

Attachment D

Residential Time-of-Use Pilot Monitoring and Reporting Plan

Monitoring and Reporting Plan Residential Time of Use (Schedule 19)

Background

Pacific Power will pilot a time of use rate to a limited number of residential customers in an effort to collect data and determine the impacts of introducing time of use rates in Washington. This pilot program will become effective on or around May 2021 and will be studied for a three-year period with the option of extending an additional two years.

Pilot Goal

The goal of the pilot is to determine if the Company should offer a time of use program to all residential customers before 2027, by measuring the value of time of use rates for residential customers in a pilot program. No specific formula exists for what will constitute a successful pilot, but rather its success or failure will be judged on several measures listed below.

Pilot Outcomes to Measure Value

- **Customer Satisfaction**
 - How satisfied are participants with the time of use option?
 - Did participants save a meaningful amount on their bills?
 - Was customer information and education about the program adequate?
- **Economic Efficiency**
 - Do customers on this rate option pay their cost of service?
 - Do the benefits of the program outweigh the costs?
- **Customer Appeal**
 - Do customers want to sign up for this option?
 - Do participants choose to stay on this option, or do they go back to default Schedule 16?
 - What do customers value more: the appeal of potential bill savings due to shifting loads or more bill certainty under non-time-varying rates?
 - Are there particular characteristics common amongst customers who remained on the program?
 - Are there common characteristics among customers who dropped out of the program?
- **Equity**
 - Do low-income customers and/or customers from vulnerable groups participate?
 - Do low-income customers and/or customers from vulnerable groups benefit from this option?
 - What barriers exist that may prevent low-income customers and/or customers from vulnerable groups from participating?
 - What barriers exist that may prevent low-income customer and/or customers from vulnerable groups from benefitting from this option?

Pilot Design and Implementation

- The pilot will be open to a maximum of 500 residential customers on an opt-in, first-come first-served basis.
- Usage profiles will be collected from participants.
- Existing data from Schedule 16 customers will be used as a control to compare to the pilot group. Data from the control group will include the following:
 - Load profiles from the residential load research study
 - Demographic and end use responses from the Company's email survey
- Customers that enroll in the time of use pilot will be provided a 10% bill guarantee for the first year, meaning if a customer's energy charges over the participant's first annual period are 10% greater than what they would have been under the default Schedule 16 billing, that customer will be refunded the amount over the 10% threshold they paid.
- Customers will be required to remain on Schedule 19 for one year at which time they can choose to remain on the time of use option or return to Schedule 16.
- At the end of the participant's first annual period on the program, a letter will be sent to the participant informing them of their net savings or cost relative to default Schedule 16. Included in that letter will be an invitation to participate in an online survey. To increase the response rate to the survey, each respondent will be entered in a drawing to win a gift card.
- The Company will promote enrollment in the program through the following channels:
 - Bill messaging
 - Website
 - Newsletters
 - Targeted email announcements
 - Social media posts
 - Outreach through low income agencies
 - Outreach through trusted community liaisons, organizations, and partners
 - Outreach conducted in languages other than English in line with local customer demographics
 - Messaging and outreach plans will be shared with the low-income advisory board and the equity advisory board

Measures

- **Customer Satisfaction**
 - Satisfaction with the program will be measured from participant responses to the survey (See Appendix A).
 - Net customer bill savings/cost relative to service under default Schedule 16 will be tracked for each participant on a monthly and annual basis. A distribution of net savings/cost will be examined.
- **Economic Efficiency**
 - A cost-benefit analysis will be conducted to quantify the effectiveness of the pilot.
 - Costs will include, at a minimum:

