

**BEFORE THE
COUNCIL OF THE CITY OF NEW ORLEANS**

**Resolution and Order Establishing a Docket)
and Opening a Rulemaking Proceeding to)
Consider Revising the Council's Rules to) Docket No. UD-18-04
Allow Release of Whole-Building Data to)
Building Owners)**

Advisors' Report Regarding the Release of Whole-Building Data

October 19, 2018

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Advisors' Report Regarding the Release of Whole-Building Data

I. Introduction

On June 21, 2018, the Council issued Resolution No. R-18-225 establishing a docket and opening a rulemaking proceeding to consider revising the Council's rules to allow the release of aggregated whole-building energy usage data to building owners for buildings with four or more meters, without requiring the building owners to first obtain authorization from the tenants of the building. In the Resolution, the Council established an intervention deadline, a deadline for comments and reply comments by the parties and a deadline for an Advisors report with any revised recommendations from the Advisors.

The Advisors are pleased to report that there appears to be a way of providing this data at minimal cost to ratepayers once advanced metering infrastructure ("AMI") is fully deployed. The Advisors also find that there may also be a solution that would allow certain high-priority buildings to get such data before full AMI deployment, but further information regarding the costs and benefits of this possible approach is needed in order to determine whether it is in the public interest. In this Report, the Advisors analyze the comments filed by the parties and recommend that the Council allow aggregated whole-building data be released under certain circumstances, that Entergy New Orleans, LLC ("ENO") develop a process for the release of such data that will ensure the relevant conditions are met, and that ENO and the parties file more information regarding the potential costs of releasing such data prior to the implementation of AMI in ENO's territory and the benefits to be gained by doing so.

II. Background

In Council Resolution No. R-17-428, the Council committed to work with the Administration in the further development of the concepts set forth in the Administration's Climate Action Strategy and directed the Utility Advisors and the Council Utilities Regulatory Office ("CURO") to work with the Administration. It also committed that as each proposal for a specific action affected by the Climate Action Strategy that requires Council approval comes forward, the Utility, Cable, Telecommunication and Technology Committee ("UCTTC") would open an appropriate docket to provide a full and transparent process, including all stakeholders, to examine the proposed action and develop a supportable regulatory strategy and administrative record upon which to base Council action.

The Administration's City Energy Project is an energy efficiency project designed to encourage commercial building owners to benchmark their energy usage data in order to calculate the value of making energy efficiency improvements to their buildings. In discussions with the Mayor's Office of Resilience and Sustainability ("ORS"), ORS indicated to the Advisors that the Council's restrictions preventing ENO from releasing whole-building data to building owners for buildings with multiple meters without first obtaining the consent of each tenant creates a time-consuming obstacle for building owners seeking such data for energy benchmarking purposes. However, City Code Section 158-1045(e) states that a customer has "[t]he right to have customer information, including payment history and consumption patterns, kept confidential."¹

The Council's Service Regulations² implementing Section 158-1045(e), were most recently updated through Council Resolution No. R-16-105. The Service Regulations provide at *Section 53. Customer Confidentiality* that "[u]nless specific written permission is obtained from the Customer to release the information regarding the Customer, the Company shall insure that Customer information, including payment history and consumption patterns will be kept confidential. Customer information may be provided under a protective order issued and/or confidentiality agreement executed in a legal

¹ New Orleans, La., Code of Ordinances ch. 158, art. VIII, § 1045(e) (2018).

² A copy of the Service Regulations applicable to ENO may be found here: http://www.entergy-neworleans.com/content/price/tariffs/enoi_service_regs.pdf.

proceeding, but in such proceedings the Company should make every effort to maintain the Customer's privacy." The Customer Service Regulations, as presently written, would prohibit ENO from releasing whole-building data to a landlord in a building with multiple meters without first obtaining written authorization from each tenant in the building.

The Advisors reviewed information provided by ORS, including the January 2016 U.S. Department of Energy ("DOE") Energy Data Accelerator report *Best Practices for Providing Whole-Building Energy Data: A Guide for Utilities* ("*Best Practices Report*"),³ and the October 2014 U.S. DOE Pacific Northwest National Laboratories report *Commercial Building Tenant Energy Usage Data Aggregation and Privacy* ("*Data Aggregation and Privacy Report*"),⁴ and recommended that the Council open a rulemaking docket to consider the issue of whether aggregated whole-building data should be released to building owners where the building has four or more meters. The Council did so in Resolution No. R-18-225 and also invited comment on feasibility and logistical issues.

III. Comments Filed by the Parties

Comments were filed by ENO, The Alliance for Affordable Energy ("AAE"), and the Natural Resources Defense Council ("NRDC"). Joint comments were filed by a coalition of The National Housing Trust, Stewards of Affordable Housing for the Future, and the Renaissance Neighborhood Development Corporation (collectively, the "Affordable Housing Intervenors"). AAE and the NRDC filed joint reply comments.

A. Comments Regarding Whether Whole-Building Data Should be Released

ENO states that in order to protect the privacy of customers, the proposed four-meter threshold should be tied to active meters/tenants, and that the owner is best suited, and should be required to notify the utility if the number of active tenants/meters drops below the threshold or if ownership of the building is transferred in some manner.⁵ ENO also argues that it would be easier to disaggregate the data if one tenant uses the vast majority of the building's electricity.⁶ ENO suggests that the Council require consent from all tenants where one individual tenant accounts for more than 50% of the usage.⁷ ENO suggests that the Council place reasonable limitations on the building owner's use of aggregated data, such as limiting it to purposes of benchmarking and energy efficiency and management purposes.⁸

The AAE supports permitting ENO to release aggregated whole-building data to owners of buildings including at least four customer meters.⁹ The AAE also encourages ENO to work with large building owners to consider what features in a landlord portal would be most useful, and notes that a streamlined system for tracking building performance in multi-family homes is particularly useful in driving energy costs lower for New Orleanians, especially as the City's residents are primarily renters.¹⁰ The AAE states that energy benchmarking is a valuable tool for multi-tenant buildings, even beyond the direct connection to energy efficiency programs, and that using programs like Environmental Protection Agency's ("EPA") Portfolio Manager, building owners/managers can track the performance of their

³ See *Best Practices Report*, <https://betterbuildingssolutioncenter.energy.gov/sites/default/files/attachments/Best%20Practices%20for%20Providing%20Whole-Building%20Energy%20Data%20-%20%20Guide%20for%20Utilities.pdf>.

