

STATE OF NEW HAMPSHIRE
PUBLIC UTILITIES COMMISSION

DOCKET DE 19-197

IN THE MATTER OF: Electric and Natural Gas Utilities
 Development of a Statewide, Multi-Use
 Online Energy Data Platform

JOINT REBUTTAL TESTIMONY

OF

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1 **I. INTRODUCTION**

2 **Q. Please state your full names.**

3 A. Stephen R. Eckberg.

4 A. Jason Morse.

5 **Q. By whom are you employed and what is your business address?**

6 A. [Eckberg] I am employed as a utility analyst with the Electric Division of the New
7 Hampshire Public Utilities Commission. My business address is 21 South Fruit Street, Suite
8 10, Concord, NH, 03301.

9 A. [Morse] I am employed as a utility analyst with the Sustainable Energy Division of the New
10 Hampshire Public Utilities Commission. My business address is 21 South Fruit Street, Suite
11 10, Concord, NH, 03301.

12 **Q. Please summarize your relevant education and professional work experiences.**

13 A. [Eckberg and Morse] Our education and work experience are provided in our joint direct
14 testimony in this docket and we will not repeat it here.

15 **Q. What is the purpose of your joint testimony?**

16 A. The purpose of our testimony is to advise the Commission regarding some of the non-
17 consensus issues in this docket, to highlight other relevant issues, and to expand upon the
18 recommendation presented in our direct pre-filed testimony regarding how the Commission
19 might determine whether the costs of any proposed statewide, multi-use online energy data
20 platform are reasonable and in the public interest using a two-phase approach.

21 **Q. How is your testimony organized?**

22 A. Section I introduces and summarizes our testimony. Section II discusses the potential costs
23 of the platform. Section III discusses platform cost recovery. Section IV discusses platform

1 governance. Section V discusses platform architecture. Section VI provides a summary and
2 conclusions.

3 **Q. Are you providing testimony regarding all of the issues that will need to be addressed in**
4 **DE 19-197?**

5 A. No. The scope of our rebuttal testimony will focus primarily on advising the Commission
6 regarding only certain key issues which are non-consensus among the parties.¹

7 **Q. What issues have you identified as non-consensus issues among the parties at this time?**

8 A. There appears to be disagreement among parties' positions in pre-filed testimony regarding
9 multiple issues important to the development and implementation of the project.² We will
10 provide more detail on only *some* of those issues below.

11

12 **II. PLATFORM COSTS**

13 **Q. Is there relevant information from other utilities or jurisdictions that can help the**
14 **Commission better understand the potential costs of the platform?**

15 A. Yes. Dunskey Energy Consulting prepared a 2017 report analyzing the costs and benefits of
16 Green Button Connect (GBC) implementation for 72 electric and three natural gas utilities in
17 Ontario, Canada.³ (Ontario Report) This analysis, while described as "high-level" by its

¹ Our rebuttal testimony should be understood as supplementing, rather than supplanting, our initial testimony.

² These include, but are not limited to: (1) Recovery of the data platform's development and operational costs; (2) the data platform's system architecture; (3) Governance of the data platform; (4) Manner of implementing the platform (Design Pilot, Timing of an RFP relative to designing the platform and its components, hiring of an independent project leader or designation of the Utilities as project leaders); (5) Whether the utilities primarily build the platform, should a third party, or should it be a combination of these; (6) Security and data access issues including but limited to: anonymization protocols; data encryption; data retention policies; and data sharing with third-parties; and (7) the platform data requirements and/or use cases that it should support.

³ Attachment Rebuttal SRE-JM-1. Dunskey Energy Consulting. Green Button Cost-Benefit Analysis Report. October 2017. Available also at: <https://www.ontarioenergyreport.ca/pdfs/Green%20Button%20Cost-Benefit%20Analysis%20Report%20FINAL.PDF> (The report also considers Ontario's 515 water utilities, but we do not reference that portion of the report as it is not applicable to the NH statewide energy data platform.).

1 author, appears to be the most robust available analysis of the costs of GBC functionality.

2 We note that this analysis considers separate GBC implementations for each utility, and that
3 this is not an analysis of a platform in which multiple utilities share a logical data model
4 and/or potentially share a common endpoint as has been proposed by some parties in this
5 docket. The Ontario Report also reviews implementations in Canada, which might limit its
6 relevancy to the New Hampshire platform. We also note that as a three year old analysis, it
7 might already be considered somewhat outdated. We therefore do not advise drawing cost
8 estimates for a NH platform directly from the Ontario Report's analysis, rather, we reference
9 this analysis within our testimony because it may provide some relevant insights for New
10 Hampshire to consider.

11 **Q. Please describe some of the categories of costs that might be incurred for deployment of**
12 **a data platform.**

13 A. The Ontario Report separately categorizes the costs of a GBC implementation into three main
14 categories: set-up, integration, and ongoing annual costs.

15 **Set-up costs** include all one-time costs required to develop the GBC functionality. The
16 authors describe set-up costs as including front-end solutions, cloud services, the Green
17 Button platform, development and testing of the services to manage third party applications,
18 and testing of required security and privacy mechanisms and protocols. The Ontario Report
19 suggests that these particular costs are highly dependent on what functionality is included,
20 and are relatively fixed costs in the sense that they are not expected to vary much based on
21 the size of a utility or the complexity of its systems. The Ontario Report estimates that set-up
22 costs would amount to \$50,000 per utility implementation.⁴

⁴ The Ontario Report uses Canadian Dollars. To convert to United States dollars, one would multiply cost figures found in the report by approximately 0.75.

1 **Integration costs** are described as including all of the one-time costs incurred to integrate the
2 platform with the utilities' data systems and processes. The Ontario Report suggests that
3 these costs are expected to vary widely based on the size of a utility and the complexity of its
4 data systems. These costs are described as primarily resulting from the extracting,
5 transforming, and loading of data from the utilities' data storage systems into the platform.

6 **Ongoing annual costs** are described as including all of the costs required to maintain the
7 platform, maintain and update the integrations, manage third party registration, and other
8 costs that are likely to recur.

