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Report Regarding Monitoring of Energy Use Data Standards and Online Energy Data Platforms

Submitted by the Governor's Energy Office to the Joint Standing Committee on Energy, Utilities and
Technology pursuant to Resolves 2022, Chapter 179, §1

February 28, 2023

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List of terms and acronyms

BIL	Bipartisan Infrastructure Law
CMD	Green Button <i>Connect My Data</i> standard
DOE	United States Department of Energy
GEO	Maine Governor’s Energy Office
IEDR	Integrated Energy Data Resource
MVP	Minimum viable product
NH PUC	New Hampshire Public Utilities Commission
NY PSC	New York Public Service Commission
NYSERDA	New York State Energy Research and Development Authority
PUC	Maine Public Utilities Commission
The Resolve	Resolves 2022, ch. 179
RFI	Request for Information

Introduction

Resolves 2022, ch. 179, §1 (the Resolve) directs the Governor’s Energy Office (GEO) to “monitor efforts undertaken in other states to improve energy use data standards and to implement multiple-use online energy data platforms that will provide natural gas and electric utility customers with access to information about their energy usage and will allow for the aggregation of and removal of personally identifiable information from community-level energy data.” The Resolve further requires the GEO to “submit a report, on or before February 28, 2023, to the joint standing committee of the Legislature having jurisdiction over utilities and energy matters including information regarding other states’ efforts and recommendations for how similar efforts could be undertaken in the State.” This report is submitted in fulfillment of this directive.

Approach to this report

The GEO utilized multiple approaches to compile the information in this report, including:

- Inquiries submitted to other states;
- Consultation with peers in other states; and
- Desktop research.

The GEO is grateful for the contributions and information shared by numerous other parties who responded to inquiries or consultation requests. Any errors in this report are solely attributable to the GEO.

Related efforts

The Resolve also directs the Public Utilities Commission (‘PUC’ or ‘Commission’) to collect certain information from transmission and distribution (electric) utilities and natural gas utilities in Maine and report it to the Committee. Because of this contemporaneous requirement, the GEO does not examine or provide information related to any similar initiatives in Maine in this report.

Resolves 2021, ch. 63 directed the Commission to examine the feasibility of establishing and operating an online energy data platform for natural gas and electric utility customers. The Commission was also tasked with evaluating the capabilities of information technology systems to view and manage energy use, what systems are available, and what kind of systems are needed to support the capability described in Resolves 2021, Chapter 63. The Commission issued a request for information (RFI), sought public comments, and provided a report to the Joint Standing Committee on Energy, Utilities and Technology on January 20, 2022 regarding its efforts.¹ The report provided the following four major conclusions:

- 1. The Platform for electric and gas information described in the RFI has not yet been built by any other state. The state of maturity of existing products will likely evolve over time but no existing solution can provide the functionality described in the RFI, though a few can provide elements of those criteria.*
- 2. The responses to the RFI detail the complexities of this information technology project. None of the Respondents to the RFI have built a system with the required functionality, so their costs are based on their industry experience. The estimated costs to develop such a project could exceed*

¹ The Commission’s 2022 report is available here: <https://legislature.maine.gov/doc/8040>

\$2,000,000 and cost an additional \$350,000 – \$1,260,000 annually to operate. Cost experiences related by Respondents to the RFI are summarized in Appendix B.

3. The Commission does not have the resources or technical expertise to establish and oversee a statewide data platform as contemplated by the Resolve.

4. The Commission recommends further study before proceeding with this initiative. The New York State Energy Research and Development Authority (NYSERDA) has established an office to develop their IEDR (Integrated Energy Data Resource) platform. After putting a program manager and a data advisor in place, they began their requirements work in the Summer 2021 and plan to issue an RFP for development in the Summer 2022 for Phase 1, with expectation of a fully operational Phase 1 platform by the end of 2023. Phase 2 is expected to be completed in 2026. In New Hampshire a great deal of work has gone into developing a framework and requirements prior to system procurement. Given the potential significant costs involved, the Commission would suggest a similar "phased" approach should the Committee elect to pursue this initiative. This phased approach should be conducted by a third-party with expertise in the energy industry as well as significant expertise in managing the development and integration of a significant technology project.

