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September 30, 2022

Via Email and Regular Mail
Carmen D. Diaz, Acting Secretary
New Jersey Board of Public Utilities
44 S. Clinton Avenue, 9th Floor
P.O. Box 350
Trenton, NJ 08625-0350

> Re: **Comments of Public Service Electric and Gas Company to draft Minimum**
>   **Filing Requirements for AMI Data Access Plans (Docket EO20110716)**

Dear Acting Secretary Diaz:

   Public Service Electric and Gas Company ("PSE&G", or the "Company") respectfully submits the below comments on the draft minimum filing requirements ("MFRs"), to be included in advanced metering infrastructure ("AMI") data access plans ("DAPs") of New Jersey's electric distribution companies ("EDCs"). Pursuant to the July 29, 2022 notice setting forth the draft MFRs, PSE&G participated in and offered verbal comments during the public stakeholder meetings on August 16 and September 7, 2022. In verbal comments, the Company encouraged the BPU to:

- develop MFRs that primarily focus on a framework for EDCs to follow in allowing customers to securely access and leverage their AMI data and to provide their permission to EDCs to release data to the customers' approved third party entities in the energy supply and energy services marketplace;
- avoid including overly prescriptive elements in the MFRs so that EDCs may file for the BPU's consideration and approval DAPs that are feasible and cost-effective;
- carefully review the EDCs existing BPU-approved AMI deployment programs, including AMI "Use Cases" (programs, processes, and tools to provide the benefits of AMI technology and data to customers), to ensure MFRs are feasible and efficient in the context of technical elements and schedules of EDC's approved AMI deployment programs; and
- re-prioritize into working groups some of the suggested MFRs that are more technically complicated and/or are could follow the primary task of providing customer and third party access to AMI data.

PSE&G submits that the MFRs should enable EDCs to propose AMI DAPs that allow customers, and third parties with customer's permission, fair and reasonably timely access to AMI data in a manner that is: 1) as uniform as possible in form and manner of delivery among the EDCs, 2) easy for customers to use; 3) secure; and 4) cost effective. This can be achieved if:

- EDCs have latitude to develop DAPs within the context of their already-approved investments in AMI, and
- certain possible future or longer-term benefits of AMI technology, especially on-meter apps, are considered via working groups rather than being mandated requirements at this time.

In the below comments, PSE&G reiterates these recommendations and provides additional supporting facts to aid in developing MFRs for DAPs that will enhance benefits to customers derived from AMI data while avoiding potentially wasteful spending or stranded investments.

General Comments

1. MFRs Should Align With PSE&G's Approved CEF-EC Deployment And AMI Use Cases

The MFRs should be incremental to PSE&G's ongoing AMI deployment and not revise the existing approved program. The BPU has already approved PSE&G's AMI deployment plan, the Clean Energy Future – Energy Cloud ("CEF-EC") program.[1] PSE&G's approved CEF-EC plan includes deployment of an AMI communications network (recently completed) and replacement of all electric meters territory-wide (except where customers opt out) with AMI meters by 2024 (in progress with approximately 400,000 will be deployed by the end of 2022). As drafted, some aspects of the MFRs conflict with PSE&G's CEF-EC deployment, in some cases because the requirements are not feasible to implement using the AMI network and AMI meters PSE&G is installing. To resolve this issue and avoid the possibility of stranding costs of assets already deployed pursuant to the approved CEF-EC program, the final MFRs should clarify that there is no intent to supplant previously-approved programs.

It is critical to delivery of significant benefits to customers that MFRs do not prevent or delay PSE&G from continuing to meet its obligation to deploy the CEF-EC AMI infrastructure by 2024.

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[1] *In the Matter of the Petition of Public Service Electric and Gas Company for Approval of Its Clean Energy Future-Energy Cloud ("CEF-EC") Program On a Regulated Basis*, BPU Docket No. EO1810115 (Decision and Order Approving Stipulation, January 7, 2022) (CEF-EC Approval Order). The approved CEF-EC program complied with the BPU's 2020 directive to EDCs to expeditiously file or update previously-filed plans to deploy AMI. *In the Matter of the Petition of Rockland Electric Company for Approval of an Advanced Metering Program; and for Other Relief*, BPU Docket No. ER16060524 (Decision and Order, February 19, 2020) (directing EDCS to file or update within 180 days plans to implement AMI).

2. MFRs should prioritize key, achievable aspects, and other issues should be resolved through working groups rather than becoming mandatory elements of DAPs

Like the draft MFRs, PSE&G's CEF-EC program includes AMI Use Cases intended to maximize delivery of AMI benefits to customers. The Company's CEF-EC approval filing set forth a total of 70 AMI Use Cases prioritized into three phases – Release 1, Release 2, and Release 3.[2] While all 70 Use Cases are capabilities of the type of AMI network and meters PSE&G is deploying, PSE&G prioritized 22 of the Use Cases for Release 1 and only sought approval for implementing the 22 Release 1 Use Cases the CEF-EC filing for the 2021-2024 deployment plan. The remaining 48 Use Cases (Releases 2 and 3 in the filing) were set forth to demonstrate future potential benefits of the network and meters that would require future filings by PSE&G for investment over 10 to 15 years following installation of the meters. This prioritization plan for Use Cases acknowledged the investment required to install AMI technology on an accelerated basis is significant, and costs to deploy all possible benefits of AMI technology over the short term would be unreasonable.

