STATE OF NEW HAMPSHIRE
BEFORE THE
PUBLIC UTILITIES COMMISSION

Docket No. DE 19-197

Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty Utilities
Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty Utilities

Development of a Statewide, Multi-Use Online Energy Data Platform

DIRECT TESTIMONY

OF

HEATHER M. TEBBETTS

AND

MELISSA B. SAMENFELD

August 17, 2020

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1 **I.** **INTRODUCTION AND BACKGROUND**

2 **Q.** **Ms. Tebbetts, please state your full name, business address, and position.**

3 A. My name is Heather M. Tebbetts and my business address is 15 Buttrick Road,

4   Londonderry, New Hampshire. I am Manager of Rates and Regulatory Affairs for

5   Liberty Utilities Service Corp. ("LUSC") and am responsible for providing rate-related

6   services for Liberty Utilities (EnergyNorth Natural Gas) Corp. ("EnergyNorth") and

7   Liberty Utilities (Granite State Electric) Corp. ("Granite State"), (collectively "Liberty"

8   or "the Companies").

9 **Q.** **Please describe your educational background and training.**

10 A. I graduated from Franklin Pierce University in 2004 with a Bachelor of Science degree in

11   Finance. I received a Master of Business Administration from Southern New Hampshire

12   University in 2007.

13 **Q.** **Please describe your professional background.**

14 A. I joined LUSC in October 2014. Prior to my employment at LUSC, I was employed by

15   Public Service Company of New Hampshire ("PSNH") as a Senior Analyst in NH

16   Revenue Requirements from 2010 to 2014. Prior to my position in NH Revenue

17   Requirements, I was a Staff Accountant in PSNH's Property Tax group from 2007 to

18   2010 and a Customer Service Representative III in PSNH's Customer Service

19   Department from 2004 to 2007.

20 **Q.** **Have you previously testified before the Commission?**

21 A. Yes, I have testified on numerous occasions before the Commission.

1   **Q.**   **Ms. Samenfeld, please state your full name, business address, and position.**

2   A.   My name is Melissa B. Samenfeld and my business address is 15 Buttrick Road,

3   Londonderry, New Hampshire. I am a Rates Analyst II in the Rates and Regulatory

4   Affairs department for LUSC and am responsible for providing rate-related services for

5   EnergyNorth and Granite State.

6   **Q.**   **Please describe your educational background and training.**

7   A.   I graduated from Southern New Hampshire University in 2014 with a with a Bachelor of

8   Science degree in Business Administration, with a concentration in Organizational

9   Leadership.

10   **Q.**   **Please describe your professional background.**

11   A.   I joined LUSC in December 2016. Prior to my current position, I was employed by

12   LUSC as an Electric Service Representative from 2017 to 2019, and an Electric

13   Operations Coordinator from 2016 to 2017. Prior to my employment at LUSC, I was

14   employed by PSNH as a Utility Worker from 2012 to 2016, a Representative A from

15   2007 to 2012, and a Customer Service Representative III in the Credit and Collections

16   Department from 2001 to 2007.

17   **Q.**   **Have you previously testified before the Commission?**

18   A.   No, I have not.

1 **II.** **PURPOSE OF TESTIMONY**

2 **Q.** **What is the purpose of your testimony?**

3 A.   The purpose of our testimony is to describe Liberty's vision for the online data platform

4   to be developed pursuant to RSA 378:50-54. This statute generally directs the New

5   Hampshire utilities to establish a statewide online energy data platform which will allow

6   utilities, customers, and third parties, including the Office of the Consumer Advocate

7   ("OCA"), to access and share data regarding customer usage.

8   More specifically, RSA 378:51, II directed the Commission to determine the following

9   during an adjudicative proceeding: (1) the governance, development, implementation,

10   change management, and versioning of the energy data platform; (2) standards for data

11   accuracy, retention, availability, privacy, and security, including the integrity and

12   uniformity of the logical data model; and (3) financial security standards or other

13   mechanisms to assure third-party compliance with privacy standards. In doing so, the

14   Commission will be guided by the standards for the energy data platform contained in

15   RSA 378:51, I, which include, among other things, adhering to a common statewide

16   logical data model defining the relationships among the various data categories; allowing

17   the sharing of individual customer data consistent with the opt-in requirements for third-

18   party access under RSA 363:38; and protection from unauthorized disclosure.

1 **III. DESIGNING A DATA PLATFORM FOR THE CUSTOMER OF THE FUTURE**

2 **Q. Please explain the typical customer for whom you will be designing the data**

3   **platform.**

4 A. There are two general categories of customers this platform must be designed for -- the

5   customer we serve today and the customer we will serve tomorrow.

6   The customer we serve today has become more aware of their usage because of the

7   opportunities to reduce consumption through solar installation and energy efficiency

8   measures. These customers also have more electronic devices than ever in their homes

9   with many having multiple televisions, computers, cell phones, and perhaps electric

10   vehicles. The explosion of electronic consumer devices in American homes tends to

11   drive up customer bills, even if those devices are considered lower energy devices than

12   their predecessor – think a tube television versus an LED, but having four in your home,

13   instead of one shared by the family.

14   In 2018, the United States consumed more energy than ever before, using 101.3

15   quadrillion BTUs in 2018, an increase of four percent from 2017, according to the US

16   Energy Information Agency.[1] Today's customers are becoming more aware of this

17   increased usage and are beginning to search for the data that will help them manage the

18   resulting costs.