9 We also suggest that there is a fourth category of costs which might be considered,
10 depending on the requirements of a statewide platform. These are **indirect costs**. We define
11 indirect costs as any costs that are not incurred directly for the platform's set-up, integration,
12 or ongoing annual requirements, but would be incurred as a result of a requirement of the
13 data platform.

14 **Q. Which category of costs is expected to be most significant for the NH Statewide Energy**
15 **Data Platform?**

16 A. Using the definitional framework above, the highest expected costs associated with
17 implementing the New Hampshire platform appear to be the integration costs. Eversource
18 and Unitil note this in their pre-filed testimony, and further suggest in response to discovery
19 Staff 01-011(a) that this category of costs represents 85% of the costs and effort related to a
20 platform implementation.⁵

21 The Ontario Report estimates that integration costs for a large utility of any type (defined as
22 >150,000 customers) are \$225,000, costs for a medium utility (defined as between 30,000

⁵ Attachment Rebuttal SRE-JM-2. Eversource and Unitil Response STAFF 01-011.

1 and 150,000 customers) are \$72,000, and costs for a small utility (defined as <30,000
2 customers) \$22,500.⁶ They estimate that these costs would increase by 33% if the utility
3 were to implement the platform in-house as opposed to pursuing a Software-as-a-Service
4 agreement.

5 If the assumption made in the Ontario Report that larger utilities will incur significantly
6 higher costs for integration due to more complex internal data structures proves to be true for
7 New Hampshire, we should expect that the potential cost of integrating Eversource's data
8 into the platform will be one of the highest specific costs of platform implementation.

9 **Q. Is there a risk that these integration costs would need to be re-incurred if a utility**
10 **updates their back-end data storage systems in the future?**

11 A. Yes. In particular, we suggest that the Commission consider the testimony and discovery
12 responses of Liberty Utilities which state that the Company is currently planning to change
13 its billing system from its current "Cogsdale" system to a new "SAP" system. Liberty's
14 response to Staff 2-2 states "Considering Liberty is in the process of designing the new
15 billing system, trying to adapt Cogsdale to feed in to the statewide platform would be a waste
16 of time and money."⁷ The Company has estimated that the new billing system will be ready
17 to use during Q2 2022. It appears that if the Commission orders Liberty Utilities to begin a
18 platform implementation before its new billing system is in place, the result might be that the
19 Company and/or contractors would undertake efforts to design, map, extract, transform, and
20 load/prepare data from Liberty's current data storage systems, but these efforts would

⁶ The approximate customer-base of the NH Utilities are: Eversource Energy (electric): 560,000; Unitil Energy Systems, Inc. (electric): 100,000; Granite State Electric Corp. d/b/a Liberty Utilities (electric): 43,000 Northern Utilities, Inc. (gas): 27,000; Energy North Natural Gas Corp. d/b/a Liberty Utilities (gas): 87,000.

⁷ Attachment Rebuttal SRE-JM-3. Liberty Response Staff 2-2(c).

1 become obsolete and need to be re-done within a very short timeframe. It therefore might be
2 in the public interest to defer integration of Liberty’s data into a statewide data platform until
3 its new billing system and data sources are being used, in order to avoid incurring integration
4 costs that would need to be re-incurred.

5 **Q. Might additional integration costs be expected when new data elements are added into**
6 **the platform?**

7 A. Yes. To provide one example, Eversource states in response to Staff 1-011 (e) that
8 “Implementing AMI in NH could result in a major [data platform] cost impacts. Either the
9 source could be changed to pull data from the AMI MDMS (meter data management system)
10 or additional data and a much greater volume of data would be available in the Azure data
11 lake. An estimation of cost would have to be developed at that point.”⁸ Given that
12 Eversource does not currently have a timeline for AMI implementation in NH, that such an
13 implementation might be many years in the future, and that it is not clear to what extent the
14 current back-end data storage systems would be replaced upon an AMI implementation, it
15 does not appear to be possible to predict when this cost might need to be incurred or how
16 large this particular cost might be. However, we bring this to the Commission’s attention as
17 an example of the potential future platform costs that could be above the “normal” expected
18 operations & maintenance costs.

19 As another example, if it is determined that certain “System data” elements may be
20 integrated into the platform at a later date, additional costs related to integrating that data
21 should be expected. Eversource and Unitil state in response to Staff 01-011 (c) that “Cost
22 would be affected by the number of source systems or tables required and the time period

⁸ Supra at Note 5.

1 involved. For example, system data is generally not tied to billing data, which would result
2 in higher integration costs.”⁹

3 **Q. Could a requirement of the data platform result in additional costs that might not be**
4 **considered direct costs of the platform?**

5 A. As mentioned above, the data platform could potentially create indirect costs. For example,
6 if hourly load data is necessary to enable certain platform functionalities, and a utility’s
7 systems are only designed to collect monthly load data, updating that utility’s systems could
8 become an indirect cost related to satisfying the platform requirements.

9 **Q. How might the Commission limit indirect costs?**

10 A. To limit indirect costs, the Commission could clarify that any adopted data sharing
11 requirements or use case should be limited by existing data collection frequency, granularity,
12 and storage capabilities.¹⁰ Under such an arrangement, if the data required to enable certain
13 platform functionalities is not already available to a utility, the Commission would have the
14 opportunity to understand any indirect costs that would need to be incurred as a result of
15 adopting incremental platform functionalities or use cases.

16 **Q. Can you further describe the potential costs of operating and maintaining the**
17 **platform?**

18 Yes, there are expected to be a number of ongoing costs for the operation and maintenance
19 the platform. The Ontario Report estimates ongoing annual costs of between \$0.80 and
20 \$1.20 per customer per year depending on the implementation type. A Statewide platform

⁹ *Id.*

¹⁰ One exception of this general rule would be if the Commission found costs associated with functionalities beyond the minimum viable platform to be reasonable and in the public interest, including designing the platform to be extensible to future additional data collection frequencies and granularities.

1 might have additional incremental ongoing costs beyond what would be incurred to operate
2 and maintain separate GBC implementations. We recommend that RFI or RFP responses for
3 the NH platform should separately estimate expected annual operation and maintenance
4 costs, and clearly explain the extent to which those estimates account for possible future data
5 integration/re-integration efforts. We also recommend that the responses provide separate
6 annual ongoing cost estimates for a platform that uses the different architecture options, such
7 as a central database, a virtual platform, an “API of APIs”, and/or a centralized web portal.
8 These architectural options are discussed in more detail in Section V of this testimony.

