



NOVEMBER 2023

EXPANDING THIRD PARTY ACCESS TO THE SMART METERING DATA

Stakeholder Engagement Sessions

Smart Metering Entity (SME)

Agenda

- I. Purpose & Summary
- II. The Smart Metering Data
- III. Examples of Use-Cases & Third Party Requests
- IV. Key SME Considerations for Expanding Third Party Access
- V. Discussion and Q&A

- VI. Supplemental Information

I. Purpose & Background

- The SME is soliciting input from a diverse set of stakeholders across the energy sector and beyond, on the potential value of expanding third party access to the electricity data in the provincial smart metering repository.
- As such, the SME invites your views on the potential usefulness of this data to your organization's objectives, along with any other data access considerations, in order to inform a recommendation for expanding third party access to the data – report due to the Ontario Energy Board (OEB) by April 30th 2024.
- Currently the data is restricted to Canadian Governmental Entities, as per the OEB's decision in 2022 ([EB-2021-0292](#)). Non-personal hourly electricity consumption data is aggregated at various levels and parameters (date ranges, geographies) and provided at cost-recovery (\$145/hour) upon signing of a Data Use Agreement ([DUA](#)). An Ethics Committee of internal and external experts is also available to evaluate complaints about denial of access and/or ethically complex data requests.

II. The Smart Metering Data

The SME Third Party Access (TPA) Program allows access to de-identified smart metering data aggregated to one, or multiple, of the following attributes:

- Distributor Rate Class (DRC) – Residential and Small Commercial customers
- Commodity Rate Class (CRC) – Pricing Plan (Time of Use, Tiered, Ultra-low Overnight)
- Consumption Data – Hourly consumption readings from 5.2 million smart meters (kWh)

An online request form [SME TPA](#) allows requesting organization to self-select any additional attributes such as date range, postal codes, or occupant change.

To inform the eligibility assessment and the level of data aggregation/granularity, requestors will also be asked to explain the purpose of their study, if the data set will be linked to other internal or external data sets, or if planning to share it with other organizations.

The screenshot shows a web browser window with the URL <https://mdmsupport.service-now.com/tpa>. The page title is "SME TPA" and the main heading is "Data Request". The form contains several sections:

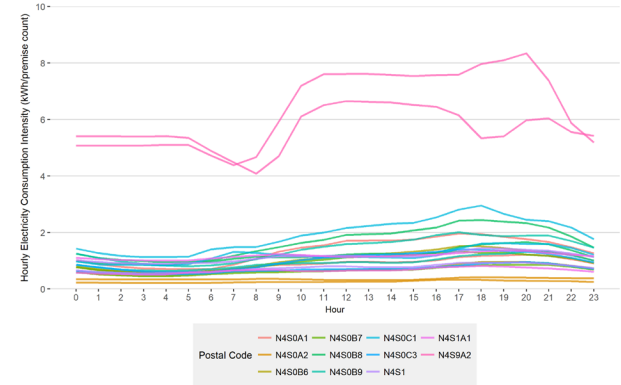
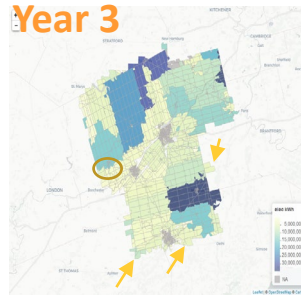
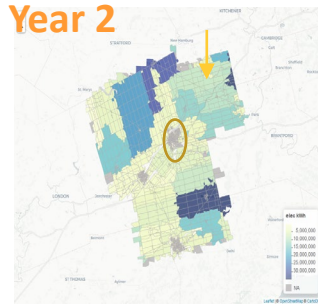
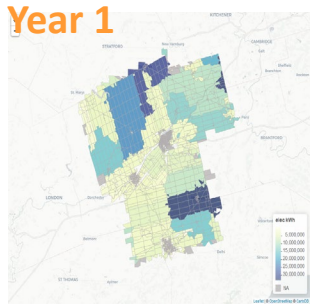
- Description of the Data Request:** A text input field.
- Intended Use of the Data:** A text input field.
- Postal Codes:** A checkbox labeled "Postal Codes" with a note: "(Note: If left unchecked this field will not be specified in the extract.)"
- Distributor Rate Class:** A text input field with a note: "(Note: If none of the options are selected, this field will not be specified in the extract.)"
- Occupant Change:** A checkbox labeled "Premises with Occupant Change Excluded".
- Requested Start Date:** A date picker field.
- Requested End Date:** A date picker field.
- Frequency:** A dropdown menu with "One Time" selected.
- Do you plan to link the data requested to other data sets?:** Radio buttons for "Yes" and "No".
- Do you plan to publish or share the results of your project?:** Radio buttons for "Yes" and "No".