⁴ See *Data Aggregation and Privacy Report*, https://www.pnnl.gov/main/publications/external/technical_reports/PNNL-23786.pdf.

⁵ Entergy New Orleans, LLC's Comments Regarding Whole-Building Aggregated Data, Docket No. UD-18-04, at 5 (Aug. 27, 2018) ("ENO Comments").

⁶ ENO Comments at 5.

⁷ ENO Comments at 5.

⁸ ENO Comments at 6.

⁹ Comments of the Alliance for Affordable Energy, Docket No. UD-18-04, at 2 (Aug. 23, 2018) ("AAE Comments").

¹⁰ AAE Comments at 3.

buildings over time and compare them to competitors in a market and to buildings nationwide.¹¹ The AAE also recommends that ENO work with the EPA's Portfolio Manager program to develop an automated process in order to overcome the barrier created by requiring building owners to manually enter their energy usage into the program and support greater adoption of the Portfolio Manager program.¹²

The Affordable Housing Intervenor state that they are affordable housing providers committed to energy efficiency as a cost-effective way to maintain affordable housing and provide healthier, more comfortable homes for residents.¹³ They argue that access to whole-building energy usage data would allow owners to monitor buildings for maintenance issues, identify opportunities and finance cost-effective energy efficiency improvements, and help keep energy costs low for residents.¹⁴ They also state that effective energy management is particularly important to owners and residents of low-income publicly-subsidized multifamily housing.¹⁵ The Affordable Housing Intervenor state that energy costs are the second largest variable operating cost in multifamily affordable housing, and because of affordability restrictions, rents cannot generally be increased to offset rising operational expenses.¹⁶ The Affordable Housing Intervenor argue that improved energy management, directly informed through whole-building energy information, and benchmarking that such data enables, is an essential path to lower operating expenses and pursue further investments in energy efficiency to maintain long-term affordability.¹⁷ They state that the benefits of benchmarking include energy savings, access to financing, and reduced energy burden for residents.¹⁸ The Affordable Housing Intervenor support the City Council's effort to assure building owners are able to obtain energy usage information using modern systems and tools and agree that a good first step is the proposal outlined in the Resolution to clarify that customer Service Regulations allow ENO to deliver aggregated, whole-building energy usage data to owners of multi-tenant apartment buildings without the cumbersome process of obtaining permission from every tenant.¹⁹ They state that an aggregated whole-building total for a month does not reveal any confidential information to the owner.²⁰

In addition, the Affordable Housing Intervenor encourage the Council to consider guidance, direction, and support to ENO to implement processes and systems, like a "Landlord Portal," that delivers whole-building energy usage data in a modern, timely, and systematic manner.²¹ The Affordable Housing Intervenor suggest several design best practices: (1) that data provided to building owners should represent the sum of the electricity consumed at the property and should be provided at a high degree of resolution (e.g., hourly, daily and monthly) to provide the best information for decision-making, but no less than monthly; (2) a process should be established to allow an owner's designee, such as a property management firm or an energy auditor to obtain the information on behalf of the owner; (3) the program should require four or more tenants to be both useful and ensure customer privacy is protected, and should allow the minimum threshold to be met and data to be released at the property level rather than the building level to allow for participation by properties with multiple buildings on a campus; (4) streamlined data access should be provided; (5) data transfer should be quick, convenient in a useful electronic format; (6) building usage data should be calendarized; and (7) the definition of multifamily

¹¹ AAE Comments at 3.

¹² AAE Comments at 3.

¹³ Comments of the National Housing Trust, Stewards of Affordable Housing for the Future, and Renaissance Neighborhood Development Corporation, Docket No. UD-18-04, at 2 (Aug. 23, 2018) ("NHT Comments").

¹⁴ NHT Comments at 2.

¹⁵ NHT Comments at 2.

¹⁶ NHT Comments at 2.

¹⁷ NHT Comments at 2.

¹⁸ NHT Comments at 2-3.

¹⁹ NHT Comments at 3.

²⁰ NHT Comments at 3.

²¹ NHT Comments at 3.

properties should take into account various property types, including attached (e.g., townhouses) and stacked properties.²²

The NRDC makes two recommendations: (1) that the Council clarify that ENO may provide whole-building usage information to building owners when it is aggregated of multiple customers; and (2) that the Council direct ENO to evaluate and report back to the Council on the systems and process improvements needed to assure building owners are able to obtain usage information in a systematic and automated manner.²³ The NRDC states that the Council's Resolution No. R-18-225 proposes a sensible first step: that the Council should clarify that ENO may provide the owner of a multi-tenant property with whole-building energy usage totals, so long as the total is aggregated of several customers' usage totals, without the owner obtaining and ENO maintaining paper-based permission forms for every included customer.²⁴ The NRDC states that the fact that many utilities have operated similar programs without any reports of problems validates the conclusion that aggregating multiple customers' usage information protects customer confidentiality.²⁵ The NRDC states that the Council is on very solid ground concluding that ENO may deliver a whole-building usage total to building owners, aggregated of several customers; information, within the terms of the current policy that designates usage information as confidential, and the NRDC supports the Council clarifying this point.²⁶ The NRDC states that building owners need information on the energy usage in their buildings in order to manage their properties effectively and to invest in energy-related repairs and improvements.²⁷ In addition, energy usage information is essential for a building owner to obtain and maintain an Energy Star score.²⁸ The NRDC notes that there are many benefits that come when building owners have energy usage information such as: funding for energy efficiency repairs, interest rate discounts from financial institutions for more energy efficient properties, benchmarking building energy use and comparing it to other properties, the ability of prospective tenants to compare Energy Star scores.²⁹

