



Puget Sound Energy

Meter Upgrade Project and Schedules 171 Implementation Status Report

Reporting Period:

January 1, 2018 – December 31, 2021

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Introduction

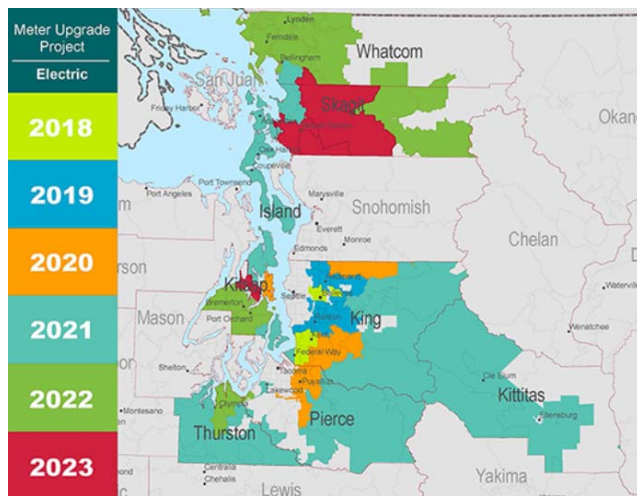
Pursuant to paragraph 32 in Order 01 of Dockets UE-180860 and UG-180861¹, Puget Sound Energy (“PSE”) provides its fourth report of the status of PSE’s Meter Upgrade Project² and of the results and costs associated with the implementation of PSE’s electric and natural gas Schedules 171 Optional Non-Communicating Meter (“NCM”) Service. This report reflects the meter exchange results and the Schedules 171 transactions and accounting records as of December 31, 2021, for the years of 2018-2021.

The data presented in this reporting includes preliminary and transactional data that will be supplemented and updated as data becoming available and new NCM events occurred. The costs associated with the implementation of the NCM service outlined in this report are not final and not comprehensive as this optional service requires on-going customer care, operations management, and information technology support. Additionally, some of the implementation and operation costs of electric and natural gas NCM service are recorded in the Advanced Metering Infrastructure (“AMI”) implementation and operation costs, which are not included in this report.

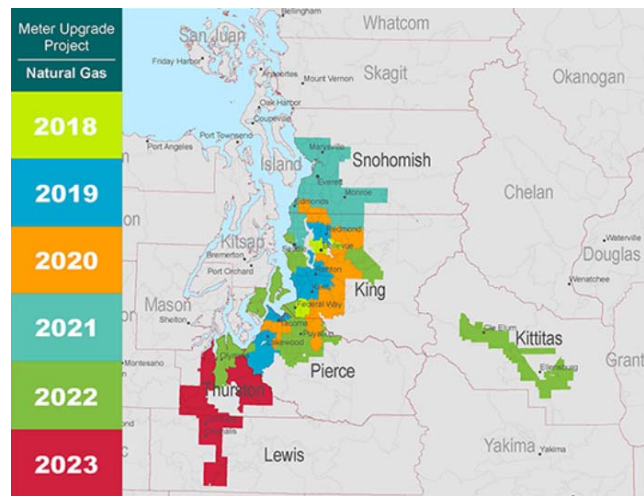
Although the new electric and natural gas Schedules 171 Optional NCM Service are available to customers in the AMI deployment area beginning on July 1, 2019, PSE’s preparation and customer inquiries about the NCM service began in 2018 when PSE initiated its Meter Upgrade Project, prior to approval of the new optional service on July 1, 2019.

The two Meter Upgrade Project maps below are the areas where exchanges are anticipated by year. These maps are updated frequently and available at pse.com/meterupgrade.

