April 15, 2020

Liberty Utilities Corp. (Granite State Electric) d/b/a Liberty Utilities ("Liberty Electric"), Public Service Company of New Hampshire d/b/a Eversource Energy ("Eversource"), Unitil Energy Systems, Inc. ("UES"), Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty Utilities ("Liberty Gas"), and Northern Utilities, Inc. ("Northern") (collectively, "the Joint Utilities"), submit for consideration by the stakeholders of docket number DE 19-197, comments on the four submissions in response to a request for use cases by Commission Staff.

These comments are an initial impression and relatively high-level issue spotting meant to further the discussion and development of a Statewide Multiuse Online Data Platform as outlined for exploration in SB 284. While these comments further the purpose of SB 284, no explicit comment contained within, nor any lack of comment on any portion of substantive content of the submissions in response to the use case request should be taken as an endorsement or rejection of what the form, format or content of such a Data Platform should be. The Joint Utilities do not take a position on form or substance for the Data Platform at this time. Rather, the Joint Utilities are engaged in exploring the feasibility of developing a spectrum of features and functionalities as contemplated by the stakeholders, as well as engaging in a robust discussion as to the content—including both the means and ends such content should serve.

New Hampshire PUC DE 19-197

Use Cases by Mission:data

Use Case #1: Individual Customer Grants a Third Party One-Time Historic Energy Information

Name	Individual customer grants a Third Party one-time historic energy information
Author/last updated	Michael Murray, Mission:data Coalition Last updated 4/3/20
Description (1-2 sentences)	A customer wishes to share his/her historic energy information (usage, cost/billing info, etc.) held by a utility with a Third Party (any non-utility entity such as DER, CPA, non-profit, competitive supplier, etc.) in order to determine whether a certain service is a good fit for the customer. For example, this could include sending energy information to (i) a rooftop solar provider for getting a price quote; (ii) a competitive supplier to receive a price estimate; (iii) to a storage provider to determine the appropriate size of behind-the-meter battery storage; and many other examples.
Step-by-step process – what happens?	1. Customer signs up for a Third Party service on Third Party's website, mobile app, or by telephone with Third Party. 2. Customer is prompted to authenticate and authorize sharing of data described below. (The premise methods for authentication/authorization can vary depending upon architecture and user experience; but it should be simply, convenient, and require no more information than utilities require today for establishing an online account. SMS shortcodes are a simple mechanism to complete authentication and authorization.) 3. Once authorized, utility promptly begins transmission of historical data within 60 seconds to Third Party. [Is this a standard time requirement (60 seconds). In EDI, these types of transactions are typically provided within 24 hours or 1 work day.]
Data fields required	□ Historical energy usage (kWh or therms) over 36-48 months, at whatever time interval collected by the meter. Quality of the reading should be indicated (raw, edited, estimated, revenue quality, as billed, etc.) Net meters should provide two channels, one for imported energy and one for exported energy. 48 months is preferable to allow for weather/energy regressions and more accurate M&V. [Will need to determine what data is available and captured. Utilities currently capture net usage at the meter.]

	☐ All historical line items on bills that add up to the total bill amount, including associated quantities (e.g., X kWh * $Y/kWh = $Z) over 36-48 months. Line items should be marked with the bill or period to which they apply, and line items should be categorized using standard categories in the Green Button standard's "itemKind" field. ☐ PDFs of bills over 36-48 months ☐ Account number(s), whether for customer accounts, billing accounts, service accounts, or supplier accounts, if applicable [We need to determine if "supplier accounts" could be provided. Utilities may require authorization to release by the Supplier and/or the customer, if the utilities store them.] ☐ Supplier name [Need to determine where authorizations are needed to release this information.] ☐ Meter number(s), if applicable ☐ Premise address(es) ☐ What rate the customer is on (by meter or premise) ☐ Any information necessary to determine eligibility for, or participate in, a demand response, energy efficiency or renewable energy program [What data is envisioned here?] ☐ Bill payment details [What data is envisioned here?] ☐ What low-income bill assistance plan the customer is on, if any [What data is envisioned here?] ☐ Net metering details, if any [What data is envisioned here?]
Estimated costs	☐ Up front costs of $200k - $2M ☐ Annual maintenance costs of $52k - $200k[1]; another estimate is CAD$0.80 – CAD$1.20 per customer per year[2] Note: Costs to Third Parties (and thus indirectly costs to customers) are significantly reduced with centralized access. This is because centralization (of some form or another) reduces costs associated with API monitoring and management, versioning, bug reporting, SSL certificate rotation, and general technical support that are specific to each API provider.
Estimated benefits	An assortment of customer benefits, estimated by other organizations, are provided below with citations. This list is intended to be illustrative, not exhaustive. ☐ Large commercial/industrial: CAD$180 per customer per year avoided costs as a result of easy access to benchmarking and portfolio energy analysis[3]