The NRDC supports the Council providing additional regulatory clarity that permits ENO to deliver a whole-building total to a building owner without the owner documenting permission from each included tenant, so long as ENO implements reasonable measures to protect customer confidentiality.³⁰ The NRDC recommends two measures to protect customer confidentiality: (i) requiring the whole-building total to include three or more active customers (the NRDC notes that it would also be acceptable for the Council to err further on the side of caution by requiring four customers, but it is not necessary); and (ii) confirming the identity of the requesting entity (recipient of information) as the building's owner or owner's designated agent.³¹

The NRDC also states that for a building owner's "right" to obtain usage information to have value, owners must be able to obtain the information through modern systems and processes. The NRDC recommends that the Council direct ENO to evaluate and report back to the Council on the systems and process improvements needed to assure building owners are able to obtain usage information in a modern, systematic, and automated manner.³² The NRDC recommends that ENO consider automated integration systems such as the Energy Star Portfolio Manager, establishing a process for properties with smaller numbers of tenants to obtain customer permission to obtain usage

²² NHT Comments at 3-4.

²³ Comments of the Natural Resources Defense Council, Docket No. UD-18-04, at 2 (Aug. 23, 2018) ("NRDC Comments").

²⁴ NRDC Comments at 2.

²⁵ NRDC Comments at 3 and 5.

²⁶ NRDC Comments at 3 and 5-6.

²⁷ NRDC Comments at 3.

²⁸ NRDC Comments at 3.

²⁹ NRDC Comments at 3-4.

³⁰ NRDC Comments at 6.

³¹ NRDC Comments at 7.

³² NRDC Comments at 7.

data, and that owners of affordable housing require information on usage to satisfy federal and local requirements.³³

B. Comments Regarding Feasibility of Releasing Whole-Building Data

ENO states that its customer billing systems, similar to those of many other utilities, generally are not designed to track energy consumption of a specific building given that separately metered accounts are generally under separate customer names.³⁴ However, ENO also explains that it has consulted with its AMI deployment team and vendors, and has learned that AMI technology will, in fact, enable the ability to accurately map meters to specific geographic locations using a geographic information system (“GIS”).³⁵ ENO states that it will not be able to use the GIS system to locate meters until the rollout of AMI is complete in 2020, but that using it in combination with some form of building owner verification, where the building owner verifies the meters on the building, would meet the objective of enabling ENO to understand the specific meters attached to each building.³⁶ ENO believes that the cost of this method to ratepayers would be negligible.³⁷ ENO also states that attempting to use other methods of mapping the meters on ENO’s system prior to full AMI rollout would be a costly and time-consuming process and would not benefit customers.³⁸

With respect to aggregating and transmitting energy usage data to building owners, ENO states that neither manual aggregation nor building a tool within the current billing system would be effective methods of providing aggregated data given the currently planned AMI rollout.³⁹ ENO states that it could utilize its plans to have the capability to aggregate data through the AMI Customer Engagement Portal (“CEP”) by building internal software that automatically aggregates the data by creating a “virtual meter” that aggregates all meters in the building.⁴⁰ Once the meters are verified, a utility employee would enter the meter numbers into the system to create a virtual meter.⁴¹ ENO notes that other utilities, including Xcel Energy have utilized this method.⁴² ENO states that with the deployment of AMI it will have the ability to build and implement a similar solution that aggregates and transmits the energy usage data to both the owner, through the CEP, and to a benchmarking service.⁴³ ENO notes that the DOE offers free benchmarking software, Portfolio Manager, which other utilities currently utilize, including Commonwealth Edison, Pepco, and Puget Sound Energy.⁴⁴ ENO estimates the cost associated with creating this type of software to likely be under \$25,000 before accounting for the labor related to any manual processes that would need to be performed and that it can be developed and implemented in 2019 before full AMI deployment.⁴⁵ ENO states that there is another alternative, to have a third party provide a turnkey benchmarking program that would handle the benchmarking process from aggregation to transmission.⁴⁶ ENO states that these programs come at a premium, and could cost from \$20,000-\$40,000 for startup and \$40,000-\$75,000 annually, and take up to a year to develop, but could offer additional options to building owners.⁴⁷

The AAE and the NRDC stated in their reply comments that they were surprised that a substantial new system on the scale of AMI is required in order for ENO to identify the address of apartment and

³³ NRDC Comments at 7-8.

³⁴ ENO Comments at 1-2.

³⁵ ENO Comments at 2.

³⁶ ENO Comments at 2.

³⁷ ENO Comments at 2.

³⁸ ENO Comments at 3.

³⁹ ENO Comments at 3.

⁴⁰ ENO Comments at 4.

⁴¹ ENO Comments at 4.

⁴² ENO Comments at 4.

⁴³ ENO Comments at 4.

⁴⁴ ENO Comments at 4.

⁴⁵ ENO Comments at 4.

⁴⁶ ENO Comments at 4.

