

February 17, 2016

VIA ELECTRONIC FILING

Public Utility Commission of Oregon
201 High Street SE, Suite 100
Salem, OR 97301-1166

Attn: Filing Center

**RE: Advice No. 16-03
Schedule 215—Irrigation Time-of-Use Pilot Supply Service**

In compliance with ORS 757.205, OAR 860-022-0025, and OAR 860-022-0030, PacifiCorp d/b/a Pacific Power (Company), submits for filing the following proposed tariff pages associated with Tariff P.U.C. OR No. 36, which sets forth all rates, tolls, charges, rules, and regulations applicable to electric service in Oregon. The Company requests an effective date of March 23, 2016.

Third Revision of Sheet No. 215-1	Schedule 215	Irrigation Time-of-Use Pilot Supply Service
Third Revision of Sheet No. 215-2	Schedule 215	Irrigation Time-of-Use Pilot Supply Service

The purpose of this filing is to present the results of the survey conducted with participants in the Company's pilot time-of-use rate program for irrigation customers (pilot) and to propose to extend and expand the program. The purpose of the pilot is to test the interest, willingness, and ability of irrigators in Oregon to shift their usage away from designated on-peak periods. The pilot was initially designed as a two year program and first implemented in 2014. Due to low participation in the first year of the program, the Company requested and the Commission approved a concentration and expansion of the pilot to approximately 95 meters in the Klamath Falls area.

On December 1, 2015, the Company filed a compliance report to Advice Nos. 14-005, 15-003 and 15-006 describing the pilot and presenting the an initial evaluation showing that 80 out of 91 participating meters saved money during the 2015 summer pilot season by shifting or reducing on-peak energy usage with an average summer bill savings of 28 percent. A survey was sent to pilot participants in November 2015 but a full analysis of the survey responses had not yet been completed at the time of the compliance report filing. The Company has since completed this analysis and presents it here.

Pilot Participant Survey and Energy Analysis Results

The Company mailed surveys to all pilot participants. The response rate was very good at over 50 percent. Below are the key findings from the survey results:

- Program Satisfaction. When asked to rate their satisfaction with the pilot participation on a scale of one to ten where ten is completely satisfied, 74 percent of respondents rated their satisfaction as eight or higher. The main reasons cited for high satisfaction were ease of participation and monetary savings. No respondent rated their satisfaction with the program below a six. The reasons cited for lower satisfaction levels were lower than expected savings, logistics issues and reduced crop production.
- Reasons for Pilot Participation. Not surprisingly, 100 percent of survey respondents indicated that saving money on their energy bill was a main motivation for joining the pilot.
- Program Savings and Perceptions of Savings. When asked about their perceived savings under the pilot, 85 percent of survey respondents thought that they saved money under the pilot. Two respondents thought they did not save money. In actuality, all of the respondents to the survey saved money by participating in the pilot (with the exception of two respondents who had no usage over the summer and were billed \$0). The average summer bill savings of survey respondents was 25 percent. This correlates with the savings statistics for the whole of the pilot participants with 92 percent saving money with an average savings of 28 percent. Seven pilot participants paid slightly more under the pilot than they would have under standard rates; however no customer paid more than three percent extra.
- On-Peak Energy Savings. Overall, pilot participants used just two percent of their energy on-peak during the pilot which shows an energy shift when compared to the class average of 12 percent on-peak. Survey responses indicate that the majority of pilot participants did shift usage out of the on-peak period into the off-peak period, though some participants simply pumped less overall and a few already performed all pumping off-peak.
- Changes in Usage Patterns. Water availability in 2015 certainly affected irrigation in the Klamath Basin. The governor of Oregon declared a 2015 state of drought emergency in Klamath County on April 6th, 2015¹. Over half of the survey respondents indicated that they pumped less overall in the summer of 2015 than they would have typically. Some indicated that they pumped less due to participation in the pilot; however many indicated that water availability affected the overall amount they used their pumps. Some write-in responses revealed that certain irrigators planted less acreage in the summer of 2015 than would be typical. Some pilot participants did not pump at all in 2015. It also seems likely that some irrigators did not choose to participate in the pilot due to the early expectation of a low water year for 2015.

Although 64 percent of respondents rated the cost of electricity as very important in deciding when and how much to irrigate, overwhelmingly respondents specified the most important factor in making watering decisions is soil moisture and the needs of the crop.

¹ Office of the Governor, State of Oregon, Executive Order 15-03.

