DE 19-197 Statewide Multi-Use Online Energy Data Platform
Scoping Comment Solicitation - Responses by Kat McGhee

SB 284-FN (2019) amended RSA chapter 378 by adding a new subdivision entitled "Multi-Use Energy Data Platform," effective September 17, 2019. The Commission opened DE 19-197 on December 13, 2019 to determine the following aspects of the platform during DE 19-197: (1) the governance, development, implementation, change management, and versioning of the energy data platform; (2) standards for data accuracy, retention, availability, privacy, and security, including the integrity and uniformity of the logical data model; and (3) financial security standards or other mechanisms to assure third-party compliance with privacy standards. RSA 378:51, II. The Commission must also determine whether the costs associated with the proposed platform may be reasonable and in the public interest. RSA 378:51, III.

To better delineate the form that the statewide multi-use online energy data platform may ultimately take pursuant to the directives of RSA 378:51, II, and describe the potential benefits and costs associated with the platform pursuant to RSA 378:51, III, the Commission Staff solicits comment on the below-described aspects of the platform. Commenters are encouraged to cite quantitative data and qualitative approaches from other jurisdictions while addressing the following issues in their comments:

Functionalities

1. What functionalities should a statewide multi-use energy data platform offer to customers, Distributed Energy Resource (DER) providers, Competitive Suppliers, and other users, including any applications and business uses? *Refer to the 'deep dive' into business requirements and requisite data already completed by the OCA in compiling the NH Electric Energy Data Standard (NEEDS) and defined in the 45 pages of definitional framework gained from 2 years of benchmarking as the baseline for what the state desires in terms of functionality.*

2. What level of energy data granularity appropriately balances costs of collecting, storing, and transmitting energy data with the incremental benefits of increased granularity? *Asking people to create requirements of this complexity misses the point of the project to date. These considerations have already been refined into a start point that is viable for answering the functionality questions. The NEEDS phase one discovery has provided a framework which should be the topic of conversation among the parties to the technical discussion. Asking for design by committee is regressing the project and increasing the likelihood that the primary focus will be lost and the costs will be higher than needed, by returning to square one.*

3. How often should the data be updated? The idea of a database that supports constantly changing aggregate data is that it will be maintained by technology professionals who

understand the necessary regularity for updates and versioning. *In a software project, questions like these are not up for debate or simply a function of the opinions of the parties. It will grow out of the technical collaboration and evolve to the place that makes sense based upon a number of constraints that are not yet known. These are questions to be answered by a technical project manager during the software development effort that cannot be prescribed through conjecture at the outset.*

4. Should the customer data platform focus only on energy usage data as measured at the meter, or include other data and/or data sources? If other data sources, how should those sources be included and at what cost? *The NH Electric Energy Data Standard (NEEDS) has already asked and answered these critical questions. Perhaps we could agree to partner with a third party New Hampshire institution in order to create a sandbox to look at what we have as of today before we ask everyone to separately recreate a very complex wheel for which an initial blueprint has been defined.*

5. Is the energy data platform under consideration in this docket the appropriate mechanism to provide information on energy system data? Why or why not? *Yes. As we heard from Mission Data and others, and as Commissioner Bailey, OSI and I all heard at the ISO/NE Strategy meeting this past fall, a global move toward data portability and aggregation of energy data to mobile devices is where DER's are moving. Questions around real-time usages, adapting to a variety of meter technologies and proper sizing and management of resources based upon the ability to measure and manage energy in one place are part of the learning curve that comes with any innovative technology undertaking. Wondering whether or not it is the right mechanism is really not in question. This is the right direction and that is why there is so much interest in the NEEDS project. The main questions around the project are centered around how well the project will meet its objectives and whether we will manage this technology project appropriately to realize the potential it represents.*

Existing Opportunities for Energy Data Access

1. What are the capabilities of the currents platforms through which customers can access their energy data? (Unitil and Eversource both currently offer Green Button Download My Data for their electric customers, and Eversource offers further services to customer through its customer engagement platform) *The traditional customer energy data platforms provide users with the data they manage. The NEEDS platform would allow aggregation of all metered data, in front of and behind the meter. This ability to see and manage usage opens up all kinds of ability to understand and use data that is currently elusive and difficult to harness for action. The already developed (35) use cases for the NEEDS platform would answer this question in some detail - which is why I kept referring to the work already done and the fact that if this is not run as a software project on a parallel track, the stakeholders will be spinning their wheels trying to reconstruct analysis already done to provide NH with a perfect launch pad for this undertaking. The starter set of requirements and use cases is in hand and it is a logical place from which to begin discussion - because it includes a review*

of similar efforts around the country and includes the benefit of lessons learned in a way no set of questions to a crowd of stakeholders could ever recreate.

