Regulating Utility Data

Commissions Defining Access

By Jason Price

In the coming months and years, expect an increasing number of utility regulatory commissions to begin ruling on third-party access to utility data – several state orders are currently examining the implications of making utility data more accessible to third parties and customers. Some states are going further and broadening the data pool to include more than just customer-metered end-use data but grid hosting data as well.

Utility regulatory commissions should follow suit to encourage customer adoption, improve the marketing and sales of Distributed Energy Resources (DERs) and other energy solutions to help states reach their net-zero carbon goals – though national and state initiatives to democratize data have had mixed reviews, from complete abandonment to growing adoption.

We can learn from past experiences. The Green Button Initiative (GBI) was designed to empower customers in making more informed energy decisions with their own energy usage. Proponents believed that greater access to customer data would motivate better energy decisions and spur market innovation in energy efficiency, demand response, and other technologies and practices available at the time.

But GBI fell short of achieving national adoption. Regulators are viewing utility data through a modern lens and closely examining states like Texas and California on how they've addressed utility data democratization.

Energy & Utilities

Utility data varies and comes from different parts of the operation. From customer and grid asset data to Advanced Metering Infrastructure (AMI) and DER and hosting capacity data, all of it plays a critical role in maintaining the performance of a modernized grid. Customer meter data coupled with circuit data – and other utility asset data – will allow the marketplace to deliver cleaner energy solutions to homes and businesses.

The reality is that how regulators rule on the accessibility and availability of utility data may determine whether a state can remotely achieve state decarbonization goals. We've already seen it play out:

Texas and California are two examples of where utility data was organized and made available to third parties to increase market awareness about its value to help empower customer choice and accelerate clean energy initiatives.

See Figure 1.

Texas built a central meter data repository where all state utilities that are part of the Electric Reliability Council of Texas are required to post their smart meter data. Smart Meter Texas (SMT) makes it easy for customers and competitive service providers to gain access to near real time customer meter.

The energy supply in Texas is deregulated, and there are more than seventy competitive energy retail companies that can provide energy quotes and related energy efficiency services based on readily available data through the portal. The Texas model introduces creative market solutions that best fit the needs of commercial and residential customers' businesses or lifestyles.

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SMT stores daily, monthly, and fifteen-minute interval readings for up to two years and provides secure access to the data. Customers can invite authorized competitive service providers to access the energy data for competitive quotes on a range of energy saving services and rates.

California organized the utilities to collectively standardize data and make it available at the utility level. Each utility makes smart meter data available and follows the same procedures statewide for data access, data definition, and data portability. Where California differs from Texas is the addition of DER data for market developers.

DER data includes grid hosting capacity, enabling increased marketing of clean energy development with an advanced emphasis on data democratization by expanding the definition to include data to support energy supply.

Development of DER in some locations is dependent upon whether the specific circuit in that location has the capacity to host excess load from the DER. Hosting capacity data – defined as the amount of DERs a distribution system can accommodate without significant grid upgrades – is critical for businesses

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Fig. 1 Where We Are Today: Three Different Delivery Models

Texas	California	New York
Smart Meter Texas (SMT), a statewide platform containing customer meter data in 15-minute intervals	Utility level interval data and a separate utility level DER data (hosting capacity data)	Single platform combining utility customer, utility system, and DER data (NYS PSC, CASE 20-M-0082)
Interval Only	**Separated**	**Integrated**

Drivers: Expediency, Cost, Expertise, Security, Requirements, Recovery

Fig. 2 State Proceedings

New York Strategic Use of Energy Related Data (Case 20-M-0082)
New Hampshire Open Energy Data Platform (Docket No. DE 19-197)
North Carolina Data Access Rulemaking (Docket E-100, Sub 161)
New Jersey AMI Data Transparency (Docket EO20110716)
Illinois Open Data Access Framework (Docket No. 14-0507)
Maryland RM62 (Public Conference 44)
Michigan MI Power Grid Data Access and Privacy (Case U-18120)
Other states in discussions—Arizona, Colorado, Massachusetts, Minnesota, Pennsylvania, Washington D.C.

Fig. 3 Example Uses Case Of An Integrated Energy Data Resource

Use Case	Intended Purpose
Energy Efficiency Customer Identification	As a DER provider, government agency, or community organization, I want to identify, evaluate, and engage potential energy efficiency customers so that I can increase the adoption rate of energy efficiency programs in my state.
DER Customer Identification	As a DER provider (e.g., Rooftop Solar, Energy Storage, etc.), I want to accelerate the identification, evaluation, and engagement with potential DER customers so that I can identify the most relevant customers and initiate a consent request to them to share their identifying information and usage data.
DER Interconnections	As a DER developer, DER owner, or utility, I want to accelerate the interconnection approval for planned/installed systems so that the DER project can begin delivering clean energy to customers as soon as possible.
DER Registry and Aggregation	As a DER aggregator or utility, I want to access information about all DERs installed in the geography so that installed DER systems can be aggregated to provide energy and resiliency to the grid in a cost-effective and efficient manner by participating in the wholesale markets.

seeking to make electrification investments. It is a case of conducting load forecasting on a circuit.

All California investor-owned utilities provide a publicly available web portal for anyone to view the hosting capacity at the substation level on the grid. Availability of this information has helped renewable energy developers better target and plan for renewable projects.