- Influences for On-Peak Usage. Although all respondents to the survey saved money under the pilot, many still had on-peak usage during the summer. When questioned as to the reason for this on-peak usage, 56 percent of respondents who were aware they had on-peak usage indicated that the usage was accidental. The main reason given for on-peak usage other than accidental usage was that crops would be harmed if watering did not occur during those hours. One respondent cited timing of water availability from their irrigation district as a reason for needing to pump on-peak. One respondent indicated that the pump was used for flood irrigation which required it to run 24 hours a day, seven days a week.
- Tools for Shifting Usage. Timers used to turn on and shut off pumps automatically would seem to be a useful tool to help irrigators participate in time-of-use rates. Only 36 percent of respondents indicated that their pumps were connected to timers to irrigate at certain times, with the majority of those installed specifically to participate in the pilot. Reviewing on/off-peak usage for all respondents reveals that in 2015 respondents with timers were not significantly better able to shift usage away from on-peak than participants who did not have timers. Another survey question revealed that 79 percent of respondents scrutinized their pump usage more closely under the pilot than they would have otherwise. This increased scrutiny, contrasted with a learning curve for using new timers (which resulted in accidental on-peak usage), may have leveled the field between irrigators with and without timers for this initial irrigation season of evaluation. Forty-four percent of irrigators would consider purchasing equipment, including timers, to assist with shifting energy if they were to enroll in a permanent time-of-use rate. Further study is needed to determine if timers are a worthwhile tool in helping irrigators to shift energy use to off-peak.
- Problems with Pilot Participation. Eight respondents indicated that participating in the pilot caused or may have caused complications with irrigation over the summer. There was no general thread to the issues encountered – each irrigator encountering problems seems to have had specific issues. Issues listed include: conflict with the irrigation district water availability/wasting water when provided with flood irrigation, crops growing less abundantly due to lack of water, water pattern coverage problems, completing full pattern irrigation before on-peak cut off, having to prime pumps more frequently and at odd hours, timer malfunctions, possible orchard disease caused by extra night watering (could also be related to rainy weather instead). One respondent indicated that the pilot worked for them this year because of periodic rains but may not work under other dry weather patterns. It seems likely that some of these issues that have now been identified could be addressed by participants if these customers were allowed to continue participation in the pilot. One respondent indicated in comments that although savings this year were less than expected, they could plan better next time to take advantage of off-peak rates.
- Understanding of Program. The vast majority of respondents indicated that they had a fairly good understanding of the program and many improved their understanding of the

program over the course of the summer of participation. Some respondents showed confusion as to whether or not they had any on-peak usage. This could be due to some confusion as to how to read on- and off- peak usage on the monthly bill. The Company plans to improve communication on how customers can read their bill under the pilot program if the program is approved to continue, as proposed below.

- Likelihood to Participate in TOU in Future. Eighty-five percent of survey respondents probably or definitely would enroll the meters participating in the pilot in a similar ongoing time-of-use program if it were offered to them. Saving money was the most cited reason for this choice. Sixty-five percent of respondents with other irrigation pumps indicated that they probably or definitely would enroll those additional pumps in an ongoing time-of-use program if it were offered, again with the expectation of saving money. A few respondents indicated that they would probably not enroll other pumps in a time-of-use rate, one specifying as a reason that all other pumps were based on flood irrigation. Based on this response and other comments within the survey responses, it appears that pumpers who flood irrigate are less able to shift energy usage and benefit from time-of-use rates. Since this concept was not directly addressed in the survey, further inquiry may be required to determine if this is accurate.

Proposed Tariff Changes

The Company proposes to extend the irrigation time-of-use pilot for two more years through 2017. Due to the low participation in the pilot in 2014, the data for 2015 is essentially the only year of data under the pilot. As 2015 was a low water year for participants with drought declared in Klamath County, a single year of data is unlikely to be representative of typical usage data for the area. Irrigation is particularly sensitive to weather and water conditions, as revealed in the pilot survey responses. Certain customers have expressed an interest and willingness to shift energy usage to off-peak but the ability of some customers to shift energy usage is still unclear. Averaging multiple years of results would give a better picture of the effectiveness of irrigation time-of-use rates and ensure conclusions are as accurate as possible for consideration of the future of irrigation time-of-use rates. If the extension is approved, the Company will send a letter to all participants explaining the extension and giving them the option to remove themselves from the pilot.

The Company also proposes to expand the pilot by reopening enrollment to irrigators on Schedule 41 in the Klamath Falls area, up to an additional 75 meters for a total participation level of approximately 170 meters. Customer interest in participating in the pilot has been high and additional participants would provide additional data for more complete pilot evaluation. Furthermore, comparing data between existing and new participants could provide further insight on customer motives and abilities. Keeping the pilot limited to the Klamath Falls area will continue to simplify pilot implementation and allow the Company to better focus outreach to potential new participants. Last year the Company limited participation to two meters per customer due to a high level of interest in the program. The Company proposes to continue this participation limit. If the expansion is approved, the Company will invite irrigators in the Klamath Falls area to contact the Company and enroll in the program. Participants will be selected on a first come, first served basis.