19   The customers we will serve tomorrow will behave fundamentally differently. They are

20   Generation Z, born in the mid-to-late 1990s through the early 2010s, many of whom are

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[1] US Energy Information Administration, Today In Energy:
https://www.eia.gov/todayinenergy/detail.php?id=39092#

1   entering high school and college right now – and over the course of the next decade they

2   will become some of Liberty's most engaged customers.

3   The customers of tomorrow are likely to be "digital natives," having grown up with smart

4   phones, social media, and high speed internet. They send fifteen second video clips of

5   the latest dance craze and create quick stories for friends and the public to view their

6   takes on everything from saving the planet to how to get the perfect curl in their hair.

7   They are inundated with content from influencers on TikTok and Instagram, where they

8   buy products and services through Apple Pay and Google Wallet because few carry cash.

9   Most importantly, they are likely to prioritize reducing emissions to take action on

10   climate change – especially through the integration of distributed energy resources

11   (DER), energy efficiency, and innovative technology – and they expect their utility

12   service providers to empower them to make choices which reflect their values.

13   Tomorrow's customers will expect to be able to pull up an app on their phone to make

14   choices about energy usage with the same level of convenience they have when they

15   order an Uber or Lyft today. This evolution of customer expectations is happening right

16   now, and is akin to how today's Netflix and Hulu subscribers expect to binge their

17   favorite shows whenever they feel like it, while previous generations were at the mercy

18   of network programming schedules. Tomorrow's customers will want to make

19   instantaneous decisions on their own terms, according to their own personal priorities,

20   and they will need access to real-time data to do so. A PDF file of last month's utility bill

21   won't cut it. Liberty's ultimate goal is for customers to be able to access utility data as

22   easily as they check the status of a restaurant reservation on OpenTable, and to have the

1 ability to put that data to work to reflect and support their personal and social values,

2 from saving on their energy bills to reducing greenhouse gas emissions.

3 Unless utilities adapt to the evolving expectations of the customer of tomorrow, they risk

4 the same fate as Blockbuster Video or landline telephones. Twitter wouldn't exist today

5 if people were content reading the daily newspaper in print, and we anticipate the same

6 trend will hold when it comes to how customers engage with their utility company.

7 **Q.** **Do you believe the customer of today would benefit from Liberty looking to serve**

8 **the customer of tomorrow?**

9 A. Absolutely. The customer of today still finds the data useful, they just tend be slower to

10 adapt and incorporate it into their daily lives. Today's customers are then able and

11 willing to make those decisions about spending money and whether they should turn that

12 thermostat up or just put on a sweater.

13 **IV.** **ENERGY DATA SHARING TODAY**

14 **Q.** **How is energy data shared by the Liberty today?**

15 A. Granite State currently provides energy data through Electronic Data Interchange ("EDI")

16 to electric suppliers and aggregators. For customers looking for their usage history, we

17 have to download the data and send a spreadsheet to the customer. When a municipality

18 requests aggregated usage data for customers within its borders, Liberty will provide the

19 information via an Excel spreadsheet and email, filtered by customer class. The

20 Companies do not have any other software that allows for data sharing at this time.

1   **Q.**   **How do Liberty customers give authorization for third parties to receive EDI data**

2   **today?**

3   A.   There are two ways Liberty customers can share their data with a third party. The first is

4   by providing directly to the third party a valid name key, using the first letters of their last

5   name or business name and account number. Liberty then receives an EDI request for

6   information from that third party. Liberty does not require anything directly from the

7   customer to prove authorization as this is considered a valid EDI request. The second

8   way authorization can be provided is for customers to complete, sign, and send to Liberty

9   a form called the Interval Data Request Form/Letter of Authorization, which is available

10   on our website.[2] We then provide access to the customer's data through an EDI

11   transaction.

12   **Q.**   **Is this process archaic?**

13   A.   Absolutely. A customer has to fill out a form every time they want a different third party

14   supplier to receive access. Liberty then has to process that form. Customers should have

15   an easier process to grant a third party access to their data.

16   **Q.**   **What is your experience with customers looking for greater data detail than what is**

17   **provided in their monthly bill?**

18   A.   As part of Granite State's battery storage pilot approved in Docket No. DE 17-189, we

19   have spoken with many customers who asked questions such as, "What time of day do I

20   use the most power?" and, "At what time of day is electricity the most expensive?"

21   Customers are very interested in how they can reduce their bills and their usage. They

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[2]   https://new-hampshire.libertyutilities.com/uploads/LU_IntervalDataRequestForm.pdf

1   want to be able to look at an app on their phone and see real time information on their

2   electric usage.

3 **Q. Does Granite State Electric's tariff provide opportunities for data sharing now?**

4 A.   Yes. Pages 28 and 29 of Granite State's Tariff No. 21 describes service under Optional

5   Enhanced Metering Service, Complete Service, Pulse Service, and Optional Interval Data

6   Service.

7   For Complete Service, Granite State will provide equipment at the customer's facility

8   that will allow for periodic readings of the customer's load through telephone lines.