9 **Q. What additional costs might be incurred beyond those already mentioned above?**

10 Below we provide a list of some other potential costs that might be incurred as part of an
11 initial and ongoing platform implementation. This list is not exhaustive and is based on the
12 features and functionalities that have been proposed in parties’ testimony. To the extent
13 certain features/functionalities are not adopted as part of a platform, some of these costs
14 might not apply.

- 15 • Any performance incentive, rate of return, or other utility incentive;
- 16 • Any tracking and reporting system and/or related functionality integrated into the
17 platform;
- 18 • Any independent entity which might host, support, provide customer service for, or
19 incur any other costs related to the data platform;
- 20 • Any identity management, token management etc. services included in the platform;
- 21 • Any physical data warehouse(s) involved in the platform architecture, whether
22 hardware or cloud-based;

- 1 • Initial and ongoing costs related to a website or other location which provides
- 2 centralized access and documentation related to the data platform, and any associated
- 3 functions or features;
- 4 • The costs of any future updates, upgrades, additional functionalities, or data mapping
- 5 exercises that would not be included in an initial version of the platform or its
- 6 expected annual maintenance costs;
- 7 • All licensing and certification costs related to the platform;
- 8 • The costs of any consultant that might be needed; and
- 9 • Any additional costs related to the providing of aggregated/anonymized data, which
- 10 might include anonymization/screening software and/or manual intervention by
- 11 administrative staff.

12 **Q. Please summarize your observations relating to potential platform costs.**

13 A. We recommend the Commission consider the full universe of potential platform costs as it

14 evaluates whether the costs of implementation are reasonable and in the public interest.

15 These costs include set-up costs, integration costs, ongoing direct costs, and indirect costs.

16 We recommend that RFI or RFP responses for the NH platform should separately estimate

17 expected annual operation and maintenance costs, and clearly explain the extent to which

18 those estimates account for possible future data integration/re-integration efforts. We also

19 recommend that the responses provide separate annual ongoing cost estimates for a platform

20 that uses the different architecture options, such as a central database, a virtual platform, an

21 “API of APIs”, and/or a centralized web portal.

22

1 **III. PLATFORM COST RECOVERY**

2 **Q. If the Commission approves the development of an Online Energy Data Platform, how**
3 **might costs incurred by the Utilities to develop and enable the platform be recovered?**

4 A. RSA 378:54 provides that the utilities may: (1) “Impose reasonable charges to third parties
5 for access to data via the multi-use, online energy data platform” and (2) “Otherwise recover
6 costs from customers in a timely manner as approved by the commission.”

7 There are several methods by which the Utilities might recover costs related to the data
8 platform. One is recovery from ratepayers through distribution rates. Another is recovery
9 from ratepayers through the Systems Benefit Charge (SBC) and Local Distribution
10 Adjustment Charge (LDAC). Another might be charging a reasonable fee to third parties for
11 the use of the platform.¹¹

12

13 **A. Platform Cost Recovery – Positions of the Parties**

14 **Q. Did any of the utilities who provided testimony in this proceeding offer input on the cost**
15 **recovery issue?**

16 A. Yes. The Joint Testimony of Eversource/Unitil witnesses addressed this in some detail. The
17 witnesses stated that prior to inclusion of the energy data platform costs in distribution rates,
18 they would propose that cost recovery be allowed as a separate stand-alone adder, as it would
19 facilitate more timely recovery of costs. Absent such timely recovery, the Utilities stated a

¹¹ Beyond these three high-level cost-recovery mechanisms, there are additional details related to cost recovery that the Commission might address. These details are related to the timeliness in which the costs would be recovered, whether the Utilities should be given the opportunity to earn a rate of return on some of the platform costs, whether there should be performance bonuses or penalties, and a variety of additional details that would need to be addressed if fees to third parties are to be enacted upon implementation of the platform.

1 preference for authorization of a regulatory asset to track and collect, over time, certain cost
2 elements rather than including the costs in current distribution rates.¹²

3 Liberty Utilities, in its testimony, opined that the most appropriate route to provide cost
4 recovery is via distribution rates as those rates are paid by all customers who will eventually
5 have access to the data platform. However, Liberty witnesses went on to say that the timing
6 of distribution rate cases may present less than optimal conditions for timely recovery of the
7 data platform implementation costs and that the instant docket should address this issue.

8 Liberty also supported imposing fees on third parties who use the system to extract customer
9 data, including anonymized and aggregated data.¹³

10 **Q. Please provide a brief summary of the initial positions of other parties regarding the**
11 **issues related to cost recovery.**

12 **A. Mission:Data:** Mission:Data proposes that the governance body be granted a budget cap of
13 \$250,000 annually under which the body could approve changes and improvements to the
14 platform and in which prudence is pre-determined and the Utilities would be guaranteed
15 recovery¹⁴. They also propose that “prudently-incurred costs for administering the GBC
16 platform should be recovered from all ratepayers, and that the cost charged to customers or
17 third parties for each use of the GBC platform should be zero.”¹⁵ They further propose a
18 performance incentive for the utilities of up to 25% of the platform’s first year costs if they
19 meet or exceed certain performance metrics.¹⁶

¹² Testimony of Eversource/Unitil at page 54-55.

¹³ Testimony of Liberty Utilities at Page 29.

¹⁴ Testimony of Mission:Data at Page 72, lines 1-12.

¹⁵ *Id.* at Page 72, lines 16-18.

¹⁶ *Id.* Page 74, lines 2-4.

