



Integrated Energy Data Resource (IEDR) Use Cases Stakeholder Cover Letter

- **Contact Information for RESA Members Submitting IEDR Case Studies**

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- **RESA's Most Immediate Needs that the IEDR Should Address as Soon as Possible**

- RESA believes that the IEDR should focus on partnering with key stakeholders to standardize and define the data access requirements for ESCOs and other third parties. This includes providing consistent and clear guidance on the step-by-step processes required for ESCOs and others to access customers' energy-related interval data. Additionally, the IEDR data access process should prioritize protecting customers data; this includes the development of uniform cybersecurity and data protection requirements. The IEDR process must also ensure that unnecessary data access barriers are not placed on ESCOs and other third parties that would delay or prevent the development of energy related products and services that benefit customers and help New York achieve its climate and clean energy goals.

- **Criteria Used to Prioritize Initial Use Cases**

- IEDR should prioritize use cases that require access to customers' energy-related interval data in order to develop and offer products and services that would help customers reduce their carbon footprint and energy consumption. Additionally, all use cases selected should include products or services that will assist New York in achieving the state's Clean Energy goals.

Integrated Energy Data Resource (IEDR) Stakeholder Use Case Survey Template

Comments Due: July 23, 2021 to iedr@nyserda.ny.gov

Background and Overview:

The Integrated Energy Data Resource (IEDR) concept has developed through several years of prior work that ultimately led to the New York Public Service Commission's IEDR Order¹ on February 11, 2021. As the resulting IEDR program begins, NYSERDA asks stakeholders to help by identifying, characterizing, and prioritizing a preliminary set of potential IEDR use cases.

The IEDR is intended to eventually support many use cases, but development will begin with an initial set of five to ten priority use cases. These first use cases need to have practical value, urgency, and reliability that a novel data platform can deliver. At the outset, the descriptions of the initial IEDR use cases may be high-level, but specifications will become much more detailed as development proceeds. Also, to achieve a successful launch of the IEDR, we will consider how the initial set of IEDR use cases functions as a portfolio.

To aid our investigation of potential IEDR use cases, NYSERDA is asking stakeholders to use the form provided below to profile use cases that will be most valuable to them. To arrive at consistent profiles of potential use cases, stakeholders, together with the Program Manager and later with the participation of the Solution Architect, will subsequently discuss overlaps, similarities, and differences across their submissions.

Individuals and organizations comprising an industry sector and/or including multiple industry sectors are strongly encouraged to collaborate in the preparation of use case profiles.

The stakeholders' use case profiles will serve as a starting point for specifying and prioritizing IEDR use cases. As the IEDR program progresses, stakeholders may be asked to provide additional details. As potential use cases become better understood, stakeholders should expect their specifications to evolve through peer review.

In preparing these initial profiles, stakeholders should keep in mind that in its Order, the Commission stated that the IEDR is intended to enable use cases that materially improve and/or accelerate investment, operational, or regulatory decisions related to DERs, energy efficiency, environmental justice, or electrification strategies for transportation and buildings thereby facilitating one or more of New York State's REV and CLCPA objectives to accelerate New York's progress toward the climate and equity goals set for the state in the CLCPA and related legislation Orders issued by the Commission. IEDR use cases and their individual goals must be clearly aligned with these statewide commitments.

Instructions for Submitting Comments and Profiles:

Each submission of comments is to include:

- A cover sheet that contains
 - the name and contact information for each of the individual(s) or organization(s) on whose behalf the comments are submitted
 - what are your most immediate needs that the IEDR should address as soon as possible
 - what criteria should be used to prioritize initial use cases
 - if desired, a suggested definition of use case to be used for the IEDR
- A separate use case profile, consisting of responses to the topics below, should be completed for each potential use case presented by a stakeholder(s).
- Each profile should contain:

¹ See New York State Case 20-M-0082 – Strategic Use of Energy Related Data, (Order Instituting Proceeding) (March 19, 2020); and Case 16-M-0411, Summary Report: Distributed Energy Resource Market Enablement Data Needs (filed in the public comments section on January 6, 2020); and Recommendation to Implement an Integrated Energy Data Resource, Case 20-M-0082: Proceeding on Motion of the Commission Regarding Strategic Use of Energy Related Data, a New York Department of Public Service Staff Whitepaper (May 20, 2020).

