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March 11, 2020

Ms. Debra A. Howland
Executive Director
New Hampshire Public Utilities Commission
21 South Fruit Street, Suite 10
Concord, New Hampshire 03301

Re: Docket No. DE 19-197 Electric and Natural Gas Utilities - Development of a Statewide, Multi-Use Online Energy Data Platform Scoping Comments

Dear Ms. Howland:

Pursuant to the procedural schedule approved by the Commission in the above-referenced docket on February 14, 2020, the Greentel Group is submitting this letter as its written comments on the scope of this proceeding. Commission Staff filed a memorandum on February 10, 2020 with specific scoping questions, which we have provided our responses to below. We have included certain perspectives and recommendations, based on our deep experience in other jurisdictions with the issue before the Commission - the development of a statewide platform for the sharing of energy data - with the goal of conveying the tangible benefits of this platform to New Hampshire's energy economy.

I. Context

The energy system in New Hampshire (as elsewhere) faces inevitable change. Technological advances in how citizens and businesses use and manage electricity – from smart thermostats to electric vehicles – are reshaping when, where, and how much electric power the grid needs to deliver. Dramatic cost reductions in decentralized, distributed resources are creating cost-effective opportunities for these same customers – individually and in businesses and communities – to generate and manage their energy use (electricity and natural gas) locally and more actively.

In the following Responses to Staff Questions, we aim to identify how New Hampshire can maximize the breadth and depth of benefits to its citizens, communities and businesses (including utilities) as these changes take hold. Timely access to useful data is foundationally important to capturing these benefits, which include: maximizing private sector innovation during grid modernization, streamlining the regulatory process and enabling the retail electricity sector, increasing the options available to businesses to manage their bills and

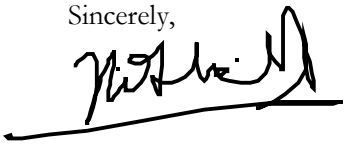
achieve resiliency, supporting local empowerment and community choice, and creating the full range of economic opportunity for New Hampshire.

We believe the data platform concept holds great promise to realize the possible benefits described above. In addition to our individual responses, we encourage Staff to consider the following in moving forward:

- **The range of use cases and benefits expands significantly when customer data can be used on combination with system data:** we provide examples of how combined data can accelerate market activity, and describe how a "single source of truth" for data supports streamlined regulatory proceedings;
- **Implementation approach and governance are key success factors:** No idea, no matter how worthy, implements itself, and we offer practical considerations for Staff. New Hampshire will realize the greatest benefits from a consistent Statewide data environment (in terms of data definitions and access standards), and we encourage Staff to fully examine potential implementation approaches to ensure that this key feature (State-wide consistency) is preserved. In terms of governance, we support the idea that the development and operation of the platform should be solely in the broadest public interest; given the range of beneficiaries from data availability (as we describe in our responses), we believe independence in development and operation of the platform should be a primary consideration.

Finally, we thank Staff for the opportunity to provide these responses. The potential in a data platform is great, and we hope our information and perspectives are helpful to Staff in moving forward quickly.

Sincerely,



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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?**

Functionalities

A statewide multi-use energy data platform should offer the following functionalities (overall and by user type). Given that staff has requested responses regarding only customer and system data, these functionalities are limited to this context and can be expanded to include market/financial and DER data.

Data Format
Data is accessible to all platform users in API , electronic, machine readable format
Data is accessible to all platform users in downloadable, machine readable format
Data Type Availability
Platform will make available **customer data to approved CPAs or otherwise upon customer consent** (
Platform will make available **anonymous aggregated customer data**
Platform will make available **system dat**a
Customers & Communities
Communities can authorize CPAs to access customer data for the purposes of SB 286 by approval of an Electric Aggregation Plan
Customers can authorize third parties to access customer data via 1-click electronic authorization
Customers can access customer data via both data formats stated above (downloadable/API)
Distributed Energy Resource (DER) providers
DERs providers can access **customer data** upon customer consent
DERs providers can access **anonymous aggregated customer data**
DERs providers can access **system data**
Competitive Suppliers
Competitive suppliers can access **customer data** upon customer consent
Competitive suppliers providers can access **anonymous aggregated customer data**
Community Power aggregators (CPAs)
CPAs can access **customer data** for the purposes of SB 286 after approval of an Electric Aggregation Plan