The Company proposes no changes at this time to the on- and off-peak hours or to the on- and off-peak rate adders of the pilot. Keeping these elements consistent between years will help eliminate changes in program design as causes for changes in customer behavior when year to year data is compared. The Guarantee Payment anticipated in the tariff for customers with bills exceeding ten percent of what their bills would have been under standard rates will continue to apply to customers for their first year of participation in the pilot only. The Company will remind second and third year pilot participants in the letter announcing the continuation of the pilot that the guarantee payment will no longer be applicable to them if they choose to remain on the pilot.

Finally, a provision has been added to the special conditions of the tariff precluding customers from enrolling a meter in both this pilot and a load control pilot at the same time. The Company anticipates filing a separate request for an irrigation load control pilot in the near future. Customers would not benefit from enrolling a meter in both pilots and participation in both pilots at once could muddy the results of both pilots.

To support this filing and meet the requirements of OAR 860-022-0025 and OAR 860-022-0230, the Company submits the tariff sheets listed above along with Attachment A showing the Estimated Summer Monthly Bill Impacts to customers shifting some or all of their usage from on-peak to off-peak.

The proposal to continue the pilot with the existing rate structure will result in rate impacts to existing pilot participants consistent with rate impacts seen in 2015. Rates have been designed to be revenue neutral and therefore will result in no annual rate change. The average pilot participant shifting all of their on-peak usage into off-peak periods could see summer monthly bill savings of 33 percent over standard irrigation rates. Detail on potential monthly savings is shown in Attachment A.

Although time-based rates under the pilot will not begin until June 1, the Company proposes that tariffs become effective on March 23, 2016, to allow time to contact existing customers and enroll new participants prior to the rate effective period.

It is respectfully requested that all formal data requests regarding this matter be addressed to:

By E-Mail (preferred): datarequest@pacificorp.com

By regular mail: Data Request Response Center
PacifiCorp
825 NE Multnomah, Suite 2000
Portland, Oregon, 97232

Informal questions may be directed to Erin Apperson, Manager, Regulatory Affairs, at (503) 813-6642.

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Sincerely,

A handwritten signature in black ink that reads "R. Bryce Dalley" with a stylized flourish at the end.

R. Bryce Dalley
Vice President, Regulation
Enclosures

IRRIGATION TIME-OF-USE PILOT SUPPLY SERVICE
Purpose

To implement a pilot program for optional time-of-use rates for irrigation customers.

Available

To areas served by the Company in and around Klamath Falls and Albany, Oregon.

Applicable

To agricultural irrigation or agricultural soil drainage pumping Consumers receiving Delivery Service under Schedule 41, in conjunction with Supply Service Schedule 201, who have been invited to participate in this pilot and who elect to take this service. New participation in 2016 will be limited to approximately seventy-five (75) metered points of delivery. No more than two metered points of delivery belonging to one Consumer will be allowed into the pilot. (C)
(C)
(C)

Monthly Billing

The Monthly Billing shall be the Energy Charge. The Monthly Billing is in addition to all other charges contained in Delivery Service Schedule 41, Base Supply Service Schedule 200 and Supply Service Schedule 201.

Energy Charge

		Prime Summer Season
41	On-Peak kWh, per kWh	22.313¢
	Off-Peak kWh, per kWh	(3.161)¢

Seasonal Definition

Prime Summer season is defined as June 1 through August 31. Time-of-use adders under this pilot apply for the Prime Summer season only. No adjustments will be applied in other months.

On-Peak Period

Prime Summer
 Monday through Friday 2:00 p.m. to 6:00 p.m.

All other months have no time-of-use periods.

Off-Peak Period

Prime Summer
 All non On-Peak Period hours and days plus the following holiday: Independence Day.

All other months have no time-of-use periods.

(continued)

Guarantee Payment

The Company shall guarantee against excessive increase of consumer costs for the 2014 and 2015 Prime Summers of enrollment in the program and thereafter for the first Prime Summer of enrollment. If the total energy costs incurred on this Schedule for the Prime Summer season exceed 10% over what costs would have been for the same period under Cost-Based Supply Service, the net difference, Guarantee Payment, will be credited on the customer's bill following the end of the Prime Summer season. No Guarantee Payment shall be given for a Prime Summer period if Consumer terminates service before the end of the Prime Summer period.