- a name/description of the use case being profiled
- a response to each topic beginning with an indication of the topic being addressed, up to one page of narrative, and up to one additional page of diagrams, charts, tables, maps, and references (e.g., sources of key claims or evidence). Please specify dates, times, metrics, and quantities when they are essential.

Use Case Profile Form (using fillable form below is optional) :

1) Contributor Name & Contact Information

Enter the name(s), organization(s), and contact information for the contributor(s) of this profile form.

2) Use Case Category

Select and enter one of the use case categories listed at the end of this form.

3) Use Case Sub-Category

Select and enter one of the use case sub-categories listed at the end of this form.

4) What Question(s) Does the Stakeholder Seek to Answer with This Use Case?

Enter the questions that this IEDR use case could answer with information that would be useful to the Stakeholder.

5) What Information Should the Use Case Produce for the Stakeholder?

Describe the type(s) of useful information that the use case should produce.

(a) How Will the Stakeholder Use the Information Produced by This Use Case?

Explain how the Stakeholder will use each type of information produced.

(b) What are the Minimum Necessary Attributes for Each Type of Information Produced?

For each type of information produced, specify the minimum necessary information attributes (i.e. precision, accuracy, granularity, etc.).

6) How Should the IEDR User Interface Present the Information Produced by the Use Case?

Identify one or more useful ways to present the output information to the user (i.e. list, table, graph, bar chart, pie chart, map, ... , etc.). For example, a bar chart that shows the number of electric customers on each of several rates within a zip code.

7) What Type(s) of Data Does the IEDR Need to Analyze for This Use Case?

Identify the one or more types of data - from utilities and/or other sources - that the IEDR will need to analyze to produce useful information. See Appendix B of the Staff IEDR Whitepaper for a preliminary list of data types that could be collected and analyzed by the IEDR.

(a) What are the Minimum Necessary Data Attributes for Each Type of Data Collected and Analyzed?

For each type of data analyzed, specify the minimum necessary data attributes (i.e. precision, accuracy, granularity, age, ... , etc.).

8) What Data Relationships Does the IEDR Need to Analyze for This Use Case?

Identify the one or more data relationships, if any, that must exist in the IEDR to enable the analyses needed for this use case. For example, the user may want to identify EV registrations and electric utility customer accounts that share the same street address.

9) What Data Analysis Function(s) Does the IEDR Need for This Use Case?

Identify the one or more analytic functions that the IEDR must apply to each type of data used in this use case. For example, the use case may require the determination of averages, maximums, minimums, durations, and values greater/lesser/equal/between variables set by the user.

(a) What are the Minimum Necessary User Input Variables Needed to Enable a Useful Analysis?

For each analytic function, specify the one or more input variables that the user must provide (if any) to enable the desired analysis. For each type of input variable needed, specify the type(s) of condition to be applied in the analysis (i.e., greater than, equal to, less than, between, not between, etc.).

10) How Often Does the Stakeholder Expect to Employ This Use Case?

For example: sub-daily; daily; weekly; monthly; quarterly; semi-annually; annually ...

11) How Does This Use Case Benefit the Stakeholder?

Describe how this use case would benefit its Stakeholder(s) and explain how the use case would enable those benefits. Benefits described and explained could include reduced cost, reduced time, greater revenue, reduced risk, increased understanding, ... , etc.

12) Why Should This Use Case Be Prioritized From the Perspective of i) the Industry and ii) the Citizens of New York State?

***The IEDR use case profiles submitted will be shared, and should contain no proprietary information.**

The profiles are regarded as preliminary working papers, and may be revised based on subsequent analysis and discussion. Advocates submitting profiles of similar use cases will work together with the IEDR development teams to come to a consensus. For consistency in development, the IEDR team may elect to format use case submissions into a standardized format such as UML or BPMN.