In a similar manner, the MFRs attempt to identify all of the possible benefits or "use cases" that could derive specifically from AMI data; however, the exercise of developing EDC DAPs to facilitate AMI data sharing needs to similarly acknowledge that not *all* capabilities of AMI technology can be delivered over the short term at a reasonable cost. PSE&G appreciates the desire to maximize possible customer benefits of AMI technology over time as the technology evolves; however, PSE&G's CEF-EC program was approved and will deliver *substantial* benefits to New Jersey electric customers over the next several years. To finalize the MFRs, PSE&G encourages Staff to re-examine and leverage the existing PSE&G CEF-EC program and ensure that MFRs are feasible to implement given the technology that is being deployed. Staff should also consider whether all proposed MFRs are necessary, given the already-approved Release 1 Use Cases PSE&G has committed to use best efforts to deploy by 2024. PSE&G's Release 1 Use Cases are set forth in an appendix to these comments with notations marking those that align with those also proposed in the draft MFRs.

Subject to the more detailed comments PSE&G provides for each MFR below, PSE&G submits for consideration the following recommendation for prioritizing the draft MFRs:

Address Topic In MFR	Assign to Working Group
#1 Customer Ownership and Sharing	#2 HAN issue
#2 AMI Data Provision Timelines (except for Home Area Network "HAN" issue)	#5 Data Granularity and Appropriate Rollout Schedule (or if included in MFRs, provide sufficient time for implementation)
#3 Adoption of Standardized Customer Privacy and Cybersecurity Requirements	#6 Additional Data Fields
#4 Reporting Metrics	#7 Ensuring Fair Access and Competition

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[2] All 70 use cases are also set forth PSE&G's April 1, 2020 Updated Petition in Docket No. EO18101115, Attachment 1, Schedule FGD-CEF-EC-2, beginning at page 44.

#8 Billing and Settlements (with sufficient time to implement)	#10 Emergency Responders Access
#9 Format of Data Sharing	
#11 Appropriate Use of Utility Data	

3. MFRs Should Allow EDCs To Present Alternatives To Encourage Efficiency, Reasonable Implementation Costs, And Sufficient Customer Benefits

The MFRs should carefully consider what additional benefits can be provided to customers in the short term at reasonable costs, and what potential capabilities are more complex and should be deferred for further consideration through working groups, to ensure there are benefits justifying costs. The MFRs contemplate that EDCs will file DAPs meeting the final requirements, and those DAPs will be subject to review and approval, providing a further opportunity for examination of options to meet the goals of the MFRs. Thus, the MFRs need not dictate overly-prescriptive requirements that limit EDCs options, and instead should recommend desired functionality but allow EDCs to propose options including the feasible timing and costs for implantation. The options can then be further scrutinized during the approval of the filed plan.

4. Cyber Security Is Paramount

The draft MFRs provide a recommendation that EDCs follow National Institute of Standards and Technology ("NIST") best practices to protect customer data from unauthorized intrusion/release and do not further address cybersecurity issues. While this is a good recommendation, PSE&G submits that there are overarching cybersecurity needs to implement nearly all aspects of data access to third parties. The guidance to follow NIST, alone, is likely not sufficient. Security risk is highest where MFRs recommend direct access to the Company's systems, such as with IP connectivity and on-meter apps. PSE&G requests that the MFRs generally allow EDCs to include cybersecurity proposals and costs in their DAP filings, and that some issues should be examined further in working groups.

Comments on Specific MFRs

1. Customer Ownership and Sharing of Energy Related Data

PSE&G agrees that customers own their AMI data.[3] Additionally, PSE&G generally agrees with Staff's recommendation for Green Button Connect (GBC) to facilitate customers' access to their data and customers' consent for the EDC to provide their data with third parties. PSE&G' "myMeter Portal" has GBC capability, which can be implemented with some required system modifications. PSE&G's preliminary analysis is that modifications to incorporate GBC and desired functionality for data portability would likely take at least six months to move into

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[3] In fact, PSE&G's CEF-EC Stipulation includes the following language, "[c]ustomers' usage data from the AMI meters belongs to the customer, who may choose to share such data with any licensed third party supplier." CEF-EC Stipulation at ¶ 29.

production. There would also be a need for incremental investment and on-going annual costs to run and maintain.[4] Additionally, PSE&G recommends the following clarifications or modifications to this MFR:

   a. The DAP may acknowledge differences between licensed Third Party Suppliers (TPSs) and non-licensed third parties

   As drafted, the MFR appropriately indicates that data sharing should be enabled, "through a variety of formats, including GBC, Electronic Data Interchange ("EDI") or through the EDC's supplier web portals via flat files."[5] PSE&G recommends that the MFR should also expressly indicate that EDCs may design their DAPs to incorporate existing processes for sharing data with TPSs and may provide alternatives for access by different types of users (licensed and non-licensed), so long as the proposals are non-discriminatory and easy for customers to use.

   b. The MFR should require proposed DAPs to facilitate easy access and data portability, rather than prescribing more specific functionality

   The MFR currently requires that data should be "easily accessible with 'one-click' access" and data portability. PSE&G recommends that the MFR should instead require EDCs to design DAPs that provide easy access designed to maximize customer use and engagement. "One click" access should be suggested as an alternative that may meet this requirement, but should not be mandated as an *actual* requirement. It is not clear exactly what "one-click" means or whether this is feasible. Moreover, as discussed above, there may need to be alternatives to facilitate access to licensed TPSs vs. non-licensed third parties. PSE&G agrees that the customer-facing platform for providing data access and consent should be as easy and seamless as possible; however, requiring specific functionality like "one-click" decreases design options and may drive higher costs, when there may be other ways to reasonably meet customers' needs and expectations.