- Metering
 - Customer Service
 - Marketing
 - Administration
 - A variant of the cost-benefit analysis will consider the net bill savings (or costs) of participants as a cost
- Benefits will include, at a minimum:
 - Energy savings
 - Capacity savings
 - Transmission and distribution deferral
- The cost-benefit analysis will also compare current metering with a counterfactual sensitivity under which the Company has deployed advanced metering infrastructure (AMI).
- A cost of service study will be conducted under which Schedule 19 time of use will be put onto its own class within the study to determine if participants pay more or less than their cost of service in the final report.
- **Customer Appeal**
 - Enrollment counts by date will be tracked. Inferences could be made from enrollment timing regarding seasonality and simultaneous timing of program promotions.
 - Retention will be tracked by measuring counts of customers who drop off the program and return to default Schedule 16 relative to overall enrollment over time.
 - Customer enrollment, retention, satisfaction will be analyzed against demographic characteristics and load characteristics (e.g., numbers of people at 100% of federal poverty level, number of participants who own EVs, etc.)
 - To what degree participating customers (or customers who have dropped out) place more value on the potential savings from time-varying rates or appreciate reliable/predictable bills based on non-time varied rates (i.e. does the potential for savings due to a new rate structure outweigh the uncertainty of whether or not savings will actually accrue?) will be measured in survey responses.
- **Equity**
 - Customer enrollment, retention, satisfaction, and bill savings/cost will be tracked along demographic lines to understand if program experience differs for low-income and/or customers from vulnerable groups.
 - Participation will be tracked by census tract.
- The data collected and analysis performed will be used to determine if the pilot should be terminated, expanded, modified, or made permanent.

Reporting

- A preliminary check-in report will be prepared on the results of the first 18 months of the pilot. This report will be filed with the Commission six months after the initial 18-month period. It will include all of the information available from the different measures, except

for those pertaining to the economic efficiency since load research data will not be available at that time and census tract information, since the Company will need time to develop this capability.

- A final report will be filed with the Commission within six months of the end of the pilot's three-year period that will include a full review of the program metrics, conclusions on the successfulness of the program as well as recommendations for the continuation or cancellation of the program.
 - At this time, the Company may recommend a two-year extension of the pilot if more information or tariff changes are necessary. If such an option is exercised, an additional final report will be required within six months of the end of the five-year extended pilot term.
- The tariff for Schedule 19 will not have an automatic termination date.
- Any changes made to the pilot design will need to be addressed in the reports and efforts made to create accurate comparisons between pre- and post- change versions of the program.

Appendix A. Washington Residential TOU Pilot Survey

1. Where did you hear about Pacific Power's time of use rate plan?
 1. Company website
 2. Word of mouth
 3. Company email
 4. Company brochure
 5. Social media channels
 6. Other <Please enter>

2. Why did you enroll in the time of use rate plan? <Check all that apply>
 1. To save money
 2. To help Pacific Power with its research
 3. To help Pacific Power better manage its system
 4. To help the environment
 5. Other <Please enter>

3. How satisfied are you with the time of use rate plan?
 1. Very satisfied
 2. Somewhat satisfied
 3. Neither satisfied nor dissatisfied
 4. Somewhat dissatisfied
 5. Very dissatisfied
 6. No opinion

4. If you were not satisfied with the time of use plan, why were you dissatisfied? <Check all that apply>
 1. Not applicable (I am satisfied with the plan)
 2. Did not save money
 3. Did not save enough money
 4. Too difficult to change the times you use energy/appliances
 5. Too difficult to pay attention to the times you used energy/appliances
 6. Terms of the program were confusing or difficult to understand
 7. Too challenging to change schedule to align with the program
 8. Preferred bill predictability of previous rate option
 9. Other <Please enter>

5. Have you recommended the time of use plan to someone you know?
 1. Yes
 2. No
 3. I don't know

6. If yes, do you know if that individual enrolled in the program?
 1. Yes
 2. No
 3. I don't know
 4. Not applicable

7. What would you recommend improving about the program? <Check all that apply>
 1. Additional or clearer information from Pacific Power about how the program works
 2. Clearer or more frequent information about electricity usage
 3. Clearer or more frequent information about bill savings or increases
 4. Better protection against higher bills
 5. Less on-peak hours
 6. Greater difference in pricing by period, so I can save more
 7. Nothing
 8. Other <Please enter>