Use Case Categories:

Enter one of the following use case categories in Part 2 of the survey form.

- DER Development and Use
- Transportation Electrification
- Building Electrification
- Energy Efficiency (EE)
- Electric Utility Function
- Gas Utility Function
- Local Government Function
- State Government Function
- Other (please describe)

Use Case Sub-Categories:

Enter one of the following use case sub-categories in Part 3 of the survey form.

- For DER Development and Use:
 - identifying, evaluating, and/or selecting potential DER locations;
 - identifying, evaluating, and/or engaging potential DER customers;
 - preparing and/or optimizing DER development plans;
 - preparing and/or optimizing DER operating plans;
 - designing, implementing, and/or operating DER aggregations;
 - monitoring and evaluating the deployment and use of DERs;
 - designing and implementing Community Distributed Generation (CDG) solutions; or,
 - other (please describe)
- For Transportation Electrification:
 - identifying, evaluating, and/or engaging existing EV owners/operators;
 - identifying, evaluating, and/or engaging potential EV owners/operators;
 - monitoring and/or evaluating EV acquisitions and uses;
 - identifying, evaluating, and/or selecting potential locations for EV charging facilities;
 - preparing and/or optimizing plans for developing EV charging facilities;
 - preparing and/or optimizing plans for operating EV charging facilities;
 - monitoring and/or evaluating the deployment and use of EV charging facilities
 - other (please describe)
- For Building Electrification:
 - identifying, evaluating, and/or engaging energy consumers and energy managers in existing buildings;
 - identifying, evaluating, and/or engaging energy consumers and energy managers in planned buildings;
 - monitoring and/or evaluating acquisitions and uses of building electrification solutions;
 - building energy benchmarking;
 - identifying, evaluating, and/or selecting opportunities for building electrification;
 - preparing and/or optimizing plans for developing building electrification solutions;
 - preparing and/or optimizing plans for operating building electrification solutions;
 - monitoring and/or evaluating the deployment and performance of building electrification solutions
 - other (please describe)

- For Energy Efficiency (EE):
 - identifying, evaluating, and/or engaging customers with existing EE solutions;
 - identifying, evaluating, and/or engaging potential EE customers;
 - monitoring and/or evaluating EE acquisitions and uses;
 - building energy benchmarking;
 - identifying, evaluating, and/or selecting EE opportunities;
 - preparing and/or optimizing plans for deploying EE solutions;
 - monitoring and/or evaluating the deployment and use of EE solutions;
 - designing and implementing Community Choice Aggregation (CCA) solutions
 - other (please describe)

- For Electric Utility Functions:
 - system planning;
 - DER interconnection;
 - system operations;
 - market enablement;
 - market operations;
 - customer programs and services;
 - regulatory/statutory compliance;
 - other (please describe)

- For Gas Utility Functions:
 - system planning;
 - system operations;
 - market enablement;
 - market operations;
 - customer programs and services;
 - regulatory/statutory compliance;
 - other (please describe)

- For Local Government Functions:
 - building energy benchmarking;
 - Community Choice Aggregation;
 - Community Distributed Generation;
 - facility siting and permitting;
 - environmental justice initiatives;
 - economic development;
 - planning and zoning;
 - other (please describe)

- For State Government Functions:
 - energy-related R&D;
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 John Kern, john.kern@constellation.com
 Shera McFearn, Shera.Mcfearn@constellation.com
 Sam Mermall, Samuel.Mermall@Exeloncorp.com
 Guillermo Pereira, Guillermo.Pereira@constellation.com
 Richard Spilky, richard.spilky@constellation.com

- 2) **Use Case Category** Select and enter one of the use case categories listed at the end of this form.

DER Development and Use: Solar/Multi-facility and commodity product.

- 3) **Use Case Sub-Category** Select and enter one of the use case sub-categories listed at the end of this form.

Other: Designing and implementing a IDER solution combined with commodity to multiple locations under a single commodity/DER contract. As an example, providing solar plus commodity to multiple C&I chain stores across the state.