III. Examples of Use-Cases & Third Party Requests (1)

- The SME issues public-level statistics based on smart meter data that can inform high level energy studies: <https://www.ieso.ca/en/Sector-Participants/Smart-Metering-Entity/Consumption-Data>.
- Other key users of more detailed smart meter data are the LDCs (for own analytics), OEB and Ministry of Energy (pricing plans analysis, policy studies), and the IESO (to improve forecasting models).
- To date, several universities and municipalities have submitted requests for a wide range of data to support various projects: studies of the socio-economic impacts of COVID-19, impact of electric vehicles on urban planning, estimating greenhouse gas emissions by sector and others.

Examples of Use-Cases & Third Party Requests (2)

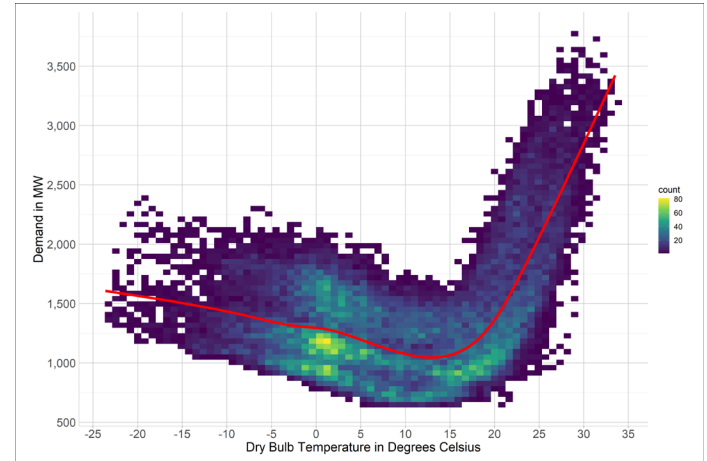
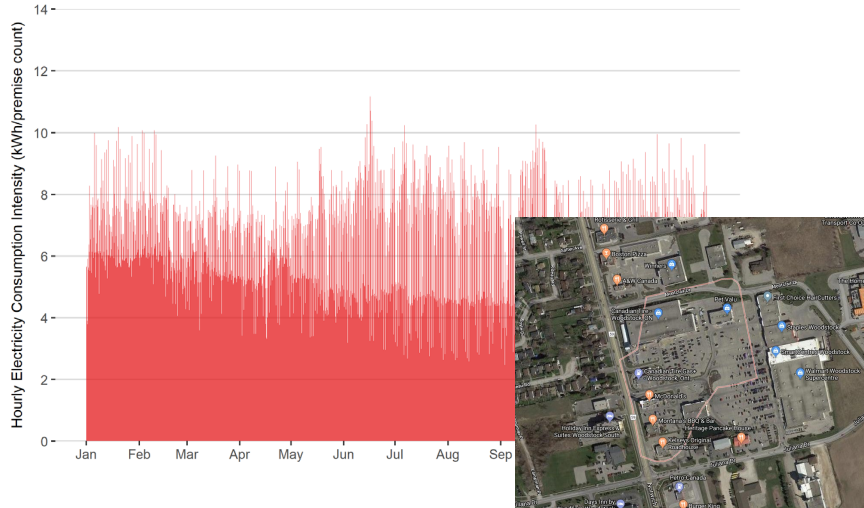
- Year over year trending of consumption data* useful in municipal planning, regional green-plans and net zero goals tracking.
- Clustering Analysis for a selected set of Postal Codes



* Images used with permission by the County of Oxford.

