



JUNE 2024

Revenue Metering Standing Committee



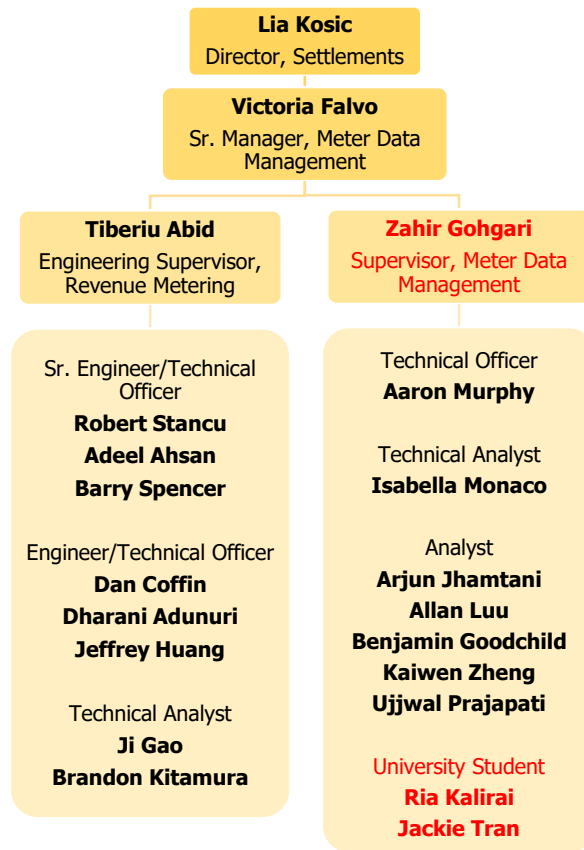
Welcome Remarks

Victoria Falvo | Sr. Manager, Meter Data Management

IESO Staff Updates

Changes:

- **Zahir Gohgari** – Supervisor (Rotation), Market Settlements, Policy and Strategy Integration, beginning June 17, 2024
- **Ria Kalirai** – MDM student, ending September 2024
- **Jackie Tran** – MDM Student, beginning June 3, 2024





Administrative Items

Tiberiu Abid | Engineering Supervisor, Revenue Metering

Administrative Items

- Review current meeting agenda
- Review and approval of last meeting minutes

Administrative Items - Updates on action items

#	Date	Action	Status	Comments
1	Jun 2021	IESO to invite committee members to continue discussion relating to meter phase rotation and remedial plan.	Propose to Close	<p>June 13/24: We reached out to MC to request access to the revised Appendix A however, we weren't successful to date. IESO decided to close the issue and not follow with the enforcement of the current remediation plan. All the audit findings will be closed with no action for the MSPs. Future metering installation audits will not identify this issue as a finding.</p> <p>Dec 14/23: MC issued S-E-08, revision 3, on September 28, 2023. The purpose of revision 3 was to: (i) clarify the position of Measurement Canada with regards to ABC versus CBA rotation and the vector diagrams in the standard drawings, and (ii) update the document according to the latest formatting requirements, which included modifying the document numbering. However, there are no specific revisions in the body of the specification and we believe the revisions are reflected in Appendix A—Standard Drawings for Electricity Metering Installations. This appendix is available upon request due to its large size. To obtain a copy, please send an email to mcinfo-infomc@ised-isde.gc.ca. To date, we were not able to obtain a copy of Appendix A for our review.</p> <p>June 22/23: Status quo – still awaiting for MC revisions</p> <p>Dec 7/22: Status quo – still awaiting for MC revisions</p> <p>Jun 23/22: Status quo – still awaiting for MC revisions</p> <p>Dec 9/21: Follow up meeting conducted on Sep 15/21. The meeting did not yield any changes to the initial remediation plan.</p> <p>Based on IESO's discussions with Measurement Canada, it has been recognized the need to revise the current Measurement Canada S-E-08 to ensure clarity regarding this issue. MC plans to revise the S-E-08 by Q3-2022. Until then, IESO will pause the enforcement of the current remediation plan.</p> <p>Jun 24/21: The IESO will schedule a follow up meeting with the MSPs to discuss this further.</p>