2. AMI Data Provision Timelines

   As PSE&G has indicated in prior comments in this docket, the Company believes it can facilitate a 48-hour data posting. Regarding the aspect of the MFR that proposes required data sharing with Home Area Networks ("HANs"), PSE&G recommends that this issue should be re-prioritized to allow development of cybersecurity requirements for HANs. PSE&G included in its CEF-EC filing a proposed future use-case for HAN applications that would be developed following the completion of the 2021-2024 AMI deployment.[6] Since this use case was not

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[4] Cost details would be set forth in PSE&G's DAP filing that is contemplated by the draft MFRs.

[5] Draft MFRs at 6.

[6] PSE&G's CEF-EC filing included 22 AMI Use Cases that were approved for deployment by 2025 as part of the CEF-EC program; moreover, the filing set forth an additional 48 Use Cases that were not adopted, but that could be considered in future filings leveraging the network and meters that would be installed by the approved CEF-EC

included in the currently-approved CEF-EC program, PSE&G has not developed a detailed deployment plan for this capability, including investigation of cybersecurity risks and requirements. The MFR acknowledges that there are cybersecurity concerns with HANs but seeks to address interests of third party stakeholders seeking this capability by requiring sharing to behind-the-meter HAN devices that the customer would be responsible to obtain and own. PSE&G submits that possible vulnerabilities to critical utility systems of behind-the-meter HAN devices has not been well-developed during this proceeding and should be explored in more depth through a working group prior to mandating this as a requirement.

3. Adoption of Standardized Customer Privacy and Cybersecurity Requirements

As is stated in comments to MFR #1, above, PSE&G agrees that customer access to data and the customer consent process should be as user-friendly and seamless as possible to across EDCs to encourage customer engagement. PSE&G agrees that it should work with other EDCs to expeditiously develop a common consent form, and recommends the following:

a. <u>MFR should allow EDCs to jointly recommend a consent form for BPU evaluation</u>. For the reasons stated above, PSE&G recommends that this MFR requirement should not be so granular as to mandate specifics like a "one-click" experience or prohibit EDCs from submitting proposals. PSE&G recommends that the MFR allow the EDCs to put forth a proposal for the customer consent form and process for the Board and other stakeholders to evaluate, rather than mandating at the outset that existing retail choice processes consent be utilized without any modifications, including any additional requirements to address cybersecurity. PSE&G submits that it should not be a foregone conclusion that any requirements beyond those currently used for retail choice would be unjustified or unduly burdensome for third parties. Considering the importance of cybersecurity, EDCs should have flexibility to design a common consent form on the basis of the existing processes, and if the EDCs propose elements not currently included, EDCs should have an opportunity to present to the Board why they are justified.

b. <u>Compliance with consent requirements should remain with the third party requesting access.</u> With respect to the current retail choice process, current regulations require licensed TPSs to obtain and retain customer authorization. This process puts the responsibility of insuring consent compliance on the entity that is requesting the information, rather than having the utility secure consent for each transfer of data, and enables the transfer of data without considerable administrative burden while preserving customer privacy. This practice should continue for TPSs and should apply to un-licensed third parties with whom customers wish to share their AMI data.

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program. All 70 use cases are set forth in PSE&G's April 1, 2020 Updated Petition in Docket No. EO18101115, Attachment 1, Schedule FGD-CEF-EC-2, beginning at page 44.

c. <u>The MFR should clarify that EDCs may design reasonable cyber security protocols to address the data delivery architecture.</u> PSE&G generally agrees that the NIST Cybersecurity Framework should be a baseline for cybersecurity requirements, but to the extent there may be security gaps or risks identified during development of the DAP, the MFR should allow EDCs to recommend additional requirements, along with justification, that would be reviewed by the BPU when DAPs are filed.

d. <u>EDCs should not be required to track and report "bad actors."</u> PSE&G requests removal of the requirement that EDCs report and track "bad actor" third parties, as this should not be the responsibility of the EDCs. It is not clear what is meant by "bad actors" and how this would be identified or measured. PSE&G should not be placed in a position of deciding what behaviors warrant removal from access and potentially receiving complaints from third parties regarding their inclusion. Complaints by customers should be submitted to the BPU, and the BPU can direct EDCs regarding required actions in response. PSE&G also suggests that the BPU could pre-screen or certify non-licensed third parties for participation in AMI data sharing, as a proactive measure.

4. Reporting Metrics

PSE&G preliminarily believes the proposed reporting requirements are reasonable, but recommends that the MFR require EDCs to include in their DAP filings the costs to track and report the data listed in the Draft MFR and to reserve final determination of reporting requirements and frequency for the orders approving EDC DAPs so that costs to implement can be considered in context with the value of data provided.

5. Data Granularity and Appropriate Rollout Schedule

PSE&G requests clarification of this MFR and that if this transition is required, the MFR reasonably account for time and resources needed to transition from a 15-minute to a 5-minute interval for residential customers. Additionally, considering that the MFR links potential benefits of a 5-minute interval to changes to the PJM tariffs that will not be implemented for several years, PSE&G suggests this is an item that could be re-prioritized for further consideration through working groups rather than included in the final MFRs. Should the Board determine there is a reason to prioritize this item in the final MFRs, PSE&G recommends the following:

a. <u>The MFR should clarify that a 15-minute interval may be maintained for non-aggregated residential customers.</u> The MFR as drafted states that each EDC "shall collect" 5-minute interval data for all customers and also states that the 15-minute interval should be permitted for residential customers on the condition that there is a process for "easy" transition to 5-minute collection if/when customers enter a DER aggregation plan. Assuming the latter is the intent, the MFR should be re-worded so that the final version is clear that a 5-minute interval is not mandated for all residential customers. If the intent *was* to mandate a 5-minute interval for all

residential customers, it is unclear what was intending for residential customers that do not ultimately join a DER aggregation plan. Flexibility is needed as it might be more prudent operationally to transition all meters, rather than to maintain different sets of data for subsets of residential customers in the long term. Thus the MFR should state that 15 minutes may be maintained for non-aggregated customers, or EDCs may choose to propose in their DAPs to transition all residential customers to a 5-minute interval if such a plan is more efficient and cost effective.