- 4) **What Question(s) Does the Stakeholder Seek to Answer with This Use Case?** Enter the questions that this IEDR use case could answer with information that would be useful to the Stakeholder.

Our objective is to serve electric commodity supply in combination with several DER installations (presumably solar panels but could be other DER devices too) spread across a number of Commercial and Industrial facilities under a single agreement across the state. By way of example; consider a chain store with dozens of locations across the state, a portion of which would have DER installed, each receiving electric supply commodity service from an ESCO, and each receiving an allocation of DER generation and VDER credits (including the facilities that don't have DER installed at their premises). This we call a DER/Commodity combination use case (or "product") offering from an ESCO. At a high level there two general areas of data requirements:

- 1) Data required to evaluate the best economic and technically feasible locations to deploy DER resources, such as areas where substations are nearing capacity. This data will need to focus on the economic viability of the project for evaluation purposes. In this document we classify upfront data requirements pertaining to commodity related information separately from upfront DER related data requirements.
- 2) Data required to administer the product once it's up and running. The main area of data requirements here revolve around allocating credits (e.g. energy, VDER, net-metering, etc.) to the ESCO in such a

manner that they can allocate those credits to each of the accounts involved pursuant to the retail agreement with the C&I customer grouping.

5) **What Information Should the Use Case Produce for the Stakeholder?** Describe the type(s) of useful information that the use case should produce.

1. The Use Case should provide the stakeholder with information to validate data requirements for the successful scoping and implementation of an economically viable commodity and DER combination project under the VDER tariffs within NYS.
2. The Use Case should provide the stakeholder with information to evaluate pricing structures.

As outlined in Exhibit 1, the ESCOs require the following information: Electric Service Point Details, NYISO Market Details, Utility Tariff Details.¹

3. The Use Case should provide the stakeholder with information to properly bill and administer the product including the value difference +/- between the current ICAP tags and the previous year and include the future value. Electronic Data Interchange (EDI) transactions would provide clarity to the type of data being provided by using a meter type/or data type identifier. The EDI transactions should include the consumption, generation, and netted usage in the same EDI. Historical summary and interval data usage history that is sometimes available today (in various formats by EDC) should be made available in a consistent format as demonstrated in the EDC data table submitted by RESA.² The EDC data table provides for the preferred format that usage history should be made and this could be made accessible via screen scrape and/or EDI. The information would provide VDER/or net meter tracking of the banked and customer disbursed credits. The ESCO could allocate the credits, along with the relevant data types and billing determinants (e.g. consumption, generation, and net usage) to provide the customer with clear, concise, and accurate billing.

(a) **How Will the Stakeholder Use the Information Produced by This Use Case?** Explain how the Stakeholder will use each type of information produced.

The data required on the front end of the DER/Commodity product will be used to evaluate the best economic and technically feasible locations to deploy DER resource. For instance, there may be a group of 100 commercial convenience stores but only a portion have access to DER due to economic or technical reasons. However, each of the stores will be under the same commodity contract with their chosen commodity supplier/ESCO. This will lead to determining the best locations to deploy the DER resources and install them. This in turn will enable the project to maximize the economic benefits to the customers and other market participants.

Once the product is up and running, on-going data requirements to administer the product include billing, reporting and other data necessary to evaluate the project. For example, monthly invoices will need to be sent to each of the store locations that will include both the commodity charges as well as the proper allocation of credits (e.g. energy, VDER, net-metering, etc.) to each of the C&I store locations/accounts under the contract served commodity by the ESCO. The key being the allocation of all the credits attributable to the DER assets will be provided to the accounts that have DER resources and those that don't. Each are included in the C&I customer product grouping.

(b) **What are the Minimum Necessary Attributes for Each Type of Information Produced?** For each type of information produced, specify the minimum necessary information attributes (i.e. precision, accuracy, granularity, etc.).

¹ An examination of existing PSC rules (e.g., Net Metering) may be required to implement this Use Case.