CPAs can access **anonymous aggregated customer data**
CPAs can access **system data**
Utilities
Utilities can provide **customer data** to customers to inform EE programs (1-stop shop platform for customers)

Use Cases

Timely access to useful data is foundational to a range of applications and use cases that create value. This value is derived from both customer energy use data, as well as system data. The following table summarizes the potential value (business uses) that would result from the availability of individual customer or system data elements:

Data Type	Data Element(s)	Individual Value
Customer	Interval Usage	Identify a much broader set of potential customers that are strong candidates for DERs by comparing customer interval data (e.g. load profiles) to DER performance characteristics.
Customer	Customer Class	Model potential customer-sited solutions based on the quantity/proportion of customer type (residential, commercial, industrial, agricultural) on a given feeder, based on the service each solution could provide.
Customer	Tariffs	Understand the current customer rates and identify alternative tariffs that would maximize savings.
Customer	Customer Bill	Provide 'billing quality' bill comparisons to track energy savings from solutions

Customer	Location	Understand which feeder to analyze to anticipate and avoid grid constraints while minimizing interconnection costs
System (Grid Condition & Performance)	System Elements	Independently estimate the deferral value of a non-wires alternative project by understanding system elements such as the rated capacity of transformers and circuits in order to assess level of congestion.
System (Grid Condition & Performance)	Hosting Capacity	1. Evaluate opportunities to increase hosting capacity for DER on a circuit by including storage in areas that could benefit from its advanced functionality. 2. Assess DER project development risks by independently evaluating causes of hosting capacity constraints.
System (Grid Condition & Performance)	System Elements, Network Demand	Independently identify areas with increasing congestion ("low headroom") that are emerging opportunities for non-wires solutions by using network demand data alongside the sizing of feeders to assess the spare capacity trends.
System (Grid Condition & Performance)	Power Quality	Independently identify opportunities for DER to alleviate voltage and power quality issues.

Business uses of even greater value are possible when different data types can be used in combination. Described below is a use case for business uses that depicts how a DERs provider would leverage data to scope a solution to maximize value to the customer.

Use Case: DERs provider deploys solution for customer

Stage 1: Scope custom DER solution for customer that maximizes value	
Customer Data	• **Customer Class:** Ability to quickly screen location to determine whether it serves the developer's target customers (residential, commercial, agricultural, industrial). • **Interval Usage:** By analyzing interval usage data, developers can quickly screen potential customers to determine whether a DER solution is viable and if so, what specific DER solution and operational characteristics would most benefit a customer.
Stage 2: Optimize DER solution to anticipate and avoid grid constraints while minimizing interconnection costs	
Customer Data	• **Location:** Ability to determine which feeder the customer is on to identify potential grid constraints
System Data	• **System Elements:** Provides context on the physical attributes of the grid, such as the rated capacity of transformers and circuits as well as topology of distribution feeders, which leveraged alongside the system data below can be used to determine potential constraints. • **Network Demand:** Used in tandem with system elements, developers can assess level of congestion and spare headroom which allows them to optimize the DER solution to avoid grid constraints and/or anticipate potential interconnection costs.
Stage 3: Optimize customer business case to maximize potential savings by selecting the best tariffs	
Customer Data	• **Customer Bill:** Ability to compare historical bills and estimate savings from energy solution • **Customer Bill & Tariff:** Understand potential customer value of optimized DER solution using current tariff
Market Data	• **Tariffs:** Ability to assess and compare potential customer value of optimized DER solution on current vs. available tariffs.