⁴⁷ ENO Comments at 4-5.

office buildings it serves.⁴⁸ They state that they are concerned that waiting two and a half years until after AMI is completely implemented in order to deliver whole-building data access will mean a significant loss of savings in the meantime and may not be necessary.⁴⁹ The AAE and the NRDC argue that a high value would be lost by waiting because the Downtown Energy Challenge is already underway, and the owners/managers of the participating buildings are limited by the lack of data access. They also note that the comments from the National Housing Trust and from the NRDC state that affordable housing owners and developers are substantially impaired by not having access to this data, and that in particular, they are prevented from making use of better-priced financing for energy efficiency improvements without benchmarking.⁵⁰

The AAE and NRDC state that they concur with ENO's approach to seek cost-saving measures to reduce customer-funded costs of administration and avoid technology work that would be obviated by AMI deployment, but state that it is not clear whether ENO explored less burdensome alternatives to be able to aggregate customer accounts by address into a whole-building total, even for a limited set of large multi-tenant properties in New Orleans.⁵¹ They believe alternatives are available and encourage ENO to explore whether it could implement a partial solution, prior to full roll-out, for a subset of large multi-tenant properties - the properties likely with the highest value to be realized.⁵² The AAE and NRDC request that ENO explore the cost and level of effort for ENO to provide whole-building usage information in response to requests for whole-building data submitted by multifamily and office building owners (e.g., over 30,000 square feet), and ENO providing such data using existing systems, billing systems, or in some cases, manually.⁵³ The AAE and NRDC also suggest that ENO could target building owners requesting such information for its Energy Smart marketing and programming.⁵⁴

IV. Advisor Analysis and Recommendations

A. Allowing the Release of Data

No party opposes permitting ENO to release whole-building data, and several parties commented in favor of it. AAE, the Affordable Housing Intervenors, and the NRDC all support the release of whole-building data and ENO does not oppose it. The Advisors' own research also indicates that release of the data under the right circumstances appears to protect sufficiently consumer privacy.

The *Data Aggregation and Privacy Report* undertook a comprehensive study as to whether allowing the release of aggregated data raised a significant risk of violating the customer's privacy. In particular, they ran studies on two factors using a sampling of six utilities: (1) how many meters had to be aggregated together to sufficiently protect customer privacy and (2) how much did the pool of eligible buildings diminish as you increase the number of required meters.⁵⁵ The report sought to establish a quantitative approach for providing practitioners, such as utilities, public utility commissioners, and other policy-makers with a defensible aggregation threshold selection method, which would protect tenant privacy and ensure data on the greatest number of buildings can be reported.⁵⁶ As to the first factor, they measured what percentage of tenant bills matched the building's average profile closely enough to allow the building owner receiving that data to estimate the tenant's energy use.⁵⁷ They found that four-meter buildings are the first meter aggregation level not subject to simple deduction techniques for estimating

⁴⁸ Reply Comments of the Alliance for Affordable Energy and of the Natural Resources Defense Council, UD-18-04, at 1 (Sept. 14, 2018) ("AAE & NRDC Reply Comments").

⁴⁹ AAE & NRDC Reply Comments at 1.

⁵⁰ AAE & NRDC Reply Comments at 2.

⁵¹ AAE & NRDC Reply Comments at 2.

⁵² AAE & NRDC Reply Comments at 2.

⁵³ AAE & NRDC Reply Comments at 2-3.

⁵⁴ AAE & NRDC Reply Comments at 3.

⁵⁵ *Data Aggregation and Privacy Report* at 1-2.

⁵⁶ *Data Aggregation and Privacy Report* at 1-2.

⁵⁷ *Data Aggregation and Privacy Report* at 1-2.

individual customer electric utility use.⁵⁸ For the second factor they looked at how many buildings there were in the utilities' service territories at each level of meters (*i.e.*, how many two-meter buildings, how many three-meter buildings, and so forth).⁵⁹ They found that the number of buildings at each level diminishes rapidly above four meters and that establishing a higher threshold for the number of meters required would significantly diminish the set of buildings eligible for reporting.⁶⁰

In short, the *Data Aggregation and Privacy Report* concluded that a four-meter threshold appears to provide sufficient protection against a building owner being able to deduce what any individual tenant's actual energy usage is, and increasing the threshold to a greater number of meters diminishes the number of buildings eligible to participate at a more rapid rate than the rate at which the protection of customer privacy increases (*i.e.*, you lose more than you gain by moving from a four-meter requirement to a five-meter requirement).⁶¹ They also note that the owner of the building generally has access to tenant meters and other information that is not available to the general public and therefore there is less concern about increasing customer vulnerability with respect to releasing information to building owners than there is with releasing such information to the general public.

ENO's concern regarding the ability of the building owner to reconstruct a tenant's energy use where all four meters are not active or where one tenant uses the vast majority of the building's electricity is a recognized issue in this area. ENO's concern that a tenant's energy use would be easy to reconstruct where one tenant uses more than 50% of the building's total energy use also merits discussion. The *Data Aggregation and Privacy Report* considered the issue of tenant turnover and recognized that when there are, for example, three tenants in a building and one moves out, the energy use of the departing tenant can be estimated by comparing the two months before and after the move, and while the unit is vacant, the probability of a building owner being able to determine the energy profile of the remaining two tenants increases.⁶² That report concludes that high turnover makes this more difficult, but that establishing a quantifiable measure of the sufficient turnover based on the impact on the likelihood a tenant can be matched to its energy use is not possible because there are simply too many variables that affect the outcome, such as the proportion of the impacted meter of the building total profile, the shape of the building total profile and the timing of the move.⁶³ The Advisors also agree with ENO that where a single tenant uses 50% or more of the building's energy, the whole-building data is more likely to enable the building owner to deduce that tenant's energy usage. Therefore, the Advisors believe that a restriction on the release of data where a single tenant uses more than 50% of the building's energy is appropriate. In addition, the Advisors note that there may be other special circumstances where the risk that a customer may be matched to his energy use is unusually high, such as when one tenant leases multiple spaces, and thus has multiple meters within the same building. The Advisors therefore recommend that the rule require both four meters and four unique customers and that the 50% limitation be applied to the customer use (rather than per meter) to ensure that no single customer's use can be deduced.