² PSC Case No. 20-M-0082, *Proceeding on Motion of the Commission Regarding Strategic Use of Energy Related Data*, Retail Energy Supply Association's Comments re Integrated Energy Data Resource Whitepaper (Aug. 24, 2020), Attachment A.

1. The minimum necessary attributes to identify the pricing structures are found in Exhibit 1.
 2. The minimum necessary attributes to identify the best locations for installation are found in Exhibit 2.
-
3. The minimum necessary attributes to administer and bill this product are found in Exhibit 3.

6) How Should the IEDR User Interface Present the Information Produced by the Use Case? Identify one or more useful ways to present the output information to the user (i.e. list, table, graph, bar chart, pie chart, map, ... , etc.). For example, a bar chart that shows the number of electric customers on each of several rates within a zip code.

1. The information required to evaluate the best location for installation should be presented to the user in the form of a map with multiple overlays including grid congestion (both current and future projections), local environmental tariff benefits of green DER, existing DER, current DER in the queue, total DER, projected load on feeders, transformers, substations, and planned improvements and/or expansions to electrical infrastructure. Users can draw a bounding box around a specific region on the map to pull tabulated grid information (including infrastructure within that zone, number of customers served, and existing/current/projected DER), as well as pull info by zip code or city/town. This information should be made available to ESCOs via a webbased interface.
2. The information required to evaluate the pricing structures are found in Exhibit 1 and should be presented to the user in a “screen scrape” and/or tabular format.
3. The information required to evaluate the administration and billing of this product are found in Exhibit 3 and should be presented to the user in a “screen scrape” and/or tabular format.

7) What Type(s) of Data Does the IEDR Need to Analyze for This Use Case? Identify the one or more types of data - from utilities and/or other sources - that the IEDR will need to analyze to produce useful information. See Appendix B of the Staff IEDR Whitepaper for a preliminary list of data types that could be collected and analyzed by the IEDR.

The type of data required to analyze the best locations for this Use Case is a location which is not only favorable given the VDER value stack, but also utility-specific information, such as: which feeders, substations, and transformers have the capacity to accept additional load. A more detailed list is found in Exhibit 4.

The type of data required to analyze the administration and billing for this Use Case is found in Exhibit 3 and should contemplate dual billing for commodity supply and DER credit allocation purposes.

(a) What are the Minimum Necessary Data Attributes for Each Type of Data Collected and Analyzed? For each type of data analyzed, specify the minimum necessary data attributes (i.e. precision, accuracy, granularity, age, ... , etc.).

1. The minimum necessary data attributes for each type of data collected and analyzed to evaluate the best locations for installation should be available with a fidelity high enough for reasonable analysis. Customer interval data will ideally be in increments of 30 minutes or less.
2. The minimum necessary data attributes for each type of data collected and analyzed to administer and bill this product are found in Exhibit 3.