Information from other states

This section summarizes information collected from a variety of public sources and consultations with officials or others involved with the relevant efforts. While efforts were made to provide a broad range of examples, it may not be an exhaustive survey of all potentially relevant efforts or programs. Additionally, many of the listed efforts are currently underway or in various stages of implementation, and thus may be subject to modification as they progress.

In its 2022 report, the Commission identified New Hampshire and New York as states with existing multi-use online energy data platform efforts underway and recommended ongoing monitoring of these and related efforts. Therefore, the GEO's monitoring focused on these states, while also utilizing existing connections and membership organizations to query other states about the existence and status of any similar efforts. The GEO also consulted with entities in both New Hampshire and New York regarding other states with related efforts. While many other states, counties, cities, and other jurisdictions have various energy data-related programs – for example, multiple other states have produced online data portals related to energy efficiency program data – New Hampshire and New York appear to be the two primary examples of states working to implement statewide multi-use online energy data platforms as contemplated by the Resolve.

New Hampshire

In 2019 the state of New Hampshire enacted legislation providing for the establishment of a statewide online energy data platform, which would allow utilities, their customers, and third parties, including the Office of the Consumer Advocate, to access and share data regarding customer energy usage. The legislation (SB 284) required the New Hampshire Public Utilities Commission (NH PUC) to open a

proceeding to determine how the energy data platform would be developed, implemented, and maintained, and whether the costs of doing so would be reasonable and in the public interest.²

On March 2, 2022, the NH PUC issued an order approving a design and framework proposed by parties to the proceeding for the implementation of the statewide Multi-Use Energy Data Platform. The March 2, 2022, order included direction for the New Hampshire utilities to contract an entity or entities to develop, operate, and host the platform, and directed the utilities to establish a Platform Governance Council to provide oversight of the platform, consisting of twelve members representing various stakeholder perspectives. The order also reserved the possibility for the NH PUC to make a future determination regarding the cost reasonableness of the platform and provided a timeline for parties to take subsequent actions within the following year.

On February 23, 2023, the NH PUC authorized the issuance of a request for proposals for the development of software in order to integrate utility back-end processes with the proposed data platform, drafted by parties to the proceeding. The GEO understands this planned Multi-Use Online Data Platform would both provide utility customers with access to information about their energy usage and would allow for the aggregation of and removal of personally identifiable information from community-level energy data.

New York

On February 11, 2021, the New York Public Service Commission (NY PSC) issued an order implementing an IEDR to securely collect, integrate, and provide broad and appropriate access to large and diverse sets of useful energy-related information on one statewide data platform. The NY PSC order designated NYSERDA as the IEDR Program Sponsor. NYSERDA is required to create the IEDR program charter that formally establishes the IEDR program's scope, guiding principles, objectives, participants, roles, and responsibilities.

The IEDR will be a single statewide platform that securely collects and integrates a large and diverse set of energy-related data and shares meaningful information and insights on New York's energy system to support the state's clean energy and climate commitment. NYSERDA is leading the development of the IEDR with significant focus on stakeholder engagement to ensure the platform's primary audiences will be able to access and analyze elements of the state's energy system and customer information that are most useful to them. NYSERDA leads a steering committee including representatives of various stakeholder interests and the PSC, and has retained a team of private sector consultants and experts to support the project.

Throughout 2021 and 2022, NYSERDA conducted extensive stakeholder engagement to inform the IEDR's development, including the formulation of use cases to inform initial development. This two-year process was designed to inform the development of a minimum viable product (MVP) to demonstrate a set of use cases, including aggregate building energy consumption. Pending further authorization from the NY PSC, NYSERDA and stakeholders will undertake a phase 2 of development building on successes from phase 1.