Administrative Items - Updates on action items

#	Date	Action	Status	Comments
2	Dec 2022	IESO to consider options for creating a working group to further discuss evaluation methodology for commissioning report submissions.	Propose to Close	<p>June 13/24: IESO determined that there is no need to create new working group to reevaluate the current methodology for commissioning</p> <p>Dec 14/23: No updates</p> <p>June 22/23: IESO is analyzing rejected commissioning reports to determine if there is a need to reevaluate the methodology for commissioning</p>



IESO Metering Updates

Aaron Murphy | Technical Officer, Meter Data Management

Metering Installations by the Numbers – Part 1

Total of 2537 metering installations (2236 physical + 298 virtual) registered in IESO Administered Market (IAM)

Physical Metering Installations

- 2236 physical metering installations
- 1887 registered under the Declaration of Compliance (DOC)
- 349 registered under the Alternative Metering Installation Standard (AMIS)

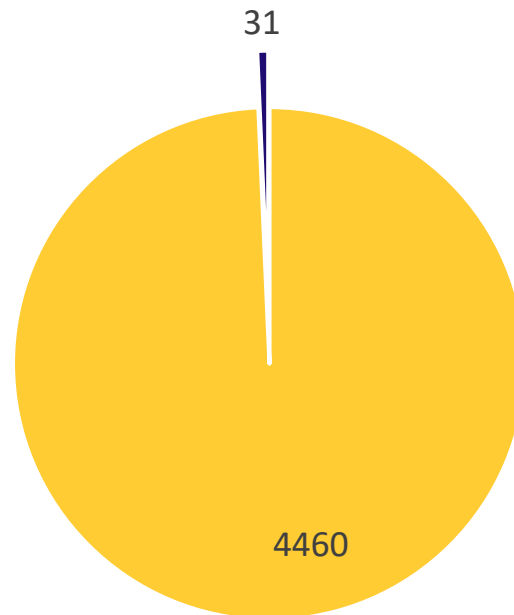
Metering Installations by the Numbers – Part 2

Virtual Metering Installations

- 298 virtual metering installations
- 115 represent station service (unmetered or allocated between MMPs)
- 183 represent embedded generation for the purpose of transmission tariff (Form 1563)

Metering Communications

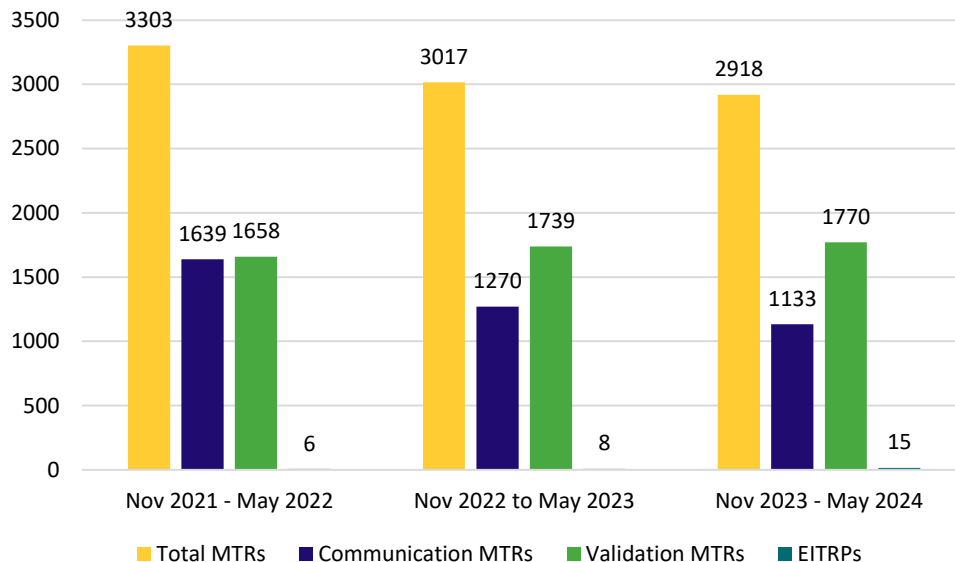
- 4491 Meters interrogated daily
- 4460 via TCPIP (99%, ■)
- 31 via telephone lines (1%, ■)