- 8) **What Data Relationships Does the IEDR Need to Analyze for This Use Case?** Identify the one or more data relationships, if any, that must exist in the IEDR to enable the analyses needed for this use case. For example, the user may want to identify EV registrations and electric utility customer accounts that share the same street address.
1. The data relationships required to successfully evaluate the best locations for installation of the DER/Commodity product should take into account a variety of economic factors including the VDER tariffs. The data required to evaluate the economic factors falls into three categories. The first is the customer side, where the data relationship between interval data, tariff, service address, structural health (for solar), electricity prices (demand, delivery, supply), metering facilities, and direct transfer trip must be understood. The second is the utility, where the data relationship between the local feeder(s), transformer(s), substation, peak load (along those impacted assets), and queued interconnection projects must be evaluated together. And finally, at the ISO level where the data relationship between network congestion, queued DER, pre-existing DER, forecasted DER, forecasted load growth, and DER environmental impacts must be evaluated.
 2. The data relationships required to successfully administer and bill this product are found in Exhibit 3.
- 9) **What Data Analysis Function(s) Does the IEDR Need for This Use Case?** Identify the one or more analytic functions that the IEDR must apply to each type of data used in this use case. For example, the use case may require the determination of averages, maximums, minimums, durations, and values greater/lesser/equal/between variables set by the user.
1. The ESCO will need to have the data necessary to properly evaluate the value proposition of the DER/Commodity product in the customer's eyes regarding the economic, sustainability, and environmental perspectives. This can be captured in terms of interconnection costs (dictated by feeder/transformer rating combined with peak load, and any substation upgrades, along with utility interconnection fees), infrastructure costs (physical DER asset installation, upgrades to existing infrastructure to support), any RECs or SRECs, and commodity costs being offset by DER (commodity supply, demand, and tariff). The deployment of a DER/Commodity product may have an effect to both utilities and the NYISO in the sense that the operation of the grid will be influenced by this deployment. Similarly the NYISO will need to understand how the deployment of a new DER/Commodity product will impact network congestion and generation mix (through an environmental lens).
 2. Data required to administer/bill the product -- The Use Case should provide VDER requirements (e.g. eligibility, agent forms, allocation forms, certifications, procedural guidelines, agent authorization and reporting tools).
- (a) **What are the Minimum Necessary User Input Variables Needed to Enable a Useful Analysis?** For each analytic function, specify the one or more input variables that the user must provide (if any) to enable the desired analysis. For each type of input variable needed, specify the type(s) of condition to be applied in the analysis (i.e., greater than, equal to, less than, between, not between, etc.).
1. The minimum necessary user input variables needed to evaluate the best locations for installation are found in Exhibit 5.
 2. The minimum necessary user input variables needed to administer and bill this product are found in Exhibit 3.
- 10) **How Often Does the Stakeholder Expect to Employ This Use Case?** For example: sub-daily; daily; weekly; monthly; quarterly; semi-annually; annually ...

If approved, the information provided by this IEDR Use Case would help facilitate an environment where ESCOs could offer a DER/Commodity product combination to all C&I customers with multiple locations across New York state. As more businesses commit to meeting renewable/clean energy goals, demand for sustainability products is increasing, however; project realization and implementation may be difficult, carry unwanted risks, and don't make a strong enough sustainability statement. A DER/Commodity combination Use Case can eliminate these barriers leading to more widespread adoption within the C&I business community.

- 11) **How Does This Use Case Benefit the Stakeholder?** Describe how this use case would benefit its Stakeholder(s) and explain how the use case would enable those benefits. Benefits described and explained could include reduced cost, reduced time, greater revenue, reduced risk, increased understanding, ... , etc. Commercial and Industrial businesses (customers) are increasingly seeking more impactful renewable options to establish or further their respective sustainability goals. By installing this DER/Commodity product across their portfolio of buildings/properties, companies can report their commitment to renewable/clean energy by showcasing their specific DER facility and the corresponding clean power their buildings would be consuming. This DER/Commodity product combination will be unique in its deployment of IEDR resources as it will:
- Enhance the allocation of VDER credits to customers.
 - Will reduce the overall costs to the customer.
 - Since ESCOs are assuming risks that would otherwise fall to the customer, overall customer risk is reduced.
 - Provide sustainability and economic benefits in furtherance of New York's sustainability objectives.

12) **Why Should This Use Case Be Prioritized From the Perspective of i) the Industry and ii) the Citizens of New York State?**

- 1) This DER/Commodity product combination is designed to capture customers' increasing interest in pursuing clean energy, reducing their carbon footprint, and maximizing economic efficiency while at the same time achieving the state's sustainability goals.
- 2) ESCOs are uniquely positioned to make this DER/Commodity product combination both cost effective and competitive which will increase its deployment. ESCOs are already interconnected with the utilities for commodity and have extensive knowledge of the energy markets (both capacity and usage). ESCOs also have a proven track record of working with customers to assist in managing their energy risks. Finally, ESCOs have the financing and expertise necessary to offer this combination product.
- 3) Additionally, successful deployment of this product will help further New York's public policy objectives set forth in the Climate Community Protection Act and help combat climate change, benefitting all New Yorkers.