Electric Meter Upgrade Project Map



Natural Gas Meter Upgrade Project Map



¹ Order 01, Order Allowing Tariff Revisions to Go Into Effect Subject to Condition, dated 1/11/2019. In Order 01 paragraph 32, the Commission orders that “Puget Sound Energy must file a status report every 6 months beginning January 31, 2020, and a final report on the status and cost of its opt-out program no later than January 31, 2026.”

https://www.utc.wa.gov/_layouts/15/CasesPublicWebsite/GetDocument.aspx?docID=33&year=2018&docketNumber=180860

² <https://www.pse.com/pages/meter-upgrade>

PSE resumed all Meter Upgrade Project activities on May 5, 2020, following the conclusion of Washington Governor Inslee’s March 23, 2020 “Stay Home – Stay Healthy order”³. Since then, PSE’s installers, Aclara and Scope (formerly Tribus), resumed activities with enhanced safety protocols for COVID-19. This includes additional personal protective equipment, including face coverings, practice physical distancing at all times, and post signs at all installation sites asking passersby to maintain appropriate distance. Likewise, all customer communications (e.g., letters, emails, robocalls, etc.) continue to include reminders about the need for physical distancing, and information about PSE’s COVID-19 safety measures. PSE will continue to follow the state’s recommendations related to COVID-19 and adapt to any changes as needed to carry out its Meter Upgrade Project.

In March 2021, a new gas module replacement vendor, Scope Services, came on board after our previous vendor was purchased by another company. Scope Services began gas module installations in May 2021 and were at full deployment scale by October 2021.

³ Governor’s Proclamation 20-25, Stay Home – Stay Healthy

<https://www.governor.wa.gov/sites/default/files/proclamations/20-25%20Coronavirus%20Stay%20Safe-Stay%20Healthy%20%28tmp%29%20%28002%29.pdf>

Reporting Elements

1. Status of the Meter Upgrade Project, including geographic areas where AMI meters have been installed and the number of meters installed.

Numbers of AMI meters and modules installed as of December 31, 2021, by quarter:

AMI meters/modules installation Count				
		Electric	Natural Gas	Total
2017	Q4	36	30	66
2018	Q1	385	0	385
2018	Q2	32,267	184	32,451
2018	Q3	67,276	14,423	81,699
2018	Q4	73,121	30,321	103,442
2019	Q1	58,385	43,707	102,092
2019	Q2	52,360	28,362	80,722
2019	Q3	53,993	42,834	96,827
2019	Q4	54,546	40,145	94,691
2020	Q1	46,797	32,453	79,250
2020	Q2	20,159	17,194	37,353
2020	Q3	61,347	51,035	112,382
2020	Q4	66,109	56,217	122,326
2021	Q1	60,346	43,788	104,134
2021	Q2	54,999	4,405	59,404
2021	Q3	62,022	49,349	111,371
2021	Q4	68,401	71,006	139,407
Total		832,549	525,453	1,358,002

Numbers of AMI meters and modules installation as of June 30, 2021, by county:

County	AMI meters/modules installation Count			Metered Customer Schedule Count ⁴		
	Electric	Natural Gas	Total	Electric	Natural Gas	Total
ISLAND				38,311		38,311
KING	525,144	354,024	879,168	583,677	484,082	1,067,759
KITSAP	37,597		37,597	126,367		126,367
KITTITAS	13,501		13,501	15,350	2,152	17,502
LEWIS			0	2	4,263	4,265
PIERCE	160,705	70,017	230,722	130,097	168,521	298,618
SKAGIT			0	63,476		63,476
SNOHOMISH		101,412	101,412	49	151,562	151,611
THURSTON	95,557		95,557	137,923	55,767	193,690
WHATCOM	45		45	110,158		110,158
Total	832,549	525,453	1,358,002	1,205,410	866,347	2,071,757

⁴ Including counts of metered rate schedules such as residential energy use electric Schedule 7 and natural gas Schedule 23; excluding counts of rate schedules that do not require a meter such as electric lighting schedules and natural gas water heater rental schedules

2. Information on customer communication results, including the number of customers who have informed PSE of their Initial Request for service under electric and natural gas Schedules 171