[1] *Prepared Rebuttal Testimony of Michael Murray on behalf of Mission:data Coalition*. California Public Utilities Commission docket no. A18-11-005, Application of Southern California Gas Company to Establish a Demand Response Program. April 26, 2019 at 20-22. Available at http://murraym.fastmail.fm/A.18-11-005%20Missiondata%20Rebuttal%20Testimony%20PDFA.pdf

[2] Ontario Green Button Cost-Benefit Analysis Report. Prepared for the Ontario, Canada Ministry of Energy by Dunsky Energy Consulting. October, 2017 at 22-23. Available at https://www.ontarioenergyreport.ca/pdfs/Green%20Button%20Cost-Benefit%20Analysis%20Report%20FINAL.PDF

[3] *Id.* at 28.

	▯ Small commercial: CAD$198 per customer per year[4] ▯ Residential: DER customer acquisition costs can be lowered (roughly $1/Watt today for solar, but applies to EE/DR/storage)
What policy changes required for benefits to be realized?	None.
Project Risks	
Cybersecurity Issues	[General Comment: Is it envisioned that any Third Party will have access to customer data with customer permission? Should the Third Parties sign a Non-Disclosure Agreement with each utility to ensure that customer data they receive is appropriately protected?]
Assumptions / Pre-Conditions	[Will require that an accurate / secure "customer identification" be in place, possibly "two factor" approvals. [Will need to determine whether authorization would be needed to release "Supplier Name and Account" information.]

[4] *Id.*

Use Case #2: Individual Customer Grants a Third Party Ongoing Energy Information

Name	Individual customer grants a Third Party ongoing energy information
Author/last updated	Michael Murray, Mission:data Coalition Last updated 4/3/20
Description (1-2 sentences)	A customer wishes to share his/her ongoing energy information (usage, cost/billing info, etc.) held by a utility with a Third Party (any non-utility entity such as DER, CPA, non-profit, competitive supplier, etc.) in order to use a service, such as a DER. Some examples include, but are not limited to, monitoring of post-retrofit energy efficiency; gathering residential or C&I usage data for demand response settlement and ongoing management; verifying performance of behind-the-meter battery storage over time. [What is meant by "CPA"?] This use case might be combined with Use Case #1 – for example, a customer might execute requests for *both* historic and ongoing information at the same time.
Step-by-step process – what happens?	1. Customer signs up for a Third Party service on Third Party's website, mobile app, or by telephone with Third Party. 2. Customer is prompted to authenticate and authorize sharing of data described below. The premise methods for authentication/authorization can vary depending upon architecture and user experience; but it should be simply, convenient, and require no more information than utilities require today for establishing an online account. SMS shortcodes are a simple mechanism to complete authentication and authorization. Third Parties should have the option to determine the authorization term they require, i.e. 12 months, 24 months, or indefinite ("valid until rescinded"). 3. Once authorized, the utility promptly (within 60 seconds) begins transmission of the last 1-2 days of energy usage data, and the most recent billing and account information as described below. Updates are made available as soon as possible as they are collected/generated by the utility. [Is this a standard time requirement (60 seconds). In EDI, these types of transactions are typically provided within 24 hours or 1 work day.]
Data fields required	☐ Ongoing energy usage into the future, at whatever time interval collected by the meter. **Note**: Third Parties are interested in **both** "raw" usage data and validated, edited and estimated ("VEE'd") usage data. Third Parties want "raw" usage data as quickly as possible, i.e. out of the Meter Data Management System as it is collected. VEE'd usage data can be provided after VEE processes are