Meter Trouble Reports (MTRs) Overview

From November 2023 – May 31, 2024

- 2918 MTRs issued
 - 1133 Communication
 - 1770 Validation MTRs
 - 15 EITRP MTRs





IESO Metering Updates

MSP Performance Metrics and Registration Updates

Isabella Monaco | Technical Analyst, Meter Data Management

Introduction to MSP Performance Reports

- Part of conformance monitoring
 - Defined by market rules: **Market Manual 3.9**
- MSP performance reports released monthly for **two** months preceding
 - MSPs can access via: Online IESO>Reports>MSP Performance Reports
- Four main themes:
 - Communications and Validations, MTRs, Registration and Errors/Conformance
- Overall, positive MSP performance over the last 12 months (April 2023 – March 2024)

Overall MSP Performance Summary – Theme 1

Over the last 12 months (April 2023 – March 2024):

- 95% Successful Daily Meter Communication on First Attempt
- 97% Successful Daily Meter Communication
- Approximately 93% of the Meter Installations do not experience communication MTRs on a monthly basis (Measure 3)
- Approximately 96% of Meter Installations do not experience validation MTRs on a monthly basis (Measure 4)

Overall MSP Performance Summary – Theme 2

Over the last 12 months (April 2023 – March 2024):

- MTR responses has shown positive results relating to:
 - MTRs Resolved Within 2 Business Days of Issuance (Measure 5)
 - Number of Unresolved MTRs by Preliminary Settlement Statement (Measure 6)
 - Number of Unresolved MTRs by Final Settlement Statement (Measure 7)

MSP Performance Monthly Breakdown (May 2023 – March 2024)