We have also developed use cases that show how data can be leveraged to not only provide customer but grid value aka accelerate grid modernization. Per the NH PUC staff report, tackling grid modernization requires regulatory reform in three key areas: 1) Distribution Planning, 2) Market Operations and 3) System Operations. Meaningful regulatory progress requires regulators, utilities and DERs providers to innovate and work collaboratively to develop a DER-supportive regulatory framework - data provides a common foundation to enable this collaboration. Per staff requests, we are happy to provide additional use cases on how data can achieve the following objectives:

- Accelerate grid modernization at each stage in the regulatory process to create new markets for DERs and;
- DERs provider participation in new markets created as a byproduct of grid modernization.

2. **What level of energy data granularity appropriately balances costs of collecting, storing, and transmitting energy data with the incremental benefits of increased granularity?**
3. **How often should the data be updated?**

Combined Response to Questions 2 and 3

The following table summarizes data granularity and specification for customer data; data provided to these specifications would be fully supportive of the value streams identified throughout this response. Information and perspective on balancing cost with value is described in our response in the 'Cost and Benefits' section.

Data Elements	Data Points	Interval	Historical	Update Frequency
Customer Class	• Residential, Commercial, Agriculture, Industrial	As Changes Occur	N/A	As Changes Occur
Tariffs	• Customer specific tariff • All available tariffs (customer specific)	As Changes Occur	N/A	As Changes Occur
Customer Bill	• Customer Name • Address • Monthly Billing Information	Monthly	2 years	Monthly
Customer Interval Usage	• Service point/Meter ID; • Account number or Electric or Gas Choice ID; • Time stamp for each meter reading; • An identifier of the quality of the data (estimated, billable, etc.); • Interval usage as registered by the meter; • Peak Load Contribution (Capacity and Transmission)	• 5 minute • 15 minute • 1 hour • (as available)	2 years	Monthly
Location	• Feeder ID • Node • Region • Pricing Zone	As Changes Occur	N/A	As Changes Occur

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?**

As demonstrated above, energy usage data is just one ingredient in identifying and developing opportunities to create value for customers and other key stakeholders through a range of possible solutions. Along with energy usage data, the following data elements support analyses that can give customers (citizens, communities, businesses) a clear picture of the potential opportunities and maximize the value of a solution.

- Customer Interval Usage Data
- Customer Class
- Tariffs
- Customer Bill
- Location

Use cases on how each data element creates value for customers and third parties can be found in the 'Use Cases' section.

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?**

As demonstrated above in just two examples, the combination of energy system data, customer energy usage data, and market/value data improves the ability to identify potential solutions for customers (citizens, communities, businesses) that can be implemented more quickly and successfully. This is achievable because system constraints/opportunities, interconnection costs and customer value can all be considered at the same time. Such solutions are usually offered by third parties in the energy services, distributed energy resource, energy management, or similar industry segments. Such solutions are identified and proposed in response to utility procurements, community solicitations, or individual customer buying decisions. In all these cases, timely project success is supported when solution providers are informed by all types of data (customer, system, market). Conversely, experience from other jurisdictions has shown that when solution providers are forced to seek system data on a utility-by-utility basis, the underlying format, quality, and access differences pose a significant headwind to project development and success.

To support the kinds of value described in these responses, we recommend the PUC require the multi-use data platform provide the following system data information:

Data Elements	Data Specification	Time Series Interval	Historical	Forecast	Update Frequency
System Model	• Assets(s) Rating Capacity/Sizing • Asset(s) Age • GIS Map	N/A	N/A	As available	Daily/Weekly (Updated as new assets are mapped, deployed and/or replaced
Hosting Capacity (By Feeder)	• Methodology Employed • Underlying Data Inputs and Assumptions (System Model, Forecasted Demand, Forecasted Generation, Projects in Queue) • Reasons for Hosting Capacity Constraints	1 hour	2 years	As available	Weekly/Monthly
Network Demand (By Feeder)	• Interval Demand & Forecasts • Minimum and Peak Demand & Forecasts • DER Generation & Forecasts	1 hour	2 years	As available	Weekly/Monthly
Power Quality (By Feeder)	• Voltage • Frequency deviation • Wave Form	15 minute	2 years	As available	Monthly
Reliability Statistics (By Feeder)	• Outage time stamp and duration • # of customers out and interrupted • Sustained and Momentary outages by day	Daily	2 years	As available	Monthly
Customer Type by Location w/ Service Need	• Current Customer Class/Type • Forecasted Customer Class/Type			As available	

In addition, system data access is being considered in the grid modernization docket IR 15-296. The most recent staff memo stated that stakeholders agreed that baseline data is needed for each utility distribution system prior to filing of the IDPs to help inform Stakeholder input for utility preparation of the IDPs, and that data should be provided on an individual circuit level. The baseline data identified is included with the staff memo.