8. How did your participation in the time of use rate plan affect your monthly electric bills?
 1. I saved a lot of money
 2. I saved a moderate amount of money
 3. I saved very little or no money
 4. It cost me very little or no money
 5. It cost me a moderate amount of money
 6. It cost me a lot of money
 7. I don't know

9. Prior to enrolling in this program, what time did you:
 1. typically run your dishwasher? <Morning (5am-10am), Middle of the Day (10am-2pm), Afternoon (2pm-5pm), Evening (7pm-11pm), Night (11pm-5am), Varies, I don't know, N/A>
 2. typically run your clothes washer? <Morning (5am-10am), Middle of the Day (10am-2pm), Afternoon (2pm-5pm), Evening (7pm-11pm), Night (11pm-5am), Varies, I don't know, N/A>
 3. typically run your clothes dryer? <Morning (5am-10am), Middle of the Day (10am-2pm), Afternoon (2pm-5pm), Evening (7pm-11pm), Night (11pm-5am), Varies, I don't know, N/A>
 4. typically run your pool pump? <Morning (5am-10am), Middle of the Day (10am-2pm), Afternoon (2pm-5pm), Evening (7pm-11pm), Night (11pm-5am), Varies, I don't know, N/A>
 5. typically charge your electric vehicle? <Morning (5am-10am), Middle of the Day (10am-2pm), Afternoon (2pm-5pm), Evening (7pm-11pm), Night (11pm-5am), Varies, I don't know, N/A>

10. Did you make changes to your energy usage in an effort to save money on the time of use program?

1. Yes
2. No
3. I don't know

11. If you made changes to your energy usage in the time of use program, how frequently did you make changes?

1. Daily
2. Weekly
3. Monthly
4. A few times per year
5. Once a year
6. Other <Please enter>

12. If yes to question 11, what changes did you make? <Check all that apply>

1. Ran my dishwasher during off-peak times
2. Ran my clothes washer during off-peak times
3. Ran my dryer during off-peak times
4. Used pool pump during off-peak times
5. Pre-cooled my home during off-peak periods
6. Pre-warmed my home during off-peak periods
7. Used "smart-home" devices to control energy usage
8. Charged my electric vehicle during off-peak times
9. Turn off lights during on-peak
10. Turn off plug loads during on-peak (computer, TV, etc.)
11. Turned down thermostat during winter on-peak
12. Turned up thermostat during summer on-peak
13. Cook dinners outside
14. Installed a water heater timer
15. I didn't do anything differently
16. Other <Please enter>

13. Were the potential savings worth the changes you made?

1. Yes
2. No
3. Indifferent
4. I don't know
5. I didn't make any changes

14. Would you make these same changes again?

1. Yes
2. No

3. I don't know

15. Do you have "smart-home" devices in your home?

1. Yes, installed before enrolling in time of use
2. Yes, installed after enrolling in time of use
3. No
4. I don't know

16. If yes to question 15 above, what type of "smart-home" devices do you have? <Check all that apply>

1. Smart thermostat
2. Smart lighting
3. Smart water heater
4. Other <Please enter>

17. What is the primary equipment you use to cool your home?

1. Central electric air conditioner
2. Window or wall air conditioner
3. Portable air conditioner
4. Radiant surface cooling
5. Ducted heat pump
6. Ductless heat pump
7. Evaporative or swamp cooler
8. Electric portable or ceiling fan
9. Other/I don't know
10. Do not cool home

18. What is the primary heating equipment you use to heat your home?

1. Central forced-air furnace
2. Floor or wall heater/furnace
3. Hot water radiator
4. Baseboard/ceiling/floor (resistance) heating
5. Ducted heat pump
6. Ductless heat pump
7. Portable heaters
8. Fireplace, wood burning stove, or pellet stove
9. Other/I don't know
10. Do not heat home