9   Granite State installs, owns, and maintains the equipment. The customer or supplier may

10   receive the data through the optical port on the equipment or electronically. Granite State

11   will store load information on the meter for a period of 35 days and will read the meters

12   daily. The one-time fee for Complete Service is as follows:

13   1. Rate schedules D, D-10, and T $155.31
14   2. Rate schedules G-1, G-2, G-3, M, and V $247.08

15   Pulse Service is for customers who wish to connect their own metering equipment to

16   Granite State's meter. Granite State will provide a pulse interface device through which

17   the customer can access meter data. The customer must purchase, own, and maintain a

18   device or system which would connect to the pulse interface device in order to access

19   meter pulses. The one-time fee for this service:

20   1. Rate schedules D, D-10, and T $135.31
21   2. Rate schedules G-1, G-2, G-3, M and V $122.07

1   The Optional Interval Data Service is available to a customer receiving service from

2   Granite State under the its Optional Enhanced Metering Service Provision, or a customer

3   receiving metered retail delivery service who has a Granite State-owned interval data

4   recorder ("IDR") installed at their facility. Under Optional Interval Data Service, the fees

5   will vary depending upon the number of accounts and frequency of requests for interval

6   data. Access is available to the customer or its authorized agent. The customer may

7   chose the one-time request for interval data or a subscription service for data over the

8   internet. The fees for those requests are:

9   <u>One-Time Request for Interval Data</u>

10   1. Initial request within a single calendar year   No Charge

11   2. Subsequent request within the same calendar year single account $55.00

12   3. Additional delivery service account request per account $23.00

13   <u>Subscription Service for Interval Data over the Internet</u>

14   Granite State may offer subscriptions to eligible Customers for access to interval data

15   through an Internet account that is available for the Customer or Supplier's use. The

16   minimum contract length is one year. The availability of this service is subject to Granite

17   State's ability to render such service.

18   1. Single delivery service account, annually $309.00

19   2. Additional delivery service account request per account, annually $277.00

20 **Q.**   **What is Green Button Connect My Data?**

21 A.   Green Button Connect My Data (GBC) is a capability which allows utility customers to

22   automate the secure transfer of their own energy usage data to authorized third parties,

1   based on affirmative (opt-in) customer consent and control. The GBC data standard is

2   flexible enough to handle different types of energy data and time interval usage, and

3   applications are being developed for both residential and commercial customers. The

4   data can be provided in 15-minute, hourly, daily, or monthly intervals depending on what

5   a utility makes available and on the level of detail they are able to provide. The Green

6   Button Initiative is not limited to utilities that have deployed smart meters that produce

7   detailed information about energy consumption, but also includes utilities that are able to

8   provide only monthly billing data.[3]

9   **Q.   How is data shared in other jurisdictions?**

10   A.   GBC is being used in other jurisdictions around the country with varying costs and data

11   collection, predicated on the type of metering the utility has deployed.

12   <u>California</u>

13   California has instituted using GBC for the state's largest utilities. Liberty's California

14   affiliate, CalPeco, which serves the Lake Tahoe area, does not currently have GBC, but

15   could benefit from Granite State moving forward with GBC as the cost-sharing between

16   the affiliates could provide benefits to both New Hampshire and California customers.

17   The type of information shared in California is interval, customer data, and billing data

18   for gas and electric customers with a one-time authorization, which information is

19   transferred through Application Programming Interfaces ("APIs"). An API is software

20   that allows two different applications to talk to each other. That is, while a third party

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[3]   https://www.energy.gov/data/green-button#:~:text=Green%20Button%20Connect%20My%20Data%20is%20a%20new%20capability%20which,in)%20customer%20consent%20and%20control

1   software might help customers understand how and when they use energy and ways to

2   save energy, by gaining access to customer data through an API, third parties can also

3   provide services including battery storage, backup generation, solar PV, energy

4   efficiency, demand management, smart buildings tools, etc.

5   <u>New York</u>

6   The New York Public Service Commission addressed GBC implementation in its 2016

7   Distributed System Implementation Plan ("DSIP") Guidance Order and its 2018

8   Accelerated EE Order. To date, Consolidated Edison ("ConEd") and Orange & Rockland

9   Utilities, Inc. ("O&R") have fully implemented GBC. (The other utilities in New York

10   do not have the capabilities to offer DSIP functionality at this time.) In the October 16,

11   2019, "Status Report on GBC My Data" from these two utilities, three third-parties have

12   completed the registration process and are allowed to receive customer consent to retrieve

13   customer data. Ten more are in various stages of the registration process. ConEd

14   reported that, from the time period between April to October 2019, 362 of its customers

15   had shared data via GBC.

16   The 2018 Storage Deployment Order directed Staff and the New York State Energy

17   Research and Development Authority ("NYSERDA") to implement a Pilot Data Platform

18   with the help of a third-party platform provider. New York Staff and NYSERDA

19   selected O&R as the participating utility. O&R offered many advantages as the

20   participating utility which include: O&R operates in a downstate New York Independent

21   System Operator, Inc. zone where energy storage and other distributed energy resources

1   ("DERs") have more value; they have deployed advanced metering infrastructure

2   ("AMI") with interval data; and, they serve an area with diverse demographics.

3   O&R and the chosen third-party contractor, Trove Predictive Data Science, worked

4   together to determine the Pilot Data Platform's initial dataset, which was limited to

5   reduce complexity and streamline development and testing. DER developers provided

6   input throughout the process, and tested and evaluated the functionality and usefulness of

7   the Pilot Data Platform's capabilities.

8   NYSERDA is in the process of establishing a platform and has issued an RFI for

9   proposals, with responses due August 11, 2020.

10   Texas

11   Texas utilizes GBC to allow parties to share data. Their standard allows utilities to report

12   electricity, natural gas, and water usage in any interval the utility has the capability to

13   provide. The type of data provided through this platform includes payment information,

14   information specific to the tariff under which the customer receives service, demand

15   charges, third party charges, administrative adjustments, etc. The usage summary

16   provides billing consumption.