ENO's suggestion for addressing this problem is that the four-meter threshold be tied to the number of active tenants/meters, and that the building owner should be required to notify the utility of the number of active tenants/meters drops below the threshold or if ownership of the building is transferred in some manner.⁶⁴ The Advisors are concerned, however, that such a standard would enable building owners who wish to match their tenants to their energy profiles to simply decide not to notify the utility, and believe that a further safeguard should be required. Once a building, the associated meters, and

⁵⁸ *Data Aggregation and Privacy Report* at 2, 23.

⁵⁹ *Data Aggregation and Privacy Report* at 2, 23.

⁶⁰ *Data Aggregation and Privacy Report* at 2, 24.

⁶¹ *Data Aggregation and Privacy Report* at 2, 24. The *Best Practices Report* recommends that utilities consider establishing aggregation thresholds, and report recommends a threshold between two and five meters, which is consistent with the *Data Aggregation and Privacy Report*. See *Best Practices Report* at 4.

⁶² *Data Aggregation and Privacy Report* at 20.

⁶³ *Id.*

⁶⁴ ENO Comments at 5.

associated customer accounts have been identified for the provision of whole-building data, ENO should be able to identify any service requests for starting, stopping, or transferring service from any of the associated customer accounts in that building. Any service changes for any of the accounts which are aggregated pursuant to a whole-building data request, should trigger an automatic review by ENO to ensure that the building continues to meet or exceed any threshold requirements with regards to the provision of whole-building data. The Advisors also agree that building owner should be required to notify the utility if the number of active tenants/meters drops below the threshold or if ownership of the building is transferred in some manner. These two requirements in combination provide redundant protection as to when a building may fall below any threshold requirements with regards to the provision of whole-building data.

Additionally, the Advisors recommend that only whole-building data be released, and that releasing data for a subgroup within a building should not be permitted. This limitation helps increase the protections for Customer privacy in two ways. First, having as many meters as possible aggregated decreases the likelihood that a building owner will be able to deduce the usage of any single tenant. Also, as is noted in the *Data Aggregation and Privacy Report*, allowing a building owner to request different subsets of data for various groups within a particular building could allow the building owner to deduce the energy usage of specific tenants.⁶⁵ The Advisors believe that the least burdensome manner in which to prevent such abuses is to require that all meters on a building be included in the data aggregation, which is also generally consistent with best practices on this topic.⁶⁶

The Affordable Housing Intervenor suggests that the Council allow the data to be released at the property threshold rather than the building level to allow for participation by properties with multiple buildings on a campus, and that the definition of multifamily buildings should take into account various property types, including attached (*i.e.*, townhouses) and stacked properties.⁶⁷ The Advisors believe that aggregated building data is of the most useful when benchmarking a specific building to which energy efficiency improvements may be made, and the usefulness of multi-building data in assisting building owners in identifying what improvements would most benefit a building are less obvious. To that end the Advisors recommend that the release of data be limited to single buildings with four or more meters. To be clear, owners of multiple buildings on a property where there are not four or more meters on a building may still obtain the usage data for each building if they are able to obtain the specific written consent of the customers to do so.

The parties also express concerns regarding the potential uses of the aggregated whole-building data. ENO suggests that the Council place reasonable limits on the building owner's use of the aggregated data, such as limiting it to purposes of benchmarking, energy efficiency and energy management.⁶⁸ Meanwhile, other parties state that such data can be used to bring benefits such as energy savings, access to financing, and reduced energy burden for building residents and that energy usage information is essential for a building owner to obtain and maintain an Energy Star score.⁶⁹ The Affordable Housing Intervenor also suggest that a process should be established to allow an owner's designee, such as a property management firm or an energy auditor to obtain the information on behalf of the owner.⁷⁰ While the Advisors agree that there should be limits on the use of the aggregated data, the Advisors also recognize that many building owners employ managers who are tasked with energy management for the building or may seek the assistance of an energy auditor or other expert in analyzing and addressing issues related to the energy use of the building who would be using the data for a legitimate purpose. The Advisors agree that use of the data should be limited to: (1) benchmarking; (2) energy efficiency and energy management; (3) obtaining financing for energy efficiency improvements to the building in question; and (4) obtaining energy efficiency certifications or ratings for the building in question, such as, but not limited to, an Energy Star rating. The Advisors also recommend that there be a

⁶⁵ *Data Aggregation and Privacy Report* at 14.

⁶⁶ See *Data Aggregation and Privacy Report* at 14; *Best Practices Report* at Appendices C-F.

⁶⁷ NHT Comments at 3-4.

⁶⁸ ENO Comments at 6.

⁶⁹ NHT Comments at 2-3; NRDC Comments at 3.

⁷⁰ NHT Comments at 3-4.

complaint process that allows building tenants who are concerned that their energy usage data is being used for an improper purpose to request that the building owner's ability to receive such information be revoked. The Advisors recommend that ENO also establish a methodology for verifying the identity of the building owner and/or the building owner's designated agent for receipt of the data.