Examples of Use-Cases & Third Party Requests (3)

- Hourly electrical consumption intensity mapping for Small Commercial customers within a distinct postal code in Ontario.
- Weather sensitivity analysis – Residential Customers, Toronto IESO Electrical Zone



Examples of Use-Cases & Third Party Requests (4)

Below are some additional ideas for consideration in the context of an expanded access to the SME data – directionally only, as many more uses could be potentially envisioned:

Generators/ Storage

Identifying high consumption areas can assist with DER's siting - offsetting high demand can reduce need for wires and simplify the connection process

Demand Response Aggregators

Identifying high consumption areas during activation hours can help to target the most beneficial participants

Infrastructure Planners

EV charging size and location based on the uptake of Ultra Low Overnight (ULO) rate and consumption patterns

Scope 2 ESG Reporting

Baseline of Carbon Footprint in specific areas to compare with Green Button or Energy Management/ Industrial data for net-zero goals

Finance/ Economists

Use Electricity Consumption as a proxy for production for Small General Service

Market Research / Consulting

Rate Plan breakdown and historical trends can be useful to study customer behavior and preferences

IV. Key SME Considerations for Expanding Third Party Access

Assessing the opportunity to expand access to SME data, requires an understanding of the risks and benefits associated with potential changes, such as:

- Expanding the range of users with potentially new and valuable use-cases to organizations such as energy consultants, energy service providers, power generators, aggregators, even other industries (legal, banking, transportation, telecom, etc.)
- Diversifying the data by including new data streams (such as generation data, or from new customer classes such as Commercial & Industrial), incorporating new methodologies for better analytics, new data sharing platforms, a more streamlined intake & fulfillment process, pricing model, etc.
- Expanding the scope of the SME data and its potential implications on privacy and ethics – including through use of advanced technology such as AI.
- The effort required by the SME to sustain this new area of activity (impact on operations, budget, staff requirements, compliance and audits).

V. Discussion and Q&A

- 1) Reflecting on the examples provided in slides 5 – 10 of the discussion deck, are any of these use-cases resonating with you for potential applications in your own organizations?
- 2) Are there any other use-cases for the smart metering data that we have not captured here, that you could envision to have value for your organization?
- 3) Do you perceive any gaps in the data fields currently provided (customer type, pricing type, consumption data – by geography and time range) that make the usefulness of the potential use-cases for your business, less attractive?
- 4) Do you have any additional views on the current configuration of the third party access program?
- 5) Any other considerations that the SME should incorporate in their thinking about expanding third party access?

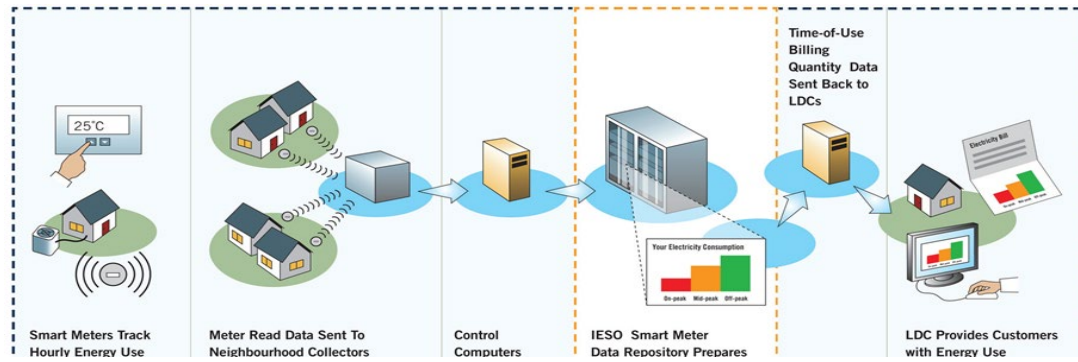


VI. SUPPLEMENTAL INFORMATION

Additional background on the Smart Metering Entity and its operations, more details on the Third Party Access project, and a market scan of energy data use examples in other jurisdictions.

Ontario's Smart Metering System

- The IESO, as the designated SME, operates Ontario's central smart meter data repository, the Meter Data Management and Repository ("MDM/R"). The MDM/R is one of the largest shared service/transactional systems in the world, supporting Ontario's 57 Local Distribution Companies (LDCs).
- The SME reliably and accurately processes meter reads for over 5.2M smart meters and delivers data to facilitate LDC billing (Time of Use, Tiered pricing and Ultra Low Overnight rate) of all residential and small general service (SGS) customers in Ontario.