2. Are capabilities of current platforms a function of current metering/billing infrastructure? If so please describe that infrastructure. *In my understanding, the metering and billing infrastructure supports traditional electric meter billing and some ability to tag on DER metered info upon request. There is no ability to get an aggregate picture or to combine utilities, coops, municipalities or microgrids in a useful way for entities beyond individual customers. In the utility model they are set up to serve their customers and that means a different set of expectations and questions of data privacy and liability. In the NEEDS (NH Electrical Energy Data Standard) these questions will also be addressed, but the point of the statewide, multi-use, online energy platform will be to support new configurations and research into the ways in which we maximize grid modernization and DER deployments, rather than trying to cobble together what is happening after the fact. We cannot be data-driven if we do not have the data in a way that serves the state as well as the customers. The utilities provide varying levels of customer tools. The idea of the state leading a project to produce a future-proof platform that aids all of our other policy and energy management efforts is the difference between a utility lead project, and one that the state helps lead.* Is it possible for existing energy data offerings overlap with, but not be duplicative of, a statewide energy data platform? If so, please explain how. *The requisite data for the NEEDS will be supplied by the utilities. So from this standpoint, of course there is overlap. If you listen to any municipalities who have moved aggressively toward clean energy investments, you will hear stories of how laborious it is to compile the DER data with the traditional energy usage. I believe Hanover said 6 month of work was required and at the end of the goat- rope, they realized that their point in time data was just that. A point in time that would go out of date immediately and it would take another 6 months, to update. So while there is overlap in the data, it is the proper reconstitution of data and the ability to build a tool that gets us to the 35 defined use cases (and potentially more that we uncover via the collaboration) that will move us into the 21st century with the ability to adapt to the rapid changes technology is likely to undergo as the transition efforts to new forms of energy reliance increase.*

3. Please describe the approximate customer participation in existing platforms and any marketing strategies are employed to maximize customer participation. *No clue.*

Database Structure and Management

1. Please describe any preferred approaches to governance, development, implementation, change management, and versioning of the platform. *As a phased software project, it is important to understand that many of these questions belong to upcoming phases of the collaboration. In a waterfall project the high level phases are:*

The problem I have been trying to relay in my interactions with the PUC is that the
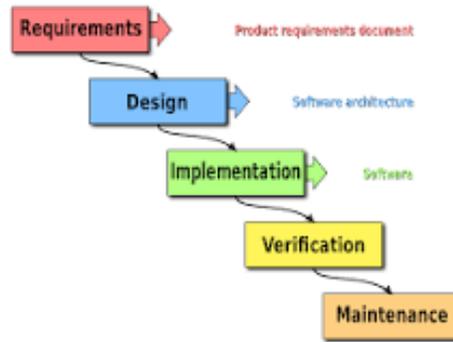
requirements phase has been completed by OCA's technical resource so that the architecture of the platform can easily be moved into software design. The conversations about implementation, testing, governance, whether to buy or build, privacy, liability, maintenance are all subsequent conversations that can only occur once the technical project begins in earnest and the parties can discuss and review the software architecture that comes out of the conceptual design phase and move into the 'sandbox' where the software can be seen/tested. It appears there is some question as to whether we should use the requirements and design that resulted from the last two years of work by the OCA (and the passing of SB284). But we cannot answer the questions in item 1. under Database Structure and Management without beginning to work together from the existing framework that led us to entreat the state, the governor and the PUC to approve 'this project' under SB284. SB284 was not a request to start the effort from scratch. It was a request for approval of a project already well defined by a logical data model that meets the needs of a statewide, multi-use, online energy data platform.

2. Please describe any preferred standards for data accuracy, retention, availability, privacy, and security. *Again, this is all a natural part of the software engineering process and these questions will be answered once the collaboration on software is underway. If we list answers here, they have very little meaning because they are not tethered to a tool that lives in reality. We need to begin testing what we have outlined to date in order to make the conversation real.*

3. Please describe any preferred approaches to utility design and operation of the platform, including but not limited to a common landing page connecting to the data and/or relevant web pages of individual utilities, or alternatively, a single jointly designed and operated database. *There is no common landing page envisioned. That is the concept of a user page like the ones at the utilities. The NEEDS is a back-end data service that can have a number of user facing applications that leverage its data. We are not trying to design the user experience. We are trying to make sure whatever user experience is needed in the future, it can be accommodated by the statewide, multi-use, online energy platform. If we build it, they will come. User applications from the utilities and others will grow up out of the ability to access data. But the goal is to put together the disparate energy data in one*

place, to support all that will be enabled down stream.