² See New Hampshire Public Utilities Commission, DE 19-197: <https://www.puc.nh.gov/Regulatory/Docketbk/2019/19-197.html>

National efforts

Green Button *Connect My Data* (CMD) is the energy-industry standard for enabling easy access to, and secure sharing of, utility customer usage data. According to the Green Button Alliance, utilities that adopt the CMD standard for providing data can enable customers to access various utility- and third-party data-driven services, programs, and platforms, and enable customers to securely transfer their data to third-party solution providers.³ The Green Button CMD is formally established by the North American Energy Standards Board as REQ.21 – Energy Services Provider Interface Model Business Practices.⁴

The Infrastructure Investment and Jobs Act of 2021 (also known as the Bipartisan Infrastructure Law, or BIL) appropriated more than \$62 billion to the Department of Energy (DOE) for a range of programs, including Smart Grid Grants available to institutions of higher education, for-profit entities, non-profit entities, and state and local governmental entities and tribal nations. The Smart Grid Grants program will invest up to \$3 billion, and seeks to deploy and catalyze technology solutions that increase the flexibility, efficiency, reliability, and resilience of the electric power system, with particular focus on enhancing the system’s capabilities to meet the following objectives:

- increase the capacity of transmission facilities or the capability of the transmission system to reliably transfer increased amounts of electric energy;
- prevent faults that may lead to wildfires or other system disturbances;
- integrate variable renewable energy resources at the transmission and distribution levels; and,
- facilitate the aggregation and integration (edge-computing) of electric vehicles and other grid-edge devices or electrified loads.

In its first Funding Opportunity Notice for the Smart Grid Grants program, the DOE stated “a broad set of eligible smart grid investments and capabilities is allowed under statute, and any combination of smart grid investments and functions that support the objectives are eligible. DOE will require that projects support data standards (e.g., Green Button Connect), interoperability, and nondiscriminatory data access on a real-time basis.”⁵

The GEO also notes numerous utilities provide various data platforms enabling customers to access energy data and/or share it with third parties. In some jurisdictions, the same utility provides both electric and gas service, and may provide platforms allowing customers to access data related to both of those services through a single platform.⁶

³ For more information, see <https://www.greenbuttondata.org/cmd.html>

⁴ Available online here: https://naesb.org/retail_standards.asp

⁵ For more information, see <https://www.energy.gov/gdo/smart-grid-grants>

⁶ For example, Pacific Gas & Electric (PG&E) in California provides such a service: https://www.pge.com/en_US/residential/save-energy-money/analyze-your-usage/energy-data-hub/energy-data-hub-for-customers-and-third-parties.page

Findings and Recommendations

Based on the information summarized in this report, the GEO finds the following:

- Access to energy usage and related data in a near-real-time, granular format conforming to established standards has the potential to bring significant benefits to energy consumers and may enable the deployment of new and innovative technologies. However, this report does not examine the current status or future plans for such data sharing capabilities by any utilities in Maine.
- While other states have ongoing efforts to establish statewide multi-use online energy data platforms, no state has completed such a platform to date. The processes underway represent significant investments of funding, agency and stakeholder capacity, and involve complex new and emerging technologies and challenges including cybersecurity, privacy, and intellectual property issues.
- Establishment of a statewide multi-use online energy data platform is likely to represent a substantial investment. Whether that cost would be worth bearing depends on the potential use cases and desired functionality of the platform and may inform the source of necessary funds.
- Many of the potential use cases that may be of interest to stakeholders may be achievable sooner and at less cost if implemented by utilities, rather than through a single statewide platform.
- If the creation of a statewide multi-use online energy data platform is directed by the legislature, consideration should be given to an implementation approach that would be suitable to Maine's context. This should include clear objectives of the platform, adequate funding to establish and maintain a system, and an iterative, stakeholder-informed development process to ensure future-proof and user-centric implementation.