1 **Clean Energy NH:** CENH suggests that for the platform’s initial start-up costs “the
2 Commission could approve a specific limited budget for each utility that it deems is
3 reasonable to meet the legislative objectives of SB 284. The utilities could then be confident
4 that these investments are prudent, and will be recovered,” and that the utilities could, after
5 working with the Governance body, seek Commission approval for modification of these
6 pre-approved budgets.¹⁷ CENH suggests that once the Data Platform is established,
7 operating costs could be recovered under a performance-based ratemaking approach based on
8 the platform meeting certain performance metrics rather than through the traditional
9 ratemaking process. In CENH’s view, the utilities would be able to recover their
10 implementation and maintenance costs if they meet the basic requirements established by the
11 governance body and would receive additional shareholder compensation if they meet others
12 goals that measure the ratepayer value and impact of the platform.¹⁸

13 **GreenTel:** GreenTel states that the Commission should consider performance incentives
14 for the data platform. Specifically, they recommend considering “the ability to rate base
15 cloud-based software as a service (SaaS) technologies which will ensure the data platform is
16 built leveraging the latest technologies.”¹⁹

17 **Local Government Coalition: Representative Kat McGhee:** Representative McGhee
18 suggests that there should be a performance based rewards system to the utilities for the
19 platform meeting or exceeding system performance goals.²⁰ She also suggests that “If we are

¹⁷ Testimony of Clean Energy NH at Page 30, lines 9-14.

¹⁸ *Id.* at Page 30, line 19, through Page 31, line 23.

¹⁹ Testimony of Greentel Group at Page 23.

²⁰ Testimony of Kat McGhee at Page 18, lines 1-9.

1 going to supply access to New Hampshire’s energy data, the cost of development and
2 ongoing maintenance should be absorbed into the cost of electric utility customer services.”²¹

3
4 **B. Platform Cost Recovery – Potential Recovery through SBC/LDAC**

5 **Q. Could the utilities recover costs of the energy data platform through the Systems**
6 **Benefit Charge (SBC) and the Local Distribution Adjustment Charge (LDAC)?**

7 A. The SBC was legislatively authorized by RSA 374-F:3, VI, which provides:

8 A nonbypassable and competitively neutral system benefits charge applied to
9 the use of the distribution system may be used to fund public benefits related to
10 the provision of electricity. Such benefits, as approved by regulators, may
11 include, but not necessarily be limited to, programs for low-income customers,
12 energy efficiency programs, funding for the electric utility industry's share of
13 commission expenses pursuant to RSA 363-A, support for research and
14 development, and investments in commercialization strategies for new and
15 beneficial technologies.²²

16 Eversource currently funds the costs of its Customer Engagement Platform through the SBC,
17 with an annual budget of approximately \$600,000; initial integration costs associated with
18 that customer data platform were approximately \$3 million.²³ Staff believes this is one
19 potential approach to consider for recovery of costs related to the development,
20 implementation, and operation of the online energy data platform at issue in this proceeding.

21 **Q. What approvals might be needed to recover the costs of the platform in this manner?**

22 A. RSA 374-F:3, VI further provides that

23 Legislative approval of the New Hampshire general court shall be required to
24 increase the system benefits charge. This requirement of prior approval... shall
25 not apply to the energy efficiency portion of the system benefits charge if the
26 increase is authorized by an order of the commission to implement the 3-year

²¹ *Id.* at Page 9, lines 8-11.

²² The LDAC is the corresponding rate element through which the natural gas utilities collect costs related to the energy efficiency programs they administer.

²³ Attachment Rebuttal SRE-JM-4. Docket No. DE 17-136. Eversource Response OCA 2-10.

1 planning periods of the Energy Efficiency Resource Standard framework
2 established by commission Order No. 25,932 dated August 2, 2016, ending in
3 2020 and 2023, or, if for purposes other than implementing the Energy
4 Efficiency Resource Standard, is authorized by the fiscal committee of the
5 general court.

6 In light of this statutory provision, it seems likely that the SBC could only fund the platform
7 if it were approved as part of the three year energy efficiency plan currently under review in
8 DE 20-092, or, if it were explicitly authorized by the fiscal committee of the general court.

9 **Q. What might be the advantage of the Utilities recovering the costs of the platform**
10 **through the SBC and LDAC, rather than through distribution rates?**

11 A. There is a chance that some functionalities offered by the data platform and certain
12 functionalities currently offered by EERS marketing efforts and other customer data sharing
13 efforts are, or could become, duplicative. For example, Eversource stated during the October
14 8, 2020 Technical Session in this docket that the license for their current Customer
15 Engagement Platform (CEP) software is expiring in early 2021 and that they have released an
16 RFP and received proposals for a new Customer Engagement Initiative. An Eversource
17 representative stated that many of the proposals received by the company included Green
18 Button Connect functionality as an option. It seems that if the costs and functionalities of the
19 data platform, CEPs, and/or other customer data sharing efforts are reviewed in a more
20 cohesive manner, there may be a reduced chance of incurring duplicative costs for redundant
21 functionalities among software and data platform efforts.

22 **Q. Are there any basic programmatic reasons to support consideration of the Energy Data**
23 **Platform within the EERS and the corresponding SBC and LDAC charges?**

24 A. There is at least one worth mentioning. It is our understanding that participation in several of
25 the residential energy efficiency programs – the Home Performance with Energy Star
26 (HPwES) and/or Home Energy Assistance (HEA) generally require the participant to provide

1 12 months of utility bills and other energy consumption information so that the energy
2 auditor evaluating the premises for cost-effective improvements can use that data in the
3 project-specific energy modeling. The platform’s GBC functionality would make it easier
4 for customers to obtain this data and transmit it to their auditor. Therefore, there is a direct
5 connection between the need for the customer energy data and the SBC/LDAC energy
6 efficiency program funding stream.

7
8 **C. Platform Cost Recovery – User Fees**

9 **Q. You also mentioned charges to third parties for use of the energy data platform. Could**
10 **the Utilities fully or partially offset the costs of the data platform with reasonable**
11 **charges to third parties for use of the platform?**

12 A. RSA 378:54 provides that “the Utilities may impose reasonable charges to third parties for
13 access to data via the multi-use, online energy data platform.” However, it does not seem
14 likely that charges to third parties for using the data platform could fully provide the funds
15 for development, deployment, and ongoing operational cost of the data platform.

16 It is unclear how many users there would be, how often they would use the platform, how
17 soon they would begin using the platform, or in exactly what manner they would use the
18 available data. It is also unclear at this time exactly what functionality would be built into
19 the platform and what data delivery tasks might still require significant additional expenses
20 to develop more advanced data processes that would be of interest and value to third parties.
21 It therefore does not seem possible to predict to the level of funding that such charges might
22 provide or to what extent they could offset costs to ratepayers.