4. Please comment on the definitions of the terms "common base of energy data," and "user-friendly interface," and describe how they relate to preferred database structure and management approaches. *'Common base of energy data' is not a term with which I am familiar. I assume it means a 'one stop shop'. The idea is that all forms of electricity powering the state should be available via a database that makes it useful. 'User-friendly' means easy to use. But we are not talking about creating an application for the user. We are talking about making it possible to access the data in such a way that applications can be built that are user friendly and able to roll up the data into meaningful management levels. This work has already been defined in the 'deep dive' into the business requirements that was described in our technical session by Jim Brennan of OCA.*

Community Level Data

1. What is the current process and costs associated with accessing community-level data, how long does the process generally take, and who pays the cost? *No idea.*

2. What type of data is necessary for a community seeking community choice aggregation to competitive suppliers? *The needs of the community level data seeker have already been defined in the initial data model work and requirements definition undertaken by OCA.*

Costs and Benefits

1. What are the likely incremental benefits and costs of a single statewide database compared to utility specific energy data access mechanisms? *The benefits of being able to harness our electric usage data as the management of DER becomes more unwieldy cannot be overstated. It was the number one point of the international keynote speaker at the ISO-NE strategy conference. That the lack of ability to see and manage the DER is the single most intractable problem in moving to grid modernization. It appears when something is brand spanking new, people have a really hard time understanding it without likening it to something else. This is a move forward. If we make better energy investment decisions and can manage not only DER deployments but also their interactions with the overall grid stability, then the incremental saving will be marked. ISO-NE could use this tool as well to understand the true nature of all assets for planning purposes. Right now, behind the meter generators are a rag-tag set of resources. Truly understanding what we would be able to do if we have the data to be able to see, measure and manage these resources as part of a modernized grid system is the immeasurable benefit of pursuing this project.*

2. Is there an annual cost associated with maintaining Green Button Connect certification? *I'm sure there is - but someone else among these stakeholders will be able to answer this question.*

3. Should costs associated with a statewide platform be recovered from all ratepayers or through user fees for those seeking: (a) individual data; or (b) aggregated and anonymized

community-level data? *Both. Once a pricing structure is identified for the different types of data seekers, that money will be used to offset costs that will be spread among all users. At least that is what I would imagine is the most reasonable allocation of cost sharing. The initial cost of running the software collaboration can be kept significantly lower by using all the preliminary work undertaken by the OCA. A sandbox for the initial straw man design and testing must be set up somewhere, UNH Innovation Lab, Dartmouth College Thayer School or ... this is where the testing ground for the concepts begins. There will need to be an identified technical lead from the state as handing the project off to the utilities without any ownership represents a sure point of failure. SB284 identified the need for a technical project lead salary as a cost of getting the project going. A more fulsome discussion of this role and how to fill it is an important next step. The sooner a person is brought in and gotten up to speed, the likelier the state can clear up any confusion about how to proceed. The fee for use once the data tool is online is a part of the collaborative project that will need to define along with all the policy guidelines and governance pieces which are separate from making the database work as intended by the state.*

4. How might a user fee for the database be structured? *I believe this question is premature. There are multiple complexities in just the 'data seekers' that will need to be reviewed once we figure out whether we have 35 use cases or 50 use cases that the tool will service in terms of data users.*

Phasing/Deferral

1. Are there any functionalities which should be considered for deferral or phased implementation during deployment of any energy data platform? *Good question. But it is also one that must be answers as part of the technical project management. Why? Once the effort of building the software pieces becomes clear, then the technical project lead will determine whether phasing is indicated. We cannot know the nuances or constraints until the technical software project is underway. A project schedule for the platform will be the first place where such a question can be answered.*

2. How should an energy data platform be designed so that it includes the possibility of reasonably foreseeable functionalities whose costs may not be reasonable at this time, or future functionalities which may not be foreseeable at this time? *When we heard the initial technical presentation by Jim Brennan he mentioned this very thing - in the software world it is called 'future-proofing'. The data standard design that is on the OCA server waiting to be leveraged has already taken this factor into account. It refers to allowing the data standard design to be able to expand to include future DERs that are not yet known or deployed - by standardizing the data inputs so that we can plug and play additional data sources into the platform as they arise. All of this is done by technical people, so that lay people like us do not have to try to solve these issues. But*

the consideration of future-proofing has already been included in the NEEDS (NH Electric Energy Data Standard).