Existing Opportunities for Energy Data Access

1. **What are the capabilities of the current 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 data environment (how third parties access the data) is as important as the data types and elements when it comes to the success of any platform. Green Button Download My Data does not meet the standards identified in the next section.

2. **Are capabilities of current platforms a function of current metering/billing infrastructure? If so please describe that infrastructure.**
3. **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.**
4. **Please describe the approximate customer participation in existing platforms and any marketing strategies are employed to maximize customer participation.**

Database Structure and Management

1. **Please describe any preferred approaches to governance, development, implementation, change management, and versioning of the platform.**

Governance

Access to initially available data through a centralized platform is likely to have the near-term benefits described earlier in this response but may not by itself lead to the full value that data can unlock. The design of the first version of the platform will reflect this initial availability of data but should evolve relatively quickly to capture the full data set described elsewhere in this response, and should (over time) add functionality necessary to capture the full range of potential benefits. This evolutionary approach to platform development highlights the importance of governance: addition of platform functionality should always be done in a way that maximizes public benefits. Likewise, the specific kinds of capabilities or tools to be added to the platform are decisions that should be based on the needs of the range of stakeholders who would benefit: customers, communities, businesses, utilities, third-party energy companies, public officials and regulators, and others.

We believe the governance approach should reinforce the principle that collaboration among all stakeholders is essential to developing and operating a platform that generates the full range of potential value. To do this effectively will require independence from all of these stakeholder groups. For that reason, we believe that design, development and operation of the platform independent from utilities, market participants and other stakeholder groups – but advised by these groups - would be the best approach to ensuring platform development in the public interest. This also implies that the State government should have a prominent role in overseeing the development, operation, and evolution of the platform.

Governance considerations factor into other decisions about the design, development, and operation of the platform. These three functions should not be vested in a single organizational entity as a matter of good project development practice, and because that may introduce incentives that are not purely aligned with the broadest public interest. We believe that the best incentive alignment results from combining the design and development functions but separating these from platform operational roles. Combining the design and

development functions helps ensure that the requirements for the platform (developed during the design phase) are actually delivered as the platform is built.

2. **Please describe any preferred standards for data accuracy, retention, availability, privacy, and security.**

Will provide responses in follow-up comments.

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.**

The data environment (how third parties engage with an access the data) is as important as the data types and elements when it comes to the success of the platform. In designing, developing and operating the platform, the following factors should be considered for the data environment:

- **Database Structure:** Platform users require a single jointly designed and operated database for a variety of reasons including the need for a standardized data format and a single access point as discussed below. In addition, developing a single database allows the utilities to develop a common data architecture which is a more cost-effective way to develop the platform.
- **Data Access:** Platform users require a single layer for registration and access to data. Multiple layers of registration, and varied approaches to access data result is a fragmented data environment, with inconsistent accessibility standards, that impedes the ability of industry to identify customers, develop DER proposals to address grid needs, or easily build the business case for project development.
- **Data Format:** Platform users require a common, standard data format across utilities to access data types and data elements. In addition, information derived from underlying data may be based on different assumptions which should be disclosed. Inconsistent data formats require third parties to commit significant resources to develop capabilities to ingest data across a range of formats and engage with utilities when underlying assumptions are not clear. If clear assumptions are not identified, or if disputed assumptions are not resolved, third parties may be unable or unwilling to proceed with proposal development for a given project.
- **Data Timeliness:** Data updates should be timely and schedules should be published and adhered to. Third parties often face a choice of developing their own data at their own expense – when that is possible – or choosing to no longer propose projects because timely data is unavailable.
- **Data Scope:** Data scope should be focused on animating markets to achieve the energy objectives of New Hampshire and the Public Utilities Commission.
- **Market Engagement:** A single vehicle for stakeholder engagement is required to focus on the data needs of current market participants and aspiring new entrants. The vehicle not only requires focus on market formation but high accountability. Without this vehicle, third parties must either dedicate resources to engage with utilities across a fragmented set of engagement opportunities and venues or limit their involvement to a subset of known engagement opportunities. In the face of this fatigue and burden, inadequate engagement results – third parties may limit their activity to select parts of the state or choose to de-emphasize NH as a source of opportunity.