All customers are sent a letter notification 3-5 weeks ahead of the exchange to an AMI meter. The letter contains information about electric and natural gas Schedules 171 NCM service. Interested customers can contact PSE via phone, email or US mail to learn about the NCM service or to request the optional service. As of December 31, 2021, PSE received a total of 10,462 electric and natural gas Schedules 171 NCM service requests associated with 6,194 electric and 4,268 natural gas meters. Of these 10,462 NCM service requests, 2,341 have been completed, 1,819 are in progress, 3,138 were rejected, and 3,164 were cancelled.

The table below provides further details about the completed 2,341 NCM service requests and associated count of the current Schedule 171 NCM customers. There more than 500 NCM service requests have been approved but were pending billing configuration in PSE's billing system as of December 31, 2021.

	NCM Service Request Form Completed and Approved	Schedule 171 Billing Initiated and NCM Meter Installed/Natural Gas Module Removed
Electric	1,490	1,161
Natural Gas	851	587
Total	2,341	1,748

3. The number of customers on electric and natural gas schedules 171, including a) the non-payment disconnection count, b) the bill payment assistance status, and c) status of their Schedule 171 One-Time Charge Payment

	Electric	Natural Gas
Schedule 171 billed accounts as of 12/31/2021	1,161	587
Number of Schedule 171 accounts with non-payment disconnection during 1/1/2017-12/31/2021 ⁵	20	4
Number of Schedule 171 accounts with bill payment assistance during 1/1/2017-12/31/2021, including pledges from the federal government, PSE or organizations that provide assistance through PSE	42	21
Count of Schedule 171 One-Time Charge ⁶ 7/2019-12/2021	140	34

⁵ All non-payment disconnections occurred prior to March 2020.

⁶ Schedule 171 One-Time Charge is applicable to the NCM service request made by a customer at a point of delivery where an AMI meter has already been installed.

4. PSE costs associated with the implementation of electric and natural gas schedules 171, including capital costs and maintenance costs for information systems, meter networks, meter exchange, meter reading, and other related costs associated with providing service under electric and natural gas Schedules 171

The following table summarizes some of the capital costs and maintenance costs associated the implementation of electric and natural gas schedules 171. The NCM service related costs that are recorded within the Meter Upgrade Project costs during 2018 through 2021 are not included in the table below.

As PSE moves forward in its AMI meter/module exchange, PSE will gather information that allows PSE to understand how much the rest of rate payers are subsidizing NCM customers.

	2018 ^{Note 1}	2019 ^{Note 1}	2020 ^{Note 1}	2021 ^{Note 1}	1/2018-12/2021 ^{Note 1}
Electric NCM Installation Costs	\$0	\$15,277	\$40,559	\$35,849	\$91,685
Gas NCM Installations	\$0	\$23,003	\$22,893	\$14,747	\$60,643
Electric NCM Reading Set-up Costs	\$0	\$0	\$61,848	\$8,220	\$70,068
Gas NCM Reading Set-up Costs	\$0	\$0	\$28,325	\$4,980	\$33,305
Electric NCM Reading Costs ^{Note 2}	\$0	\$0	\$0	\$49,513	\$49,513
Gas NCM Reading Costs ^{Note 2}	\$0	\$0	\$0	\$18,693	\$18,693
Electric NCM Customer Service and Project Management Related Costs ^{Note 3}	\$0	\$0	\$14,042	\$422,383	\$436,425
Gas NCM Customer Service and Project Management Related Costs ^{Note 3}	\$0	\$0	\$10,341	\$316,307	\$326,648
NCM Information System Capital Costs ^{Note 4}	\$1,521,425	\$2,280,046	\$12,291	\$0	\$3,813,761

Note 1: The NCM service related costs that are recorded within the Meter Upgrade Project costs during 2018, 2019, and 2020 are not included in the amount.