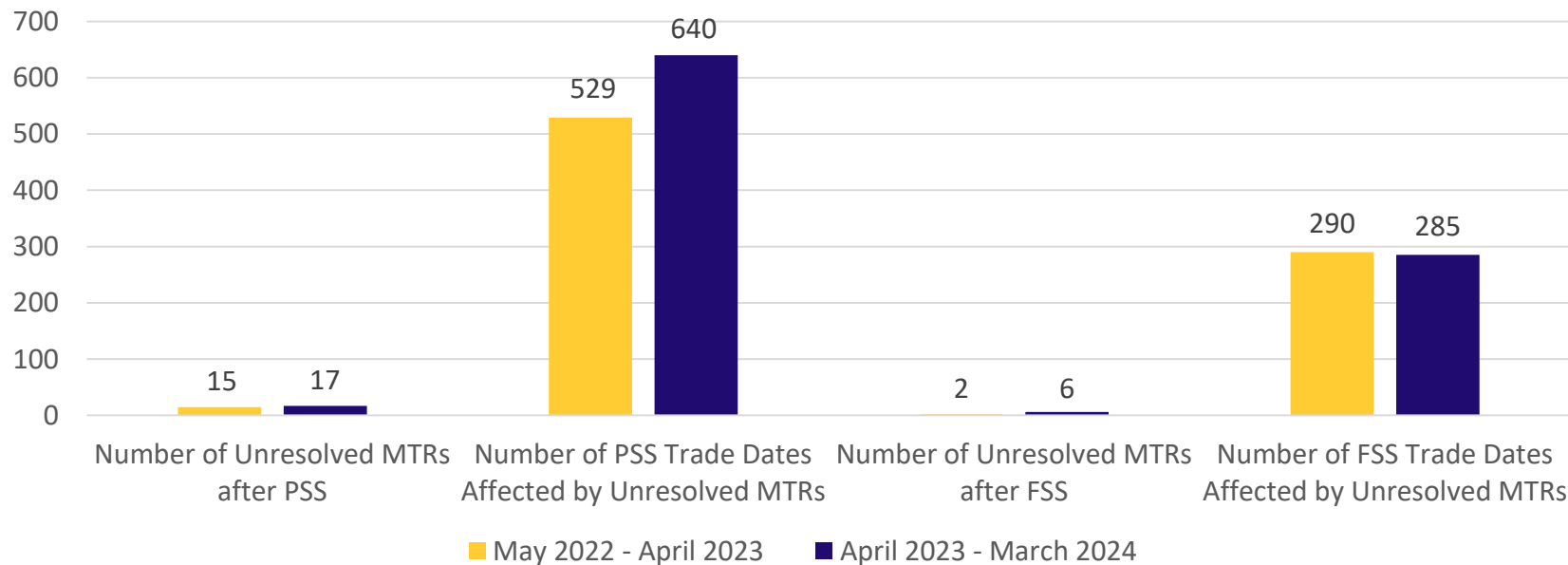
Measure	Target	May 2023	Jun 2023	Jul 2023	Aug 2023	Sep 2023	Oct 2023	Nov 2023	Dec 2023	Jan 2024	Feb 2024	Mar 2024	Apr 2024
1. Successful Daily Meter Communication on First Attempt	90%	94.9	94.7	94.1	95.0	94.7	94.1	94.2	95.6	95.9	95.4	94.3	-
2. Successful Daily Meter Communication	95%	97.6	97.6	96.7	97.9	97.7	97.1	96.7	98.0	98.3	97.9	96.9	-
3. Communication Meter Trouble Reports Issued													
- # of communication MTRs issued	0	186	173	566	199	198	241	203	126	134	154	137	-
- % of meter installations without communication MTRs issued	100%	93.6	94.5	79.2	92.8	93.4	91.9	93.0	95.8	95.5	95.4	95.1	-

MSP Performance Monthly Breakdown (May 2023 – March 2024)

Measure	Target	May 2023	Jun 2023	Jul 2023	Aug 2023	Sep 2023	Oct 2023	Nov 2023	Dec 2023	Jan 2024	Feb 2024	Mar 2024	Apr 2024
4. Validation Meter Trouble Reports Issued													
- # of validation MTRs issued	0	114	125	134	103	119	107	82	65	70	55	71	-
- % of meter installations without validation MTRs issued	100%	95.8	95.4	95.5	96.1	95.8	96.0	97.1	97.5	97.4	97.8	97.4	-
5. Meter Trouble Reports Resolved Within 2 Business Days of Issuance	95%	98.3	95.2	95.9	94.1	91.1	96.7	96.1	96.9	96.9	98.3	97.6	-

PSS/FSS Performance Overview

All MSPs 12-Month Performance
(May 2022 - April 2023 vs. April 2023 - March 2024)



Overall MSP Performance Summary – Theme 3

Over the last 12 months (April 2023 – March 2024):