23 **Q. Do other states have user fees associated with online energy data platforms?**

1 A. In its direct pre-filed testimony, Mission:Data states that “no other jurisdiction to my
2 knowledge charges a per-use fee for accessing a data-sharing platform. State commissions in
3 California, Colorado, Illinois, New York and Texas have all determined that utilities’ costs of
4 administering customer energy data sharing systems should be socialized.”²⁴

5 **Q. Do you have a preferred approach or a recommendation on this issue of user fees?**

6 A. The Commission might initially order that all initial and ongoing costs of the data platform
7 should be recovered from ratepayers rather than by charges to third parties. However, the
8 Commission might authorize the Utilities to charge reasonable fees for certain platform uses
9 and/or certain categories of users in the future. For example, if the delivery of aggregated and
10 anonymized data is not fully automated by the platform and requires manual screening and/or
11 analysis by the utility prior to delivery, it might be appropriate to establish a reasonable
12 charge for providing aggregated data to offset the additional administrative expenses, rather
13 than placing the burden on ratepayers.²⁵ We recommend that such charges should be
14 developed only when there is more data and experience regarding the usage of the platform,
15 rather than upon initial deployment. We also recommend that such charges be developed
16 with some form of opportunity for stakeholder input to ensure that the charges are
17 reasonable.

18

19 **IV. PLATFORM GOVERNANCE**

20 **Q. Is there a consensus among parties on how the platform should be governed?**

²⁴ Testimony of Mission:Data at page 73.

²⁵ *Id.* page 73 footnote 58 “I am aware that some jurisdictions, such as New York, permit utilities to charge a reasonable fee for certain *aggregations* of customer data where manual effort is required to analyze or process the request. However there is no charge for use of GBC systems in New York.”

1 A. No. The testimony includes a variety of different proposals and suggestions regarding how
2 the platform should be governed. There does appear to be a general consensus among parties
3 that there should be at least one stakeholder group that could, at a minimum, attempt to
4 resolve differences of opinion among the parties relating to platform development, prior to
5 Commission review of any non-consensus issues. There also appears to be a general
6 consensus that a stakeholder group should be structured in such a way that non-utility
7 stakeholders are given input. However, the proposals vary regarding which stakeholders
8 should be included in the group, how many should be included, and whether certain
9 stakeholders should be granted decision making authority. In particular, there is
10 disagreement regarding what proportion of representation should be granted to the Utilities
11 compared to the representation of the platform’s users and other non-utility stakeholders.
12 There is also disagreement regarding the amount of autonomy the group would have, which
13 specific aspects of the platform it would have authority/responsibility for, and whether the
14 group would be given a certain amount of budgetary authority.

15

16 **A. Platform Governance – Positions of the Parties**

17 **Q. Please provide a high-level summary of the initial positions of the parties regarding the**
18 **membership, voting structure, and level of authority of a platform governance body.**

19 A. **Eversource and Unitil:** Eversource and Unitil propose two working groups for the data
20 platform: A “Governance Working Group” and an “Operations Committee.”

21 Eversource and Unitil described the makeup and role of the Governance Working Group
22 (GWG) as follows:

23 The GWG... would make recommendations to the Commission on a semi-
24 annual or annual basis that the Commission could consider for implementation.

1 The group could be comprised of the following: two representatives total from
2 each utility involved with the data platform (a total of 6 representatives with the
3 utilities with gas and electric operations being combined), three Commission-
4 appointed stakeholder representatives for specified terms; two representatives
5 from the Office of the Consumer Advocate; and up to three representatives from
6 Commission Staff, as available. Recommendations will be made by general
7 consensus, with dissenting opinions noted for consideration. Recommendations
8 must have more than six 12 representatives supporting it to be submitted to the
9 Commission.²⁶

10 In testimony, Eversource and Unitil described the makeup and role of the Operations
11 Committee (OC) as follows:

12 The OC would consist of equal representatives of each utility and be responsible
13 for drafting platform operation policy and procedures, technical design, scoping
14 and pricing changes, change management, security management and
15 recommendations on the feasibility and cost/benefit analysis of requests for
16 enhancements or changes. The proposals of the OC would be submitted to the
17 GWG should it want to add recommendations to OC proposals. Proposals of
18 the OC would be submitted periodically or as needed to the Commission, but
19 no more frequently than semi-annually.²⁷

20 Eversource and Unitil later expanded on their OC proposal in response to discovery from
21 Commission Staff:

22 The Operations Committee (OC) would need approval of the Governance
23 Working Group (GWG) for draft or revised operating policies and procedures;
24 platform scoping and pricing changes; operating and capital budget revisions;
25 and final decisions on security restrictions on users of the platform. The OC and
26 GWG would need approval of the Commission on governance changes, and
27 operating and capital budget approvals, as those items relate to the core mandate
28 of the Commission's authority... The Operations Committee (OC) would make
29 decisions on day-to-day operations and security including short term
30 restrictions on platform access due to immediate cyber concerns; platform
31 change management categorization (there is an expectation that change
32 management approvals will vary with change complexity and risk); and cyber
33 event classification and incident response. The OC would also be responsible
34 for making technical design decisions where the decision affects the operations
35 or security of the platform.²⁸

²⁶ Testimony of Eversource/Unitil at page 50.

²⁷ *Id.*

²⁸ Attachment Rebuttal SRE-JM-5. Eversource and Unitil Response Staff 1-024.

1 **Liberty Utilities:** Liberty asserts that “Governance should be guided by multiple
2 stakeholders, including the utilities, Commission Staff, the OCA, along with parties that may
3 be interested in utilizing the platform.”²⁹ Liberty suggests that a governance body for the
4 data platform should perform in a manner that is a combination of the EESE Board and the
5 not-yet-convened Grid Mod Stakeholder Group described in Order #26,358. Liberty further
6 suggests the governance body should have a set number of members with voting rights, with
7 a certain threshold of votes (such as a 2/3 majority) needed to move a recommendation
8 forward to the Commission.³⁰

9 **Office of the Consumer Advocate:** The OCA suggests that ideally, Utilities would play no
10 direct role in the governance of platform planning and design, and that they would instead
11 “essentially act as a service provider, accountable to a governing body.”³¹ The OCA
12 recommends two separate governance groups for the data platform. One group would be
13 tasked with planning and design and another group would be tasked with operations.