Note 2: Amount reflects the manual metering reading costs that have been invoiced by the contractor by December 31, 2021.

Note 3: Amount reflects June 2021 results of the labor costs associated with customer care staff and the project team working on the management of NCM service operations.

Note 4: The NCM information system capital costs are the costs associated with SAP work management and interface configuration and programming changes to support the NCM service. The works include adding new rate schedules and charges, enabling NCM service request tracking, expanding bi-monthly meter reading and billing functionality, automating customer NCM communication, and integrating and testing systems.

5. Revenues associated with electric and natural gas Schedules 171

Schedule 171 For the period of 7/2019-6/2021	Additional Bi-Monthly Service Charge		One-Time Charge	
	Per Meter	Total Billed	Per Meter	Total Billed
Electric	\$15	\$128,565	\$90	\$12,600
Natural Gas	\$15	\$78,150	\$50	\$1,700

6. Number of Initial Requests that did not result in a submitted and completed Service Request

As of December 31, 2021, PSE has received 10,462 NCM service requests. 3,164 requests have been cancelled by customers and 3,138 NCM service requests have been rejected by PSE per the terms and conditions of Schedule 171. As outlined in electric and natural gas Schedules 171, this optional non-communicating meter service is available only to residential customers residing in a single-family dwelling (or a multi-plex residence of up to four units) that are in the area where PSE has started the deployment of AMI meter upgrade. In addition, customers have to complete a NCM service request and meet the requirements and responsibilities for service outlined in the tariff schedules.

7. Number of electric and natural gas Schedules 171 customers who discontinue service on Schedule 171

As of December 31, 2021, 268 NCM services have been discontinued, 37 at customer request and 226 because of that the initial NCM customers have moved out. The reminding six accounts' NCM service was discontinued by PSE because PSE personnel had not been able to read the meter for four consecutive months as provided for in PSE's electric and natural Schedules 171⁷ section 8:

8. The Company may refuse or revoke the Installation of a non-communicating meter at the Customer's premises for reasons including but not limited to the following conditions:
 - a. no meter reading for four consecutive calendar months when safe access is not available for the Company's personnel and standard equipment;
 - b. current or past incidents of Customer meter tampering;
 - c. current or past incidents of Customer impeding the Company's access to meter to obtain meter reads, perform maintenance or to disconnect meter for non-payment of Gas Service; or
 - d. incidents of service disconnection for non-payment (of Customer's electric and/or natural gas accounts for communicating and/or non-communicating meters) twice within the prior 12-month period.

⁷ Electric Schedule 171: https://www.pse.com/-/media/Project/PSE/Portal/Rate-documents/Electric/elec_sch_171.pdf
Natural gas Schedule 171: https://www.pse.com/-/media/Project/PSE/Portal/Rate-documents/Gas/gas_sch_171.pdf

8. PSE discussion of other issues associated with providing service under electric and natural gas Schedules 171

A. Challenges with Manual Meter Reading

For two decades, PSE wirelessly read nearly all its meters. All of PSE's systems have been designed to collect meter reads wirelessly since the installation of AMR technology in the late 1990s. The reintroduction of manual reading has required the creation of entirely new internal and external processes, and company and IT structure changes.

Aside from the needed PSE business structure and process changes, customer expectations and behaviors have changed; customers have naturally adapted to no longer having to provide regular access to the meter for reading. Residences have been altered to include fences, locked gates, planted vegetation, siding, and decoration around the meter face. This can make a manual meter read difficult, if not impossible with alteration. In addition to the physical impediments to reading the meter, the necessity of having someone on customers' property is a change for the customers. Even customers who are requesting NCM require time to discuss and understand that PSE will now need access to their property on a regular basis and what that means for them.

The set up and execution of efficient internal and external processes that support the manual meter reading system for the electric and natural gas Schedules 171 NCM service in an era of wireless reading was more difficult than originally anticipated. With PSE's wireless AMR metering, PSE did not previously have a group that focused on manually reading meters, so the optional NCM service has necessitated the acquisition of additional resources.