Privacy Thresholds

1. Is there a threshold standard for energy data aggregation and anonymization that the Commission should adopt to enable multi-tenant property owners to access whole building energy data while also protecting the privacy of individual customers? *Technical discussion is required for how to properly address this question. There are examples of other states in various stages of development and there is a national energy data standard which is already integrated into the 45 pages of data model designed by OCA in its pursuit of SB284.*

2. Is there a threshold standard for energy data aggregation and anonymization that the Commission should adopt to enable access to community-level data while also protecting large energy users in a single community from having their data disclosed in a manner which unfairly inhibits their business practices or might disclose trade secrets? *The tool is opt-in for privacy purposes. The ways in which data will be anonymized for roll up purposes - to make the data into useful information is a technical conversation with the utilities. There are 45 use cases for how the data might be made useful. Each will be vetted and tested and the issues arising from that work will inform this answer. This is a new paradigm; the answers come from the work.*

Obligations of Database Users

1. Is there a qualification and/or registration process that third parties must complete in order to access either individual or community level data? If so, please describe or provide an example of such a qualification and/or registration process. *This process is TBD. However, user data will be private unless the user opts in to allow third parties to see an anonymous version of their data for research and deployment planning.*

2. How long should the registration or certification be in effect and how often must it be renewed? *Another question for the pile. TBD. How would anyone know this when we have no such tool today? The stakeholders might have some thoughts, but the development of the platform will help them review and address questions like this.*

3. Should third parties be required to execute non-disclosure agreements, cybersecurity agreements or other similar agreement? If so, please describe or provide an example of such an agreement. *I would imagine the answer is yes. But what type, when and under what circumstances are TBD. When the security, privacy and liability conversations occur, these are among the questions in need of answers. You can never know the answers to these types of questions before you have some definition of the software tool understood by the parties. It might make people feel better if we try to fashion an answer now, but it won't be based upon anything real until we have a tool that we can discuss, play with and test. What we*

need to make people feel better is a project schedule for the technical project that includes decision points. Then people will know where the issues will be addressed.

4. Should third parties be required to meet certain financial security standards or other mechanisms that may be warranted to assure third parties comply with privacy, cybersecurity, or other standards. If so, please describe or provide an example of such mechanisms. *There are already tools in use that address all of these concerns. The technical collaboration on the software project is where these decisions (about how to incorporate each of these and to what degree and with what vendor or software widget) will be made and the PUC procedural schedule is where the parties will discuss how these issues are being approached and solved - and to ask for approval whenever there is uncertainty or disagreement.*

Issues and Stakeholders Not Yet Identified

1. Are there any stakeholders who have not yet petitioned for intervention but would contribute materially to, and are likely to participate in, the DE 19-197 docket process? *It is likely that a third party entity will be needed to 'own' or 'house' the technology project, simply because the state does not appear set up to do so. Dr. Amro Farid and the engineers in his department at Dartmouth are extremely interested in the potential of the NH Electric Energy Data Standard (NEEDS) for its implications to aid in transforming the current electric ecosystem into a more useful and fully integrated grid. But another potential home or partner might be Marc Sedam, Managing Director at the UNH Innovation Lab in Durham. UNH did not intervene, but they may be the kind of state entity that would have the capacity to help with hosting a software project of this type at least until it is ready to move to the step of build or buy. The fact that there is no owner from the state at this juncture is a huge roadblock on what will be a fairly complex technical undertaking. I spoke of this in my intervenor's request and tried to reiterate it at the hearing, but it seems as though we are talking past each other in terms of what makes this project unlike other PUC collaborations. Without informed technical oversight from the state, leading the project, it will be unlikely to succeed. So reaching out to the higher education partners to determine whether they would be interested in working with the state on this project would help solve an open question of where the state ownership and leadership will reside. In Project Management (especially software project management), every project lives with the triple constraint (time, scope and cost). In this project we have the scoping pretty much ready to go and we have a rough idea on the timeline. We need a technical project lead to get us to the point where a realistic timeline, necessary resources and projected costs can be defined; and without that technical project lead, this important analysis cannot happen. Making sure the knowledgeable technical stakeholder are able to align goals and to become familiar with the work already completed is also an essential success factor.*

2. Are there any foreseeable issues that should be covered in this docket that are not yet

identified in the list of issues and questions above? If so please describe those issues.
The issue of state leadership for this project is essential. That leadership must have sufficient technical understanding not to derail the software pieces of the project that will either make or break its usefulness to the State of New Hampshire and all the data seekers who will benefit from use of this data platform. Although we all listened to a high level overview of the NEEDS developed within OCA, we seem to have dismissed its existence in favor of starting at square one. Since I am familiar with the NH electric energy data standard, I will continue to advocate for keeping costs low for ratepayers by starting at our considerably advanced starting line, rather than scrapping the states' excellent work to allow stakeholders to define a project that we have already spent two years scoping. Last but not least, I want to mention that technical projects have one thing in common with non-technical projects: designing by committee does not work. We must use our best and most knowledgeable resources to get this innovative and much sought after project off the ground. If we try to run a software project as though it is a non-technical project, we are unlikely to succeed.