14 The OCA described the makeup and role of the planning and design group as follows:

15 [The Commission should create] a nine-member stakeholder governance board,
16 comprised of the Consumer Advocate or his designee (to represent the interests
17 of residential customers), a representative of small commercial customers, a
18 representative of large commercial customers, two members of the Commission
19 Staff, two municipal representatives, and two representatives of firms that
20 provide energy-related services to consumers that depend on access to
21 data....Alternatively, the size of the stakeholder governance board could be
22 increased to 12 voting members with a representative of Eversource, Liberty,
23 and Unitil each given one vote.”³²

²⁹ Testimony of Liberty Utilities at Page 24, lines 15-18.

³⁰ *Id.* at Pages 24 and 25.

³¹ Testimony of OCA at Page 89, lines 16-22.

³² *Id.* at Page 90, lines 9-17.

1 The OCA suggests that the Commission should not initially determine how this body would
2 operate, but rather, that “it would be better to allow this body to convene and work to decide
3 for itself how it will operate, presumably according to bylaws or some similar governance
4 document the body would adopt,” subject to Commission approval.³³

5 Regarding the OCA’s proposed operations group, the OCA suggests that the Commission
6 “create a platform operations committee that would be comprised of three utility representatives
7 (one each from Eversource, Liberty, and Unitil), three representatives of third-party service
8 providers reliant on the platform for data, and a tie-breaking representative of the Commission
9 Staff.”³⁴ The OCA also recommends that the Commission “allow the operations committee to
10 design its own operating rules in the first instance, subject to approval by the governance board
11 and the Commission.”³⁵

12 **Mission:Data:** Mission:Data proposes that “the Commission appoint a Data Platform
13 Committee comprised of two utility representatives, two DER representatives, and one
14 representative from the Office of the Consumer Advocate.”³⁶ It proposes an annual budget of
15 \$250,000 which the Committee could allocate for change requests with a presumption of
16 prudence in each utility’s next rate case for such allocations.³⁷ Under the Mission:data
17 proposal, decisions would be made by majority vote, but that decisions could be appealed by
18 any party, in which case the Commission would review the decision de novo.³⁸

³³ *Id.* at Page 90, lines 19-22.

³⁴ *Id.* at Page 91, lines 11-14.

³⁵ *Id.* at Page 92, lines 4-6.

³⁶ Testimony of Mission:Data at Page 69, lines 18-21.

³⁷ *Id.* at Page 70, lines 1-9.

³⁸ *Id.* at Page 70, lines 9-12.

1 **CENH:** CENH states that the governance body of the data platform could include one or more
2 seats for: Data Sources (including Utilities), State government (PUC, OCA, State Energy
3 Manager), local government, academia and other researchers, advocacy groups, and third party
4 energy service providers and DER representatives.³⁹ CENH makes no recommendation
5 regarding whether the Utilities should have voting authority within such a governance body, but
6 describe a potential conflict of interest.⁴⁰

7 **GreenTel:** GreenTel states that a governance body for the data platform should
8 “appropriately represent the different parties.”⁴¹

9 **Local Government Coalition: Representative Kat McGhee:** Representative McGhee
10 suggests that a semi-autonomous governance body be granted a reasonable amount of rolling
11 budgetary authority. She suggests a group comprised of 13 Members, with six third party
12 energy stakeholders including one NH community power planner representative, four utility
13 representatives, two State of NH representatives, and one ratepayer representative. She
14 suggests a binding voting structure for conflict resolution, with conflicts elevated to the
15 Commission if needed.⁴²

16 **Local Government Coalition: Dr. Amro Farid:** Dr. Farid states agreement with the
17 discussion of governance in the testimony of Kat McGhee, and adds that the platform’s
18 governance should include a wide variety of stakeholders with reference to 15 different

³⁹ Testimony of Clean Energy NH at Page 27, lines 11-20.

⁴⁰ Testimony of Clean Energy NH at Page 28 at line 10 through Page 29 at line 2.

⁴¹ Testimony of Greentel Group at Page 23.

⁴² Testimony of Kat McGhee at Pages 17 through 20.

1 identified categories of stakeholders. Dr. Farid also suggests consideration of the governance
2 structure of ISO New England’s data platform(s) as a relevant precedent.⁴³

3 **Local Government Coalition: Samuel Golding:** Samuel Golding states that the platform’s
4 governance should be “primarily designed to fully engage and leverage market stakeholders
5 in the decision-making process.”⁴⁴ He suggests that the Commission consider a “market-
6 based institutional decision-making framework” with reference to the Texas ERCOT model,
7 and suggests that the Commission could “implement a similar market-based framework in
8 this proceeding, giving due consideration to the elevated role that market participants, and
9 CPAs in particular, should be expected to play within this governance framework.”⁴⁵

10
11 **B. Platform Governance – Key Considerations**

12 **Q. Is there a relationship between the platform’s cost recovery mechanism and platform**
13 **governance?**

14 A. Yes, the topics of governance and cost recovery are, to some degree, related. One example
15 of this relationship is that if certain costs resulting from decisions made by a governance
16 body are given the presumption of prudence, it might diminish the Utilities incentive to
17 scrutinize and/or attempt to minimize these costs.

18 **Q. Is there a relationship between the security of customer data and platform**
19 **governance?**

⁴³ Testimony of Dr. Amro Farid at Page 38.

⁴⁴ Testimony of Samuel Golding at Page 43, lines 15-17.

⁴⁵ Testimony of Samuel Golding at Pages 43 and 44.

1 A. Yes. Under RSA 363:37-38, the Utilities are tasked with the protection of customer data. It
2 may not be appropriate to subrogate utility responsibility for such matters to a governance
3 body on which they may have limited input or decision making authority. Conversely, it
4 might not be optimal to create a scenario where the Utilities could be unnecessarily
5 conservative about issues related to data security in a way that could negatively impact the
6 user-friendly operation of the platform. If such a governance body and voting structure were
7 considered by the Commission, it would need to carefully evaluate the balance of
8 responsibilities assigned to each member.