Additionally, since meters have not needed to be read manually, customers who participate in the NCM service are not accustomed to making their yard accessible for PSE's meter reader. For 2020-2021, there have been total of 94 access issues associated with 15 natural gas meters and 54 electric meters that PSE's meter readers were unable to be read these 69 non-communicating meters. 78 of these 94 instances were due to a locked gate and the customer was not there to open the gate. Ten instances were due to a dog or dogs in the yard.

The NCM service has been revoked for six meters (one meter in 2020 and five meters in 2021) where PSE has had access denied to read a NCM for four consecutive months.

Finally, the geographically spread out nature of the participants of the optional non-communicating meters service and their different billing schedules can make it difficult to reach all the customers in the short timeframe to collect the meter read necessary to bill.

B. New Customer Communication and Education Needs

PSE is respectful of its customers' preferences regarding the optional NCM service. PSE's goal is to exchange all meters in a timely and reasonable manner, regardless of whether it is an AMI or non-communicating meter. As such, PSE has implemented a robust communications and education process to provide customers with the opportunity to discuss and ask questions about the NCM service and the Meter Upgrade Project. This approach requires in-depth and time intensive conversations with customers; PSE's customer communication team has consistently found that customers have both incorrect

information and numerous questions on a variety of topics that may be tangentially connected to a communicating meter. This has required shifting priorities and dedicating resources to meet the new customer needs has led to a large variance in how long customer care and communication processing takes for the non-communicating meter service. Currently, PSE has a dedicated team of two (2) customer service representatives (i.e., the “back office team”) assigned to communicate with customers regarding their questions related to meter exchange and the NCM service. The back office team is also supported by a group of additional non-dedicated but specially-trained customer service representatives.

PSE customers have never had a metering choice; this customer choice has created a need for enhanced communication and education around meters that was previously not necessary. The meter choice and its technology is not previously something that customers had to think much about and the general understanding of metering technology is low. PSE has been diligently working to ensure that customer’s questions are answered in a timely fashion and they are given the information needed to make an informed choice on their meter choice. These questions have included such topics as RF⁸ v. EMF⁹, how the different metering types work, what to expect for installation, “dirty electricity”, as well as 5G¹⁰ and if it is related to AMI, who owns the meter, just to name a few. Between July 1, 2021, and December 31, 2021, PSE’s back office team has taken more than 6,341 calls with an average call handle time of 9.05 minutes.

The simplest request to participate in the NCM service can take a little less than an hour of employee time from initial request to arrangement of an NCM installation, but other cases have taken over 50 hours of employee time from initial request to NCM installation arrangement. PSE communicates with customers through a variety of mediums and also may need to engage multiple departments including the call center (which has the specialized back office team - staffed every business day to meet the communication needs of customers interested in NCM service), communications outreach, escalated complaints, legal, and the Meter Upgrade Project teams. This depth of resources is required to educate and answer customer questions so that they understand their decision to choose this optional NCM service.

C. Extended NCM Installation Timeline

PSE has found that the installation time for a NCM to be extended mainly due to the following reasons:

- First, some customers experience a longer timeline to have a NCM installed, which is based on whether PSE’s Meter Upgrade Project has reached their area. As shown in Section 1 above, the Meter Upgrade Project is a multi-year process. PSE has received requests for the NCM service from customers in areas that are not scheduled to have the AMI upgrade yet. These customers will receive their NCM meters when the AMI and the NCM service become available in an area. The call center’s specialized back office team has been working through these requests as AMI and NCM services becomes available in different areas.

