

THE STATE OF NEW HAMPSHIRE

BEFORE THE

NEW HAMPSHIRE PUBLIC UTILITIES COMMISSION

**JOINT PREPARED REBUTTAL TESTIMONY FOR POSSIBLE OPTIONS FOR A
STATEWIDE ENERGY DATA PLATFORM**

**CHRISTINA JAMHARIAN, CHRISTOPHER LEIGH, BRIAN RICE, and BENJAMIN
BYBOTH FOR EVERSOURCE**

**JUSTIN EISFELLER, KIMBERLY HOOD, JEREMY HAYNES, and DAN GOODWIN
FOR UNITIL**

Docket No. DE 19-197

October 23, 2020

1 **Witness Introductions**

2 **Q. Mr. Leigh, please state your name, business address, and position.**

3 **A.** My name is Christopher Leigh, I work at 107 Selden Road in Berlin Connecticut. I am
4 the Director and Chief of Information Security, Compliance and Networks for Eversource
5 Energy Service Company, d/b/a Eversource Energy (“Eversource”)

6 **Q. Have you previously testified before this Commission?**

7 **A.** No, not for the New Hampshire PUC. I have testified once before the CT PURA on grid
8 modernization.

9 **Q. Please describe your educational and professional experience.**

10 **A.** I have a Master’s degree in Information Assurance from Norwich University, a second
11 Master’s degree in Business Economics from Southern Connecticut State University and
12 a Bachelor of Science degree in Accounting and Management with a Psychology minor
13 from Saint Joseph’s College. I have 20 years of cyber security experience and
14 have worked at Eversource for the last 4 years, developing the Cybersecurity and
15 Compliance programs which include IT Risk Management, Cyber Policy and
16 Governance, Threat and Vulnerability Management. Threat Intelligence and Incident
17 Response, and Security Architecture. The Cyber Security department is responsible for
18 the Corporate and Operational networks. I also lead the network team ensuring all

1 computing systems can communicate across the Eversource service territory. Prior to
2 joining Eversource, I held a similar role at Consolidated Edison in New York, for 3 years,
3 and began my Cyber career at United Technologies Corporation where I worked for 16
4 years. Finally, I am an Adjunct Professor at Central Connecticut State University where I
5 teach Cyber Security.

6 **Q. Do you have any licenses or certifications that qualify you to speak to issues related**
7 **to information security or privacy?**

8 **A.** Yes, I am a Certified Risk and Information Security and Controls professional from the
9 Information Systems Audit and Control Association (ISACA) and a Certified Information
10 Privacy Professional from the International Association of Privacy Professionals.

11 **Q. Do you hold any industry leading roles?**

12 **A.** Yes, I am the Co-Chair of Cyber Mutual Aid, which is a group of over 150 utilities
13 located in the United States and Canada. I am also the Co-Chair for the Security Director
14 group under UNITE, an IT Benchmarking organization composed of 22 of the largest
15 utilities in the United States. Finally, I am the Industry Chair for the New England Utility
16 Cyber Integration Collaborative (NEUCIC) which is an organization composed of
17 Utilities, Department of Homeland Security (DHS), New Hampshire National Guard, and
18 a Board composed of the New England utility Commissioners.

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

20 **A.** The purpose of my testimony is to address, in conjunction with Kimberly Hood of
21 Unitil, a lack of necessary security and privacy policies and protocols in the proposals of
22 various witnesses. I also wish to address the sensitivity of and need to protect the
23 data being considered for inclusion in the statewide data platform. Lastly, I will discuss
24 various process issues that have been raised during the technical sessions.

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

2 **A.** My name is Christina Jamharian and I work at 107 Selden Road in Berlin Connecticut. I
3 am the IT Product Center Delivery Manager, Customer Care, for Eversource Energy
4 Service Company, d/b/a Eversource Energy (“Eversource”)

5 **Q. Have you previously testified before this Commission?**

6 **A.** No. I have prepared testimony and addressed interrogatories for the NH, MA, and CT
7 commissions on metering, billing, and grid modernization.

8 **Q. Please describe your educational and professional experience.**

9 **A.** I have worked at Eversource for 22 years. As the delivery manager, I’m responsible for a
10 \$40 million portfolio of Customer Care capital projects supporting the customer
11 experience, energy efficiency, billing, metering, and revenue protection. My job is to
12 ensure that the solutions delivered into the IT space meet the clients’ needs, run
13 efficiently, and can be maintained effectively. Previously, I served in various roles in the
14 metering area, including Engineering, Operations, and IT. I’ve been a certified Project
15 Management Professional since 2011. I also worked in Market Research and Corporate
16 Communications in the early days of deregulation. The first six years of my professional
17 life were spent at Andersen Consulting. I was a Consulting Manager of Enterprise
18 Transformation, in the Industrial Products Division. I graduated from the University of
19 Connecticut with a Bachelor of Science degree in Business Administration majoring in
20 Finance, with a concentration in working capital.

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

2 **A.** I, along with Jeremy Haynes of Unitil, will address issues regarding the requirements and
3 design of the statewide platform solution, the implementation approach, project life cycle
4 questions, cost/benefit analysis, and any questions of an IT perspective.

5 **Q. Mr. Rice, please state your name, business address, and position.**

6 **A.** My name is Brian J Rice and I work at 247 Station Drive in Westwood Massachusetts. I
7 am Manager, Regulatory Projects for Eversource Energy Service Company.

8 **Q. Have you previously testified before this Commission?**

9 **A.** Yes. I submitted testimony pertaining to cash working capital requirements associated
10 with Energy Service in docket DE 16-822 and the proposed Clean Innovation
11 Community Solar pilot in docket DE 19-104. I have also testified before the
12 Massachusetts Department of Public Utilities in several proceedings related to solar
13 program design, revenue requirements and cost recovery.

14 **Q. Please describe your educational and professional experience.**

15 **A.** I graduated from Union College in Schenectady, NY in 2004 with a Bachelor of Science
16 degree in Industrial Economics and received a Master of Business Administration degree
17 with a concentration in corporate finance in 2011 from the Boston College Carroll
18 Graduate School of Management in Chestnut Hill, Massachusetts. I've held multiple
19 Senior Analyst positions in different functions at Eversource since 2011. My present
20 responsibilities include managing analysis and projects in support of enterprise-wide
21 regulatory initiatives across Eversource's operating businesses. I have previously
22 supported wholesale energy procurement activities for the Company and held consulting
23 positions covering various segments of the energy and utility industries before joining
24 Eversource.

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

2 **A.** I, along with Justin Eisfeller of Unitil, will address the governance and regulatory
3 framework for the statewide data platform. This includes comparing and contrasting the
4 governance proposals of Eversource and Unitil (collectively, the “Utilities”) to those of
5 the OCA and various intervenor parties in direct testimony and subsequent discovery.

6 **Q. Mr. Byboth, please state your name, business address, and position.**

7 **A.** My name is Benjamin Byboth. I work at 107 Selden Road in Berlin Connecticut. I am the
8 Director of Grid Modernization for Eversource.

9 **Q. Have you previously testified before this Commission?**

10 **A.** No.

11 **Q. Please describe your educational and professional experience.**

12 **A.** I have a bachelor’s degree in Nuclear Engineering Technologies from Thomas Edison
13 State University. I have 15 years of utility experience and have worked at Eversource for
14 the last 2 months, supporting the development of Grid Modernization strategies. The
15 Grid Modernization department is responsible for the planning and implementation of
16 Grid Modernization activities across the Eversource service territory. Prior to joining
17 Eversource, I held various roles at Entergy including: 1) Senior Manager, Innovation
18 where I led the development of customer-centric distributed energy resource business
19 platforms; 2) Senior Project Management, Engineering where I established the operations
20 and maintenance function for renewable operations. Before Entergy, I held multiple roles
21 in commercial nuclear power including operations, maintenance, engineering and
22 quality/process improvement roles at NextEra Energy Resources, Seabrook Station. I
23 began my career in the United States Navy Nuclear program.

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

2 **A.** I am replacing Tom Belair as a witness for Eversource, as Mr. Belair retired at the end of
3 August. I will address testimony filed by various witnesses related to multiple issues in
4 their respective pieces of testimony. First, I wish to respond to the matters identified in
5 the testimony of the Local Government Coalition (LGC) that inappropriately expand the
6 scope of the data platform, the diminishing return of benefits to the general public, and
7 the unquantified impacts on customers. Additionally, I wish to reiterate how the utility
8 solution can provide most of the available benefits with minimal redundancy to
9 the utility's services. Finally, I wish to identify where proposed scoped items overlap
10 with existing open dockets.

11 **Q. Mr. Goodwin, please state your name, business address, and position.**

12 **A.** My name is Dan Goodwin and I work for Unitil Service Corp. (USC) at 6 Liberty Lane
13 West, Hampton, NH 03842. USC provides centralized utility management services to
14 Unitil Corporation's subsidiary companies including Unitil Energy Systems, Inc. and
15 Northern Utilities. I have worked for Unitil for 12 years and currently hold the position of
16 Senior Energy Analyst II in the Energy Contracts Department. My responsibilities
17 include oversight of Supplier Services and EDI processes.

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

19 **A.** I am joining the Unitil and Eversource witnesses to provide testimony related to the
20 Electronic Data Interchange (EDI), supplier services, and energy contracts.

21 **Q. What areas of discussion will this rebuttal testimony cover?**

22 **A.** On behalf of the Utilities, our rebuttal testimony aims to address issues presented by
23 other participants in this proceeding during technical sessions, pre-filed testimony, and
24 discovery including but not limited to: the proposed data model and integration, the
25 Application Programming Interface ("API") architecture, statutory requirements,

1 enabling community power aggregation, data sets available within the proposed design,
2 development costs foreseen, privacy, cyber security, 3rd party access, platform
3 governance, perceived platform scope and benefits, and other issues for consideration.