17   The Smart Meter Texas ("SMT") portal was deployed in 2008 when the state deployed

18   advanced meters. The portal enables consumers to download and access their smart

19   meter data. SMT hosts a website which stores daily, monthly, and 15-minute interval

20   energy data recorded by smart meters, providing secure data access to customers and

21   third parties through Green Button. One of the goals of SMT is to enable customers to

1   better manage their energy consumption to lower their monthly electric bills and benefit

2   from new products and services offered third parties.

3   The following utilities participate in SMT and pay based on their share of the number of

4   customers: AEP Texas, CenterPoint Energy, Oncor, and Texas-New Mexico Power. In

5   2016, 73,000 residential and business customers were registered on the SMT website to

6   access their data. Oncor filed a document with the Texas PUC on January 31, 2020,

7   providing an estimated budget for SMT of $9,282,000, of which the majority

8   ($8,922,000) is for ongoing hosting, maintenance, and support.

9   Massachusetts

10   The Mass Save Data ("MSD") website www.masssavedata.com is jointly sponsored by

11   all of the Massachusetts energy efficiency Program Administrators ("PAs") where energy

12   efficiency performance data has been leveraged to also provide monthly usage data by

13   sector (residential and commercial) and town. The Metropolitan Area Planning Council

14   and some of their town members wanted to be able to track their progress against

15   greenhouse gas emission goals through the platform, thus monthly usage by town is also

16   included. Currently, the electric MWh and gas therms usage data is uploaded on an

17   annual basis during the subsequent year (i.e., 2019 data will be published in the 2020

18   calendar year). By consistently updating and analyzing a greenhouse gas inventory,

19   municipalities can measure their progress and emissions reductions over time.

20   Aggregated usage data by town is also shown on the website. To protect customer

21   privacy, residential data is only shown when it represents a minimum of 100 households.

1   Commercial data is shown when there is a minimum of 15 accounts and no one account

2   represents more than 15 percent of the total usage.

3   The PAs have spent approximately $600,000 since 2013 on the development,

4   enhancement, and maintenance of the MSD website, which includes energy efficiency

5   performance data in addition to the usage data by town. This does not include PA staff

6   time and other costs to collect, compile, and upload the data to the website.

7 **V.   PROPOSED DESIGN OF THE DATA PLATFORM**

8 **Q.   What is Liberty's proposed design for the online energy data platform?**

9 A.   Liberty's proposal is essentially the same as that of the other New Hampshire utilities.

10   Two of its foundational components, Green Button support and the creation of and

11   adherence to a "logical data model," are at the core of this proposal as required by the

12   statute. See Figure 1 for the depiction.

1   Figure 1
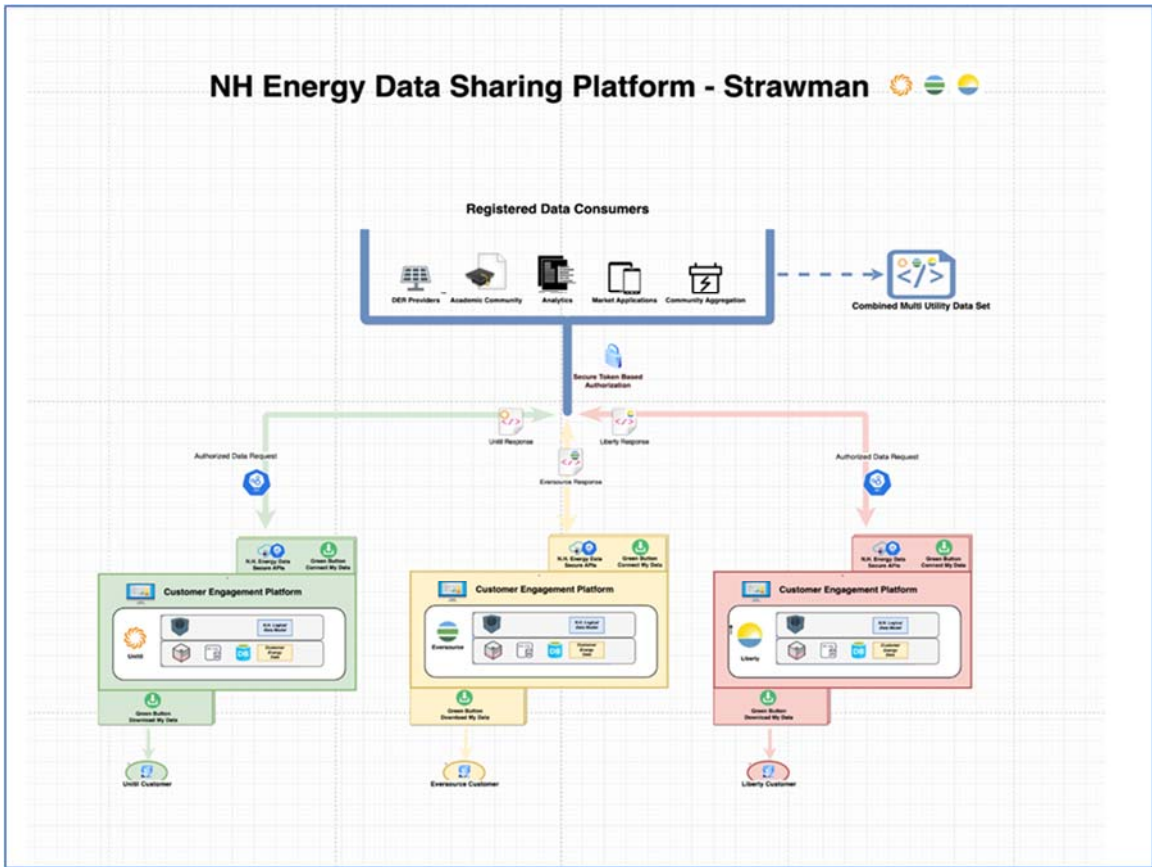
2

3   The utilities recognize that there are a large number of functional use cases that may be of

4   value to interested parties; the intervening stakeholders have provided numerous detailed