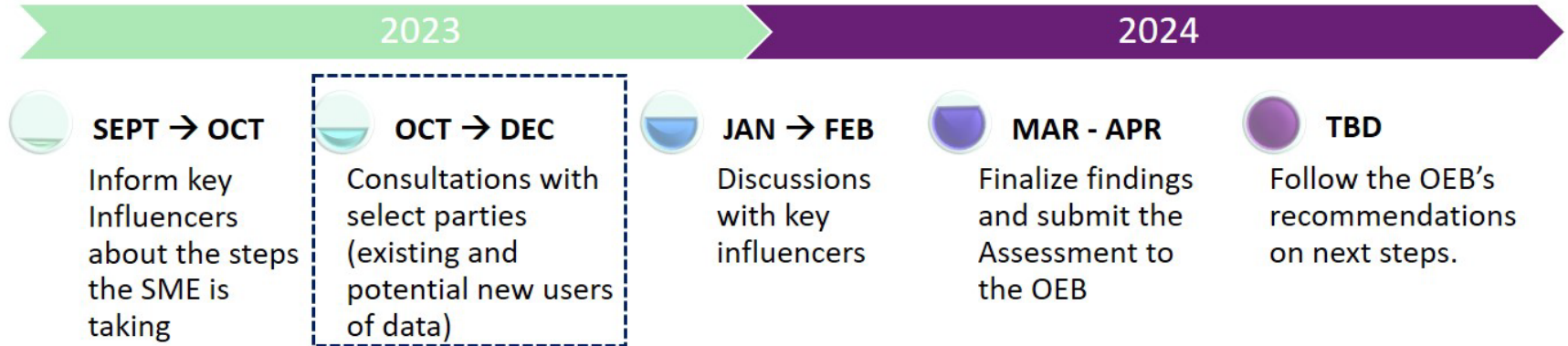


Key SME Milestones

July 2007	Following the announcement of the Smart Metering Initiative in 2004, the IESO is designated Smart Metering Entity by O. Reg. 393/07 responsible for developing, implementing and operating the meter data management provincial data centre (“MDM/R”).
Jan & Nov 2016	OEB orders the SME to collect more smart meter information, and prepare an implementation plan for third party access to this enhanced data, in a privacy compliant manner. OEB renews the SME’s licence for a five-year period (2017 – 2021) and endorses the accompanying high level implementation plan filed by the SME.
March 2018	The OEB approves the SME’s second 5 years budget and fee (2018-2022), of \$170.6MM and \$0.57/meter/month respectively (25% smaller than previous fee of \$0.79/meter/month).
Sept 2021	The OEB approves the SME license for a new five-year period of 2022 – 2026.
March 2022	The OEB orders that the SME should provide third party access to smart meter data to Canadian Government Entities, and requests an expanded third party access recommendation within 2 years.
June 2022	The OEB approves the SME’s third 5 years budget and fee (2023-2027), of \$137.1M and \$0.42/meter/month respectively (a further 25% reduction vs. previous fee of \$0.57/meter/month).
July 2023	Ministry completes regulatory amendments to extend the SME’s exclusive authority with respect to electricity conveyed to the grid, allowing the SME to implement a provincial MDM/R solution to support the LDCs customer net metering (Go Live scheduled for November 1 st 2023).

Timelines for Expanding Third Party Access Project

- As part of the OEB's 2022 Decision, the SME is required to undertake an investigation to assess the opportunity for expanding third party access to the SME data and file a recommendation not later than April 30, 2025, as part of its 2024 SME Annual Report.