4 **Data Platform Model Design and API Architecture**

5 **Q. What is data integration distance and why does it matter when evaluating platform**
6 **design options?**

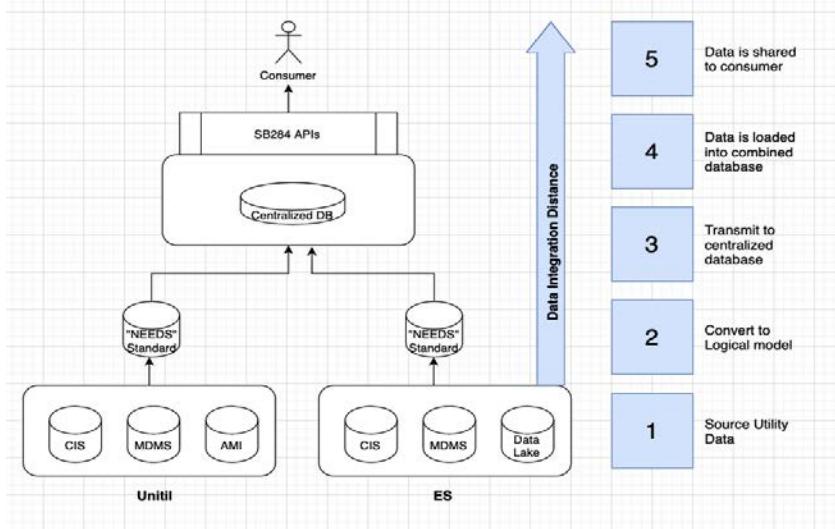
7 **A.** James Brennan, in his testimony on behalf of the NH Office of the Consumer Advocate
8 (“OCA”), defined the concept of “Data Integration Distance” as “a metric that illustrates
9 the level of difficulty involved with integrating (sharing) data and data services between
10 two separate IT systems or Software Components”. On Bates 045-7, it is additionally
11 referred to as a representation of “time, cost, friction and brick walls that organizations
12 encounter to attempt to overcome efforts to obtain quality Energy Data”. At the risk of
13 oversimplifying the concept, this is another way of saying that the fewer number of
14 processing steps that exist between gathering and sending the source data to the
15 consumer, the better.

16 The Utilities agree that the smallest feasible degree of data integration
17 distance possible between the utility and the platform is critical to ensure
18 contemporaneous, quality controlled, secured and cost-effective delivery of customer
19 data. The virtual platform strawman proposed by the Utilities was designed with this in
20 mind and the Utilities believe that our decentralized approach offers a shorter, more
21 direct data integration path than the centralized approach offered by Mr. Brennan.

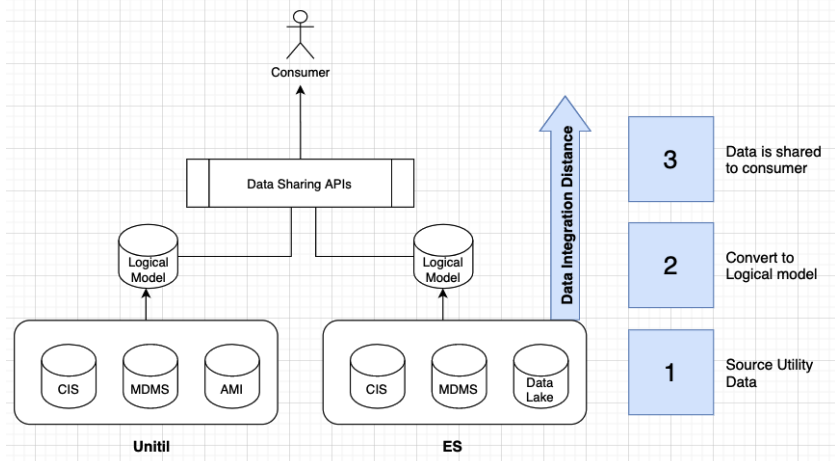
22 Figures 1 and 2 below depict the two proposed approaches (Centralized vs. the Utilities’
23 virtual Model) and enumerate the number of stages (i.e. the data “distance”) between
24 the source data and the consumer. The Utilities believe that these diagrams demonstrate

1 the compelling argument that the Virtual API approach offers a more direct and
 2 concise Data Integration Distance than the centralized database advocated for by the
 3 OCA in its direct testimony. Brennan, Bates page 35.

4 *Figure 1 OCA Centralized Model – Data Integration Distance score of 5*



5 *Figure 2 Utility Virtual Model – Data Integration Distance score of 3*



6 It is critically important to note that regardless of the model chosen, the incremental labor
 7 and costs of back-end data extraction, preparation and mapping to a common logical
 8 standard, and exposing the data via APIs, must be borne by each utility. This work does

1 not become any more or less costly or complex as a result of this centralized vs.
 2 decentralized architectural decision; in fact, creating and maintaining a centralized data
 3 warehouse would constitute additional effort and costs. The breakdown of required
 4 stages of construction of the various platform design proposals is reflected in Figure 3
 5 below:

6 *Figure 3 Data Integration Stages*

Integration Stage	Description	Eversource/Unitil Proposal Options	Proposals with Centralized Database
Source Utility Data	Data residing in utility managed backend systems	X	X
Convert to Logical Model	Data has been translated to a common representation	X	X
Transmit data to centralized database	As part of an ETL (Extract/Transform/Load) process, data is packaged and sent to a central location		X
Data is loaded into centralized database	As part of an ETL process, data is transformed and loaded into the central location		X
Data is shared to consumer	Data is made available to consumers via secure API	X	X

7 **Q. How would a decentralized API-based architecture allow for a more robust, flexible,**
 8 **iterative, and cost-effective development?**

9 **A.** Both of the Green Button-compliant models, Options 2 and 3 in the Utilities' direct
 10 testimony describe a model wherein the data that feeds the platform is maintained in a
 11 decentralized manner. Haynes, Eversource/Unitil Joint Direct Testimony, Page 25. In
 12 these proposals, the utility source data storage is kept closest to its origin, under
 13 utility control, on utility-controlled servers. The two options do, however, offer different
 14 degrees of decentralization of the data access APIs themselves. In both options, the utility
 15 is responsible for hosting its own instance of the common data access API wherein a
 16 verified consumer can pull data directly from the individual utility specific

1 endpoints. Option 3 builds further on this paradigm by additionally providing a
2 centralized “API of APIs” to allow for a convenient single call to retrieve all data across
3 the participating utilities a consumer is authorized to access (i.e. a customer with electric
4 and natural gas services from two utilities or an authorized third-party with access to
5 customer data from multiple utilities). Haynes at 29.

6 The API approach is flexible and robust. Having a well-designed API provides a level of
7 abstraction from the physical database schema that can help to prevent the notion of
8 “breaking changes”. A breaking change is a change that, when made, would stop existing
9 applications that leverage the platform from continuing to function as they did
10 before. API versioning and additive change strategies would be implemented from the
11 ground up to ensure that backwards compatibility is always maintained when changes are
12 introduced to the platform. By designing our API model from the ground up so that it can
13 be changed without breaking existing consumer applications, both the platform API and
14 the consumers of the API become more loosely coupled, allowing each to evolve
15 independently. The result of this work will be a “well-defined extension mode” for our
16 API that allows consumers to understand the ways in which the API can change.

17 Since it is unlikely that the complete universe of platform requirements will be defined by
18 the time the design and development begin, it is even more important that we choose an
19 architecture that can evolve in the least disruptive and most cost-efficient means. The
20 well-designed extensible API approach offered by the Utilities provides just
21 that. This approach would provide a “time to market” advantage and mitigate
22 the technical and functional obsolescence often seen when attempting a long and
23 protracted waterfall design process. Furthermore, and importantly, such an approach
24 would maximize the cost-effectiveness of the investment dollars from our customers.

1 It is helpful to think of these platform APIs as a set of “virtual database queries” wherein
2 changes can be made to the underlying queries and schema without impacting the
3 resulting data set returned to a consumer. In a centralized database schema, such as the
4 one suggested by the OCA in its testimony, all of the relationships, entities, and queries
5 need to be well-defined up front and the level of hard data typing (in most database
6 management systems) will likely necessitate system-wide updates and breaking changes
7 for requirements as small as changing the size of a data column. Brennan, Bates page 54.
8 A centralized database would also likely necessitate the role of a database administrator
9 (DBA), potentially on a full-time basis. This DBA would be needed to do perform
10 performance tuning, maintenance, monitoring, and administration of the centralized
11 database. Such a role would not be needed within the proposed Utility model. As a result
12 of these limitations and additional requirements, the central database approach is less
13 flexible in design.

14 Additionally, numerous privacy and security concerns exist surrounding the
15 centralization approach, many of these and are covered in more detail elsewhere in this
16 rebuttal. It is worth mentioning here, however, that embracing a fully centralized data
17 store for utility data, adds additional risk regardless of the mitigation measures
18 performed. Furthermore, one must then also that a “trusted” authority would have access
19 to vast amounts of potentially sensitive data in a centralized data store. The utilities
20 obligation to secure customer data may be at odds with this notion and must not be
21 overlooked.

22 As mentioned in this rebuttal testimony on “Data Integration Distance”, the Utilities
23 strongly recommend an API model without a single, centralized database, keeping the
24 data (mapped to a common standard) within utility databases. This approach can be seen
25 as building a “bridge” to connect consumers to utility data closest to its original source,
26 versus the overhead and excess of building a second duplicative and disconnected copy

1 of the data between the consumer. It should also be noted that multiple stakeholders have
2 supported the Utilities' decentralized API approach in testimony and technical
3 discussions for the same reasons described above. Mr. Murray explains the API
4 advantage in Mission:data's direct testimony in this way: "...the underlying customer
5 data need not be transferred from each utility and stored separately in a centralized
6 repository; rather, the API provides a "gateway" into the customer data that is already
7 stored and maintained by each utility individually, even if it appears from the third
8 party's point of view that the customer data is centralized." Murray, Page 34 Lines 14-18.