5   user stories describing their desired business outcomes. Liberty, along with the other

6   utilities, propose an "enabling platform" that securely provides a core set of customer

7   energy usage and billing data points in a standardized format. This architecture is

8   referred to as a "Virtual Energy Data Platform." This model should be modular with a

9   decentralized design to allow for maximum cost/benefit justified flexibility while

10   minimizing many of the data security, privacy, and governance complexities and risks

11   which come from a centralized database. The utilities recommend a Virtual Platform as

12   superior to a centralized data warehouse.

1   <u>Core Components of the Virtual Energy Data Platform</u>

2   • Logical Data Model

3   • Single Customer Data Download

4   • Single Customer Data Sharing

5   • Aggregate Customer Data Download

6   <u>Logical Data Model</u>

7   RSA 378:51, I states that the platform shall "allow for sharing of individual customer

8   data consistent with the opt-in requirements for third-party access specified in RSA

9   363:38" and that it will "adhere to a common statewide logical data model that defines

10   the relationships among the various categories of data included in the platform."

11   The introduction of a "Logical Data Model," as adopted by all of the utilities, attempts to

12   solve some of the problems whereby the other New Hampshire utilities may have

13   challenges to data mining and extraction of files to be fed in to the GBC platform. Some

14   of the features of the Logical Data Model are as follows:

15   • Provides a common abstraction with agreed upon semantics for field names and
16   data conventions.

17   o Allows all utilities to "speak the same language" with common terms,
18   agreed upon units of measurement, etc.

19   o Will be based on the Energy Services Provider Interface (ESPI) data
20   standard released by the North American Energy Standards Board
21   (NAESB)

22   ▪ Required data fields above and beyond what the ESPI model
23   supports will likely be supported by extending the ESPI

1   ▪ ESPI model contains constructs for energy usage components such

2   as: Usage Points, Meter Readings, Intervals, and Reading Types etc.

3   o Will act as a "mapping layer" that sits on top of native utility data sets

4   ▪ Because the mapping is done as an abstraction, utilities need not

5   make any changes to their existing back end systems to support this

6   but will require a non-trivial data mapping exercise.

7   o Adherence to this logical data standard is a cornerstone of the "Virtual

8   Energy Data Platform" as this is what allows multi-utility data to be

9   combined by the API consumer.

10   Green Button Download My Data

11 All proposed configurations of the Virtual Energy Data Platform specify the use of Green

12 Button Download My Data to provide single customer energy usage data sets directly to

13 the customer.

14   • Utilities will allow customers to download their own energy usage data directly

15   from their customer engagement platforms using the "Green Button Download My

16   Data" standard

17   • The platform Logical Data Model by design will support this capability

18   • Green Button Download My Data represents the access of energy usage data

19   directly by a retail customer from the utilities consumer facing web portal, using a

20   standard web browser

21   • Vendors must code and create their own tools to read the Extensible Markup

22   Language ("XML") files accessed via API. A helper style sheet can also be

23   downloaded that allows the XML data to be transformed into a more "human

24   readable" format

1   •   The platform can alternatively provide a downloadable comma-separated values

2   ("CSV") file to support smaller third parties who do not have the technical

3   capabilities to process a GB XML file

4   <u>Aggregate / Multi Customer Data Download</u>

5   The legislation's findings in support of the data platform statute indicated that the

6   platform should enable access to aggregated data:

7   By enabling the aggregation and anonymization of
8   community-level energy data and requiring a consent-driven
9   process for access to or sharing of customer-level energy
10   usage data, the state can open the door to innovative business
11   applications that will save customers money as well as
12   facilitate municipal and county aggregation programs
13   authorized by RSA 53-E.

14   NH Laws 2019, Ch. 286:1 (the Legislature's "Findings" in support of RSA 378:50

15   through 378:54.)