9 **Q. What might be the drawbacks of a governance structure that utilizes voting for binding**
10 **decision making?**

11 A. It seems unlikely that the individual governance body members would forfeit their right to
12 raise an issue to the Commission, regardless of what voting structure is in place. Another
13 drawback might be that in initially determining the composition of a governance body, the
14 number of representatives from certain stakeholder groups assigned to the body might, in
15 part, need to be determined with consideration of maintaining an appropriate balance of
16 voting weight among the stakeholder types. It might instead be more advantageous to select
17 the members of a governance body based on their possession of the variety of technical and
18 non-technical knowledge, skills, and perspectives that are most likely to offer valuable input
19 for data platform decisions, without potentially having to exclude a valuable stakeholder over
20 the implications of the balance of voting power within the group structure.

21

22 **C. Platform Governance – Stakeholder Working Group**

23 **Q. Are there other approaches to governance that the Commission might consider?**

1 A. The Commission might consider enabling a governance body for the data platform in which
2 decision making authority is only enabled when there is 100% consensus among all members
3 of the body, with any non-consensus issues raised to the Commission. Such a structure could
4 allow for maximum participation and input by stakeholder groups without concerns about
5 disproportionate voting authority being granted to one certain stakeholder type and/or
6 enabling the variety of potential perverse incentives described in parties' testimony. The
7 fundamental drawback of such a group is that one member would be able to delay or elevate
8 a decision to the Commission, regardless of whether a large majority of the group has come
9 to agreement.

10 The Commission has convened working groups based on this model, most recently under the
11 auspices of the Energy Efficiency Resource Standard and proposed grid modernization
12 stakeholder group.⁴⁶ Within those processes, it is often the case that: (1) Staff chairs the
13 working group; (2) Staff has the responsibility of elevating non-consensus issues to the
14 Commission on behalf of the stakeholder group as well as reporting to the Commission on
15 any assigned deliverables on behalf of the stakeholder group; (3) the Commission solicits
16 comment on non-consensus issues elevated by Staff on behalf of working groups, providing
17 stakeholders with an opportunity to be heard before issuing a decision; and (4) Staff is
18 expected to exercise judgment in deciding at what point a consensus will not be reached and
19 elevating an issue to the Commission, though nothing prevents another working group
20 participant from doing so.

21

⁴⁶ Order Nos 26,095 (January 1, 2018) and 26,207 (December 31, 2018) (Establishing and continuing various working group for review of issues requiring further inquiry at time of settlement); Order No. 26,358 (May 22, 2020) at 24-36 (Establishing the grid modernization stakeholder working group).

1 **V. PLATFORM ARCHITECTURE**

2 **Q. Is there consensus among the parties regarding the energy data platform’s architecture**
3 **or general design?**

4 A. There does appear to be a general consensus regarding the use of an Agile software
5 implementation approach, with many architectural design decisions made based on a set of
6 user requirements which the platform should or must satisfy⁴⁷. However, there are three
7 closely-related aspects of the platform’s architecture which do not appear to enjoy consensus
8 currently.

9 The first aspect is whether the data platform’s API “endpoint” (an API endpoint is a URL
10 that enables the API to gain access to resources on a server – it’s the internet address of the
11 data source⁴⁸) should be separate for each utility, for a possible total of five different API
12 endpoints from which customers and/or third parties could retrieve data⁴⁹. In the alternative,
13 some parties have suggested that there should be a single API endpoint, which could require
14 either that all the data be in a single, central data location, or that an “API-of-APIs” is
15 developed with a layer that would effectively query the different utilities’ APIs as
16 appropriate, so that a data seeker could retrieve combined data from multiple Utilities’ APIs
17 in one request.

18 The second aspect of the platform’s architecture in which there does not appear to be
19 consensus is whether the platform should be built using a central database as proposed in the

⁴⁷ See Testimony of Everource/Unitil at page 18; Testimony of Clean Energy NH at page 14; Testimony of Clifton Below for Local Government Coalition at page 6.

⁴⁸ <https://rapidapi.com/blog/api-glossary/endpoint/>

⁴⁹ Under this approach, any third party seeking data from multiple Utilities would need to download data from each Utility individually using a separate API, and combine the data using their own efforts, their own software tools, and/or the services of a third party.

1 testimony of the OCA,⁵⁰ or it should employ a “virtual platform,”⁵¹ as proposed in the
2 testimony of the Utilities.

3 And, finally, the third aspect on which there is not consensus on whether the platform’s
4 Green Button Connect My Data API(s) and associated documentation should be made
5 available on a dedicated platform web portal, or if they would be made available only by
6 each Utility on its website.

7
8 **A. Platform Architecture – Positions of the Parties**

9 **Q. What are the initial positions of the parties regarding these aspects of the platform’s**
10 **architecture?**

11 A. The Utilities and the OCA have taken positions that differ in each of the three above-
12 mentioned aspects of the platform. Generally, each other party either did not opine
13 specifically about these aspects, or have suggested a platform architecture that includes parts
14 of the Utilities’ proposed architecture and parts of the OCA’s proposed architecture.

15 The Utilities have stated a preference for the platform described in their testimony as “Option
16 2”.⁵² Generally, this is a platform which would provide one separate API for each utility and
17 does not join them together with a final “API of APIs”, does not utilize a central database,
18 and does not utilize a central web portal. The Utilities stated that any or all of these three
19 additions could raise the cost of the platform “substantially”, but were not able to provide
20 cost estimates. In response to Staff 01-17 (c), Eversource and Unitil stated that “A

⁵⁰ See Testimony of James Brennan at page 19 lines 3-8.

⁵¹ See Testimony of Eversource/Unitil at page 29-30.

⁵² See Testimony of Eversource/Unitil at page 25.