Canadian Governmental Entities explained

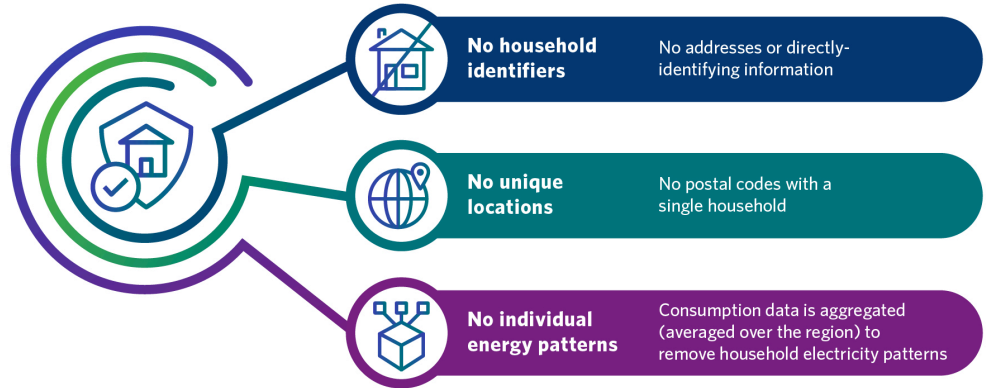
Canadian Governmental Entities (as defined in 2022 OEB Order):

“Federal and provincial governments, including ministries, agencies, boards, commissions, tribunals and wholly-owned corporations, or in the case of non-share capital corporations, where such corporations are controlled by a federal or provincial governments, as well as municipalities (or regional governments), universities, school boards, hospitals and First Nations. First Nations means a “council of the band” as that term is defined in subsection 2(1) of the Indian Act (Canada).

“Canadian Governmental Entities” does not include private sector entities, publicly traded companies, individual doctors, professors, or government officials and all those entities that do not fall in one of the categories outlined above.”

Full Privacy Protection by Design

- Household identifiers are removed (e.g., addresses, account numbers).
- No unique locations are included (e.g., postal codes with only one premise).
- No individual energy consumption is provided (e.g., only the total or average electricity consumption of a group is eligible for sharing).



Market Scan Summary

A high level scan of data sharing programs across the globe has identified key differences between jurisdictions, and some limited comparables with Ontario's Third Party Access program. As such:

- Several utilities across the USA have developed programs for data sharing beyond the typical Green Button construct (where electricity customers provide direct consent to a third party to have their data used for insights & analytics), to models more **comparable with Ontario's Third Party Access** (PG&E, Smart Meter Texas - SMT, ComEd, and Connecticut)
- Data sharing concepts are more advanced in Europe, especially between energy sector actors, where **complex Data Hubs** have come to life, or are in the process of being developed, to leverage the value of a mature smart metering infrastructure through integrated use cases reaching **many key participants in the electricity eco-system** (Finland's FinGrid, Denmark, Norway, and others)

Market Scan Summary (cont'd)

In Canada there are a number of third party data sharing programs, expanding beyond the energy sector:

- Several Canadian health agencies have developed data sharing programs providing aggregate and de-identified record-level data. Pricing options are different based on the organization and data provided (e.g. The Canadian Institute for Health Information - CIHI, Public Health Ontario, Ontario Health)
- Other federal, provincial and municipal government entities provide specific data access under Open Data principles (Government of Canada, Government of Ontario) or to offset operational costs (Municipal Property Assessment Corporation - MPAC)

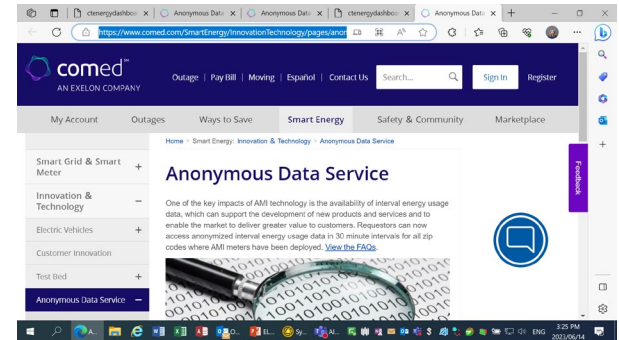
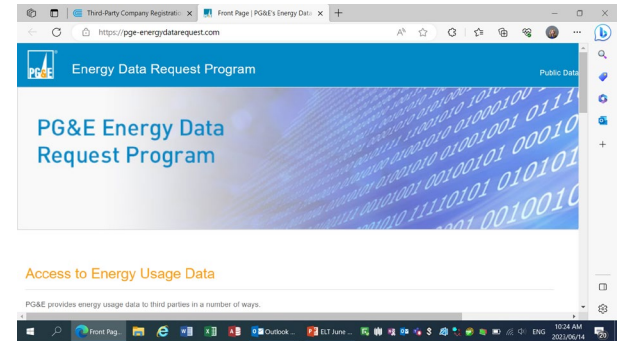
Market Scan – Energy Data Use Examples

