

May 5, 2022

VIA E-FILING

Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
400 North Street
Harrisburg, Pennsylvania 17120

**Re: Investigation into Conservation Service Provider and Other Third-Party
Access to Electric Distribution Company Customer Data
PA PUC Docket No. M-2021-3029018**

Dear Secretary Chiavetta:

On behalf of our client, Google, LLC (“Google”), please see attached comments on Conservation Service Provider (“CSP”) and other third-party access to Electric Distribution Company (“EDC”) customer data, pursuant to the February 8, 2022 Secretarial letter.

Introduction:

Google Nest supports the development of pathways for customers to initiate and automatically share their EDC customer data with authorized third parties. In these comments below, we support the PAPUC’s direction to develop data sharing pathways with the following points:

1. Customers should be able to share their data with third parties that they authorize because third party access to Electric Distribution Company customer data is necessary to achieve Pennsylvania’s climate goals;
2. The process to share data should be no less burdensome on the customer than other utility account functions; and
3. The most efficient solution to enable data sharing is to develop a statewide data hub.

About Google Nest:

Google Nest, a business unit of Google, is dedicated to making the smart home less complicated and more helpful, where products work together to provide customers with safety, security, comfort and connection with their friends and family. The Nest energy devices include the Google Nest Learning Thermostat, the Google Nest Thermostat E, and the new Google Nest Thermostat, which are equipped with sensors, Wi-Fi capability, and smart-phone grade processing, to help customers consume less energy.

Google Nest thermostats enable households to participate in wholesale markets by providing demand response. There are over 100 million housing units, or roughly 85% of all housing units in the United States, that have either main heating and/or cooling systems where installing a Google Nest thermostat could enable meaningful load reductions.¹ Specifically in Pennsylvania, over 3/4 of Pennsylvania households use natural gas or electricity as their primary home heating fuel, and the majority of those systems would benefit from a smart thermostat.²

Of the 100 million households in the U.S. with main heating and/or cooling systems, over 15 million households in the U.S. are estimated to have a smart thermostat installed today.³ A growing subset of these households actively engage in demand response through programs like Nest's "Rush Hour Rewards". Nest believes that customers and the grid will greatly benefit from bridging the gap between the large potential number of households that can host Distributed Energy Resources ("DERs") and the much smaller number of households that currently have DERs participating in grid service programs. The affordability of the smart thermostat, especially compared with other DERS, like solar or storage, makes it a powerful and effective tool to make homes across the United States responsive to grid conditions and provide resiliency by flexibly managing load.

Google Nest has also recently launched a new service named "Nest Renew." Nest Renew helps residential customers play a part in the fight against climate change by combining existing Nest thermostat programs with new user education tools, intelligent automation, nonprofit funding focused on clean energy equity, and renewable generation support. Nest Renew includes an "Energy Shift" feature that helps users prioritize heating and cooling during periods of lower grid emissions or lower cost electricity. This enables new emissions-based and time-of-use based advanced energy management opportunities for users with Nest thermostats.

¹ See US Energy Information Administration ("EIA"), Space heating in U.S. homes by climate region, 2015: <https://www.eia.gov/consumption/residential/data/2015/hc/php/hc6.6.php>.

² See US EIA, Pennsylvania State Profile: <https://www.eia.gov/state/?sid=PA#tabs-1>

³ Based on Park Associates estimates of 13% smart thermostat penetration in January 2018: See <http://www.parksassociates.com/blog/article/pr-06142017#:~:text=New%20Parks%20Associates%20research%20shows,by%20the%20end%20of%202017>

Comments:

Customers should be able to share their data with third parties that they authorize because third party access to Electric Distribution Company customer data is necessary to achieve Pennsylvania’s climate goals.

Google Nest is supportive of efforts in Pennsylvania to develop safe pathways for customers to choose to share their customer data with any customer-authorized third party. Pennsylvania has set laudable climate goals to achieve a 26% reduction in greenhouse gas emissions by 2025 and an 80% reduction by 2050.⁴ Data and data access are essential to actually reaching these targets. For example, of the 18 strategies highlighted in the Pennsylvania Climate Action Plan 2021 (“Plan”), strategies representing over 75% of total forecasted GHG reductions are enabled or enhanced in some form by data access, including:

- Create a Carbon Emissions-Free Grid
- Increase Industrial EE and Fuel Switching
- Increase Adoption of Light Duty Electric Vehicles
- Incentivize Building Electrification
- Increase Distributed On-Site Solar

DER technologies are most effective when paired with customer data. The combination of DERs and customer data can lead to innovative programs or offerings by third parties that allow users to enable third parties to automatically control a customer’s load to achieve objectives such as lower customer bills or a reduced GHG emissions footprint. This capability to optimize and control customer load based on customer data directly enables several strategies identified in the Plan, such as demand response (which can be used as an emissions-free generating source) or energy efficiency (by identifying the most effective energy efficiency interventions for a building based on its load profile). These capabilities also indirectly enable strategies, such as enhancing the pairing of battery storage with distributed on-site solar (as discussed on p. 53 of the Plan) or calculating the business case for fuel switching. Data access allows DERs to flourish, and DERs underpin successful outcomes of the strategies identified above.