19. What fuel do you use for this primary source of heating equipment?

1. Electricity
2. Natural gas

3. Propane
 4. Oil
 5. Wood or pellets
20. What is your primary energy source for heating water?
1. Electricity
 2. Natural gas
 3. Other fuel source
21. Does anyone in your household uses medical equipment or other devices that cannot be turned-off or scheduled to run at a different time?
1. Yes
 2. No
 3. Prefer not to answer
22. Do you own or lease an electric vehicle (automobile/light truck)?
1. Yes – all electric
 2. Yes – plug-in hybrid
 3. No
 4. I don't know
23. Were you more active in monitoring energy usage while on the time of use rate compared to before you enrolled?
1. Yes, much more active
 2. Yes, moderately more active
 3. Yes, slightly more active
 4. No
 5. I don't know
24. Was the time of use rate easy to understand?
1. Yes
 2. No
 3. I don't know
25. What were your biggest challenges on the time of use rate?
1. <Please enter>
26. Do you have any comments on the time of use rate program?
1. <Please enter>
27. What is your annual household income?
1. Less than \$10,000
 2. \$10,000 to \$14,999

3. \$15,000 to \$24,999
4. \$25,000 to \$34,999
5. \$35,000 to \$49,999
6. \$50,000 to \$74,999
7. \$75,000 to \$99,999
8. \$100,000 to \$149,999
9. \$150,000 to \$199,999
10. \$200,000 or more
11. Prefer not to answer

28. What is your primary source of income right now?

1. Full-time employment
2. Part-time employment, but would prefer/am seeking additional work at this time
3. Part-time employment and would not prefer/am not seeking additional work at this time
4. Pension, retirement, or social security
5. Other - fixed income
6. Other – not fixed income
7. Prefer not to answer

29. Over the last year, have you experienced a change in employment?

1. Yes, faced job loss
2. Yes, faced reduced hours
3. Yes, changed jobs
4. Yes, retired
5. No
6. Other <Please enter>

30. During the time of the program, if you are employed, did you work out of your home?

1. Yes, permanently
2. Yes, on a temporary basis due to the COVID-19 pandemic
3. No
4. Not applicable

31. Does anyone in your household work swing or night shift?

1. Yes, night shift
2. Yes, swing shift
3. No
4. Prefer not to answer

32. Do you care for a dependent in your home?

1. Yes

2. No
 3. I don't know
33. Do you own or rent your home?
1. Own
 2. Rent
34. Have you received energy-related financial assistance from any state agency or non-profit organization?
1. Yes
 2. No
 3. Yes, but not during the time enrolled in the time of use program
 4. Prefer not to answer
35. What is the highest level of education that anyone in your household has?
1. Less than a high school degree
 2. High school degree or GED equivalent
 3. Some college
 4. Undergraduate degree
 5. Graduate degree
 6. Post-graduate degree or doctorate
36. What is the primary language spoken at home?
1. English
 2. Spanish
 3. Other <Please enter>
37. What is your race? <Check all that apply>
1. American Indian, Alaska Native
 2. Asian
 3. Pacific Islander
 4. Black, African American
 5. Hispanic/Latino
 6. White/Caucasian
 7. Prefer not to answer
38. Does anyone in your household have a legally protected disability?
1. Yes
 2. No
 3. Prefer not to answer
39. Please enter the number of people living in your household in each age category listed below.

Age Category	Number
A. 4 years or younger	
B. 5-13 years old	
C. 14 -17 years old	
D. 18-24 years old	
E. 25-44 years old	
F. 45-54 years old	
G. 55-64 years old	
H. 65-74 years old	
I. 75 years and older	

40. What is the square footage of your living space?

1. <Please enter>

41. Please enter your name and email address for a chance to win a \$\$\$ gift card.