b. <u>The MFR should allow EDCs to include in the DAP filing a plan for reasonable transition.</u> Regardless of whether the intent was for all residential customers, or only for aggregation customers, the MFR should allow the EDCs to propose a transition plan. The MFR assumes transition from a 15-minute to a 5-minute interval can be done easily, for example, through an over-the-air ("OTA") software configuration update, and during the stakeholder session, Staff noted they do not expect this configuration change would require a truck roll, which would be concerning from a cost perspective. PSE&G's approved CEF-EC program is deploying residential AMI meters collecting data at a 15-minute interval, and by the end of 2022, PSE&G will have installed approximately 400,000 of these meters. While the meters being installed are capable of transitioning to a 5-minute interval, PSE&G is still investigating whether this could be done simply and reliably via OTA. Currently, it is the Company's understanding that OTA configuration changes have not been utilized over a large population of utility billing meters for the type of network and meter PSE&G is deploying; thus, OTA meterology changes are not known to be reliable at this time. Failures of OTA changes could negatively impact billing accuracy. In addition to uncertainty regarding whether such changes could be reliably accomplished without rolling a truck, there will be incremental costs, beyond those planned as part of the CEF-EC program, for collecting and maintaining a larger amount of data, since three times the data would be reported by the meter than what was planned, and for significant and potentially costly changes to underlying business systems and processes using the 15-minute interval (e.g. SAP and MDMS).[7] For these reasons, PSE&G recommends this MFR be modified to require each EDC to present in their DAP filings a plan, timing, and costs for transitioning to a 5-minute interval for residential customers as expeditiously as is practicable - at a minimum for those joining aggregation plans, but EDCs may present a plan for all, if efficient. In this manner, EDCs may propose for the Board's consideration plans to better spread implementation risks and costs over time, test out OTA transitions and possibly

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[7] A change from 15-minute to 5-minute data interval for residential customers impacts systems and processes across the entire operations landscape from the meter reading equipment to the front end user tools. The entire meter-to-cash process would be impacted, as the Company would have to bill new determinants or create new profiles. This would also result in the need to reconfigure or purchase a new settlement system for the Company's "Retain Settlement" process, and the Company have to rebuild rates in MDMS (meter data management system) and VEE logic.

implement lessons-learned, and to scale proposed interval changes for the timing and expected benefits to align with PJM tariff changes.

    c. <u>The MFR should allow EDCs to provide a roll-out plan that aligns with AMI deployment.</u> The MFR also proposes to require AMI data to be made available on a rolling basis as AMI meters are installed and meter certification processes are completed. Additional time may be needed for some meter functionalities based on PSE&G's deployment plan, as connectivity to the network and all functions may not be available at the time of meter certification, and to stand up data access systems and processes. Alternatively, PSE&G recommends that the MFR require DAP filings that encourage AMI data to be made available as soon as possible, and if possible, on rolling basis as certification is completed. The EDCs could then present a plan and justification for that plan, if a rolling implementation is not possible or practicable.

6. Additional Data Fields

PSE&G recommends that this MFR be re-prioritized for assignment to a working group rather than included in the final MFRs because there currently is not technical feasibility for PSE&G to include the three recommended additional data fields based the company's approved CEF-EC AMI deployment and existing business processes. Specifically:

    a. <u>AMI meters cannot currently track EV charging data.</u> PSE&G's AMI meters are not capable of segregating any specific type of usage on the meter. Thus, unless a customer has installed a separate meter dedicated solely to EV charging (which is not the case for the vast majority of customers), PSE&G is not able to obtain EV charging data from AMI meters.[8] Moreover, it is PSE&G's understanding based on investigative discussions with our AMI meter vendor, that there are not AMI meters commercially available with the capability to track EV charging data. At best, analytics could be applied to a customer's total usage data to potentially derive likely EV usage patterns; however, such data would not be reliable for billing or EV rate-development purposes. Because this is not an automated functionality, it is not clear that the resources required to develop and maintain a derivative methodology would be justified by benefits, considering the quality issue for derived data could not be used to bill or develop rates. This issue should be considered in a working group where PSE&G's understanding of current meter technology could be better informed by vendors and other potential participants.

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[8] PSE&G's BPU-approved light duty EV charging incentive program requires participating residential customers to provide data to PSE&G from their EV chargers to facilitate calculation of time-of-use billing incentives and to support EV charging cost studies that PSE&G has agreed to perform based on aggregated data provided by program participants. *In the Matter of The Petition of Public Service Electric and Gas Company for Approval of Its Clean Energy Future – Electric Vehicle And Energy Storage ("CEF-EVES") Program on a Regulated Basis*, BPU Docket No. EO1810111 (Decision and Order Approving Stipulation, January 27, 2021).

b. <u>PSE&G's billing systems do not capture or retain data to identify customers' economic demographics, and this information is available from other sources.</u> The second recommended additional data set is data that could identify or correlate to a "status flag" of a premises as operating within a predefined community, like a disadvantaged community. In New Jersey, however, it is the state and not the EDCs that collects and maintains demographic information for overburdened communities.[9] For PSE&G to become a source of this same information would be duplicative and would require incremental systems and costs to collect, store, and keep this highly sensitive type of data secure. PSE&G suggests that whatever analytics for overburdened communities the BPU envisions could be performed using AMI data could be performed by the state providing demographic data to the utilities, and the utilities reporting the aggregated, anonymous data from addresses provided without need for this to be a required element in DAPs.

c. <u>Potential use of AMI Data for future Volt/VAR control is already a PSE&G future AMI use case, but needs additional time and resources to develop.</u> Considering the need to prioritize utility investment in the DAPs to focus on the core elements of AMI data access, the very name of this additional data set, "potential" and "for future use" suggests re-prioritization for future consideration rather than inclusion as a mandated element of DAPs. In fact, PSE&G's CEF-EC filing presented a future (Release 3) Use Case for Volt/VAR control. Because this Use Case was not prioritized for inclusion in the ongoing approved CEF-EC program, additional developmental work would be required to implement this item. PSE&G recommends this should be considered via a working group.

