selected resource technologies are summarized in the table below.

Summary of Estimates of Average Levelized Costs for Generation Facilities Entering Service in 2022

<i>Resource Technology</i>	<i>LCOE (\$/MWh)</i>
Natural Gas Combined Cycle Combustion Turbine	\$56.40
Wind	50.90
Solar PV*	58.20

**Solar PV costs are expressed in terms of net AC power available to the grid for the installed capacity.*

- PacifiCorp's 2015 IRP update includes estimates of the average levelized costs for generation facilities entering service in 2017. The costs are presented in 2014 dollars per MWh without continued tax credits. The costs for selected resource technologies are summarized in the table below.

Resource Technology	2014 \$/MWh
Natural Gas Combined Cycle Combustion Turbine	66-74
Wind	41-60
Solar PV	69-88

In summary, the following shows the ACP rates from 2012 to 2019

Summary of Alternative Compliance Payment (ACP) Rates*

	Date Set**	Rate \$/MWh	Year Applied
	1-Oct-10	\$50	2012-2013
	1-Oct-12	\$110	2014-15
	21-Jul-15	\$110	2016-17***
<i>Proposed</i>	1-Oct-16	\$90	2018-19

**Rates set pursuant to ORS 469A.180. OPUC Docket UM1432(1).*

***OAR 860-083-0500(1) requires that no later than October 1 of even-numbered calendar years the Commission will set an ACP for the next even-numbered compliance year and the following odd-numbered year.*

****The alternative compliance payment rate for 2016-17 was approved at the July 21, 2015 Commission meeting as consent item 6.*

Conclusion

Based on the survey of estimated costs of new resources, it appears that an ACP rate just above the high solar price is likely the lowest rate needed to incent electric companies and ESSs to purchase or generate qualifying electricity. This is the primary criterion for setting the ACP rate in ORS 469A.180(2). Assessing the prices in the survey, after accounting for estimation error and adjusting to 2016\$, it appears that a rate above the solar price of \$89 would be a reasonable estimate of the needed ACP.

Staff therefore recommends that the alternative compliance payment rate be set at \$90 per MWh for 2018 and 2019 for Portland General Electric, PacifiCorp, and all electricity service suppliers, be adopted pursuant to ORS 469A.180.

PROPOSED COMMISSION MOTION:

Adopt the alternative compliance payment rate of \$90 per MWh for 2018 and 2019 for Portland General Electric, PacifiCorp, and all electricity service suppliers, pursuant to ORS 469A.180.

<http://apps3.eere.energy.gov/greenpower/markets/certificates.shtml?page=1>
 Table of national REC prices

National Retail REC Products (Validated January 2015 with regular updates)					
Certificate Marketer	Product Name	Renewable Resources	Location of Renewable Resources	Residential Price Premiums*	Certification
3Degrees	National Renewable Energy Certificates	100% wind, solar, geothermal, low-impact hydro, biogas, biomass	Nationwide	0.5¢/kWh-1.5¢/kWh	Green-e Energy
3 Phases Renewables	Green Certificates	100% biomass, geothermal, hydro, solar, wind	Nationwide	1.2¢/kWh	Green-e Energy
Arcadia Power	Wind Energy	100% new wind	Nationwide	0.5¢/kWh-1.5¢/kWh	Green-e Energy
Bonneville Environmental Foundation	Renewable Energy Certificates	wind, low-impact hydro, biogas, landfill gas, geothermal, solar	Nationwide	0.8¢/kWh	Green-e Energy
Carbon Solutions Group	CSG CleanBuild	biomass, biogas, wind, solar, hydro	Nationwide	0.15¢/kWh - 0.5¢/kWh	Green-e Energy
Community Energy	NewWind Energy	100% new wind	Nationwide	2.5¢/kWh	Green-e Energy
EDP Renewables	US Wind	100% wind	Nationwide	0.8¢/kWh	—
Green Core Electric	Wind Energy	100% new wind	Nationwide	1.0¢/kWh	Green-e Energy Certified RECs only
Mass Energy Consumers Alliance	New England Wind Friends	100% new wind	New England	5.0¢/kWh (contribution)	—
North American Power	American Wind	100% wind	Nationwide	1.5¢/kWh	Green-e Energy
NuPath Energy	NuSource1	wind, solar	Nationwide	1.2¢/kWh	Independent 3rd party
NuPath Energy	NuSourceNY	wind, small hydro	NY/nationwide	1.6¢/kWh	Independent 3rd party
Renewable Choice Energy	American Wind	100% new wind	Nationwide	2.0¢/kWh	Green-e Energy
REpowerNow	REpower Credits	wind, solar, hydro	Wisconsin	2.5¢/kWh	—
Santee Cooper	SC Green Power	landfill gas, solar	South Carolina	3.0¢/kWh	Green-e Energy
Sky Energy, Inc.	WIND-F Renewable Energy	100% wind	Nationwide	2.4¢/kWh	—
SRECTrade					
Sterling Planet	Sterling Wind	100% new wind	Nationwide	1.5¢/kWh	Green-e Energy
WindCurrent	Chesapeake Windcurrent	100% new wind	Mid-Atlantic States	1.5¢/kWh	—

Notes:
 * Product prices are updated as of January 2015. Premium may also apply to small commercial customers. Large users may be able to negotiate price premiums.