9
10 **Q. Does the utility-proposed approach satisfy RSA 378:51?**

11 **A.** The Utilities have proposed three potential options for the data platform architecture. The
12 first option, "Option 1", does not include an implementation of Green Button Connect
13 My Data and was offered by the Utilities as an implementation alternative for
14 consideration by the Commission. This option does provide useful functional
15 enhancements that will make the customer's ability to download and share their own data
16 an easier and more consistent experience, despite not being a Green Button-certifiable
17 product. Options 2 and 3 both fully support the language of RSA 378:51-54, as well as
18 the requirement for the "availability and transmittal of aggregated community level data"
19 as defined in RSA 53-E:4.

20 **Q. How is the Utilities' proposed decentralized model different from the**
21 **California model?**

22 **A.** When ordering the implementation of the Green Button standard for California's Investor
23 Owned Utilities ("IOUs"), the California commission did not mandate that
24 the participating utilities collaborate on a joint / coordinated implementation. As a result,
25 each of the four participating IOUs (PG&E, SDG&E, SCE, and SoCalGas) built out their
26 own individual Green Button implementations, energy data sharing platforms and "data
27 catalogs". The product of this, as one can imagine, is four unique interpretations and

1 implementations of the “standard” and data sets that are difficult or impossible for a
2 consumer to combine.

3 The Utilities set out from day one to design an alternative implementation model that
4 requires collaboration from all of the participating utilities on all aspects of the
5 implementation as well as platform certification to ensure compliance. Additionally, they
6 sought to incorporate the customer data aspects of the collaboratively developed common
7 logical data model.

8 Each of the core components of the Utilities’ proposal would be jointly coordinated to
9 ensure that data interoperability from one utility to another is maintained. By adopting
10 and adhering to a common logical data model and coordinating a common API
11 implementation across the three IOUs (five including the gas utilities), we believe that we
12 can provide the cost, flexibility and scale benefits of a decentralized model while
13 maintaining the coordination and consistency over the utility implementations to avoid
14 the same problems seen in California.

15 **Q. How does the Utilities’ proposal address the needs of community power and**
16 **municipal aggregation?**

17 **A.** Although the Utilities’ Option 1 proposal does not include any automation of data
18 sharing, this option does include coordination on a combined and standardized output
19 format (across the participating utilities) for aggregated data sets. The transmission
20 means for this data would be the same as it is today for each utility (generally secured
21 FTP or email), but the introduction of a new common format would help to facilitate the
22 combining of these data sets from multiple utilities.

23 With Option 2, the Utilities are proposing a standardized set of APIs exposed by each
24 utility for retrieving multi-customer aggregated data in a common format. If a consumer

1 wants data from multiple utilities, they will need to call each utility API separately. The
2 output format of this data from the API will be the same for all participating utilities,
3 allowing for easy combination of data from multiple utilities through programmatic
4 means.

5 With Option 3, the Utilities are proposing a **single** centralized API-endpoint for retrieving
6 multi- utility data through programmatic means. Authorized users can call this single
7 API and get aggregated data from multiple utilities in pre-assembled form.

8 **Q. Why do the Utilities support a historical limit for availability of customer data via**
9 **the platform? Does the quality of historical customer usage data degrade over**
10 **time? If so, please explain.**

11 **A.** Customer move ins and move outs, equipment swaps and other events may occur at the
12 original property over time, making the job of maintaining continuity of customer or
13 premise data for accurate analysis over an extended period of time complex and
14 problematic. Additionally, archived information is often stored in disparate (or alternate)
15 systems and would require additional (and potentially costly) backend integration work,
16 maintenance and support for arguably little value. The Utilities recommend that the
17 platform employ a historical data limit of two rolling years.

18 **Q. Should third-party and behind-the-meter data be included and shared by the data**
19 **platform?**

20 **A.** The Utilities have many questions and concerns surrounding the inclusion of third-
21 party data in the platform and are recommending that this discussion be tabled until
22 additional clarity surrounding the usefulness and value of this data is further defined. This
23 approach will also allow for evaluation of market interest in this type of third-party data
24 before investing in the development and design costs.

1 The Utilities are not aware of any common standards for the types of third-party data
2 described in stakeholder testimony such as delivered fuels and device level information
3 from storage providers. Additionally, parties interested in the inclusion of third-party data
4 have not provided any specific details on standards or existing formats for this data. As
5 there is no known standard, each third-party integration would need to be treated as a
6 custom development exercise where the specific protocols and data formats offered up by
7 each third party would need to be reviewed and analyzed for feasibility. As a result of the
8 lack of standardization, we would likely see varying degrees of data quality proportional
9 to the size and resources available at the third-party company responsible for producing
10 and maintaining this data. Introducing uncontrolled non-standardized data into the
11 platform could cause an increased maintenance burden and cost remains high.

12 **Q. Can additional data or data sets/types of data be added in the future with the**
13 **Utilities' design models?**

14 **A.** The flexible and extensible nature of the Utilities' proposed API platform and model
15 would allow us to integrate third-party data in the future as incremental cost-benefit
16 justification is obtained and some of the concerns expressed by the Utilities are
17 addressed. Namely, the concerns that there is no way to mandate the inclusion of third-
18 party data, so including those data sets would likely be highly inaccurate and unreliable.
19 In order to remedy the almost certain specious participation rates and inclusion of this
20 data, some sort of coordinated effort or mechanism would likely have to be designed and
21 implemented in order to get data sets that are more complete than they would be if simply
22 depending on third-parties opting in and voluntarily providing this data. But such an
23 effort to capture this data is wholly outside the scope of this docket, and should not be
24 among Commission considerations at this time.

25 With a centralized database model, such as the one proposed by the OCA in its direct
26 testimony, the database schema and queries would need to be designed from the ground

1 up to support third-party data. Failure to do so would likely result in disruptive changes
2 to the database requiring expensive redesign at a later date. As we will not have a full
3 understanding of the needs and requirements for this data unless we include an extended
4 analysis period prior to design, it is likely that we will be unable to make strong
5 architectural decisions about the best way to store this data in a centralized manner.
6 The API approach allows us to phase this data in as we understand it and as the need
7 dictates.

8 **Q. Is there the potential for additional administrative burden as a result of including**
9 **third-party data?**

10 **A.** Each third-party data provider will likely have their own (often substantial) cybersecurity
11 screening and requirements that the platform may potentially be audited against. Google,
12 for example, requires a multi-dozen page security questionnaire that must be filled out by
13 anyone looking to ingest/use/share their NEST thermostat data. Completing these
14 screening questionnaires and follow-ups could result in significant and ongoing
15 administrative burden.

16 **Q. How would we decide who could contribute third-party data to the platform?**

17 **A.** This is yet to be decided, but a strong set of qualification criteria used to screen third
18 parties who are interested in contributing data to the platform would need to be
19 developed. These screening criteria should likely include some understanding of the
20 maturity and solvency of the company to mitigate the risk of departure from the platform
21 by a third-party.

22 **Q. Do the Utilities believe that the data platform would replace existing EDI**
23 **functionality in use today by energy suppliers?**

24 **A.** No. It is important to point out that the goals of the utility EDI implementation and the
25 data sharing platform are fundamentally different. The utilities' EDI process was

1 developed specifically to manage the relationships between customers and Competitive
2 Electric Power Suppliers (CEPS). Only CEPS are currently able to transact with utilities
3 via EDI. Enhancing this to offer certain functionalities to non-suppliers would be costly
4 and time consuming.

5 While there is overlap between our current processes with EDI and the platform, it is in
6 fact minimal. Although a small subset of what EDI is responsible for is the transmission
7 of historical bill cycle usage data, the full universe of supplier EDI functionality is far
8 larger than just simple data sharing. The utilities and their suppliers
9 perform complex customer add/drop/change workflows using EDI 814 messages, as
10 one such example. The data platform would not have the functionality necessary to
11 perform these types of utility/supplier workflows currently performed over EDI. Output
12 from the data platform, such as interval data, may very well be used as an input to
13 generate EDI transactions in the future, particularly those transactions surrounding the
14 transmittal of usage and billing information. But in this case the platform would be an
15 additive component to the EDI stack.

16 The EDI process is efficient and effective and a full replacement of the EDI process
17 would not be reasonable given the scope of the proposed data sharing platform in relation
18 to the specific functionality currently managed via EDI, most of which is specific to the
19 relationships between customers and CEPS.

20 Figure 4 below depicts each of the common activities that the utilities and suppliers
21 use EDI to accomplish as well as an indication of whether that function could be
22 accomplished directly using the data sharing platform as currently envisioned by the data
23 platform law, NH RSA 378:51-54.

1 **Figure 4 EDI Functionality Compared to Data Platform Law Requirements**

Activity	EDI	Data Platform
Customer Administration (enroll/remove/rate change)	Yes – 814 transaction type	No
Billed Usage (usage and charges billed on behalf of supplier)	Yes – 810 transaction type	No
Remittance Guidance	Yes – 820 transaction type	No
Historical Usage – Bill Cycle	Yes – 867 transaction type	Yes
Historical Usage – Interval	No	Yes

2 **Q. Do the Utilities’ proposal options enable a progressive approach to determine which**
 3 **data sets are accessible by the platform?**

4 **A.** The Utilities support starting with a base data set containing customer usage data
 5 only, similar to the CORE-01 billing dataset proposed by the OCA (and included in
 6 tabular form below). The flexible nature of the API based model as well as the
 7 extensibility of the Logical Data Model will allow the utilities to employ
 8 an 80/20 approach (Pareto principle)¹ at launch delivering the data fields that provide
 9 maximum value and functionality for the least possible cost.

10 Other customer data can be added to the platform at a later time if regulatory compliance
 11 dictates or clear customer value is determined. This approach will prevent the utilities
 12 from having to invest in the upfront effort to support the extraction, cleaning and
 13 inclusion of data in the platform that has limited value or unknown scope and instead
 14 focus those efforts and dollars on the data that provides the most wide-reaching value and
 15 scope possible. This approach satisfies a large percentage of the stakeholder use cases
 16 presented in testimony and all of those that have been indicated as “high priority”, such
 17 as the example core use case taken from OCA written response to utility comments and
 18 data requests dated 4/15/2020, and depicted in Figure 5 below: wherein the platform
 19 would provide all of the 11 Customer Data fields depicted.