Alternatively, this MFR should be modeled after last concept included in this draft MFR: EDCs *may* include in their filed DAPs any additional data sets that their current AMI deployment can support at a reasonable cost.

7. Ensuring Fair Access and Competition

PSE&G strongly recommends that the complex, future state issue of Ensuring Fair Access and Competition for AMI apps be omitted from the final MFRs and be addressed instead through a working group with participation of AMI meter manufacturers, app developers, EDCs, and Staff. Of all of the proposed MFRs, this has the most potential for resulting in unintended negative impacts to customers resulting from possibly needing to replace assets recently installed pursuant to PSE&G investments that were approved in 2020 as part of the CEF-EC program. Consequently, if the Board is determined to mandate requirements addressing the future potential for on-meter apps, the MFR should clearly state that, to the extent there are any conflicts, nothing in the MFRs is intended to require EDCs to change or abandon AMI networks and meters already installed, or in progress of installation, pursuant to previously-approved AMI deployment plans.

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[9] For example, the Office of Environmental Justice, available at: https://www.nj.gov/dep/ej/communities.html .

PSE&G appreciates Staff's work to identify potential competition issues and potential solutions that could be considered when the evolution of AMI technology reaches a more stable phase. Respectfully, however, this is a true future-state issue because the technology for on-meter apps currently is not technically feasible for PSE&G's AMI deployment. This capability is not currently compatible with the RF mesh network PSE&G has just finished installing pursuant to the approved CEF-EC program or the associated meters PSE&G is in the process of deploying on an accelerated basis (approximately 400,000 will be installed by the end of this year, with full, system-wide deployment by 2024). Utilization of the RF mesh network provided efficiencies because PSE&G was already using this type of network on parts of its system when it designed its CEF-EC program, and this network can support a myriad of AMI-technology-enabled benefits, as is set forth by PSE&G's three releases of 70 Use Cases PSE&G outlined in its CEF-EC filing. Regarding on-meter apps, however, even conceptually outside the context of the CEF-EC program, PSE&G understands based on conversations with its vendor that meters capable of hosting on-meter apps are currently being developed and have only been deployed for smaller trials. When these meters become more broadly commercially available, PSE&G would need to replace large parts of the network, and retro-fit other parts, in order to install new models of meters, because the newer meters are not compatible with the RF mesh network. Thus, mandating the proposed elements of this draft MFR is premature at this time. These issues can be resolved to align with future filings for incremental AMI programming, five to ten years forward, which could align with upgrades on the network as it ages. On these bases, PSE&G provides the following for consideration:

a. If this MFR is finalized as drafted, PSE&G's DAP would be required to include a plan to replace parts and upgrade other parts of the AMI communications network and replace meters just installed, with cost recovery for stranding these investments. The MFR requires that EDCs, "shall enable Wi-Fi device to connect to an AMI behind-the-meter device[s] [HAN devices]." PSE&G's Board-approved CEF-EC program AMI network is an RF mesh network that is *not* IP based or IP capable, thus, to accommodate this type of mandatory requirement would necessitate replacement of the recently-installed network and costly software reconfiguration of portions of the network that was installed between 2015 and 2018. These are assets, a significant portion of which were just installed over the last two years have a 10-year depreciation schedule and an approximately 10-15 year useful life. If this MFR is retained, it should be clarified and/or recognized that EDCs may need to incorporate appropriate cost recovery plans for replacements to undepreciated assets.

b. PSE&G has no current plans to host on-meter apps or an "app store." As is noted above, PSE&G's CEF-EC program is designed to deliver varied and substantive AMI benefits to customers through the year 2025, and potential for additional use case benefits up to 15 years beyond, that do not require on-meter apps.[10] The AMI meter that PSE&G

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[10] Benefits of the program including the 22 Use Cases that will be implemented by the end of 2025 are described in detail in the Company's filing April 1, 2020 updated filing and in the BPU''s approval order. Moreover, the

presented in its CEF-EC filing, and is currently installing on the basis of the BPU's approval, is not capable of hosting on-meter apps, even by reconfiguration. Thus, if this MFR is mandated, in addition to replacing and upgrading the AMI network, PSE&G would need to cease installing new AMI meters until such time as meters capable of hosting apps are commercially available, likely at a far higher per-unit cost than the AMI meters PSE&G is currently installing, and start-over with AMI deployment. Such a result would be not only economically wasteful, but would confuse and annoy customers who just had their meter replaced. Moreover, since there is not broad commercial availability for on-meter apps in the near term, concerns expressed in the MFRs regarding utility pre-installation of apps are also premature.

    c. <u>AMI meter manufactures need to be engaged in discussions of competitive issues and cybersecurity for on-meter apps.</u> A speaker during the stakeholder meetings noted that in other states, utilities have been reluctant to manage app stores or serve as the middle-man between potential AMI app developers and AMI manufacturers. Perhaps unsurprisingly, PSE&G is hesitant about such a future role. PSE&G agrees with the speaker that the primary transactions required in order for hosting apps on meters are between the developers and AMI manufactures. AMI manufacturers ultimately will have primary control over approving apps that can reside on their meters, even for apps that could eventually be developed by EDCs.[11] Moreover, the processes and issues presciently raised in the Draft MFRs are complex and would require commercial contractual arrangements between app developers, AMI manufacturers, and possibly EDCs. There are also major cybersecurity concerns that would need to be resolved, with the participation of AMI manufacturers, to ensure that on-meter apps could not provide inappropriate access to the AMI communication network or utility operational systems.