⁸ radio frequency

⁹ radiofrequency electromagnetic fields

¹⁰ 5th generation of mobile networks (5G)

- Second, PSE's business process is designed to give customers adequate time to return the completed NCM service request form to finalize their optional metering choice. Customers have 67 days to return paperwork for acceptance into the optional service and PSE will allow customers to go through the process twice, meaning two 67 day periods, where PSE will wait to hear from the customer before moving forward. This process involves phone calls, emails, an initial letter, a reminder letter, and finally an acceptance or rejection letter into the optional service. From initial request to installation of NCM for eligible customers who are accepted into the NCM service can take weeks, if not months, depending on how quickly customers return paperwork.

To date, PSE is experiencing several weeks to months for customers to return the required NCM form, and sometimes customers do not return the NCM form at all but also refuse AMI meter exchange. This can add significant handle time to each case. For these cases, PSE will move forward with installing AMI meters following our normal processes for customer access issues should there be a barrier to installation.

- Third, with regard to natural gas NCM implementation, installation time has been extended due to limited crew availability. PSE's natural gas first response group has been designated to perform the task of removing the modules for natural gas meters that are going to be served with the optional NCM service. The natural gas first response group, however, is foremost responsible for any safety related work. The natural gas communicating module removal work for the NCM service is secondary to the safety related work, which can slow the removal of the modules to enable NCM service.
- Finally, the majority of non-communicating electric meter swap outs have been done on appointment. PSE's meter deployment vendor has done 751 appointment-scheduled NCM installations. Appointments and working around customer's schedules for installation can result in an extended timeline for NCM installations.

D. Customer refusal of any metering type

PSE has found a subsection of customers who wish to refuse both meter type choices and attempt to halt exchange to either NCM or AMI. There are currently 58 customers who have refused any meter change for 70 meters. PSE has seen this manifest in a variety of ways:

- First, some customers will repeatedly refuse any available meter choice. Since the meter options consist of a non-communicating meter or an AMI communicating meter for eligible residential customers, PSE continues to engage and educate customers in conversation regarding the optional non-communicating meter service. As outlined in subsection C above, the process for the optional NCM service allows customers 67 days to return their completed and signed paperwork for acceptance into the service.

PSE has found that some customers in this group will not return paperwork to participate in the optional NCM service, will then refuse AMI meter installation again, and may also have barriers that prevent the safe installation of the new meter. This then begins another 67-day process in which PSE does not attempt AMI exchange. PSE does this to allow customers time to think over their meter choices and avoid

Schedule 171 One-Time Charge associated with installing a non-communicating meter after a standard AMI meter installation.

These NCM cases can take at minimum 134 days, i.e., four and a half months, for PSE to no longer delay standard AMI meter installation. After the non-communication meter paperwork expires for the second time, PSE will move forward to install a standard AMI meter. The installation of the standard meter may also face barriers to installation, including lack of access, which may result in increased installation timeframes. . For these cases, PSE will move forward with installing AMI meters following our normal processes for customer access issues should there be a barrier to installation.

Customers who are eligible for the optional NCM service may decide to return their paperwork at any time to install a non-communicating meter instead. PSE has made every attempt to work directly with these customers who have been repeatedly refuse any new meter choice.

- Second, PSE has seen some customers refuse PSE personnel access to its metering equipment for either a NCM or AMI installation. PSE has seen customers place bars across the meter base, build structures around meters, or refuse access to enclosed spaces where meters reside among other things.
- Finally, PSE encountered several threats or acts of violence when attempting to complete exchanges for certain customers. On one occasion, a customer climbed on the hood of a vehicle after the AMI meter exchange was completed after they didn't return the paperwork to participate in the NCM service. On another occasion, a customer who had refused multiple times to return the required NCM service paperwork threatened to retrieve their gun when PSE's installer attempted to install a standard AMI meter. For the Meter Upgrade Project and the NCM service, PSE has had to contact police to attempt a meter installation or module exchange safely.

For all these cases, PSE will move forward with installing AMI meters following PSE's normal processes for customer access issues should there be a barrier to installation.