¹ The Pareto principle also known as the 80/20 rule states that for many outcomes roughly 80% of consequences come from 20% of the causes.

1 **Figure 5 OCA CORE-01 Use Case and Data Fields**

The table below represents the data required for the CORE-01: Billing Dataset

SB 284 DATA SET (Data required to produce a customer bill)			"Types" of Data Contained in SB 284 billing dataset					UNITIL BILL - ACTUAL (created with SB284 dataset)	
SB284 Data Element	Description	Value in SB284	Platform IndexID / Data	Customer Data	System Data	DER Data	Market Data	Label printed on Customer Physical Bill	Value on Physical Bill
1 Account Number		"108999999"	-->	X				--> "Account Number"	"108999999"
2 Address USPO	Address on account	"74 N Sing Street ..."	-->	X				--> "Address"	"74 N Sing Street ..."
3 TariffName	Tariff ID Name	D1 Residential	-->	X	X			--> "Rate Code"	"D"
4 n/a	n/a	(ref TimePeriod)	-->					--> "Period"	"7/17/18 - 8/16/18"
5 Meter Number	Meer Number in utility system	"46920"	-->					--> "Meter Number"	"46920"
6 Register Read End	KWH or KW at end of cycle "meter reading previous"	"72042"	-->	X				--> "Meter Reading Previous"	"72042"
7 Register Read Start	KWH or KW at start of cycle "meter reading present"	"72651"	-->	X				--> "Meter Reading Present"	"72651"
8 n/a	n/a	(calculated from G-F)	-->					--> "Meter Usage"	"609"
9 TariffCustomerCharge	Customer Charge per Tariff ID (\$rate per customer)	"16.12"	-->	X				--> "Customer Charge"	"16.12"
10 TariffDeliveryChg	Delivery Charge per Tariff ID (\$rate X KWH)	"0.06175"	-->	X				--> "Delivery Charge"	"37.6"
11 TariffStrandedCost	Stranded Costs charge per Tariff ID (\$rate X KWH)	"0.0008"	-->	X				--> "Stranded Cost Charge"	"\$0.49"
12 TariffSystemBenefit	System Benefit Charge per Tariff (\$rate X KWH)	"0.00456"	-->	X				--> "System Benefits Charge"	"\$2.77"
13 TariffConsumptionTax	Consumption Tax per Tariff ID (\$rate X KWH)	"0.0005"	-->	X				--> "Consumption Tax"	"\$0.03"
14 n/a	n/a	n/a (calc SUM above)	-->					--> "Total Current EL Charge"	"6.34"
15 TariffEnergyServiceRat	Energy Service cost (\$rate X KWH)	"0.08238"	-->	X				--> "Energy Service Charge Fixed"	"50.17"
16 n/a	n/a	n/a	-->					--> "Total Current Charges"	"50.17"
17 n/a	n/a	n/a	-->					--> "Total Current Bill"	"\$106.51"

2 It is also worth noting that the issue of energy system data has been and remains a key
 3 area of discussion in ongoing Commission dockets. Discussions in IR 15-296
 4 (Investigation into Grid Modernization) and DE 16-576 (Development of New
 5 Alternative Net Metering Tariffs and/or Other Regulatory Mechanisms and Tariffs for
 6 Customer-Generators) have led to studies regarding the locational value of distributed
 7 energy resources, development of non-wires alternatives, and integrated distribution
 8 system plans where system data is a key area of concern. In order to realize customer
 9 benefits from the provision of their data through the platform while preserving ongoing
 10 efforts in other proceedings, the Utilities recommend that the platform focus on provision
 11 of customer energy usage data at this time. As explained, the API approach offered by
 12 the Utilities is extensible in nature and can evolve over time as needs and demands
 13 change.

14 **Q. What impact does data integration have on the cost of the project?**

15 **A.** There are a variety of ways that a change in the number of data elements required might
 16 impact the cost of the project. Commonly accessed data elements such as billed usage,
 17 customer name, and account numbers are likely already fully integrated into each utility's

1 IT environment. If a new data storage/backend system needs to be introduced, then the
2 cost of designing, building and testing these additional interfaces and tables will need to
3 be factored into the implementation. Additionally, as data volumes and complexity
4 increase, impact on platform performance will need to be evaluated to ensure that any
5 data delivery service level agreements (SLAs) continue to be met.

6 **Q. Can efforts already developed by the utilities for Green Button: Download my Data**
7 **be leveraged to offset the cost of enabling Green Button: Connect My Data?**

8 **A.** No, the Download My Data functionality is a singular feature allowing a customer to
9 download their own data with one click from a link, usually exposed on a utilities'
10 customer platform. Connect My Data, on the other hand, is an entire, robust authorization
11 and data sharing ecosystem exposed using APIs.

12 **Q. How do the various tasks of building the proposed platform model break out as far**
13 **as percentage of total cost or effort?**

14 **A.** The Utilities estimate that roughly 85% of the cost and effort of the solution is in
15 developing the point-to-point data and system integrations within each utility's IT
16 environment, before the data is exposed outside the companies. This integration is the
17 work described in Data Integration stages 1 (Source Utility Data) and 2 (Convert to
18 Logical Data Model) in this rebuttal testimony.

19 This integration involves mapping data from multiple systems to the logical data standard
20 and building the internal utility data services. The utility companies may hire contractors,
21 data integrators, or developers to assist in the effort, but all the work exists within the
22 utilities' IT environment.

1 The Utilities estimate that roughly 15% of the cost is in the remaining services, which
2 include exposing the data via API, vendor registration/authorization functions, and
3 associated functions like logging, auditing, and security.

4 In order to consume data via the Green Button standard, participants will have to build
5 functionality to extract the data and load it into their own systems. Some participants may
6 purchase third-party software or services to extract the data via the standard. These costs
7 would need to be determined by individual third parties and are not included
8 here. Customers would contract with a third-party market participant to purchase services,
9 such as data viewing, online load analysis, energy efficiency options, etc. Customers do not
10 benefit directly but would presumably be able to select services from a wide range of
11 providers who use the Green Button Connect My Data standard.

12 **Q. When can costs be estimated for the proposed Utilities' solution?**

13 A. The scope of the solution must be clearly defined before a reliable order-of-magnitude
14 estimate can be generated. Agreement is needed on the general design, including data
15 elements, solution architecture, and platform support. It is, however, essential to
16 understanding the costs along with the solution scope.

17 **Cyber Security and Privacy**

18 **Q. What are the threats that would be interested in compromising customer data?**

19 A. There are generally four types of threat adversaries that attempt to compromise systems
20 and data. The data platform could be a target of all of these groups, but the most likely of
21 those discussed here are the Cyber Extortionists and Organized Criminals. This is due to
22 the fact that the data being considered for access via the platform could be of
23 considerable value and sold on the dark web. The data accessible through the platform
24 could also be combined with other stolen datasets like name and banking or health

1 information, exponentially increasing its value and making the data much more viable for
2 use in social engineering or identity theft. Such threats make proper protection of any
3 data available through the platform an unqualified necessity. Known
4 adversary groups are as follows:

- 5 • “Script kiddies”
- 6 • Cyber extortionists
- 7 • Organized criminals
- 8 • Nation states

9 Script kiddies tend to be younger individuals—normally high school or college age—
10 who are technically sophisticated compared to their peer group and have the intent to
11 break into a system to prove they can do so. They are also motivated by the chance to
12 boast their accomplishments to the relevant social circles (such as groups on the dark
13 web) where they are bestowed certain social status for the same. These individuals, while
14 advanced for their age, normally are not sophisticated enough to compromise most
15 corporate networks. But they are often the ones who can gain access to town and school
16 networks or websites and those networks and operations with like security protections.

17 Cyber extortionists are technically savvy, have access to financial resources and more
18 sophisticated technology, and have the intent to compromise networks and data with the
19 intent of “extorting” money for the safe return of the systems and data.

20 Organized criminals are technically very sophisticated and have the intent to steal data
21 for use or sale on the dark web. Organized criminals may also try to acquire controlling
22 interest or influence on companies that have access to sensitive data. By owning part or
23 all of the company, they won’t need to “hack” the data, just take a copy of what the
24 company already obtained from the data platform. They will also sell access to hacked
25 systems or tools, often to cyber extortionists.

1 Nation states hack organizations and government systems for the purposes of financial
2 gain, disruptions of services such as access to online banking websites or the power grid,
3 and to position themselves to impact military and critical infrastructure in times of
4 military conflict. Nation states will also use their influence or investment in companies
5 to also gain access to sensitive data.

6 **Q. How would the Utilities protect data from these threats?**

7 **A.** As previously stated in our pre-filed testimony, page 40, line 12, the Utilities would apply
8 industry standards including NISTIR 7628, DataGuard Energy Data Privacy Program,
9 and a Defense in Depth approach to Security.

10 The Utilities have recommended an API approach for accessing data versus building a
11 centralized, separate system. This approach is preferred to reduce the risk of compromise
12 of data along with the fact that the data will reside in existing internal systems already
13 protected by various controls including firewalls, intrusion prevention technology,
14 encryption of data in transit and at rest, monitoring for unauthorized access to the data,
15 and incident response teams that are knowledgeable and able to respond to an incident. If
16 the platform were a centralized, stand-alone system, then all of these technologies and
17 processes would have to be duplicated or expanded and a staff of experienced cyber
18 professionals hired to operate the technology and to monitor and respond to cyber threats
19 and events. By keeping the data in each utility's system, a hacker would have to
20 compromise multiple utilities or attack the process for requesting and obtaining
21 data. Using a single system means the attack is against the centralized system or process
22 for requesting and obtaining data.