PG&E

- Several tiers of data access: Public, Third Parties (academia, state and federal agencies)
- Under strict confidentiality and privacy requirements

ComEd

- Does not limit access to certain parties
- More limited zip-code based product offering
- Comparable charge model with the SME's



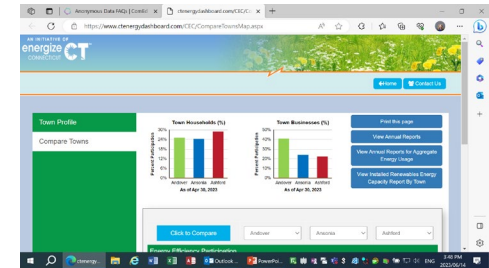
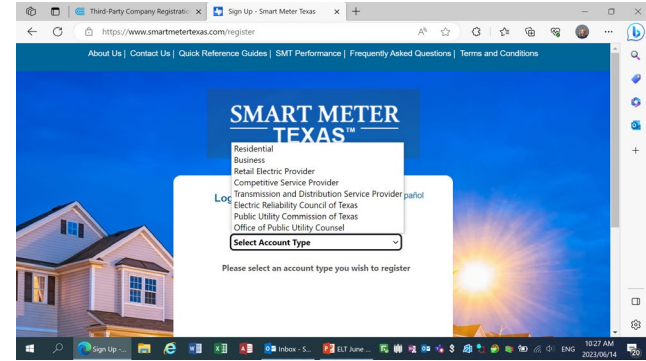
Market Scan – Energy Data Use Examples (cont'd)

Smart Meter Texas (SMT)

- Jointly operated by the 4 utilities in Texas, and controlled by the Public Utility Commission
- Provides access to authorized parties, to smart meter data of consenting customers to *help them manage electricity use*
- Transmission and Distribution Service Providers can access data for *managing the customer's quality of electric service.*

Connecticut

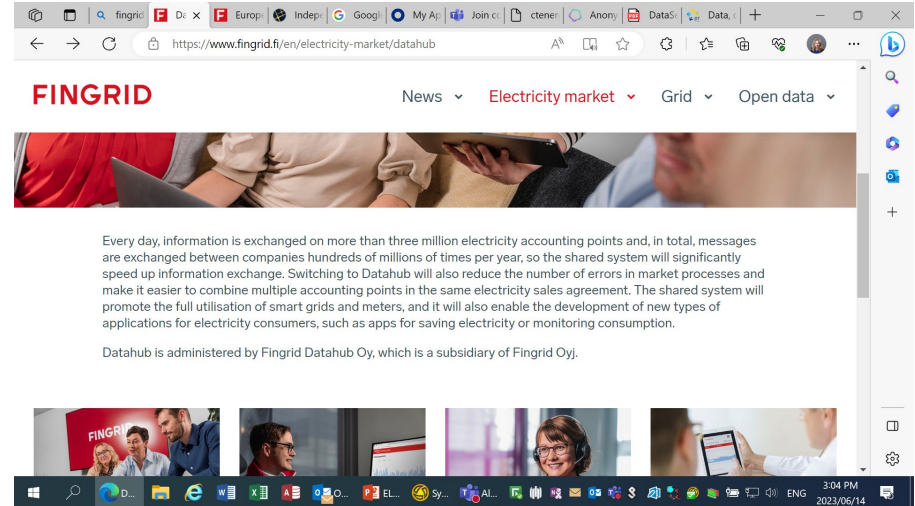
- Public dashboard to share town-based aggregated data
- No custom extract functionality



Market Scan – Energy Data Use Examples (cont'd)

FinGrid Datahub

- Centralized data exchange system for the electricity retail market
- Storing information on ~ 3.8 million electricity nodes
- ~80 distribution system operators (DSOs) and 80 electricity suppliers have switched to the Datahub to speed up information exchange



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