The Advisors find the analysis in the *Data Aggregation and Privacy Report* to be persuasive, and agree that (1) limiting access to the energy use data to a building owner or their designated representative for the purposes set forth above and (2) requiring that the data transmitted be aggregated data whole-building data from at least four active meters and at least four unique customers, with no single meter constituting more than 50% of the building's monthly energy use. This standard should protect customer privacy. The data would be limited in its release and use to purposes that would likely benefit the tenant by helping reduce energy bills in the building, and the aggregation of the data would prevent the building owner from being able to reconstruct any single tenant's energy usage. A few further conditions on the release of the data would also increase protections to the customers. The Advisors also note that there may be other special circumstances where the risk that a customer may be matched to their energy use data is higher than usual, that cannot be anticipated at this time. The Advisors recommend that in order to address the potential for such circumstances, the Council require that in the month prior to when aggregated building information is to be released, all affected customers receive a notice of the impending release of the data and be given the opportunity to petition the Council to prevent the release of the data. The Advisors are not recommending an "opt-out" provision, because that would enable a single tenant to prevent the building owner from acquiring the aggregated whole-building data that is needed to foster energy efficiency improvements expected to benefit all tenants of the building as well as the building's owner. The burden in this case, therefore, would be on the customer to demonstrate why his or her privacy is not sufficiently protected by the conditions imposed under the Council's rules. This mechanism is simply a safety valve to allow for consideration of circumstances not contemplated under these rules.

In light of the above recommendations, the Advisors recommend that the Council amend Section 53 of its Service Regulations⁷¹ as follows:

Unless specific written permission is obtained from the Customer to release the information regarding the Customer, the Company shall insure that Customer information, including payment history and consumption patterns will be kept confidential. Release of aggregated whole-building data, subject to the conditions below, shall not be a violation of this provision. Customer information may also be provided under a protective order issued and/or confidentiality agreement executed in a legal proceeding, but in such proceedings the Company should make every effort to maintain the customer's privacy.

Release of Aggregated Whole-Building Data

The Company shall release aggregated whole-building data to the owner of a building or the owner's designated representative upon request subject to the following conditions:

1. The data shall only be released subject to a Council-approved process, which includes verification of the building owner's identity, verification of the specific meters associated with the building, notification to customers whose accounts are aggregated in the whole-building data, and a process for the Customer of any account with an involved meter to challenge the appropriateness of the release of the data.
2. The data must be an aggregation of data from all meters associated with a building. There must be at least four active meters associated with the building and at least four unique Customers for which data is aggregated. For buildings with fewer than four active meters or unique Customers, specific written

⁷¹ See *supra* n. 2.

permission from all Customers with meters associated with the building is still required prior to the release of the data. Further, specific written permission from all Customers with meters associated with the building is also required where a single Customer constitutes more than 50% of the building's monthly energy use.

3. The use of such data by building owners and their designated representatives must be limited to energy use benchmarking, energy efficiency and energy management, obtaining financing for energy efficiency improvements to the building in question, or obtaining energy efficiency certifications or ratings for the building in question, such as, but not limited to, an Energy Star rating.

B. Requiring the Release of Data

No party, including ENO, appears to oppose a requirement that ENO must provide such data after the implementation of AMI, but opinions differ as to whether or not ENO should be required to provide data prior to the implementation of AMI. There are two primary issues to be addressed with respect to requiring ENO to release whole-building data to building owners. The first is the ease of identifying which meters correspond to a particular building, or “mapping” the meters to the buildings. The second is the manner in which the data should be aggregated and transmitted to building owners. The Advisors believe that the Council does not have enough information at this time to require that ENO release whole-building data prior to the implementation of AMI. The Advisors suggest that the Council direct the parties to file within 30 days additional data on this topic as discussed below.

1. *Prior to Implementation of AMI*

a) *Mapping Meters to Buildings*

The *Best Practices Report* notes that the utility likely does not have completely accurate data in its possession as to which meters are on which buildings (one building may have more than one street address), and thus the utility must work with the landlord and tenants to determine which meters correspond to any single building.⁷² ENO echoes this concern, stating that its current customer billing systems, similar to those of many other utilities, generally are not designed to track energy consumption of a specific building given that separately-metered accounts are generally under separate customer names (ENO notes this concern will be resolved by the AMI rollout, as discussed below).⁷³ In their reply comments, however, AAE and the NRDC express surprise that a substantial new system on the scale of AMI is required in order for ENO to identify the address of apartment and office buildings it serves.⁷⁴ They state that they are concerned that waiting two and a half years until after AMI is completely implemented in order to deliver whole-building data access will mean a significant loss of savings in the meantime and may not be necessary.⁷⁵ AAE and the NRDC argue that a high value would be lost by waiting because the Downtown Energy Challenge is already underway, and the owners/managers of the participating buildings are limited by the lack of data access. They also note that the comments from the National Housing Trust and from the NRDC state that affordable housing owners and developers are substantially impaired by not having access to this data, and that in particular, they are prevented from making use of better-priced financing for energy efficiency improvements without benchmarking.⁷⁶

The Advisors believe this is a legitimate issue for ENO. As the DOE *Best Practices Report* notes:

Many utility customer information systems--the systems utilities use to bill customers--are not designed to track energy consumption at the building level, and may not be able to “map”

⁷² *Best Practices Report* at 1.

⁷³ ENO Comments at 1-2.

⁷⁴ AAE & NRDC Reply Comments at 1.

⁷⁵ AAE & NRDC Reply Comments at 1.