    PSE&G understands that it will be important to address competitive issues in advance of future deployment of on-meter app capability; however, there is no apparent near-term need to resolve these issues in the forthcoming MFRs considering feasibility issues. Moreover, utilities are already subject to robust regulations governing potential competitive services.[12] Therefore, PSE&G encourages the BPU to defer the "Fair Access and Competition" issues related to development and deployment of on-meter apps to a working group that can commence contemporaneously with, or following, development and approval of EDCs DAPs.

Company's filing presented 48 additional possible future use cases that could be supported by the network and meters the Company is installing as part of this program.

[11] To be clear, PSE&G has no current plans to develop on-meter apps.

[12] New Jersey Electric Discount and Energy Competition Act, N.J.S.A. 48:3-49, et seq. ("EDECA") and the BPU's regulations at 14:4-1.1, et. seq.

8. Billing and Settlements

The MFR proposes to require EDCs to use actual AMI data to settle customer accounts and establish customers' Peak Load Contributions (PLCs) using actual load data rather than estimated data (PSE&G's current practice for the vast majority of customers). As PSE&G has noted in prior comments in this docket, this transition will be complicated and costly for PSE&G to implement due to the scope and breadth of changes required. PSE&G requests that this issue should be considered via a working group, or that sufficient flexibility be included in the final MFR to allow for the time and resources required to implement this item.

To expand, for PSE&G the transition would require substantial system enhancements. The Company's current use of interval data for load settlement for roughly 15,000 meters involves daily calculations and data transfers of roughly 336,000 discrete hourly values. If the Company were to transition this process to the utilization of interval data for all customers in the load settlement process, the daily data process for discrete hourly values would grow exponentially, to roughly 55,000,000 values. A change of that magnitude would represent a significant process modification and require a rebuild of the Company's load settlement system and processes, and interfaces to other systems. There would be similar impacts to the Company's PLC-calculation process if actual data were utilized in the derivation of PLCs values for *all* customers, though the Company has initiated the transition to the use of AMI data for the derivation of PLCs for commercial and industrial customers.

Though technically feasible, such modifications should reflect a clearly identified need and, if there is one, should occur through an orderly transition to increased use of AMI data in these processes. The draft MFR does not indicate that there has been an analysis of an immediate need or of the potential benefits to a rapid transition to justify the significant resources that will be required to implement this requirement.[13] The MFR also does not set forth a time frame for implementation. Therefore, PSE&G suggests that the MFR, at most, should require EDCs to present a plan and timeline to implement this recommendation, including costs, for the BPU's consideration. Alternatively, as there is not an apparent basis for urgency, this issue could be considered further through a working group rather than being included in the MFR at this time, so that EDCs can focus resources primarily on consent and delivery of AMI data to third parties via the recommended platforms and framework.

9. Format of Data Sharing

PSE&G generally supports the recommendations in the MFR and, as is stated above, has capability to support GBC and GBC protocols that provide a secure method for customer access. PSEG is already utilizing Green Button "Download My Data" to provide customers with access to AMI data. There will be some upfront costs and ongoing costs to utilize GBC for the volume of data expected and to facilitate customer consent. The requirement to transmit data via

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[13] For example, there is not an immediate need from a billing or load settlement standpoint to migrate all BGS-RSCP customers to interval data-based settlement or PLC determination in the immediate future, especially on a rolling basis. Moreover, since customers may opt-out of an AMI meter, PSE&G will be required to maintain its current load profiling and PLC processes even if it migrates its settlement and PLC processes to full-interval.

Electronic Data Interchange (EDI) can be supported, but PSEG does not currently have the ability to send historical AMI interval data via EDI, so incremental investment would be required to implement and maintain this functionality. The requirement of sharing data in flat files (variable format) including rolling 14 days' worth of usage interval data can also be supported, but will also require significant time and resources to build a web portal for suppliers to access the AMI data.[14] Other requirements including 60-second availability following authorization and 99.5% "uptime" for GBC may be more challenging, and feasibility of meeting these requirements is not knowable until the customer consent process and other aspects of the process are further developed.

Considering the resources required to stand-up AMI data access in the recommended manner, PSE&G requests that the MFR should recommend, but not mandate, specific functionality, like 60-second availability and 99.5% uptime. The Board should consider the cost of implementing these types of features in the context of a more fulsome review of the expected benefits they will provide to ensure DAPs provide a value-driven set of features that consider the data storage, data transfer and installed AMI equipment capability. Especially considering that the MFRs propose that utility customers should bear the full implementation costs, the MFRs should allow EDCs to provide options to avoid developing costly features that might benefit only a small minority of users. Clarifying the MFRs to allow for alternate proposals will allow for these issues to be examined when EDCs submit their DAPs for approval.

10. Emergency Responders Access

This is an issue that can likely be accommodated in some reasonable manner but will require additional development and serious consideration of cybersecurity and statutory requirements that prohibit EDCs from providing customer data to any third parties without customer consent. PSE&G suggests this issue be re-prioritized to a working group with the participation of first responders to better determine needs and possibilities.