***The IEDR use case profiles submitted will be shared, and should contain no proprietary information.**

The profiles are regarded as preliminary working papers, and may be revised based on subsequent analysis and discussion. Advocates submitting profiles of similar use cases will work together with the IEDR development teams to come to a consensus. For consistency in development, the IEDR team may elect to format use case submissions into a standardized format such as UML or BPMN.

EXHIBIT 1

Commodity Pricing Attributes

Electric Service Point Details	Attributes
customer name	
postal address	
street address	
account ID	
account status	
utility ID	
NYISO zone (primarily for LBMP and ICAP)	Where NYISO Load is settled. Currently some LDCs display a value other than where the account is settled
utility subzonal unaccounted for energy (UFE) – hourly	Hourly values
service point ID	
service class	
service assigned load profile	
service voltage	
meter ID	
interval/smart meter - data availability flag	Y/N
interval data settlement flag – indicate if interval is used to report load to NYISO	Y/N
tax exemption status	Y/N
enrollment block status	Exists - Y/N
low income customer flag	Y/N
Mass Market/Protected Class customer flag	Y/N
current tariff/program ID	
monthly billed demand	
monthly billed energy	
monthly billed service charge	
behind the meter generation flag	Y/N
NYPA incentive program details (ex. PFJ, RNY, TPA, Replacement etc.)	Program Name, Allocation Size, Allocation Start/Stop Dates, Allocation change dates
UDC incentive program details	Program Name, Allocation/credit size, Allocation/credit Start/Stop Dates

measured consumption interval data – profiled hourly data if interval is unavailable (Total Load), including smart meter data	Hourly (min 24 months)
NYISO reported interval data (used for settlement) – profiled hourly data if interval is unavailable	Hourly, Only ConEd currently makes available for active customers but not available pre-enrollment. Not available from other UDCs when interval is unavailable. (min 24 months)
NYP&A served hourly interval data – if applicable, profiled hourly data if interval is unavailable	Hourly, not currently provided (min 24 months)
Generation hourly interval data – if applicable, profiled hourly data if interval is unavailable	Hourly, not currently provided. UDCs typically only provide net load not generation and consumption amounts. (min 24 months)
system peak load capacity contribution (ICAP Tags)	Currently only effective tag available, in addition would like historical 3 prior years + future year when available

EXHIBIT 2

Locational DER Related Attributes

Current feeder congestion,
Current loading on feeder
Feeder rating
Load on impacted transformer(s)
Transformer rating existing DERs on feeder
Queued DER on feeder
Potential tariff benefits based on VDER criteria (environmental impact, peak congestion)
Interval data (hourly minimum, 30-15 min preferred)
Service address
Electrical prices (supply, demand, delivery).

EXHIBIT 3

Billing/Invoicing Attributes

Rate class with rate description, load profile, voltage, price zone, meter cycle
PLC Values: Current values, values from the previous year, and future values.
Net Meter accounts -EDI transactions to include consumption, generation, and net usage in the same EDI and available on the website.
VDER and net meter credits at the account level would be available on the website.
Meter type identifier in the EDI and website (E.g. consumption, generation, and net usage)
Interval meter identifier
Ability to web scrape summary and interval usage with kWh
24 months of Historical usage – Summary data with kWh
24 months of Historical interval.
Ability to download summary and interval data from website.
The website/or portal would include RNY/or other incentive load program details. Effective date when the customer started taking RNY? The allocation amount, allocation adjustments, date of adjustment and if there are companion accounts.
Notification of new or revised rate classes, load profiles or other determinates that will impact how the customer is being billed.
Ability to create a case ticket for account assistance, based on utility, request type (e.g. EDI, PLC, enrollment/drop, billing inquiry), attach documents and include specific or multiple accounts.
Ability to check status of inquiry case tickets for resolution and/or pending additional information.
ESCO settlement statement