⁷⁶ AAE & NRDC Reply Comments at 2.

individual meters to specific structures. Additionally, the addresses used by utilities to associate meters with buildings (known as service addresses) often differ from the physical street address for a building. This issue has presented a significant barrier for many utilities considering whole-building data access.⁷⁷

The Advisors note that it may be difficult for ENO to identify which meters are on which building simply by the address that is billed -- the bills may be sent to a different address than the address at which the electricity is consumed, particularly for commercial customers. It is not uncommon for a business with several locations to have a single, centralized location to which all invoices for all addresses are sent and from which all bills are paid. The *Best Practices Report* also notes that the situation frequently occurs in some jurisdictions where a single building may have multiple street addresses.⁷⁸ The Advisors, therefore, are concerned that, prior to AMI deployment, ENO may not have sufficient information in its possession to accurately determine which meters are attached to which building in every instance. The Advisors believe that it will be necessary for ENO to work with building owners to verify which meters are attached to the building and for ENO to be able to verify that all meters for a building have been properly identified and that the building owner has not requested information for only a subset of the meters on a specific building. As discussed above, it is important to aggregate all meters because identifying only a subset of meters on a building provides less assurance of tenant privacy. Because any such process would be labor intensive for both the building owner and ENO, the Advisors recommend that if the Council desires to make whole-building data available prior to full AMI deployment that ENO only be required to provide such data on an as-requested basis. In order to assist the Council in determining whether ENO should be required to provide the data prior to full AMI deployment, the Advisors recommend that the Council direct ENO to file within 60 days a draft process for mapping meters to buildings on an as-requested basis that puts the primary burden of identifying which meters are on the building in question on the building owner requesting the whole-building data, but allows ENO to verify with reasonable certainty that all relevant meters have been identified, and that the building owner has not identified a subset of meters.

The Advisors note that while the AAE and NRDC assert that significant value would be lost by failing to release whole-building data to building owners prior to the implementation of AMI, they do not attempt to estimate the value lost. Nor has any party presented information regarding approximately how many building owners might have need of such data in the interim (because they are participating in the City's program or for other reasons), such that there is insufficient data to attempt to estimate whether the benefits to ratepayers of requiring such data release prior to the full implementation of AMI would outweigh the burden imposed on ENO that ratepayers ultimately will bear. The costs imposed by a large number of buildings seeking such data could differ significantly from the costs imposed by just a few to an extent that could impact the Council's determination in this proceeding. To that end, the Advisors also recommend that with its filing of a draft process for manually mapping meters to buildings, ENO should be required to provide an estimate of the burden on ENO that the process would impose that other ratepayers will ultimately bear. The Advisors also recommend that both ENO and the intervenors be asked to submit any information in their possession with respect to how many building owners are likely to seek a release of the data for their building prior to the full implementation of AMI.

b) *Aggregation and Transmission of Data to Building Owner*

The *Best Practices Report* also notes that, for most utilities, at least at the outset, aggregation of the data must be done manually by the utility and then transmitted to the building owner who must then manually enter it into whatever system is being used to manage and track energy usage.⁷⁹ There are, however, various software and web-based services, such as Portfolio Manager, that can automate the process and significantly reduce the administrative burdens for both utilities and building owners.⁸⁰ All parties generally support the automation of this process, the outstanding question is simply how quickly it can be automated and at what cost.

⁷⁷ *Best Practices Report* at 2.

⁷⁸ *Best Practices Report* at 3.

⁷⁹ *Best Practices Report* at 1.

⁸⁰ *Best Practices Report* at 1.

ENO explains that once AMI has been fully rolled out across its system (anticipated in 2020), the AMI technology will enable it to accurately map meters to specific geographic locations and that using the technology in combination with some form of building owner verification would meet the objective of enabling ENO to identify specific meters attached to each building at a negligible cost to ratepayers.⁸¹ However, with respect to aggregating and transmitting energy usage data to building owners prior to AMI deployment, ENO states that neither manual aggregation or building a tool within the current billing system would be effective methods of providing aggregated data given the currently planned AMI rollout.⁸²

Given that ENO has stated that it can automate the transmission of data with the full deployment of AMI at minimal cost to ratepayers, and that AMI is anticipated to be fully deployed in 2020, the Advisors agree that it makes little sense to make large expenditures at this time to develop an automated system that will be rendered unnecessary within two years. The AAE and NRDC state that they concur with ENO's approach to seek cost-saving measures to reduce customer-funded costs of administration and avoid technology work that would be obviated by AMI deployment, but state that it is not clear whether ENO explored less burdensome alternatives to be able to aggregate customer accounts by address into a whole-building total, even for a limited set of large multi-tenant properties in New Orleans.⁸³ The Advisors also believe there may be a partial solution to allow a limited number of buildings that are currently actively pursuing energy efficiency improvements to have access to their whole-building data sooner than the date of full implementation of AMI. The Advisors recommend that the Council ask ENO to explain whether manual aggregation of data for a limited number of buildings would impose an undue cost on ratepayers relative to the benefits ratepayers would receive through the earlier deployment of energy efficiency measures for those buildings, or whether there is some other partial solution that can be applied to enable some building owners to receive the whole-building data without imposing unreasonable costs on ratepayers or unreasonable burdens upon the utility.

2. *After Implementation of AMI*

a) *Mapping Meters to Buildings*

ENO explains that once AMI has been fully rolled out across its system (anticipated in 2020), the AMI technology will enable it to accurately map meters to specific geographic locations and that using the technology in combination with some form of building owner verification would meet the objective of enabling ENO to identify specific meters attached to each building at a negligible cost to ratepayers.⁸⁴ The Advisors find this development very promising and no party opposes using this method to map meters to buildings once AMI has been rolled out. To that end, the Advisors recommend that the Council instruct ENO to utilize this method of meter mapping once AMI has been deployed and to develop a process for building owner verification that will produce a reasonably accurate result without putting undue burden on the building owner.

b) *Aggregation and Transmission of Data to Building Owner*

ENO states that it could utilize its plans to have the capability to aggregate data through the AMI CEP by building internal software that automatically aggregates the data by creating a "virtual meter" that aggregates all meters in the building.⁸⁵ Once the meters are verified, a utility employee would enter the meter numbers into the system to create a virtual meter.⁸⁶ ENO notes that other utilities, including Xcel Energy have utilized this method.⁸⁷ ENO states that with the deployment of AMI it will have the ability to build and implement a similar solution that aggregates and transmits the energy usage data to both the

⁸¹ ENO Comments at 2.