1   **Figure 2**
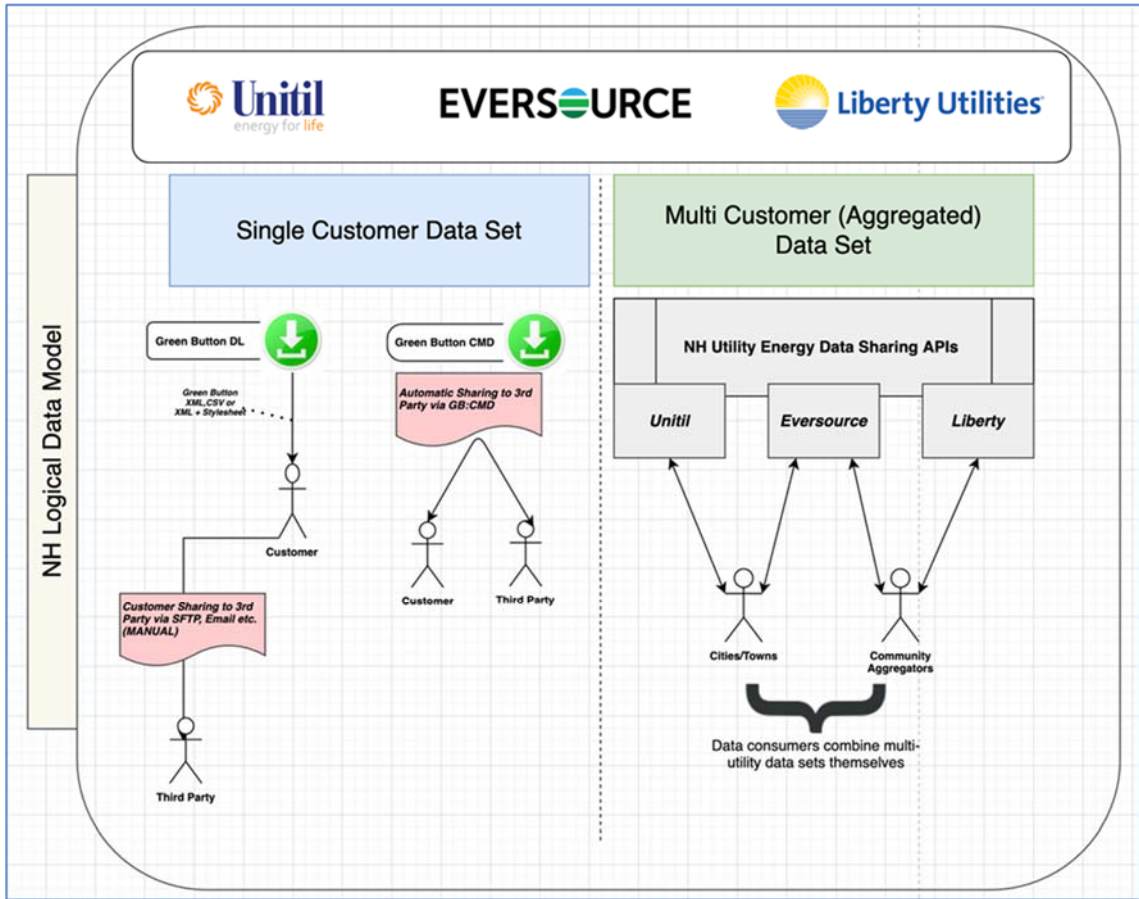
2

3   Green Button Connect My Data Sharing

4   Through the "Virtual Energy Platform," utilities will allow for direct customer or vendor-

5   initiated sharing of usage data automatically by implementing the GBC sharing protocol

6   via API as depicted in Figure 2.

7   These APIs will allow utilities to automate the customer authorization and secure

8   delivery of data directly to authorized third parties. GBC requires the utilities to

9   implement multiple security standards including:

1   • NAESB REQ.21 Energy Services Provider Interface[4]

2   • IETF Oauth 2.0 (RFC 6749 and RFC 6750)[5]

3   GBC provides a retail customer the ability to "authorize" a verified third party to access

4   data provided by the utility without any further interaction with the retail customer. The

5   standard supports the ability for the utilities to restrict access to these endpoints based on

6   various screening and approval steps performed by the utilities for a given third party.

7   Just like data downloaded using the Green Button Download My Data standard, vendors

8   must code and create their own tools to read the XML files accessed via the APIs.

9   Decentralized APIs

10   Each utility will expose a standard set of Representational State Transfer (REST)

11   accessible APIs over Secure Socket Layer connections.[6] The interface for these, as well

12   as the data formats returned, will be exactly the same for each implementing utility.

13   These APIs will provide the standard interface for providing on-demand or scheduled

14   energy data to external requestors.

15   Even though the back end logic for extracting and transforming the data for each utility

16   will be unique, the APIs will be programmed against the Logical Data Model abstraction

17   which insures that multiple utility data sets can be easily combined irrespective of the

18   underlying differences in data storage, nomenclature, and processing by the utilities.

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[4]   REQ.21 – Energy Services Provider Interface, NAESB 2010, http://www.naesb.org/ESPI_Standards.asp
[5]   The OAuth 2.0 Authorization Framework, RFC 6749, http://www.ietf.org/rfc/rfc6749.txt
[6]   "RESTful Web services: The basics", IBM Developer Works,
       https://www.ibm.coRm/developerworks/webservices/library/ws-restful/

1   APIs will implement standard token-based authentication and authorization similar to

2   ISO-NE's API model, and will return cleansed, validated, and cryptographically secure

3   data sets enabling the creation of any number of market applications and analyses.

4   Vendors and third parties will need to request and receive an API access token in order to

5   request data from the APIs. The API access tokens can be crafted to allow/deny access to

6   specific granular data and data types. Once authorized, vendors and third parties can

7   automate analytics and combining of data using the APIs and programmatic means. Just

8   like data downloaded using the Green Button Download My Data standard, vendors must

9   code and create their own tools to read the XML files accessed via the APIs.

10   <u>Initial Utility Offering</u>

11   The decentralized API model as defined up to this point would enable many of the use

12   case scenarios described by stakeholders during the various technical discovery sessions

13   across all of the participating utilities in this docket, but not without some additional

14   work by the multi-utility customer or the third-party consumers. In order to retrieve and

15   build an aggregated energy usage data set across all of the participating New Hampshire

16   utilities, the data consumer is required to make individual calls to each of the available

17   API endpoints and then combine the data themselves (which we know is possible because

18   of the logical data model). This model makes the provisioning of truly aggregated or

19   anonymized data sets such as those necessary for Community Power Aggregation

20   cumbersome and in some cases impossible.

1   Centralized Web Portal

2   The API architecture proposed would also readily facilitate the creation of a centralized

3   Web Portal that provides combined and aggregated data by municipality should the

4   incremental cost/benefit analysis justify this work. This portal could provide formatted

5   reporting, stylesheets, templates, and other user-friendly ways to consume aggregated

6   data. This web portal would utilize the decentralized APIs provided by the virtual

7   platform.