As an example, Southern California Edison (SCE) offers a publicly available integration capacity analysis (ICA) portal that allows users to model if additional DERs can be added without the need for many grid upgrades. SCE performs an analysis on every section of every feeder in its territory using five hundred seventy-six profiles for circuit level load and generation.

These ICA results are shown on a public website that displays how much generation and load differs on parts of the circuit and how much existing and queued generation there is on a circuit and substation level. The comprehensiveness and completeness of both metered data and DER data has made California a market leader.

New York is trailing Texas and California. New York's Climate Leadership Community Protection Act (CLCPA) of 2019 is designed to jump-start clean energy initiatives and the role that utility data serves. With access to integrated metered customer data and energy system DER data in one portal, the regulators anticipate greater rigors to the data and anticipated efficiencies

to accelerate the deployment of clean energy solutions across the Empire State.

As stated in the Proceeding on Motion of the Commission Regarding Strategic Use of Energy Related Data (NYS PSC, CASE 20-M-0082): Such action "will attract investment, enable analytics, help identify operational efficiencies, promote innovation, and encourage new business models, which will in-turn create value for customers and the State's energy system."

New York is one of a handful of states addressing this topic but the first to push forward a comprehensive integrated data approach through a New York State Energy Research Development Authority (NYSERDA) program called Integrated Energy Data Resource (IEDR).

The rest of the country differs. Now with state climate goals, pressure from industry and public advocacy groups for data access, and success of sister industries on how they manage their data, regulators and policymakers are placing more value on utility data.

Each state is approaching the democratization of the data differently – each regulatory authority has its own agenda and financial constraints on what can be recoverable or part of utility operations and maintenance.

Several state regulatory commissions are seeking public input on how to best improve on what other states have accomplished – and learning from sister industries on how best to manage and protect data.

Regulators are studying mechanisms that may allow customers agency over their data, including opt out, ease of access and use, standardized methodologies, data portability, security measures, incorporating rate tariffs, and other steps to boost customer adoption and third-party engagement. Other states are exploring the idea of charging for usage of the portal. There are several state regulatory dockets across the country looking at data accessibility:

See Figure 2.

While Texas and California have notable achievements given the sizable effort and hefty investment that was required, adding DER and hosting capacity data promises to improve customer adaptation of DER.

This addition will provide customers and third-party developers with the information needed to make the right energy investment decisions for the future. The upfront investment is future proofing what data third parties and the public need

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to accelerate clean energy development. The examples shown in Figure 3 illustrate the value of an integrated data approach.

See Figure 3.

Considerations for Utilities

Once regulators define the framework and overall requirements of a statewide data platform, utilities will need to participate. Two parallel workstreams are required: one for the state to assemble a team to organize and build the platform to ingest the data that will come from each utility; another for the utility to shore up its data for the hand over to the state open-access portal.

If an order is passed, a utility should create a utility data transformation office to lead the coordination and meet the requirements for eventual hand-off to the state portal.

An important first step for the utility will be to create a utility data project management office (PMO). The PMO should demonstrate competencies in the build out of data platforms and associated data management capabilities for sustained value creation.

Critical skills should include data governance program definition, data platform design and build, delivery of integrated energy data resource plans, architecture with advanced use case delivery across customer experience, and grid modernization.

Build a multidisciplinary team with members who have deep industry experience across electric and gas utilities coupled with deep data engineering and analytics skills. This team will draw from experience delivering data analytics engagements that have helped utilities and other regulated entities convert data into actionable intelligence and value.

Demonstrate deep utility data knowledge matters in understanding the purpose of the datahub. A successful team demonstrates a working knowledge of utility systems and analytics use cases relevant for customers and grid operations. This will prove worthwhile in the long run as the utility scales with more data.

Take a systems-thinking approach to envision how the utility's systems will integrate with the state's intended data platform – considering all stakeholder perspectives when building the solution. Skillsets for this approach include data engineering, analytics, and visualization expertise.

Lead in data governance. Delivering a data governance plan is top priority, and often utilities find addressing the governance question critical for success. Governance requires leadership and leadership requires proven and credible past success.

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Understand the maturity of the utility. The utility data management office must understand where the utility is in its data maturity journey. The team must have the insight to identify where investment upgrades are needed on the system to meet the commission's requirements.

Utilize available technology to support data processing and data management. Interval data from smart meters introduces data at a scale measured in terabytes that can overwhelm a utility as it tries to get its arms around this ever-increasing pool of data. The field has introduced a new class of technologies and requires advanced skill sets needed to manage this data and deliver what is needed by the commission.

Build trust to address complex questions that must be answered by a multi-disciplinary team that includes cybersecurity, data governance, and members of the utility data transformation office.

Conclusion

Each state will eventually have to define what data will become available and what role the utility will serve to influence customer behavior and engage third-party developers. If the state's decision is to democratize data through a standardized approach, the portal must also include all the utility data necessary to support the state's clean energy goals.

States must act now to arm the marketplace with the data necessary to change customer behavior and accelerate the buildout of clean energy solutions. Anything less will be incomplete and hold back the state from taking advantage of the climate-positive benefits that a comprehensive portal can offer. PUF

According to the U.S. Bureau of Labor Statistics, the Consumer Price Index was five percent higher in March 2023 than it had been a year earlier in March 2022. But the electricity component of the CPI was ten and two tenths' percent higher in March 2023 than a year earlier. The gap between the overall CPI and the electricity component of the CPI closed somewhat in March since the overall CPI rose a tenth in March 2023 and the electricity component fell by seven tenths.