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.**

Will provide responses in follow-up comments.

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 costs?
2. What type of data is necessary for a community seeking community choice aggregation to competitive suppliers?

Will provide responses in follow-up comments.

Costs and Benefits

Empowering market players to deploy innovative customer solutions provides the greatest opportunity to reduce energy bills and energy rates. Data access is a critical component to capturing this opportunity and should be considered a foundational investment in driving long-term ratepayer savings. DERs can reduce energy bills while providing grid services to defer capital expenditures, competitive energy suppliers can reduce generation costs with more competitive prices and more. Other jurisdictions and existing studies can provide examples on the favorable cost-benefit ratio of various customer solutions which should be considered when evaluating cost of the platform and potential infrastructure investments to support the platform such as advanced metering infrastructure.

1. **What are the likely incremental benefits and costs of a single statewide database compared to utility specific energy data access mechanisms?**

A single statewide database numerous advantageous benefits vs utility specific energy data access mechanisms. Below we provide a table detailing the various benefits across each factor.

Factor	Single statewide database (Benefits)
Cost	Building a single user interface and database requires one implementation and is hence more cost-effective. In addition, this would streamline a common data architecture across all NH utilities driving operational efficiencies.
Cybersecurity	More secure due to centralized security, controlled and enforceable standards, and consistently implemented protections across the entire

	platform as opposed to fragmented security measures implemented across multiple systems.
Ease of market participation	Allows market participants one-stop shop to access multiple data types to participate in a market or across multiple markets

2. **Is there an annual cost associated with maintaining Green Button Connect certification?**
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?**

Per the explanation above, this platform has the potential to enable long-term ratepayer savings far exceeding potential costs associated with the statewide platform. Thus, it would be appropriate for costs to be recovered from all ratepayers given this is a relatively small investment given the significant potential of market solutions to reduce energy bills and rates.

4. **How might a user fee for the database be structured?**

Per the response to #3, we believe data access should serve as a public benefit with no user fees for platform users.

Phasing/Deferral

1. **Are there any functionalities which should be considered for deferral or phased implementation during deployment of any energy data platform? Why?**

When developing a software solution, it is critical to develop an implementation roadmap that prioritizes functionalities and deploys them via a phased, agile implementation. The roadmap should be designed such that the platform is developed in a way that provides immediate value and gradually builds up capabilities in a cost-effective manner. Our approach is as follows:

- **Develop prioritized functionality backlog:** A list (backlog) should be developed that prioritizes the data types and data elements to be implemented depending on which 1) provide the most value to the market and 2) can be made easily available (ex: Digitizing tariff books will take time). Both factors must be considered together when developing a phased implementation plan.
- **Make data available based on existing capabilities:** Any data is better than no data which should be made available immediately to stimulate market activity.
- **Improve granularity of data over time capabilities upgrades:** Depending on which data types and elements are determined to provide the most value, targeted investments can be made over time to improve the capabilities of the platform.

In previous sections, we break down functionalities into two types: Data Format and Data Type Availability. The data format functionality should be an immediate priority for implementation as this serves as the foundation for access to any particular data type. For data type availability, we believe specific customer and

system data elements should be made available immediately depending on the prioritized functionality backlog described above.