8 **Q.**   **How will Liberty feed data in to this online data platform once built?**

9 A.   Liberty is currently working with SAP to create a new billing system for all of its water,

10   gas, and electric companies across the country. As part of that new system, the Company

11   will create its own customer engagement platform that will have the capability to feed

12   into the GBC platform. This customer engagement platform is pre-integrated with SAP,

13   thus it will cost far less than having to create a platform from scratch. Because this

14   engagement platform will be built as part of Liberty's move to SAP, we will be able to

15   specify a great amount of information to be sent to this data platform. That information

16   will come from AMI meters that the Company intends to install in New Hampshire over

17   the next three to five years. Other utilities using this SAP platform around the country

18   include Southern California Gas, San Diego Gas and Electric, Dominion Energy, and

19   Duke Energy, among others.

20   With the move to SAP, installation of the AMI meters, and addition of this engagement

21   platform, Liberty will be able to provide a great deal of information to the GBC platform

22   that customers and third parties will use to make better informed energy decisions.

1   **VI.   CYBERSECURITY**

2   **Q.   Please explain how the Company expects the platform will keep customer**

3   **information secure.**

4   A.   Cybersecurity is a key aspect of data sharing. Customer information should only be

5   shared once validation has been completed by the third party. There are many electronic

6   verification programs that provide safety and security of customer data. For example,

7   Pacific Gas & Electric (PG&E) uses OneSpan Sign for authorization or revocation of

8   receiving gas and electric usage data using an electronic signature. The customer is also

9   able to provide access through their Share My Data program that allows making

10   authorized, recurring, machine-to-machine, programmatic data access available to

11   customers and their authorized third-party service providers.

12   Cybersecurity is a core element of any platform that customers and third parties will use

13   to share data. Two-factor authentication (2FA) is the process used today for EDI as noted

14   above. The platform must be designed to use the same type of authentication to ensure

15   security of customer information.

16   **Q.   Has Liberty undertaken comprehensive cybersecurity evaluations in the past?**

17   A.   Yes. In Docket No. DE 17-189, Petition to Approve Battery Storage Pilot Program,

18   Liberty was ordered to conduct such a review with Tesla, which included both firmware

19   and software elements, and to confirm there were no unreasonable cybersecurity risks for

20   customer information. The order also required Liberty to include in its next filing of its

21   cybersecurity plan to "clearly outline the measures, detection methods, and mitigation

22   strategies that it plans to implement regarding integration of utility-owned equipment and

1   systems installed behind-the-meter at customers' premises prior to program

2   implementation." This process was arduous but appropriate given that customers would

3   be utilizing company-owned equipment, along with sharing data from their internet

4   connection (directly connected to the batteries) with Tesla and Liberty.

5   **Q.   How long did the evaluation process take?**

6   A.   The process took approximately nine months from start to finish, and we note that the

7   batteries do not have any communication with the Company's software or firmware. The

8   Tesla systems are completely cloud-based. In the Company's opinion, there is even a

9   greater reason to ensure cybersecurity here, given that any third party can get

10   authorization and access to a customer's data through the platform with the click of a

11   button.

12   **VII.   GOVERNANCE**

13   **Q.   Please describe how Liberty envisions the governance function to make this**

14   **platform robust, customer friendly, and reasonably priced?**

15   A.   Governance should be guided by multiple stakeholders, including the utilities,

16   Commission Staff, the OCA, along with parties that may be interested in utilizing the

17   platform. Liberty looked to governance models within the existing regulatory framework

18   as models for the data sharing platform. The EESE Board uses governing principles to

19   guide energy efficiency investments in New Hampshire. The board provides direction

20   and guidance to the New Hampshire utilities on energy efficiency matters they believe

21   are most important to reaching higher energy efficiency goals over time. The second

22   group, although it has yet to convene, is the Grid Mod Stakeholder Group. This group

1   will provide recommendations to the Commission on a long list of items to be addressed

2   in future Least Cost Integrated Resource Planning filings.

3   The governing body for the online data platform should perform in a manner that is a

4   combination of the two noted above. The structure should entail a group with a set

5   number of members that have voting rights. There should be a threshold of votes to

6   approve moving forward with issues, perhaps a 2/3 majority, which will result in

7   recommendations to the Commission that are based on consensus.

8   The issues that should be reviewed by this governing body are design of the platform,

9   costs and benefits to all stakeholders, especially costs to be passed on to utility customers

10   for the initial setup and ongoing annual costs of the platform, standards for data accuracy,

11   cyber security, financial security of third parties, and future enhancements of the platform

12   as the energy landscape continues to change.

13   **VIII.   METERING AND BILLING DATA**

14   **Q.   Does Liberty believe third parties should be allowed to own and maintain the meter**

15   **at the customer's location?**

16   A.   No. The meter should be owned and maintained by Liberty as the Commission has rules

17   that impose on the Company strict obligations for how the meters are read and tested.

18   Having a third party own and maintain these meters does not provide this essential

19   oversight to ensure accuracy and precise data collection.