11. Appropriate Utility Use of AMI Data

It is critical that PSE&G be permitted to appropriately and reasonably use AMI data to support energy efficiency ("EE"), demand response ("DR"), or Distributed Energy Resource ("DER") programs, both for uses already approved by the BPU and for developing, operating, and evaluating new EE, DR, and DER programming. Indeed, the BPU has already approved PSE&G's AMI Release 1 Use Cases that will leverage AMI data,[15] and this MFR, as worded, could have the unintended negative consequences to these programs. AMI data is necessary for EE/DR program design and delivery and such uses by EDCs are reasonable. This MFR should be clarified to ensure EDCs are not so narrowly constrained that they cannot continue to partner with the state on accomplishing important goals of the Energy Master Plan. Specifically, limiting EDC use of AMI data to "core functions" is problematic because this term could easily

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[15] Please reference Use Case #s 5, 7, and 9 in PSE&G's approved CEF-EC Stipulation, reproduced in the appendix, hereto.

be narrowly misconstrued, regardless of attempts to define the term to be less restrictive, and is likely to stifle innovation.

The MFR states that restricting EDC use of AMI data is necessary "to ensure that the EDCs do not gain an unfair competitive advantage over other entities," however, there is no basis provided for this concern, and there is no consideration of the regulatory structure already in place to restrict EDCs from operating in an anti-competitive manner.[16] Any actual suspected anti-competitive use of AMI data could be resolved on a case-by-case basis through existing BPU processes; a proactive restriction is unnecessary and unwarranted at this time.

PSE&G submits that a more reasonable approach would be to include statements in the MFR that:

- EDCs may use AMI data for operations including billing, settlement, reliability, and programs and AMI Use Cases or EE, DR, and DER programs that have already been approved or could provide relevant data associated with future program filings with the Board
- EDCs may present additional Use Cases or programs relying on AMI data in future flings for BPU approval
- EDCs are expected to seek BPU authority for providing services using AMI data that might be competitive in accordance with EDECA
- Nothing in the MFR is intended to revoke BPU authority previously granted

Additionally, the MFR could add to the DAP reporting requirements an EDC disclosure of programs, aside from billing and collections and reliability operations, that utilize AMI data.

Conclusion

PSE&G encourages the Board and Board Staff in this proceeding to prioritize and focus resources in the short term on the most critical elements of DAP design that best align with the planned deployment of AMI functionality over the short term, and address other elements of DAPs over a longer term and through working groups. As PSE&G continues its ongoing deployment of AMI meters and benefits pursuant to the CEF-EC program, the Company looks forward to this next step of developing a DAP to allow customers to more directly engage with their energy usage data.

Very truly yours,

Katherine E. Smith

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[16] *See*, n 10, *supra* (EDECA).

Appendix

PSE&G Clean Energy Future – Energy Cloud Program
BPU-Approved Release 1 Use Cases

Use Cases aligned with use cases contemplated by the draft minimum filing requirements straw proposal are shown in **bolded, red font** and are marked with an, "*"**.

Use Case #	Use Case Name	Use Case Overview & Value
1*,2*,3*,4*	**1.Enhanced Customer Engagement & Communications** **2.Rate Analyzer & Comparator** **3.Usage & Bill Alerts, Saving Tips, Interactive Bill Presentment** **4.Interactive Energy Demand & Bill Management (Portal part of Meter Data Management System - MDMS project)**	**A set of customer benefiting functions and analytic applications that provide visualizations and analytics across a variety of customer and iESP data combined with other data – bills, usage, prices, tips, alerts, energy efficiency, appliance profiles, new products and services, notifications, and available through mobile and web portals.**
5	Customer Segmentation & Behavioral Analysis	Provides the ability to develop highly targeted customer segmentation models based on more granular energy usage data and customer interactions to improve customer service, marketing, time of use ("TOU") rates, new products and services, and planning load forecasts.
6	Customer Power Quality	Capability that allows PSE&G to obtain voltage, load, and alert data directly from the meter to analyze customer power quality issues (flicker, sag, swell), without the need for further instrumentation, and can also help ensure appropriate corrective actions are taken (utility or customer side of the meter).
7	Customer Energy Efficiency Programs (Thermostats & Supporting CEF-EE Filing)	iESP data gives the customer the ability to make more educated energy efficiency related decisions, change energy consumption habits, and ultimately lower utility bills. This is enabled by providing customers with detailed iESP data through web or mobile portals, smart devices and in-home devices. PSE&G can also use this iESP data to design and offer energy efficiency products and services.

Use Case #	Use Case Name	Use Case Overview & Value
8	Customer Service & Call Center Performance	Enables the use of broader range of information (including iESP) to increase call center knowledge, improve service, improve customer satisfaction, and lower customer costs by bringing together historical and real-time information to support decision analysis and improve the customer experience.
9*	**Customer DER/PV/EV**	**Services and systems that will use iESP data to help assist customers with DER (solar, EV, energy storage) installations and the management of any power quality issues that occur as a result of variable DER load**
10	Customer Device Safety	Enhances customer safety by using iESP data, such as alerts and voltage data to detect safety issues relating to customer meters and power connections such as hot sockets and fallen wires, and provide alerts to customers and PSE&G.
11	iESP Sensor, Network & Data Operations	Back office processes and systems that manage the initial iESP infrastructure deployment and the ongoing and updated Meter Operations business function including acquisition, warehousing, testing, installation, maintenance, data streams and quality, alarm management, and meter data management.
12*	**Automated Move in/Move out & Remote Disconnect/ Reconnect (Primarily in MDMS project)**	**This use case addresses the messages exchanged between Customer Operations processes and Smart Meter through the HeadEnd and Network when a customer move in or out request is issued by Customer Operations or other customer processes. PSE&G currently sends a metering service employee to move a customer in or out for a variety of reasons. With iESP, the turn on functions and on demand read functions to support these processes can be automated and performed remotely and instantaneously, thereby increasing customer satisfaction and efficiency across various customer processes.** • **Electric operations reduction due to MIMO and Collection activity automated.** • **Gas operations reduction due to remote MIMO and Collection activity automated:** • **Cost reduction due to 85k avoided truck roll costs for move in move outs**