1 **Q. Can the Utilities guarantee that the data cannot be compromised?**

2 A. No. No organization can say they can guarantee a system or data breach will not
3 occur. Nation states, organized criminals, and cyber extortionists possess significant
4 resources to use in an attack and only have to be successful once. That being said,
5 leveraging the utilities' investments in cyber technology, training of company employees,
6 and external outreach relationships with government and industry organizations helps the
7 utilities evolve the protection of systems and data as the threat landscape changes. As
8 previously stated, utilities have invested in technologies that protect their networks,
9 systems and data. Leveraging these technologies for the data platform would be more
10 cost effective than reinvesting in additional technology. In addition, the utilities have
11 security awareness programs that consistently remind employees of their responsibility to
12 protect company networks, systems and data. These programs include training,
13 awareness campaigns, and testing.

14 Utilities work with various information sharing organizations to obtain threat alerts
15 related to the industry. Examples of these organizations include the Electric Information
16 Sharing and Analysis Center (E-ISAC), FBI's Infraguard program, Department of
17 Homeland Security (DHS), Department of Energy (DOE), and Cyber Mutual Aid. These
18 programs provide classified and unclassified threat information which help utilities
19 modify their programs to adjust to a changing threat landscape. In addition, the NEUCIC
20 would enable the utilities to analyze specific data against classified and unclassified
21 threat indicators in a manner not provided by the other organizations. Because of the
22 security requirements, access to this environment will not be available to third parties
23 who might otherwise manage a separate data sharing platform.

24 While the utilities cannot guarantee a cyber event will not occur, they are positioned to
25 protect data and to respond to an event faster than the other parties who are suggesting
26 they manage the system and data. Lastly, utilities have the financial resources, including

1 cyber insurance, to protect the customer's interest if the data was compromised. By state
2 law (Consumer Data Breach Notification Law, RSA 359-C:19), and industry practice, a
3 breach of customer data would require state notifications and likely credit monitoring for
4 each affected customer. The organization(s) managing the portal will need to have the
5 financial resources to comply with this law. Also note that according to a recent report
6 by IBM on the Cost of a Data Breach, an organization should expect to pay
7 approximately \$150 per compromised customer record. The organization(s) responsible
8 to manage the system will also need to have the financial resources to cover such costs.

9 **Q. How should third parties who receive customer data protect this data?**

10 **A.** Third parties receiving customer data will need to develop appropriate controls to
11 protect the data from compromise. The joint direct testimony of the Utilities, page
12 49, states that third parties must undergo a security assessment to validate
13 the reasonableness of controls prior to receiving customer data. The controls should
14 follow an industry standard such as the NIST Cyber Security Framework. This
15 framework requires an entity to document the sensitivity of data, assess risk, and then
16 provide various controls detecting attacks, protecting against attacks, and responding
17 to attacks. There are two approaches that could be taken regarding the expectations of
18 controls to be used by the vendors. One approach is to develop and post prescriptive
19 controls for platform users and the second is to assess platform users' security programs
20 through periodic assessments based on risk.

21 Under the first approach, the Governance Organization would develop specific
22 controls that constitute reasonableness. However, this puts the burden on the third-party
23 to comply with the prescriptive controls. As these controls would need to be published to
24 the public, the threat adversary would also know what controls are in place to protect the
25 data. This would allow them to develop new attack approaches and potentially
26 compromise security. If prescriptive controls are not documented, then the third party

1 is able to use the control objectives documented in industry standards and develop
2 specific controls that works best for them.

3 This second approach is preferred because entities should be able to develop appropriate
4 controls for their organizations. However, there must be some oversight to
5 ensure the deployment of controls is appropriate. This oversight could be performed
6 by various audit and security firms who are experienced in reviewing security controls of
7 a third-party at the expense of the third party. Another assessment approach is for
8 utilities to perform this review. However, the utilities would require some form
9 of regulatory or contractual relationship granting them this authority. A utility-
10 based assessment approach raised concerns from Mr. Murray in his pre-filed
11 testimony on Page 60, arguing that the utilities might engage “in anti-competitive or
12 discriminatory behavior against third parties”.

13 However, despite Mr. Murray’s claim that Utilities might engage in anti-competitive
14 behavior if required to perform the reviews, this analysis is also silent on how third
15 parties should protect customer data and respond to active cyber incidents. Mr. Murray
16 notes that “bad actors” may be punished by being ineligible to receive any data from a
17 Commission-regulated utility in New Hampshire. At the same time, it ensures that third
18 parties have due process rights before the Commission prior to any termination. Murray
19 at 60. Essentially, this means that the only repercussion for a failure by the third party
20 comes in the form of a future restriction. This inaction during an event is a minimally
21 reactive approach that does not sufficiently address the issue after a compromise. This
22 approach also does not allow for immediate response to an event. If the entity has
23 reported (and it should be required to) that it has had a data breach, then it should not be
24 allowed to have access to customer data until it has demonstrated containment
25 and remediation of the situation.

1 **Q. Should third parties be allowed to self-certify their security controls as suggested in**
2 **the direct testimony of Mission:data beginning on page 38?**

3 **A.** Self-Certification: (1) provides no assurance that reasonable, industry standard controls
4 are in place and working effectively; and (2) assumes the third party has experienced
5 and knowledgeable security persons who are empowered to and resourced to protect the
6 data. Various government reporting including the U.S. Cyber Command has stated
7 there are in excess of 300,000 unfilled cyber security positions across the country. The
8 Commission should not assume that organizations in a new and evolving marketplace
9 will have mature cyber programs. This is why some form of review should be required.

10 **Q. Why are third party pre-approval and authorization requirements necessary prior**
11 **to requesting access to customer data?**

12 **A.** Entities looking to provide customers alternatives for electric supply currently are pre-
13 approved and licensed to request basic contact information about the customer. A similar
14 process could be used for gaining access to the data platform. The data platform is likely
15 to contain more customer data than suppliers receive, so it is reasonable to expect a
16 similar, or more robust process be in place. Pre-approval or a license process also
17 ensures that the requesting party has an appropriate reason to request the data, can ensure
18 there are sufficient financial resources to respond to an incident, and could also perform
19 an assessment that the entity is not influenced by a potential threat actor. As noted above,
20 one approach nation states have taken to obtain sensitive data is to acquire controlling
21 interest in a particular company which allows them to acquire sensitive
22 information through the company. This was recently documented when Pamplona, a
23 Russian investment firm, acquired controlling interest in PhishMe, a U.S. based security
24 company that provided phishing testing services. In the interest of national security, the

1 Committee on Foreign Investment in the U.S. forced Pamplona to sell its interest
2 in PhishMe, subsequently renamed Cofense, to Blackrock.²

3 **Q. What can third parties who obtain customer data do with the data?**

4 **A.** First, the underlying principle of customer privacy is consent and knowledge of use of the
5 data. Consent is normally referred as “opting in” or “opting out”. Either way, the
6 customer has to approve a third party before access to the customer’s data is
7 granted. This approval can be done in a number of ways, such as through a platform,
8 written consent, or regulatory decision. In addition, the access will need to be
9 commensurate with the purpose the customer intends for their data to be used by the
10 third-party. Meaning, for example, if customer usage data is required for a rooftop solar
11 installation, then the data can only be used for that purpose and if a town employs that
12 same solar company to build a town solar farm, any previously approved customer data
13 cannot be used in a town wide analysis unless the customer reapproved this
14 use. This commensurate use concept is necessary as it is a fundamental concept of
15 DOE’s DataGuard program and Generally Accepted Privacy Principles. While rooftop to
16 town solar farm use cases are similar in nature and benefit to the customer, the consent of
17 use is required to ensure more extreme uses of the data do not occur, such as selling the
18 data to advertising companies who would drive other energy related products and
19 services to the customer when the customer did not approve the town or solar company to
20 sell the data for financial gain or to receive unsolicited advertising. We recommend that
21 the Commission establish strong and clear guiding principles for use of the data
22 and the governance stakeholders to establish the guidelines and procedures for
23 implementing these critical security principles in a fair and consistent manner.

² <https://www.cnbc.com/2019/07/29/blackrock-is-in-talks-to-take-over-cofense-after-us-security-concerns-sources.html>

1 **Q. Why, from a security standpoint, should the data platform be limited to customer**
2 **energy usage information?**

3 **A.** From a cybersecurity perspective the question is not whether the platform should or
4 should not contain system data. Rather, the process for making the decision of which
5 data to include or exclude must consider how the additional data would impact the risk
6 and associated controls to protect the data. As stated previously there are different
7 threat adversaries to consider.

8 Including system data would absolutely make third parties and the data platform a target
9 of nation states and cyber extortionists. Accordingly, any data platform governance
10 structure will need to develop appropriate controls and procedures to manage the
11 additional risks which consider additional risks to the security and reliability of the grid,
12 as well as risks to the data itself.

13 Viewed from this perspective, to the extent a decision would be made by the Commission
14 to include system data at all, limiting inclusion to customer data only should be
15 considered at this time, as inclusion of system data is not required by the data platform
16 law, and such inclusion requires much different types of considerations as described
17 above. On a related note, the U.S. Government has determined that certain foreign
18 companies such as Huawei and ZTE are not to provide telecommunications equipment to
19 organizations that provide products or services to the U.S. Government, including
20 military bases. Information on these requirements can be found in the 2019 Defense
21 Authorization Act, Section 889. This fact is raised as an example of the risk that certain
22 foreign-built products that could be used to disrupt grid operations, and failure to
23 understand and appreciate those risks could lead to problems for anyone interfacing with
24 the portal. Understanding these risks completely and creating appropriate standards to
25 address these risks must be done ahead of any system data inclusion for any data platform
26 design.

1 **Q. Is there anything else the Commission should consider in relation to security issues?**

2 **A.** There are many valid reasons for this platform and the use of the data. The Utilities have
3 no desire to impede economic development and improved delivery of services. However,
4 the Utilities must ensure that all parties understand that while certain organizations want
5 to do the right thing, there are others with malicious intent. The Utilities goal is to ensure
6 that the right governance, controls, and policies are in place to protect the energy systems
7 and data.