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?**

The success of the platform will depend on a strong governance function that brings together the market, utilities and technology experts to design and evolve the platform over time. A key role will be to establish an implementation roadmap, a functionality backlog and a iterative process to review the roadmap/backlog to identify:

- **Foreseeable functionalities whose costs may not be reasonable at this time:** As these functionalities are identified and become a near and/or mid term priority, cost estimates can be developed.
- **Future functionalities which may not be foreseeable at this time:** These can be identified at regular meetings and added/prioritized in the functionality backlog.

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?**

We are not currently aware of a standard. If a standard does not exist, we'd recommend expanding the docket scope include developing one that's dependent on various factors including building size, # of tenants, load etc.

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?**

We are not currently aware of a standard. If a standard does not exist, we'd recommend expanding the docket scope include developing one

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.**
2. **How long should the registration or certification be in effect and how often must it be renewed?**
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.**

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.**

Will provide responses in follow-up comments.

Issues and Stakeholders Not Yet Identified

- **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?**
- **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.**

Understanding value of platform to NH energy goals, PUC ongoing dockets and existing energy markets

New Hampshire's 10-year State Energy Strategy has three core objectives: 1) lowering electricity rates for consumers and businesses, 2) building a more reliable electric system and 3) having a practical approach to protecting the environment. By tapping into creativity and innovation of the markets and utilities, state policymakers have a tremendous opportunity to achieve these goals while creating new economic opportunities for the residents of New Hampshire. The Public Utilities Commission plays a leading role in these efforts tasked with investigating and unlocking these opportunities through a variety of vehicles including grid modernization, demand response, energy efficiency, retail energy choice and more.

With digital transformations fundamentally reshaping every part of the economy, the energy sector must be next if we are to rapidly achieve the state's energy goals. This platform represents an opportunity to realize this digital transformation, establishing one common market foundation to empower the energy markets and the utilities to build the next generation energy economy

We encourage a holistic perspective on the value of the platform that takes into account its significant potential to 1) give the Commission the data they need to move forward in various dockets forward and 2) positively affect all stakeholders and nearly every aspect of the NH energy economy. By simply making two data types available (customer and system data), NH can empower Utilities, DERs providers, Competitive Energy Suppliers, Community Choice Aggregators and more.

We recommend an exercise to map the platform to current relevant dockets before the commission to understand its potential value to ratepayers which could be taken into account when considering the scope and cost of the platform. Below is a preliminary mapping:

Key Areas	**Platform Users**	**Data Types**	**Relevant Dockets**
Grid Modernization	DERs providers, Customers	Customer, System,	IR 15-296, DE 16-576, DE 15-271

Community Choice Aggregation	CPAs		
Energy Efficiency, Demand Response, Peak Demand Reduction	EE providers, Customers	Customer and Market	DE 15-137, DE 14-216, DE 17-136, DE 16-714, DE 17-101
Retail Energy Choice	Competitive Electric Power Supplier, Customers	Customer and Market	

Understanding other data types that could provide value

As previously mentioned, business uses of even greater value are possible when different data types can be used in combination. While customer and system data are most certainly the priority, 1) **Market/financial** and 2) **DER data** complete the picture. We explain how each data type relates and the value of bringing them together below:

1. **Customer - System - DER Data:** Third parties need both types to streamline the customer engagement process , reduce costs, improve customer value and ultimately increase customer acquisition. By anticipating grid constraints and knowing the existing DER queue, third parties can optimize the solution to avoid/minimize interconnection costs. DERs providers can also identify the best opportunities to customer solutions to provide grid value.
2. **Customer - Market (Customer Value):** Need to bring customer and market data together to identify the best tariffs to maximize customer value
3. **System - Market (Grid Value):** Need to bring together customer and market data together to identify the best tariffs to maximize grid value
4. **Customer - System - Market:** Bring together customer value and grid value to synchronize both to maximize value for customer
5. **DER Data:** Utility has visibility into DERs interconnected on the grid and the upcoming pipeline of projects

We have developed detailed tables similar to the one provided above for Market/financial and DER data and are happy to make them available as requested by Commission Staff.