EXHIBIT 4

Locational Data to Analyze the Use Case

All	Impacted Substation ID
All	Utility name
All	NYISO zone
All	NYISO transmission node
Transformer	IDs on eligible circuits
Transformer	Hourly load forecast data
Transformer	Load rating
Transformer	Transformer GIS coordinates
Feeder	ID/number
Feeder	Average daily load
Feeder	Average daily peak load
Feeder	Annual peak load
Feeder	Protection details (in the event of transformer failure at the DER)
Feeder	Hosting capacity at substation
Service	Address
Service	DER GPS coordinates
Customer	Tariff
Customer	Demand Charges
Customer	Energy Charges
Forecasted DER	DER ID
Forecasted DER	Utility name
Forecasted DER	Circuit ID
Forecasted DER	Type
Forecasted DER	Capacity
Other	Direct transfer trip requirement?
Other	Roof Age (if mounting solar)

Use Case Categories:

Enter one of the following use case categories in Part 2 of the survey form.

- DER Development and Use
- Transportation Electrification
- Building Electrification
- Energy Efficiency (EE)
- Electric Utility Function
- Gas Utility Function
- Local Government Function
- State Government Function
- Other (please describe)

Use Case Sub-Categories:

Enter one of the following use case sub-categories in Part 3 of the survey form.

- For DER Development and Use:
 - identifying, evaluating, and/or selecting potential DER locations; ○ identifying, evaluating, and/or engaging potential DER customers; ○ preparing and/or optimizing DER development plans; ○ preparing and/or optimizing DER operating plans; ○ designing, implementing, and/or operating DER aggregations; ○ monitoring and evaluating the deployment and use of DERs; d
 - designing and implementing Community Distributed Generation (CDG) solutions; or,
 - other (please describe)
- For Transportation Electrification:
 - identifying, evaluating, and/or engaging existing EV owners/operators; ○ identifying, evaluating, and/or engaging potential EV owners/operators; ○ monitoring and/or evaluating EV acquisitions and uses;
 - identifying, evaluating, and/or selecting potential locations for EV charging facilities; ○ preparing and/or optimizing plans for developing EV charging facilities; ○ preparing and/or optimizing plans for operating EV charging facilities; ○ monitoring and/or evaluating the deployment and use of EV charging facilities ○ other (please describe)
- For Building Electrification:
 - identifying, evaluating, and/or engaging energy consumers and energy managers in existing buildings;
 - identifying, evaluating, and/or engaging energy consumers and energy managers in planned buildings;
 - monitoring and/or evaluating acquisitions and uses of building electrification solutions; ○ building energy benchmarking;
 - identifying, evaluating, and/or selecting opportunities for building electrification; ○ preparing and/or optimizing plans for developing building electrification solutions; ○ preparing and/or optimizing plans for operating building electrification solutions; ○ monitoring and/or evaluating the deployment and performance of building electrification solutions;
 - other (please describe)

- For Energy Efficiency (EE):
 - identifying, evaluating, and/or engaging customers with existing EE solutions; ○ identifying, evaluating, and/or engaging potential EE customers;
 - monitoring and/or evaluating EE acquisitions and uses; ○ building energy benchmarking; ○ identifying, evaluating, and/or selecting EE opportunities; ○ preparing and/or optimizing plans for deploying EE solutions; ○ monitoring and/or evaluating the deployment and use of EE solutions; ○ designing and implementing Community Choice Aggregation (CCA) solutions; ○ other (please describe)

- For Electric Utility Functions: ○ system planning; ○ DER interconnection; ○ system operations; ○ market enablement; ○ market operations; ○ customer programs and services; ○ regulatory/statutory compliance; ○ other (please describe)

- For Gas Utility Functions:
 - system planning; ○ system operations; ○ market enablement; ○ market operations; ○ customer programs and services; ○ regulatory/statutory compliance;
 - other (please describe)

- For Local Government Functions: ○ building energy benchmarking; ○ Community Choice Aggregation; ○ Community Distributed Generation; ○ facility siting and permitting; ○ environmental justice initiatives; ○ economic development; ○ planning and zoning; ○ other (please describe)

- For State Government Functions:
 - energy-related R&D; ○ regulatory research and planning; ○ regulatory oversight; ○ building energy benchmarking; ○ facility siting and permitting;
 - environmental justice initiatives; ○ economic development; ○ other (please describe)