8 **Governance**

9 **Q: What role do the relevant stakeholders have in the governance process proposed by**
10 **the Utilities?**

11 **A:** As part of pre-filed testimony, the Utilities recommended a governance structure
12 comprised of two working groups: the Governance Working Group (“GWG”) and the
13 Operations Committee (“OC”). Utilities at 49. Participants within this docket, including
14 the Utilities, Liberty, OCA, LGC, CENH, and Staff support a governance structure that
15 enables input from platform and market participants. The purpose of having two groups
16 is to enable active stakeholder participation in the use and objectives of the
17 platform while ensuring that the technical operational design, execution, and change
18 management needs of the system are met on a continuous basis. Id. The Utilities
19 recommend the GWG include fourteen stakeholder representatives: two representatives
20 from each of the regulated gas and electric utilities (Unitil, Eversource, and
21 Liberty), three Commission-appointed stakeholder representatives for specified terms,
22 two representatives from the OCA, and up to three representatives from PUC Staff, as
23 available. Utilities at 50. Recommendations would be made by general consensus,
24 dissenting opinions would be noted for consideration, and submissions to the
25 Commission would require support from more than six stakeholder
26 representatives. Id. The OC would consist of equal representation from each of the

1 regulated utilities (Unitil, Eversource, and Liberty) and have responsibility for developing
2 data platform operational policies and procedures, technical design, scoping and pricing
3 changes, change management, and recommendations on feasibility and cost/benefit
4 analysis of requests for enhancements or changes. Id. Proposals from the OC would be
5 submitted to the GWG should it want to add recommendations to GWG proposals.

6 **Q. Why does your governance recommendation include the gas and electric utilities as**
7 **members of the GWG and OC?**

8 **A.** The gas and electric utilities are mandatory stakeholders in the platform as per the
9 applicable statute, RSA 378:51 and 52. RSA 378:51, I provides:

10 The commission shall require electric and natural gas utilities to establish and jointly operate
11 a statewide, multi-use, online energy data platform.

12 Furthermore, RSA 378:52 states:

13 378.52 Platform Requirements. The utilities shall:

14 I.Design and operate the energy data platform to provide opportunities for utilities, their
15 customers, and third parties to access the online energy data platform and to participate in
16 data sharing.

17 II.Require, as a condition of access the online energy data platform, that a third party
18 complete a qualification and registration process to ensure that any customer data
19 downloaded from the platform remains in a safe, secure environment according to data
20 privacy standards established by the commission.

21 III.Administer the online energy data platform in a manner consistent with RSA 363:38.

22 As the electric and natural gas utilities are required by the law to “establish and jointly
23 operate” the data platform, “design and operate the energy data platform”, “require... a
24 qualification and registration process” for third party users, and “administer the online
25 energy data platform”, the General Court clearly designated the utilities as critical
26 stakeholders in the platform.

1 **Q. How does your governance recommendation compare to governance frameworks**
2 **recommended by other intervenors?**

3 **A.** Similar to the Utilities’ proposal described above, most intervenors recommended a
4 governance model that provides stakeholders with opportunities for meaningful
5 input through a collaborative, consensus-based process with utilities, Staff, the OCA, and
6 other energy data platform interested parties. The vision is that different participants
7 could bring forth new ideas for functionality which could evolve over time based on
8 feasibility, price, and customer benefits. Some intervenors similarly recommended
9 segmenting participating expertise into working groups with a defined stakeholder
10 makeup and voting rights that direct 1) platform functionality and 2) platform
11 operations/technical software change management. Other groups suggested the creation
12 of one body that performs all of these functions.

13 LGC recommends a “Data Platform Council” with two governance categories:
14 “vision/strategic direction” and “operational & performance-based oversight”. LGC
15 Testimony Bates Page 38. The OCA put forth the creation of a stakeholder governance
16 board to determine platform services and functionality and an operations committee to
17 handle change management and software updates. Brennan at 89. CENH suggested
18 creating a “Data Platform Committee” responsible for implementing the data model,
19 ensuring integration of new “Data Sources”, and ongoing performance of the Data
20 Platform. Goldman at 25. Mission:data on the other hand recommended a single “Data
21 Platform Committee” to “(i) review and attempt to resolve outstanding support tickets
22 from the issue-tracking system” and “(ii) refine and approve change requests” submitted
23 by any Committee member not exceeding \$250,000. Murray at 69-70. The Utilities
24 would note that a preapproved budget as suggested for platform changes by the
25 governance stakeholders should be considered to enable future functionality development
26 in a more rapid fashion. Such a budget would likely need to include a roadmap proposal

1 before the stakeholder committee along with consensus justification for the platform
2 change.

3 Where a single governing body is proposed, non-utility intervenors recommended that the
4 governing body be provided a significant level of decision-making authority and not
5 necessarily include members from the utility companies. The LGC suggested
6 placing decision-making and budgetary authority in the Data Platform Council, along
7 with responsibility for defining utility performance criteria and incentive
8 programs (McGhee at 34-36) as well as designating a technical project lead be given
9 autonomy to manage the project. (McGhee at 29) The OCA recommends a nine-member
10 stakeholder governance board that includes no utility members. (Brennan at 90) The
11 Companies find that placing substantial responsibility for the design and administration
12 of the statewide data platform in a governing body that does not includes utilities to be
13 inconsistent with the requirements of RSA 378:52 and to also introduce risk associated
14 with departing from the prevailing regulatory model for Commission oversight of New
15 Hampshire's utilities.

16 Both of these proposals result in the creation of an independent entity other than the
17 Commission with decision-making authority over the utilities as to capital investments,
18 budgetary and operational determinations, as well as performance oversight and
19 enforcement authority to various degrees. Any governance proposal that has this force
20 and effect is contrary to well-established New Hampshire legal and regulatory practice,
21 subverts the Commission's authority, and creates an anomalous power structure over
22 regulated entities that is not accountable to the process and system it intends to govern.
23 This outcome is untenable and should be rejected by the Commission.

1 **Q. What do you understand are the reasons that some stakeholders have recommended**
2 **governance structures that minimize participation of utilities that are ultimately**
3 **required to establish and jointly operate a statewide, multi-use, online energy data**
4 **platform pursuant to RSA 378:51-54?**

5 **A.** OCA, LGC and CENH represent that their governance recommendations are driven
6 largely by concerns of conflicts of interest on the part of utilities and expectations that the
7 interests of customers are in opposition to those of utility shareholders. Mr. Brennan
8 asserted that the data platform will inevitably constrain the utilities' ability to deploy
9 capital since access to data will allow customers to assume more control over their energy
10 usage and increasingly use services from third-party providers. (Brennan at
11 86). His testimony expressed further expectations that a natural incentive of utilities to
12 resist progress requires governance that inoculates well-intentioned utility
13 management from claims that they are being insufficiently attentive to shareholder
14 returns by developing solutions that are optimal for consumers. (Brennan at 87). Rep.
15 McGhee supported a desire of the OCA for a governance structure which had 'teeth' to
16 dispel fears that data platform would become a utility-only driven project. (McGhee at
17 36).

18 The LGC also recommends that a technical project lead be given autonomy to manage
19 the project based on concerns that utilities would exert influence to limit the benefits of
20 the platform. (McGhee at 29-30). CENH questioned whether utility participation in a
21 Data Platform Council presented a conflict of interest given the decisions of the Data
22 Platform Council could have implications regarding the cost of the platform and therefore
23 subsequent cost recovery by the utilities. (Goldman at 28-29). The notion that utility
24 conflicts of interest exist in regards to the construction and operation of a statewide data
25 sharing platform is rife with flaws and unsupported and contradictory assumptions,
26 perhaps the most glaring being the mandate of the data platform law for the utilities to

1 “design, operate and...administer” the platform. RSA 378:52, I-III. But there are several
2 other erroneous presumptions in this premise, as discussed further in this testimony.

3 **Q. Does the erroneous supposition by the intervenor parties of the existence of a utility
4 conflict of interest justify the governance proposals of those parties?**

5 **A.** No. OCA, LGC and CENH fundamentally misinterpret what is made to seem like
6 a utility conflict of interest to justify a governance structure that greatly diminishes
7 customer protections provided by Commission oversight of regulated distribution
8 company activities while having minimal and insufficient accountability for its
9 actions. The premises about utility management that OCA, LGC and CENH base their
10 respective governance recommendations on are speculative and represent a very narrow
11 and inaccurate view of utility management principles. Most notably, these
12 recommendations are inconsistent with many of the business activities in which the
13 utilities engage as well as the motivation for engagement in the same. Mr. Brennan
14 suggests that utilities have a natural disincentive to provide data that will allow customers
15 to assume more control of their energy usage despite the fact that the utilities have been
16 actively providing such data to customers for some time for the very purpose of
17 enabling more control over energy usage.

18 Through its CEP, Eversource provides an Energy Savings Plan tool (ESP) for Residential
19 and Commercial customers and an Energy Analysis Tool (EAT) for Enterprise
20 customers. The Company has also utilized ESP launch points via the Eversource.com
21 home page to increase visibility. As part of these launch points, CEP features such as the
22 bill disaggregation wheel, are made available to customers as they view their energy
23 usage on Eversource.com. The CEP has additional internal tools that provide the ability to
24 generate targeted customer lists and deliver emails to customers that include customized
25 energy insights to encourage investment in energy efficiency measures.

1 Through Unitil’s CEP, electric customers are able to view, compare and download their
2 daily, monthly and annual usage; in addition, up to 13 months of usage history is
3 exportable with the Green Button Download my Data tool. Together, these instruments
4 expand and enable customers’ access to granular usage data to gain insights on how their
5 behavior affects energy consumption. Unitil has also utilized launch points via the
6 Unitil.com home page and social media channels to increase the visibility of these
7 offerings. Additionally, s the company’s Home Energy Report program provides NH
8 customers with a personalized usage report by mail and email multiple times a year, and
9 access to a website, all of which summarize the most recent month’s usage, provide a
10 neighbor comparison analysis, and actionable tips and behavior modifications to
11 encourage less energy use.

12 The Utilities welcome opportunities to effectively expand upon and improve these and
13 other customer offerings through the data platform and also welcome customer and
14 stakeholder participation to increase success. The GWG was proposed by the Utilities for
15 that express purpose.