⁸² ENO Comments at 3.

⁸³ AAE & NRDC Reply Comments at 2.

⁸⁴ ENO Comments at 2.

⁸⁵ ENO Comments at 4.

⁸⁶ ENO Comments at 4.

⁸⁷ ENO Comments at 4.

owner, through the CEP, and to a benchmarking service.⁸⁸ ENO notes that the DOE offers free benchmarking software, Portfolio Manager, which other utilities currently utilize, including Commonwealth Edison, Pepco, and Puget Sound Energy.⁸⁹ ENO estimates the cost associated with creating this type of software to aggregate and transmit the data to the customer portal and benchmarking software like Portfolio Manager to likely be under \$25,000 before accounting for the labor related to any manual processes that would need to be performed and that it can be developed and implemented in 2019 before full AMI deployment.⁹⁰ Developing the software before full AMI deployment would allow it to be implemented as soon as full deployment of AMI is reached. ENO states that there is another alternative, to have a third party provide a turnkey benchmarking program that would handle the benchmarking process from aggregation to transmission.⁹¹ ENO states that these programs come at a premium, and could cost from \$20,000-\$40,000 for startup and \$40,000-\$75,000 annually, and take up to a year to develop, but could offer additional options to building owners.⁹² The AAE and NRDC both support automation of the process and the use of Portfolio Manager.⁹³

The Advisors prefer the option of building an internal software solution that can aggregate and transmit data to EPA's Portfolio Manager for approximately \$25,000, plus labor costs. This is a very low cost and the EPA's Portfolio Manager software is widely used and well understood in the energy industry. The Advisors are also encouraged that such a program could be built out prior to full AMI deployment. The second option, to have a third party provide a turnkey benchmarking program at a higher price may offer a few more options to customers, but it appears from the comments that parties are generally satisfied with transmitting data in a form that works with Portfolio Manager, and there is likely little need to spend additional funds creating an alternative. The Advisors recommend that the Council authorize ENO to proceed with the option to build internal software and utilize Portfolio Manager at an anticipated cost of \$25,000 (plus labor, as described).

The Affordable Housing Intervenors comment that the information should be provided at a high degree of resolution (e.g., hourly, daily, and monthly).⁹⁴ The Advisors recommend that whole-building data be limited to aggregated data on a monthly level. This level of granularity is sufficient for the purposes of an owner benchmarking a building utilizing EPA's Energy Star Portfolio Manager, to compare an owner's building with other similar buildings, and to track the performance of building efficiency improvements. With the implementation of AMI, the Council recognizes that data which is more granular than the monthly level data will be available to ENO as grid modernization continues. However, the provision of more granular level data to building owners, even when aggregated, may increase the potential for customer privacy concerns. For example, with hourly data, the building owner could identify when the tenants with electric cars were charging their vehicles and infer from that data the habits and location of the tenants with electric vehicles. To the extent additional granularity of data is desired by building owners in the future, the Council will need to establish whether the proposed safeguards of at least four active accounts with unique customers and no individual customers with an account or combination of accounts comprising more than 50% of the total annual building energy use are sufficient, or if additional safeguards will be required to protect customer privacy. The Advisors note that this will not prevent ENO from providing the more detailed data that it is able to provide if the building owner procures the specific written permission of the Customers to do so.

V. Conclusions

As discussed above, the Advisors recommend that the Council:

⁸⁸ ENO Comments at 4.

⁸⁹ ENO Comments at 4.

⁹⁰ ENO Comments at 4.

⁹¹ ENO Comments at 4.

⁹² ENO Comments at 4-5.

⁹³ AAE Comments at 3. NRDC Comments at 7-8.

⁹⁴ NHT Comments at 3-4.

1. Revise the Customer Service Regulations as described herein, to permit the release of aggregated whole-building data to building owners under certain, specified conditions, and require ENO to provide such data to building owners or their designated representatives upon request pursuant to a Council-approved process once AMI has been fully deployed within the ENO system.
2. Authorize ENO to proceed with the option to build internal software to aggregate the data and transmit it to the Portfolio Manager at an anticipated cost of \$25,000 (plus labor, as described).
3. Require ENO to file, within 60 days, for Council review and approval:
 - a. Draft processes for the release of whole-building data, including, but not limited to, the processes for ENO's customers to request the release of the data, for verification of the building owner's identity, verification of the specific meters attached to the building, notification to customers whose accounts are aggregated in the whole-building data, and for the customer of any account to which an involved meter is attached to challenge the appropriateness of the release of the data either because there are special circumstances where they believe the Council's rules would not sufficiently protect their privacy or because they believe the building owner or building owner's designated agent is using the data for improper purposes.
 - b. Further information regarding the costs and benefits anticipated to ratepayers of releasing aggregated whole-building data upon request to a limited number of building owners prior to the full implementation of AMI on the ENO system.
4. Request that intervenors in the docket file, within 30 days, any information in their possession regarding the number and size of buildings whose owners are likely to request aggregated whole-building data prior to the full implementation of AMI on ENO's system, and the dollar value of the benefits to be gained by ratepayers, to assist ENO and the Council in ascertaining the potential costs and benefits of requiring ENO to respond to such requests.