The PA Climate Action Plan touches on the importance of data several times. For example, the Plan recommends “Implement[ing] peak load and balancing strategies” to solve the challenge of grid balancing.⁵ It notes the importance of “digital technologies” enabled through the “internet of things”,⁶ and highlights that digital technologies (which in Google’s estimation must be informed by customer data) powered by the internet of things will “reduce operation costs and energy bills,

⁴ See “Executive Order: 2019-01 – Commonwealth Leadership in Addressing Climate Change and Promoting Energy Conservation and Sustainable Governance”, available at <https://www.governor.pa.gov/newsroom/executive-order-2019-01-commonwealth-leadership-in-addressing-climate-change-and-promoting-energy-conservation-and-sustainable-governance/>

⁵ See September 2021 “Pennsylvania Climate Action Plan 2021”, at p. 106, available at <https://www.dep.pa.gov/Citizens/climate/Pages/PA-Climate-Action-Plan.aspx>.

⁶ Ibid., at p. 108.

lessen negative environmental impacts, and mitigate GHG emissions”.⁷ Critically, this also means that “Energy demand will also shift with increased connectivity, and the Commonwealth must improve its capability to respond and adapt to the changing demand.”⁸ All of these items discussed in the Plan relate to demand response and load flexibility, which can only be provided with the input of customer data.

The process to share data should be no less burdensome on the customer than other utility account functions.

As a threshold matter, Google encourages the PAPUC to carefully consider the manner through which a customer will be able to authorize third party access to their data. We offer two general principles that we believe are critical for setting up a data access regime:

1. Consent for authorization should be informed and meaningful; and
2. The method of authentication and authorization should match the method used by the utility in other applications.

By adopting these principles, the PAPUC can avoid creating overly prescriptive requirements on the pathway to data access while still establishing reasonable bounds that protect consumers and their customer data.

The first principle, that consent is informed and meaningful, is critical for consumer protection. An effective data sharing regime needs to include a pathway trusted by customers. Authentication and authorization solutions, such as OAuth 2.0, are considered industry standards because they reasonably ensure it is the customer themselves that is providing consent while using the exact same authentication process with which the customer is familiar. Knowing that the authorization was given directly by the customer through secure pathways is of course also critical for the PAPUC to maximize customer safety.

The second principle, that authentication and authorization should match the method used by the utility in other applications, is crucial to ensure that the customer is actually empowered to easily share their data. Cumbersome and unfamiliar processes erode customer trust and ultimately will create barriers frustrating customers' ability to successfully share their data with third parties. For example, EnergyHub found that the enrollment process for a California demand response program saw a drop-off of 97% when requiring customers to share Service Account Number and sign a separate form. This drop-off in the California process is particularly stark when compared to a similar Texas program that saw a drop-off through the enrollment process of only 58% where those extra steps were not included.⁹ Put another way, the California program only enrolled three customers successfully for every 100 that started the enrollment process. And within that

⁷ Ibid., at p. 109.

⁸ Ibid.

⁹ See Energy Hub “Optimizing the Demand Response Program Enrollment Process” available at [https://f.hubspotusercontent40.net/hubfs/415845/White%20papers%20\(2021\)/EnergyHub_OptimisingEnrollmentProcess_Whitepaper_2021.pdf?_hstc=128267091.1a5421134e960e3a96d03e8face8571b.1643149785994.1643149785994.1643149785994.1&_hssc=128267091.1.1643149785994&_hsfp=668737353](https://f.hubspotusercontent40.net/hubfs/415845/White%20papers%20(2021)/EnergyHub_OptimisingEnrollmentProcess_Whitepaper_2021.pdf?_hstc=128267091.1a5421134e960e3a96d03e8face8571b.1643149785994.1643149785994.1643149785994.1&_hssc=128267091.1.1643149785994&_hsfp=668737353)

California flow, the extra step of signing a separate form *alone* led to 39% of customers failing to complete authorization.¹⁰

To avoid similar customer atrophy in Pennsylvania, we believe that the simplest solution is to apply the same methods that the utility uses to authenticate the customer today (e.g. for logging into an online account or initiating bill pay through the web portal) to any new data sharing process.

The most efficient solution to enable data sharing is to develop a statewide data hub.

Importantly, it is technically feasible to develop secure pathways for third parties to receive authorized access to a customer’s smart meter data electronically. Google Nest wholeheartedly supports the development of a pathway for customers to share EDC data with third parties. However, Google Nest cautions that a lack of consistency between EDC data sharing pathways erects significant barriers to all third parties seeking authorized access to customer data. As a solution, Google Nest encourages the PAPUC to strive for consistent and coordinated pathways between the various Pennsylvania EDCs and, to the extent possible, regional EDCs.