Special Conditions

1. In 2016, eligible Consumers in the Klamath Falls area will be invited via mail to participate in this pilot. Participants will be chosen on a first-come, first-served basis. New participation will be limited to approximately seventy-five (75) metered points. No more than two accounts belonging to one Consumer will be allowed into the pilot. (C)
(C)
(C)
(T)
2. The Consumer must have a time-of-use meter installed to participate in this option. The appropriate meter will be installed or the existing meter reprogrammed on the Consumer premises at no extra charge to the Consumer. The replacement of older meters may result in more accurate metering. The Consumer will be responsible for all charges based on accurate meter measurements from new meters. Billing under this schedule shall begin for the Consumer following installation of the time-of-use meter and the initial meter reading. Rates under this schedule prior to the beginning of the Prime Summer time-of-use rate season will be standard cost-based rates.
3. Consumers requesting service under this pilot program beginning in 2015 agree to remain on the pilot through the end of the 2015 Prime Summer season, which ends on August 31, 2015. Consumers will have the option to opt out of the pilot after this date by notifying the Company. Service will continue under this schedule until Consumer notifies the Company to discontinue service or this schedule terminates. In the event that participants are added to the pilot after the 2015 Prime Summer season, such participants agree to remain on the pilot through the end of their first Prime Summer season of participation.
4. All Consumers invited to participate in this pilot program may be asked to complete a survey following the end of the Prime Summer season. Survey responses will be used to further evaluate the potential of future time-of-use irrigation rates. Data gathered will be used for pilot evaluation only.
5. Meters enrolled in this pilot will not be eligible to participate concurrently in any load control pilot which is offered by the Company. (N)
(N)

Continuing Service

This Schedule is based on continuing service at each service location. Disconnect and reconnect transactions shall not operate to relieve a Consumer from monthly minimum charges.

ATTACHMENT A

**Pacific Power
State of Oregon
Estimated Summer Monthly Bill Impacts of Energy Shift - COS vs. Proposed TOU Pilot
Irrigation Schedule 41 Secondary - Peak Summer¹**

Energy Charge Only

kWh	COS ²	On-Peak to Off-Peak Shift																	
		0% Shift			10% Shift			20% Shift			40% Shift			70% Shift			100% Shift		
		TOU	Save	%	TOU	Save	%	TOU	Save	%	TOU	Save	%	TOU	Save	%	TOU	Save	%
1,000	\$95.55	\$95.55	\$0.00	0%	\$92.39	\$3.16	3%	\$89.23	\$6.32	7%	\$82.90	\$12.65	13%	\$73.42	\$22.13	23%	\$63.94	\$31.61	33%
2,000	\$191.10	\$191.10	\$0.00	0%	\$184.78	\$6.32	3%	\$178.45	\$12.65	7%	\$165.81	\$25.29	13%	\$146.84	\$44.26	23%	\$127.87	\$63.23	33%
3,000	\$286.65	\$286.65	\$0.00	0%	\$277.17	\$9.48	3%	\$267.68	\$18.97	7%	\$248.71	\$37.94	13%	\$220.26	\$66.39	23%	\$191.81	\$94.84	33%
4,000	\$382.20	\$382.20	\$0.00	0%	\$369.55	\$12.65	3%	\$356.91	\$25.29	7%	\$331.62	\$50.58	13%	\$293.68	\$88.52	23%	\$255.74	\$126.46	33%
5,000	\$477.75	\$477.75	\$0.00	0%	\$461.94	\$15.81	3%	\$446.14	\$31.61	7%	\$414.52	\$63.23	13%	\$367.10	\$110.65	23%	\$319.68	\$158.07	33%
6,000	\$573.30	\$573.30	\$0.00	0%	\$554.33	\$18.97	3%	\$535.36	\$37.94	7%	\$497.43	\$75.87	13%	\$440.52	\$132.78	23%	\$383.62	\$189.68	33%
7,000	\$668.85	\$668.85	\$0.00	0%	\$646.72	\$22.13	3%	\$624.59	\$44.26	7%	\$580.33	\$88.52	13%	\$513.94	\$154.91	23%	\$447.55	\$221.30	33%
8,000	\$764.40	\$764.40	\$0.00	0%	\$739.11	\$25.29	3%	\$713.82	\$50.58	7%	\$663.23	\$101.17	13%	\$587.36	\$177.04	23%	\$511.49	\$252.91	33%
9,000	\$859.95	\$859.95	\$0.00	0%	\$831.50	\$28.45	3%	\$803.04	\$56.91	7%	\$746.14	\$113.81	13%	\$660.78	\$199.17	23%	\$575.42	\$284.53	33%
10,000	\$955.50	\$955.50	\$0.00	0%	\$923.89	\$31.61	3%	\$892.27	\$63.23	7%	\$829.04	\$126.46	13%	\$734.20	\$221.30	23%	\$639.36	\$316.14	33%

Notes:

¹ Pilot program Peak Summer months defined as June through August.

² Excludes pass through surcharges. Secondary rates in effect as of January 1, 2016.