1 centralized data warehouse would increase the cost of the solution exponentially. It would
2 generate costs for code and data storage, cyber security, system management, data retention,
3 code management, and the labor associated with each of these as well.”⁵³

4 The OCA suggests that the platform should utilize a central database which would be the
5 primary data source for one API endpoint for all NH utilities, which should be made
6 accessible via a dedicated web portal. The OCA suggests that using a central database is the
7 “least-cost” and “more future proof” approach to the platform’s architecture, but was also not
8 able to provide a cost comparison between any of these different architectural choices. We
9 note that the OCA was the only party to propose in pre-filed testimony that the platform
10 should include a central database.

11 **Q. Might there be advantages to making these architectural decisions now, or could the**
12 **features suggested by the OCA likely be added on later without significantly needing to**
13 **change the underlying architecture of the platform to accommodate them (i.e. without**
14 **incurring extraneous costs)?**

15 A. Regarding the “API of APIs” and “Central Web Portal” decisions, in response to STAFF 1-
16 017, Eversource & Unitil stated “additional features, defined in option 3 and/or others, would
17 not be significantly impacted by implementing the changes in increments over time. In fact, it
18 would reduce both risk and cost by ensuring what is implemented is truly what is needed.”⁵⁴
19 We suggest that an “API of APIs” and/or a Centralized Web Portal could be features
20 included in an RFP or RFI as a-la-carte options that are additional to the features of a
21 minimum viable platform. The Commission could direct that the project enable one or both

⁵³ Attachment Rebuttal SRE-JM-6. Eversource and Unitil Response Staff 1-017.

⁵⁴ *Id.*

1 of these features upon implementation if they find that the additional benefits are likely to
2 outweigh the additional costs. Otherwise, the Commission could determine that deferral of
3 the implementation of these features to a later date is preferred.

4 **Q. How should the Commission decide whether the platform should utilize a “Virtual” or**
5 **a “Central Database” approach?**

6 A. The OCA has suggested that there should be a “Design Pilot” which could, among other
7 goals, provide experience that could assist in answering this question. They suggest that this
8 design pilot is needed before releasing an RFP and/or the implementation of the platform
9 should begin. They state that “I believe the risks of immediately moving forward with a full
10 platform build exceed the benefits“ and “It is my opinion that New Hampshire should hold off on
11 a major RFP until the merits of a centralized platforms can be analyzed. I believe the cost of the
12 proposed pilot are significantly outweighed by the potential benefits.” However, they were not
13 able to provide a cost estimate for a pilot. In response to Staff 1-11(c) the OCA witness
14 states that “it is not possible to provide an estimate. In my opinion, and without having
15 researched many variables, and without knowledge or consideration of the final negotiated
16 pilot strategy, including duration and resources, a meaningful valuable pilot could be run
17 with a budget range of moderate five figures to moderate six figures, give or take variances
18 due to a multitude of factors unknown as of now.”⁵⁵ It would be appropriate to seek further
19 clarity on the estimated costs of a pilot before proceeding with this approach. We clarify that
20 the OCA has described in their testimony multiple reasons why they believe a design pilot to
21 be appropriate, and that gaining further information and experience to help resolve this
22 particular issue is not the only goal of the proposed pilot.

⁵⁵ Attachment Rebuttal SRE-JM-7. OCA Response Staff 1-11.

1 Alternately (or after a design pilot if the Commission selects that approach), an RFP or RFI
2 could seek separate cost estimates for a platform based on a centralized database as well as a
3 virtual platform, and the costs of the proposals for each option could be compared. If one
4 approach has a higher implementation and/or maintenance cost than the other, the
5 Commission could decide whether that approach has benefits that outweigh its additional
6 costs.

7 **Q. Might further information become available from other states' efforts in the near**
8 **future?**

9 A. Yes. The State of New York State Public Service Commission, Case number 20-M-0082 is
10 currently underway, which is a proceeding on "Motion of the Commission Regarding
11 Strategic Use of Energy Related Data."⁵⁶ This proceeding is evaluating many of the same
12 issues that are identified in New Hampshire's data platform law and have been raised in this
13 docket, including the non-consensus issues identified in this testimony. New York
14 Department of Public Service Staff have issued two whitepapers, one in regards to a "Data
15 Access Framework,"⁵⁷ and another in regards to an "Integrated Energy Data Resource."⁵⁸
16 Both of these efforts might have substantial relevance to New Hampshire's DE 19-197
17 platform and its associated standards and requirements. Relevant and useful information
18 might continue to become available by way of this proceeding, both during and after the
19 remainder of DE 19-197's procedural schedule. An RFI was released for the Integrated

⁵⁶ NY PSC Case # 20-M-0082 is available at:

<http://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?Mattercaseno=20-M-0082>

⁵⁷ Attachment Rebuttal SRE-JM-8. Department of Public Service Staff Whitepaper Regarding a Data Access Framework.

⁵⁸ Attachment Rebuttal SRE-JM-9. Department of Public Service Staff Whitepaper Recommendation to Implement an Integrated Energy Data Resource.

1 Energy Data Resource in July 2020, with responses due in August. We recommend that the
2 Commission remain mindful of similar efforts underway in neighboring states as it considers
3 aspects related to development of the New Hampshire Platform, including platform
4 architecture.

5
6 **VI. CONCLUSIONS AND RECOMMENDATIONS**

7 **Q. Please summarize your observations and recommendations.**

8 A. In our testimony we described the different categories of costs that might be incurred for a
9 statewide data platform and described how these costs might be minimized. We described
10 three of the non-consensus issues relating to recovery of the platform's costs, the governance
11 of the platform, and the architecture of the platform. We offered suggestions for how these
12 issues might be resolved by the Commission, including a recommendation that the costs of
13 the platform might be recovered by the utilities within their EERS Marketing budgets by way
14 of the SBC and LDAC, a recommendation that governance of the platform might be
15 accomplished by a non-voting stakeholder working group, and a recommendation that any
16 remaining non-consensus architectural decisions could be included as options in an RFI or
17 RFP to be evaluated after cost estimates are available.⁵⁹

18 **Q. Does that complete your testimony?**

19 A. Yes.

⁵⁹ Consistent with our initial testimony, we recommend a two-step process for approval of the platform and that, to determine the likely costs of the platform, the platform operators consider issuing an RFP/RFI for platform development which includes a scope of work that is extensible but focused on a the minimum viable platform.