20   **Q.   What type of billing data would Liberty be willing to share with third parties?**

21   A.   The type of information that may be sent to GBC includes:

1   • Account information such as name, address, account number, meter number;

2   • Billing information such as the rate the customer is taking service under and the
3   rates per unit;

4   • Usage data (therms, kWh, kW, KVA);

5   o   Daily, monthly, and annual load profiles

6   o   Summary data

7   • Payment information – the customer should be required to choose whether they
8   want to share this information;

9   • Low income program participation;

10   • Level payment plan participation;

11   • Demand response data, such as whether the customer is participating in a demand
12   reduction program;

13   • Net metering data such as delivered and received kWh, and production meter data
14   if the customer has chosen Liberty to have us install one;

15   • Distributed energy resources data, if available;

16   • Electric vehicle data, if available

17 The Company would provide 24 months of billed usage data and ongoing usage data

18 based on the usage collected at the meter. All of the data being shared will go through a

19 completed validation prior to sharing. With regards to how often the data will be

20 uploaded to the platform, that will need to be decided based on the final design of the

21 platform.

1 **IX.** **THIRD PARTY REGISTRATION**

2 **Q.** **Please provide details of third party registration requirements.**

3 A.   Third parties may be eligible to use the platform on a non-discriminatory basis so long as

4   the following conditions are met, as well as compliance with any and all future relevant

5   laws, regulations, and compliance standards that may arise from the Commission, State

6   of New Hampshire, FERC, ISO New England, etc.

7   The third party will be required to provide reasonable contact information, including

8   federal tax ID number, demonstrate technical capability to interoperate with the platform,

9   satisfy utility review of compliance with privacy standards relative to RSA 363:38, and

10   requirements as established in RSA 378:51, II. This will include a vendor cyber security

11   review by utilities using a common questionnaire.

12   The third party will agree to terms and conditions governing privacy and security, and

13   they must not be on the Commission-maintained list of "banned" third parties. There

14   must be transparent and responsive onboarding for third parties. The platform will have

15   publicly-accessible documentation addressing all technical requirements, API calls and

16   responses, frequently asked questions, a list and description of the information that may

17   be obtained, vendor cybersecurity questionnaire, and the terms and conditions to which

18   third parties must agree. The platform will also provide timely responses to third party

19   registration requests and quickly resolve technical issues that arise during on-boarding.

20   The terms under which third parties access the platform should be determined by the

21   Commission. Utilities should be permitted to establish any separate terms and conditions

1   with Commission approval, which approval will not be required for changes mandated by

2   state and federal law and regulation.

3   For testing and technical support to third parties, the utilities will provide informational

4   and instructional resources and troubleshooting, enabling authorized users to access and

5   utilize the platform.

6   **Q.   How will Liberty provide community aggregation data?**

7   A.   Currently, Liberty provides Excel spreadsheets to municipalities after a great deal of

8   work to aggregate data by town. This current process involves the in-house creation and

9   distribution of an Excel spreadsheet. Once the platform is running, Liberty could initially

10   provide current lists of the names and mailing addresses of all their electric customers

11   taking distribution service within the municipality or county as required by RSA 53-E:7,

12   likely in CSV or Excel format via a secure FTP site. Through future enhancements of the

13   platform, Liberty believes that the platform should provide for easy compilation of

14   aggregated data by utility for a municipality for multi-utility analysis.

15   **Q.   Should municipalities pay for access to the platform?**

16   A.   There should be a reasonable fee for municipalities to access the platform, so long as it

17   does not act to prohibit a municipality from obtaining the data they need for municipal

18   aggregation.

1 **X.**   **COST RECOVERY**

2 **Q.**   **Should a cost benefit analysis be conducted prior to determining if the costs of the**

3   **platform are in the interest of customers?**

4 A.   Yes. A comprehensive cost benefit analysis is needed to ensure that customers will see

5   benefits that will outweigh costs for the platform.

6 **Q.**   **What does Liberty envision for a cost recovery mechanism for the platform?**

7 A.   There are two ways cost recovery can be achieved: (1) addition of the costs to

8   distribution rates, or (2) upfront payment by third parties for access to use the platform.

9   All of Liberty's gas and electric customers will have the opportunity to utilize the

10   platform and grant access to third parties they believe will help them with energy usage

11   and costs. Thus the mechanism to best provide cost recovery for the platform should be

12   distribution rates, as those rates are paid by the customers who will have access to the

13   platform. While the normal course of business for recovering distribution costs is

14   through a rate case, a rate case may not be viable because Liberty may not be in a test

15   year or ready to file its next rate case when the platform implementation occurs. If that is

16   the case, Liberty should be allowed to recover the costs of the implementation of the

17   platform through this docket, with ongoing costs reconciled through its annual step

18   adjustment approved in Docket No. DE 19-064, assuming the implementation occurs

19   prior to 2022.

20   The second way to recover the cost of the platform is the requirement that third parties

21   pay a fee to use the platform. That fee would offset the annual ongoing costs of the

1 platform, thus providing customers some cost relief. The governance committee should

2 be responsible for creating levels of rates for third parties to be charged.

3 **XI.**   **CONCLUSION**

4 **Q.**   **Please summarize your testimony.**

5 A.   Customers being able to retrieve and understand their usage and billing data is a necessity

6   if we want to continue the journey of becoming a more energy efficient and climate

7   conscious society. The utilities are the gatherers and holders of customer information and

8   should be the entity that provides the path to share the data, as their customer of today

9   looks for it, and the customer of tomorrow demands it.

10   Liberty wants to build this platform for the customer who wants their data gathered in a

11   simple and quick to access site so they can make quick decisions without being

12   encumbered by archaic processes and frustrated that their utility is unable to provide

13   them the same services as Amazon and Instacart, *i.e.*, immediate access and the sense of

14   fulfillment without delay. Liberty believes its proposal will usher a new sense of

15   satisfaction for its customers today and tomorrow.

16 **Q.**   **Does this complete your testimony?**

17 A.   Yes, it does.