16 With respect to the financial performance of utilities, consistently achieving positive
17 returns on investor supplied capital is a function of much more than simply deploying
18 capital. Mr. Brennan correctly notes that the regulatory construct encourages utilities to
19 only incur expenditures on a prudent basis (Brennan at 87). Determinations of prudence
20 may consider whether an asset is used and useful, whether appropriate cost control
21 measures were in place, that expenditures reflect least cost solutions and other
22 criteria. These are all considerations that serve to align the interests of the Company with
23 those of customers who support the recovery of utility expenditures. They are
24 also considerations that utilities would expect to be applied to data platform expenditures
25 made at their direction.

1 **Q. Are there other entities that have conflicts of interest with governing the data**
2 **platform, and are such conflicts resolvable?**

3 **A.** There are entities with possible conflicts of interest in regards to governing the data
4 platform, and the way to resolve the conflict is to ensure any conflicted entities do not
5 have unfettered budgetary or operational decision-making authority. In the
6 Utilities view, the proposed participation of unregulated entities in data platform
7 decision making presents actual and significant conflicts of interest. The OCA in its
8 testimony recommends a nine-member stakeholder governance board that includes
9 representatives of firms that provide energy-related services to consumers that depend on
10 access to data, but no utility members. Brennan at 90. The LGC and CENH also
11 contemplate governance by energy stakeholders that includes third-party service
12 providers. Governance by these types of entities provides a direct opportunity for self-
13 inurement, which is the definition of a conflict of interest. These entities, if in a position
14 to make operational, contracting, or budgetary decisions about the platform, can directly
15 create revenue streams for their businesses, discourage competition for services their
16 businesses provide, and generally benefit from an inside competitive advantage by having
17 such authority over platform spending and operational policies and decisions. In order to
18 resolve such a conflict, any data platform governance structure should address conflict of
19 interest concerns, how to weigh such concerns in deliberations related to development of
20 the platform, and whether participating stakeholders should be able to gain financial
21 benefit from data platform development.

22 The Utilities agree that input from a broad cross-section of stakeholders will enhance the
23 success of the data platform and that such a group should include businesses that are
24 seeking to provide data-driven services to customers. However, there should also be a
25 recognition that the profitability of those firms is going to directly depend on the range of
26 their services the platform supports and the costs they incur for its use. Absent guidance
27 that the data platform costs should be participant-funded by customers and service

1 providers that use it, unregulated service providers that participate in platform decision
2 making may have insufficient regard for the costs incurred by customers to support the
3 platform functionality. These potential conflicts do not merit exclusion of third-party
4 service providers from stakeholder processes, but it calls into question the
5 appropriateness of transferring decision-making and budgetary authority away from
6 regulated utilities to a governance group that includes service providers with very direct
7 and significant business objectives related to platform design and potentially little cost
8 exposure.

9 **Data Platform Scope, Benefits, and Other Considerations**

10 **Q. Should the cost of implementation be considered when determining the public**
11 **interest?**

12 **A.** Yes. Some of the intervenor parties have taken the position that cost/benefit analysis need
13 not be addressed when assessing the public interest for the data platform; the LGC has
14 repeatedly asserted that this analysis is unnecessary. (Below, LGC Direct Testimony,
15 Bates 7; Below, EU to LGC 1-001; Below, EU to LGC 1-002). This assertion is flawed
16 for numerous reasons. First, there is no rebuttable presumption of a public interest that is
17 created simply by the data platform law's existence, particularly when the text of the law
18 itself directs the Commission to determine if "the cost of such platform to be recovered
19 from customers is unreasonable and not in the public interest" RSA 378:51, III. The
20 parties are likewise mistaken in presuming that public interest is sufficient to negate the
21 need for cost justification. The Commission remains the arbiter of public interest, and as
22 the data platform law just previously quoted demonstrates, analysis of cost directly
23 impacts that determination. Cost implementation factors that should be considered are
24 those that maximize value for the associated cost. And where possible, the solutions
25 should leverage existing infrastructure to create an accurate and actionable data platform
26 with a user-friendly interface.

1 The New Hampshire data platform has the potential to create benefits for multiple
2 stakeholder groups in the process of its development. When assessing the allocation of
3 benefits of any proposed data platform, there are separate beneficiary groups that should
4 be distinguished: third-party market participants and industry stakeholder groups, and
5 New Hampshire utility customers and residents. Thus far, members of the first group and
6 intervenor parties to this docket have not provided any testimony or responses to
7 discovery that demonstrates quantifiable benefits for the latter group: customers and
8 residents.

9 It is reasonable to assume, at some point, a diminishing return of benefits for customers.
10 The Pareto principle, or 80/20 rule, stands for the premise that 80% of the customer value
11 will be available through 20% effort and cost. The Utilities' data platform proposal
12 prioritizes access to the more certain value for NH customers without the additional costs
13 and uncertainty chasing the remnant value that is not currently defined or quantified. This
14 aligns with the OCA's direct testimony: "I believe the risks of immediately moving
15 forward with a full platform build exceed the benefits" Brennan, Bates page 100.

16 **Q. What benefits do the Utilities recognize as tangible and able to be recognized in the**
17 **near term?**

18 **A.** Delivering the data with quantifiable value use cases should be a priority. The Utilities'
19 platform solution can provide value to all customers through near-term capabilities.
20 Providing New Hampshire customers with usage data via Green Button Connect, such
21 individuals can make informed energy usage decisions and spending.

22 Use cases associated with energy supply aggregations have the potential to benefit
23 participating customers. Providing municipal aggregators and other data aggregators
24 with information to make informed decisions regarding competitive supply procurement

1 can benefit participating customers. The Utility solution provides the means for third
2 parties to access this data via anonymized data.

3 Use cases associated with aggregation of distributed energy resource data have the
4 potential to increase the value of these resources. Providing customer information to
5 aggregators of distributed energy resources can help aggregators secure value from
6 wholesale markets or retail programs. However, it is not clear that this value will flow
7 through to end-users.

8 Order 2222 was recently released by the Federal Energy Regulatory Commission. The
9 order removes barriers to competitive markets by enabling distributed energy resources to
10 be aggregated and compensated from wholesale capacity, energy, and ancillary service
11 markets. The order has been issued and is pending compliance filings by NE-ISOs. The
12 order will require coordination and communication of data by the ISO and the EDC. At
13 this time how ISOs will comply is not certain. The Utilities' proposed platform can
14 potentially play a critical role moving data needed to facilitate DER aggregator
15 participation.

16 The critical few cases representing the majority of customer value are in: providing
17 customers with their own usage data, providing data to support energy supply
18 aggregators, and enabling distributed energy resource aggregators. The Utilities'
19 proposed API platform can be developed and maintained effectively and efficiently to
20 deliver these benefits. The benefits do not require creating a stand-alone database, its
21 associated costs, continued maintenance, and other considerations. This also allows the
22 Utilities to scale the API approach appropriately as customer value of functionality
23 evolves. In this way, a "pull" vs. "push" is established, reducing overbuilding and
24 overspending risks.

1 **Q. What elements are missing to evaluate the cost-effectiveness of other proposals thus**
2 **far?**

3 **A.** The testimony provided by several intervenor parties and the responses given to
4 discovery requests from the Utilities omit critical information necessary to assess the
5 levels of effort, costs, benefits and impacts to providing safe and reliable data platform
6 operations and ensure the proper and authorized use of customer data. The testimony and
7 discovery responses of the various witnesses to this point do not identify the total lifetime
8 costs associated with maintaining and evolving the platform models that they
9 recommend. Testimony and discovery of all parties likewise fail to provide qualitative,
10 much less quantitative information regarding how the platform creates value for New
11 Hampshire utility customers and residents.

12 The proposals made by the several witnesses in the LGC direct testimony do not identify
13 expected costs and benefits (qualitative or quantitative) to the extent necessary for the
14 Commission to conduct any meaningful evaluation of the customer value that may or
15 may not be offered by their suggested approach. And, as mentioned earlier in this rebuttal
16 testimony, the LGC asserted through discovery responses EU to LGC 1-001 and 1-002,
17 that such cost examination and benefit analysis is an inappropriate consideration for the
18 Commission, as the existence of the data platform law presumes a public benefit and that
19 should suffice, despite the legally required determination to be made by the Commission
20 whether “cost of such platform to be recovered from customers is unreasonable and not in
21 the public interest.” RSA 378:51, III. Setting aside for now that this determination cannot
22 be made by the Commission without a discussion about costs of the platform and value of
23 the benefits to which beneficiaries which will in turn inform a decision as to whether the
24 platform is or is not in the public interest, we note that only the Commission may
25 determine whether such a platform is in fact in the public good.

1 Intervenor testimony assumes benefits from the data platform from real-time integration
2 with third parties and unimpeded flow of behind-the-meter data without clearly
3 articulating the benefits of that data. See McGhee, EU to LGC 1-039. There are several
4 issues with this premise. As to feasibility, customers would have to agree by voluntarily
5 opting-in to the collection and sharing of their data, as the law requires affirmative
6 consent by customers. There is no discussion in the intervenor testimony of what efforts
7 would need to be conducted in order to get sufficient scale of customer opt-in
8 participation to make such data platform participation valuable or beneficial to *any*
9 customers or residents. Assuming that rather significant hurdle is overcome, at what can
10 be assumed would be some kind of cost, these assumed benefits are not articulated with
11 any specificity, leaving the questions of both what and to whom would these
12 speculatively viable benefits would apply.

13 Another feasibility hurdle, that the Utilities have expressed serious concerns about also
14 being outside the scope of this docket, is that there is no way to compel customers to
15 share non-utility data; this includes, among other things distributed energy resources such
16 as distributed generation, electric vehicles, thermal storage, or demand response. If it is
17 not a mandatory requirement, it is very unlikely that enough customers would be willing
18 to voluntarily share their device-level data – leaving an incomplete picture of what is
19 happening in the field and possibly negating any assumed value. This type of requirement
20 might also dissuade customers from installing DERs in the first place, primarily if they
21 are not being incentivized or not currently required to report it.