	executed. The Green Button standard accommodates these different levels of "data quality." [Is "raw" data envisioned in order get access to data more quicky, or is there another reason envisioned for this data.] - Ongoing line items on bills, promptly after bills are generated, as enumerated in Use Case #1 [What data is envisioned here?] - Supplier name, promptly after a change occurs [Need to determine where authorizations are needed to release this information.] - Account number(s) as enumerated in Use Case #1, promptly after a change occurs - Meter number(s), if applicable, promptly after they change over time - Premise address(es), promptly after a change occurs [What is envisioned here? If we update a premise address?] - What rate the customer is on (by meter or premise, if applicable), promptly a change occurs - Any information necessary to determine eligibility for, or participate in, a demand response, energy efficiency or renewable energy program [What data is envisioned here?]
Estimated costs	All costs are already included in Mission:data Use Case #1 above. In other words, the costs from Use Case #1 include the functionality from this Use Case #2.
Estimated benefits	An assortment of customer benefits, estimated by other organizations, are provided below with citations. This list is intended to be illustrative, not exhaustive. - Behavioral energy savings from AEP: 1.1% - 2.5%[5] - Behavioral energy savings from Duke: 1% - 5%[6] - Potential energy efficiency savings enabled through interval data access from 12 studies: 6% - 18%[7] - Residential: 10% electricity / 12% natural gas conservation enhancement of those who pursued efficiency retrofits[8] - Commercial: 10% electricity / 4% natural gas conservation enhancement of those who pursued efficiency retrofits[9]

[5] AEP Ohio cost-benefit analysis. Workpaper provided in gridSMART collaborative, June, 2018. Available at http://murraym.fastmail.fm/AEP%20Ohio%20-%20June%202018%20-%20GB%20CMD%20Cost-Benefit%20Analysis.pdf

[6] Duke Energy cost-benefit analysis. April 12, 2019, available at http://murraym.fastmail.fm/Duke%20Energy%20GreenButton%20Position%20and%20CBA%20Corrected%204-12-19.pdf

[7] *Got Data? The Value of Energy Data Access to Consumers.* Mission:data Coalition. February, 2016. Available at http://www.missiondata.io/s/Got-Data-value-of-energy-data-access-to-consumers.pdf

[8] Ontario at Appendix D.

[9] *Id.*

<table>
<tr><td></td><td>Benefit-to-cost ratios from Ontario's analysis of multiple scenarios:[10]

Table 11. Green Button DMD/CMD Scenario Cost-Benefit Results
<table>
<tr><th>Utility Type</th><th colspan="2">Single Integrated Hosted</th><th colspan="2">Multi-Integrated Hosted</th><th colspan="2">Non-Integrated Hosted</th><th colspan="2">In-House</th></tr>
<tr><th></th><th>5-year</th><th>10-year</th><th>5-year</th><th>10-year</th><th>5-year</th><th>10-year</th><th>5-year</th><th>10-year</th></tr>
<tr><td>Electricity</td><td>4.1</td><td>3.6</td><td>4.04</td><td>3.6</td><td>3.5</td><td>3.5</td><td>3.2</td><td>3.4</td></tr>
<tr><td>Electricity and Natural Gas</td><td>4.4</td><td>3.8</td><td>4.4</td><td>3.8</td><td>3.9</td><td>3.7</td><td>3.5</td><td>3.6</td></tr>
<tr><td>Electricity, Natural Gas, and Water</td><td>1.9</td><td>2.8</td><td>1.8</td><td>2.8</td><td>1.4</td><td>2.5</td><td>1.1</td><td>2.3</td></tr>
<tr><td>Natural Gas Component</td><td>6.2</td><td>4.9</td><td>6.0</td><td>5.0</td><td>5.6</td><td>4.8</td><td>5.4</td><td>4.7</td></tr>
<tr><td>Water Component</td><td>0.5</td><td>1.1</td><td>0.5</td><td>1.04</td><td>0.3</td><td>0.8</td><td>0.3</td><td>0.7</td></tr>
</table></td></tr>
<tr><td>What policy changes required for benefits to be realized?</td><td>None.</td></tr>
<tr><td>Project Risks</td><td></td></tr>
<tr><td>Cybersecurity Issues</td><td>[General Comment: Is it envisioned that any Third Party will have access to customer data with customer permission? Should the Third Parties sign a Non-Disclosure Agreement with each utility to ensure that customer data they receive is appropriately protected?]</td></tr>
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</table>

[10] Ontario at 36.