

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

<i>Name</i>	Individual customer grants a Third Party one-time historic energy information
<i>Author/last updated</i>	Michael Murray, Mission:data Coalition Last updated 4/3/20
<i>Description (1-2 sentences)</i>	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.
<i>Step-by-step process – what happens?</i>	<ol style="list-style-type: none">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.
<i>Data fields required</i>	<ul style="list-style-type: none">• 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.

	<ul style="list-style-type: none"> • 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 • Supplier name • 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 • Bill payment details • What low-income bill assistance plan the customer is on, if any • Net metering details, if any
<i>Estimated costs</i>	<ul style="list-style-type: none"> • Up front costs of \$200k - \$2M • Annual maintenance costs of \$52k - \$200k¹; another estimate is CAD\$0.80 – CAD\$1.20 per customer per year² <p>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.</p>
<i>Estimated benefits</i>	<p>An assortment of customer benefits, estimated by other organizations, are provided below with citations. This list is intended to be illustrative, not exhaustive.</p> <ul style="list-style-type: none"> • Large commercial/industrial: CAD\$180 per customer per year avoided costs as a result of easy access to benchmarking and portfolio energy analysis³

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%20PDF.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.

	<ul style="list-style-type: none">• Small commercial: CAD\$198 per customer per year⁴• Residential: DER customer acquisition costs can be lowered (roughly \$1/Watt today for solar, but applies to EE/DR/storage)
<i>What policy changes required for benefits to be realized?</i>	None.

⁴ *Id.*

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

<i>Name</i>	Individual customer grants a Third Party ongoing energy information
<i>Author/last updated</i>	Michael Murray, Mission:data Coalition Last updated 4/3/20
<i>Description (1-2 sentences)</i>	<p>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.</p> <p>This use case might be combined with Use Case #1 – for example, a customer might execute requests for <i>both</i> historic and ongoing information at the same time.</p>
<i>Step-by-step process – what happens?</i>	<ol style="list-style-type: none"> 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.
<i>Data fields required</i>	<ul style="list-style-type: none"> • 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

	<p>executed. The Green Button standard accommodates these different levels of “data quality.”</p> <ul style="list-style-type: none"> • Ongoing line items on bills, promptly after bills are generated, as enumerated in Use Case #1 • Supplier name, promptly after a change occurs • 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 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
<i>Estimated costs</i>	<p>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.</p>
<i>Estimated benefits</i>	<p>An assortment of customer benefits, estimated by other organizations, are provided below with citations. This list is intended to be illustrative, not exhaustive.</p> <ul style="list-style-type: none"> • 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 retrofits⁸ • Commercial: 10% electricity / 4% natural gas conservation enhancement of those who pursued efficiency retrofits⁹

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.*

Benefit-to-cost ratios from Ontario's analysis of multiple scenarios:¹⁰

Table 11. Green Button DMD/CMD Scenario Cost-Benefit Results

Utility Type	Single Integrated Hosted		Multi-Integrated Hosted		Non-Integrated Hosted		In-House	
	5-year	10-year	5-year	10-year	5-year	10-year	5-year	10-year
Electricity	4.1	3.6	4.04	3.6	3.5	3.5	3.2	3.4
Electricity and Natural Gas	4.4	3.8	4.4	3.8	3.9	3.7	3.5	3.6
Electricity, Natural Gas, and Water	1.9	2.8	1.8	2.8	1.4	2.5	1.1	2.3
Natural Gas Component	6.2	4.9	6.0	5.0	5.6	4.8	5.4	4.7
Water Component	0.5	1.1	0.5	1.04	0.3	0.8	0.3	0.7

What policy changes required for benefits to be realized?

None.

¹⁰ Ontario at 36.