22 **Q. Are there any additional issues to consider regarding collecting behind the meter**
23 **data from customer-sited distributed energy resources?**

24 **A.** Yes. Data, transmission from behind the meter, customer-sited distributed energy
25 resources must be considered. There needs to be a communication mechanism that allows
26 the data to be reliably and securely transmitted to gain access to this type of data in the

1 first place. The end device must send data to a collection point which. likely involves a
2 customer's wi-fi network or installing a dedicated cellular connection. A reliable (and
3 potentially redundant) cellular connection adds cost as well. Wi-fi uptime is usually not
4 100%. Additionally, devices may disconnect from a home network if passwords or
5 settings are changed.

6 Secondly, there needs to be a common or understood communication protocol so that the
7 end devices and the collection system are quite literally speaking the same language, and
8 therefore fully enabling platform functionality. For many demand-side management
9 applications, there has been some convergence around the OpenADR 2.0B protocol.
10 Adhering to a standard protocol reduces integration costs and reduces integration
11 timelines. However, OpenADR 2.0B may not be appropriate for all use cases. If
12 standardized communication protocols can't be utilized because they are not a good fit
13 for specific uses cases, it becomes necessary to re-evaluate the proposed uses cases or be
14 prepared to account for the cost to customers for custom integrations and the incremental
15 level of effort and resources required for implementation.

16 **Q. Do some of the DER control concepts advanced in intervenor testimony conflict with**
17 **the utility's obligations to provide safe and reliable power?**

18 **A.** The utility public obligation, or core franchise, includes grid engineering, designing, and
19 planning the distribution system in order to achieve safe and reliable power delivery at a
20 reasonable cost to customers. New Hampshire customers' investments, made through
21 their energy bills, support these functions with experienced engineers and planning tools
22 to model and analyze the grid.

23 Developing an external data platform with unproven design and operations applications
24 and functionality will not now or in the foreseeable future relieve the utility of this
25 critical role of ensuring safe and reliable power. Mr. Golding states in direct testimony

1 for the LGC that the objective of the platform is to enable “permissionless” innovation.
2 Golding, LGC Direct Testimony, Bates Page 64. Such innovation spans metering, data
3 management, billing and flows into interconnection standards, advanced distribution
4 management and distributed energy resource management. Significant energy, thought
5 and rigor has been built into the integration of these systems.

6 Dr. Farid quotes Mike Howard of EPRI when he discusses that by logging into an app
7 that is integrated with network operations and planning systems, and with one simple
8 click the water heater is installed with incentives. The same app serves as the interface to
9 utility system planning and distribution operations allowing real time operation and
10 planning. For many reasons, we consider this an oversimplification of a future state. By
11 simplifying a very complex issue the LGC fails to represent the cost when describing a
12 future state benefit. Farid, LGC Direct Testimony, Bates page 136.

13 The LDC use cases all provide an assessment of nonexistent project risk. All use cases
14 have “None” in the area of project risks. LGC Direct Testimony, Bates Page 167. Simply
15 disregarding the very real risks that are likely to occur when providing data without
16 considering the operational risks of using the data is inaccurate, problematic, and
17 irresponsible. There are several obvious operational risks to reliable system distribution
18 operation by integrating applications that issue control signals to DERs or expecting
19 customers or aggregators to immediately respond to market signals, including dynamic
20 voltage control and dynamic system load management. DER control and communication
21 platforms are only a small subset of a much more comprehensive grid modernization plan
22 essential to facilitating DERs growth, integration, and potential aggregation while
23 maintaining system reliability. The integration of DERs into grid operations and their
24 participation in markets and programs is still in its nascent stages, so the technology for
25 modeling and dispatch is still developing and must be highly coordinated with the
26 Utilities system design and operations in mind.

1 Experienced and trained engineers will still need to model the system accurately using
2 the industry-standard planning tools, design protective circuitry to ensure expected
3 system responses to faults, model contingency configurations when storms or electrical
4 faults occur, forecast load growth and atrophy, configure distribution automation
5 systems, perform testing and asset maintenance, maintain integrated communications and
6 facilitate the interconnection of distributed energy resources. The data and integrations
7 necessary to accomplish this work have to proceed concurrently with the data platform's
8 development. The expansive scope articulated in the testimony of LGC and other
9 intervenor parties including: load management, power quality, coincident peak
10 management, and load factors, will create inherent redundancies of investments by
11 customers and potential reliability risks to the system if not done in a coordinated
12 fashion.

13 Another example of oversimplification and omitted complexity in various witness
14 testimony of the intervenor parties that leads to both cost inefficiency and redundancy is
15 the appeals of the LGC, other intervenor parties, and the OCA for inclusion of detailed
16 and dynamic operational system data in the platform. Farid, LGC Direct Testimony Bates
17 Page 156-158. Dr. Farid proposes a community power aggregation wanting to alleviate
18 congestion on an electric distribution line. This request simplifies the planning process to
19 identify and model congestion and develop solutions. Farid at Bates page 151-152.

20 These requests fail to consider the uniqueness of the physical structure of the New
21 Hampshire distribution system itself, which creates an entirely new set of considerations
22 and implications that customer energy usage data does not. The New Hampshire grid uses
23 significant amounts of high voltage (35KV), looped distribution. Utilizing data from this
24 system requires significant experience with New Hampshire operations' unique aspects.

1 This system works in conjunction with the transmission system in New Hampshire to
2 ensure widescale and reliable operations.

3 Without considering the transmission system's impact, operators cannot model the effects
4 of operations on the distribution system, and consequently, platform users cannot make
5 use of or generate any benefit from access to system data. The substantial risks
6 associated with including system data, however, will certainly exist, and the likelihood of
7 their occurrence will be greater the less these considerations are understood. Assuming
8 that at some point the inclusion of system data gets revisited and should the security
9 concerns mentioned earlier be successfully addressed, attempting to offload the
10 complexities of system operations onto software applications added to the data platform
11 will require tremendous and redundant levels of effort and costs to customers.

12 Should the ideas in these proposals be adopted by the Commission, New Hampshire will
13 serve as a beta test platform for unproven technologies to pursue a "new paradigm"
14 (McGhee, Bates page 29) with attendant risks, costs, and limited knowledge of the
15 benefits to New Hampshire residents, all while being governed by a quasi-independent
16 body that has minimal accountability to the regulatory process or authority of the
17 Commission. This, by extension, entails a lack of financial or legal liability or
18 accountability should mistakes or bad decisions be made about platform operations and
19 functionality (including user authorization and types of data included) that have financial,
20 operational and legal consequences.

21 **Q. Are there multi-state operational factors that should be considered when**
22 **determining the value or cost effectiveness of a statewide data platform?**

23 **A.** To extent the intervenors have argued for central platform functionality that replaces
24 certain customer engagement platform functionality, planning and analysis systems or
25 distribution monitoring and control systems, care should be taken in assuming systems

1 savings. The utilities participating in this docket are multi-state companies. These
2 applications will continue to exist and be used by the utilities to engage with customers or
3 plan, operate and maintain the distribution system. Any applications developed related to
4 these systems will likely be redundant to the utility systems without the savings
5 discussed.

6 **Q. Some of the intervenors have made various arguments relating to fostering**
7 **competition and competitive markets. Do you have a response to those arguments?**

8 **A.** Yes. In their testimony and in responses to data requests, certain of the intervenors have
9 contended that the purpose of the platform is to foster competition consistent with the
10 restructuring law, RSA 374-F. See Below, EU to LGC 1-001. While there is no direct
11 reference to competition or RSA 374-F in the law establishing the platform, it is likely a
12 reasonable conclusion that the platform would support competitive activities. However,
13 what these intervenors seem to ignore is that RSA 374-F does not require for competition
14 in a vacuum.

15 While we the witnesses for the Utilities are not attorneys, it has been explained to us that
16 the New Hampshire Supreme Court has weighed in on the issue of competition under the
17 restructuring law. In *Appeal of Algonquin Gas Transmission*, 170 NH 763 (2018), the
18 Court spoke to the issue of competition issue as it relates to the restructuring law. The
19 underlying issue in the Algonquin case is different than what is presented in the data
20 platform, but the Court's pronouncements on the purposes of the restructuring law are
21 still directly applicable here. As stated by the Court in that case:

22 Pursuant to its plain language, and reading the statute as a whole, we
23 discern that the *primary intent* of the legislature in enacting RSA chapter
24 374-F was *to reduce electricity costs to consumers*. See RSA 374-F:1, I.
25 We disagree with the PUC's ruling that the legislature's "overriding

1 purpose” was “to introduce competition to the generation of electricity.”
2 Rather, as the statute provides, the legislature intended to “*harness[] the*
3 *power of competitive markets,*” RSA 374-F:1, I, *as a means to reduce*
4 *costs to consumers, not as an end in itself.*

5 *Algonquin*, 170 NH at 774-75 (emphasis added). As we understand it, based on this
6 decision the purpose of the restructuring law is not to merely foster competition. Rather,
7 to the extent fostering competition reduces costs to customers, it is consistent with the
8 law. Accordingly, the argument that competition is to be encouraged without regard to
9 cost because that is what restructuring intended, is incorrect.

10 **Q. And does this decision tell you anything else?**

11 **A.** Yes. Beyond this decision telling us that we are not to follow a competitive route merely
12 because it appears to be more competitive, it also tells us that costs must be considered.
13 To this point, the intervenors that have been pushing for a more expansive platform on
14 the basis that competition is to be supported have, at the same time, either been silent
15 about costs or have even contended that costs should not be a factor in the Commission’s
16 decisions in evaluating the platform. The *Algonquin* decision tells us that competition is
17 to be supported to the extent it reduces costs to customers, and, therefore, costs must be
18 considered by the Commission and intervenors supporting an expansive platform should
19 be required to justify not only the function of that design, but also justify with clear
20 information how that design will actually reduce costs. The requirement to justify costs
21 would also be in line with the data platform’s requirement that the Commission not
22 implement the platform if it finds that the costs are not reasonable.

23 **Q. Does this conclude rebuttal testimony for all witnesses of Eversource and Unitil?**

24 **A.** Yes, it does.