Use Case #	Use Case Name	Use Case Overview & Value
13*	**Remote Disconnect/ Reconnect (Primarily in MDMS project)**	**This use case addresses the messages exchanged between Customer Operations processes and Smart Meter through the HeadEnd and Network when a meter connect/disconnect request is issued by Customer Operations or other processes.** **PSE&G currently sends a metering service or collections employee to connect or disconnect the meter for a variety of reasons. With iESP, the reconnect/disconnect functions to support these processes can be automated and performed remotely and instantaneously, thereby increasing customer satisfaction and efficiency across various customer processes.** • **Electric operations reduction due to remote turn-on/off of electric meters** • **Gas operations reduction due to remote turn-on/off of gas meters:** • **Cost reduction due to 171k avoided truck roll costs for move in standard turn on/turn offs** • **Cost reduction due to avoided truck roll costs for turn on/turn off type events** • **Reduction in writes offs due to energy consumed on inactive accounts. Being able to remotely detect and disconnect will reduce the occurrence. $20m written off yearly. Assuming 70% reduction due to iESP capabilities**
14	Next Generation Meter-to-Cash	With more granular and quality iESP data available, alongside numerous other internal data sources, PSE&G can optimize and re-invent their meter-to-cash processes and drive out inefficiencies, increase service, and reduce costs. The iESP data is significantly more accurate at the source and by mapping the data from the iESP to its end use, leakage can be detected more easily. The cost of these losses is spread across the customer base so any improvement ultimately reduces customer bills. • Billing cost reduction due to a decline of billing irregularities and analysis work • Collection cost reduction due to a decline of back office collection workload • Reduction in bad debt due to improvement in field collections. Being able to remotely detect and disconnect will reduce the occurrence. $60m

Use Case #	Use Case Name	Use Case Overview & Value
		written off yearly. Assuming 31% reduction due to iESP capabilities
15	Network Connectivity Analysis	PSE&G's electricity network is complex, covers a large area, and provides power to different customers at different voltage levels. Ensuring that the required sources and end-use loads are correctly represented in operations systems is often very difficult. The iESP end-point meters can extend the network model and enable a high level of accuracy of connections and phasing, which in turn results in better planning and operations performance, and enables many other network dependent use cases.
16*	**Outage Detection & Analysis**	**Uses outage data from operations systems and smart meters to identify and verify possible outage locations, as well as identify network sections and specific customers (and numbers) that are out of power. This data is provided and displayed in real-time, to allow analysis, fast response, and crew dispatch to the precise location (down to meter) with information on the potential cause of the outage in order to more quickly restore power and ensure all customers are restored.**
17*	**Outage Response Notification (ETR)**	**Use iESP outage data to calculate and communicate reasonable, more accurate, and acceptable outage status and restoration times to customers in real time. This largely eliminates one of the most common customer complaints about utility service, *i.e.,* inaccurate estimated restoration times. Messaging solutions within scope of this use case include Interactive Voice Response (IVR), web portals, text messaging, social media, mobile applications, and press releases.**
18*	**Voltage Monitoring & Analysis**	**Using iESP data and other network data sources, voltage readings are captured, visualized, and system-wide analysis is run to determine locations where voltage violations exist both above and below nominal voltage. Utilities can utilize this information for accurate analysis of voltage issues and a base for voltage planning and optimization across the network. Further, this information can**

Use Case #	Use Case Name	Use Case Overview & Value
		help planners identify strategic locations for deployment of Volt/VAR optimization equipment.
19*	**Asset Load/Phase Management, Balancing & Power Analysis (incl. Transformer Load Monitoring & Customer Load Curtailment/Limiting)**	**Using iESP data and other network data sources, load data is imported, aggregated, and visualized. Power flow analysis is run to examine and monitor loading profiles of every network asset along the feeder from the substation to the smart meter. This use case gives visibility of loading profiles and load flows of all network assets and customers with real-time or overnight iESP data updates. This information can be used by planners and operators to determine areas of overloading of assets on the system, plan responses to major events, execute asset balancing, and customer load curtailment.**
20*	**Load Profiling & Forecasting**	**Capability that would enhance load profiles and forecasts by using iESP data in combination with network, customer billing or other data (*e.g.*, weather) to perform more detailed usage analysis. This is beneficial to customers and PSE&G planners by supporting optimized planning of load growth, which in turn leads to optimized capital spending and reliability of the network.**
21	Distribution Losses	Distribution losses can be identified by comparing the iESP end-point meter usage data with usage data at the distribution entry point (*i.e.*, substation). Areas of high losses or network sections with particularly high losses can be identified through the analysis. Further analysis on the causes of the high losses will shed light into the different types of corrective / mitigating actions that can be taken to reduce the technical losses. Technical losses are spread across the customer base, so any improvement in this area could reduce customer bills.
22	Revenue Protection & Assurance	Revenue protection refers to the prevention, detection, and recovery of losses caused by interference with or theft of utility service. This use case will leverage smart meter consumption, as well as voltage and event data, to detect energy theft and meter tampering by employing multiple screening techniques, including cross-service correlations. Energy theft is spread across

Use Case #	Use Case Name	Use Case Overview & Value
		the customer base, so any improvement reduces customer bills.