The best practice to develop a fully efficient data sharing system is to centralize the data sharing to a single secure platform that can be accessed by authorized entities. This will minimize integrations that third parties must build out and ensure a consistent implementation across Pennsylvania. An example of this system is in New Hampshire, where parties recently reached a settlement to develop a single virtual platform that includes:

“(1) a single, unified internet-hosted resource web portal and central Application Programming Interface (“API”) that allows customers and other non-utility third-parties to register to access and share combined utility data and participate in sharing additional data directly via APIs, through which market participants can register for access to data (the “Platform Hub”); (2) APIs developed individually by or for each NH Utility that shall furnish data to the Platform Hub (“Utility Specific APIs”); and (3) a Platform “back end” at each NH Utility that shall operate in parallel with the other two elements, so that Utility-Specific APIs and the Platform Hub share standardized data in accordance with Connect My Data supported standards adopted by the Green Button Alliance and aggregated data”¹¹

In February 2021 the New York Public Service Commission (“PSC”) also adopted a centralized approach to customer data access by directing the implementation of an integrated energy data resource (“IEDR”) that will securely collect, integrate, and provide useful access to a large and diverse set of energy-related information on one statewide data platform.¹² The PSC explained its decision as follows:

¹⁰ Ibid.

¹¹ See “Settlement Agreement” in the New Hampshire Public Utilities Commission Docket No. DE 19-197, at pp. 5-6, available at https://www.puc.nh.gov/Regulatory/Docketbk/2019/19-197/LETTERS-MEMOS-TARIFFS/19-197_2021-04-28_EVERSOURCE_JT_SETTLEMENT_AGREEMENT.PDF.

¹² NYPSC February 11, 2021 Order Implementing an Integrated Energy Data Resource, I/M/O Strategic Use of Energy Related Data (Case 20-M-0082), available at:

“New York is transforming its electricity system into one that is cleaner, more resilient, and more affordable. Effective access to useful energy data will play a critical role in this transformation, unleashing the power of integrated energy customer data and energy system data to speed the deployment of clean energy solutions. This will attract investment, enable analytics, help identify operational efficiencies, promote innovation, and encourage new business models, which will in-turn create value for customers and the State’s energy system. The creation of an Integrated Energy Data Resource (IEDR) will provide New York’s energy stakeholders with a platform that enables effective access and use of such integrated energy customer data and energy system data.”¹³

The Texas Public Utility Commission similarly implemented a centralized Smart Meter Texas (“SMT”) web portal through which energy usage data can be accessed by customers, authorized third parties and retail electric providers. The SMT Portal “stores daily, monthly and 15-minute interval energy data recorded by digital electric meters (commonly known as “smart meters”), and provides secure access to that data to customers and authorized market participants (including through the use of a “Green Button”). In addition to acting as an interface for access to smart meter data, SMTs provides a convenient, easy-to-use process whereby customers can voluntarily authorize market participants other than the customer’s Retail Electric Provider Competitive Service Providers access to their energy data information.”¹⁴

The alternative and less efficient approach is for the PAPUC to set expectations and requirements and allow each EDC to develop its own implementation. Google Nest is concerned that this process could lead to inconsistent implementations across the Commonwealth of Pennsylvania that would add unnecessary administrative burden to third parties and the PAPUC simply to monitor and integrate with all the disparate solutions. For example, in California, each investor-owned utility has designed its own data authorization and data sharing system. As a result, several stakeholders have critiqued the current system as haphazard and creating frustrations for customers and burdens on the third parties due to a lack of clear expectations and future proofing.¹⁵ Adding to the challenges, the proceeding to update those criteria and develop new standards around data sharing has now stretched across four years due in part to the lack of a party consensus. We encourage the PAPUC to learn from California’s example and strive to create a single consolidated solution rather than a set of fragmented ones.

<https://documents.dps.ny.gov/public/MatterManagement/MatterFilingItem.aspx?FilingSeq=260923&MatterSeq=61981>

¹³ *Id.*

¹⁴ See <https://www.smartmetertexas.com/aboutus>.

¹⁵ See May 28, 2021 Joint Opening Brief of OhmConnect, Inc. California Efficiency + Demand Management Council, and Leapfrog Power, Inc., available at <https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M386/K637/386637975.PDF>.

Conclusion:

Google Nest is extremely supportive of enabling customers to share their EDC data with authorized third parties of their choosing. We believe that this functionality is critical to meeting the climate goals of Pennsylvania and engaging customers in making smart and informed choices about their energy usage. We further envision that this will unlock numerous programs and technologies that will provide direct value back to customers. We look forward to further engagement with the PAPUC, the EDCs, and stakeholders on this topic.

Please do not hesitate to contact me with any additional questions or concerns.

Very truly yours,


Murray E. Bevan