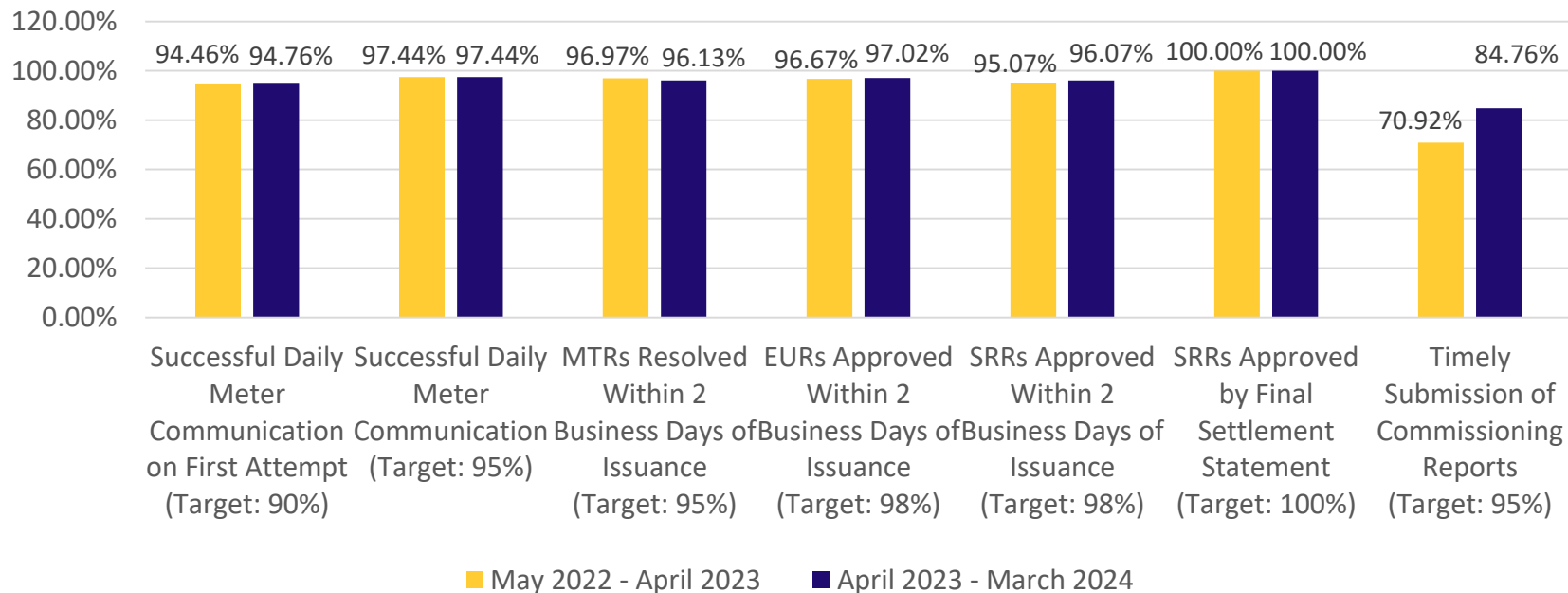
- Registration activity has shown positive results relating to:
 - EURs Approved Within 2 Business Days of Issuance (Measure 8)
 - SRRs Approved Within 2 Business Days of Issuance (Measure 9)
 - SRRs Approved By Final Settlement Statement (Measure 10)
- Registration activity has shown lower performance relating to:
 - Timely Submission of Commissioning Reports (Measure 11)

MSP Performance Monthly Breakdown (May 2023 – April 2024)

Measure	Target	May 2023	Jun 2023	Jul 2023	Aug 2023	Sep 2023	Oct 2023	Nov 2023	Dec 2023	Jan 2024	Feb 2024	Mar 2024	Apr 2024
8. Engineering Unit Reports Approved Within 2 Business Days of Issuance	98%	100.0	100.0	100.0	96.8	86.8	100.0	100.0	89.2	100.0	100.0	100.0	-
9. Site Registration Reports Approved Within 2 Business Days of Issuance	98%	100.0	100.0	100.0	100.0	91.4	80.0	77.8	95.7	100.0	100.0	100.0	-
10. Site Registration Reports Approved by Final Settlement Statement	100%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	-
11. Timely Submission of Commissioning Reports	95%	95.5	89.3	78.3	61.8	91.4	86.4	86.4	87.5	96.2	84.6	92.7	-

MSP Performance Breakdown

All MSPs 12 Month Performance
(May 2022 – April 2023 vs. April 2023 – March 2024)



Overall MSP Performance Summary – Theme 4

Over the last 12 months (April 2023 – March 2024):

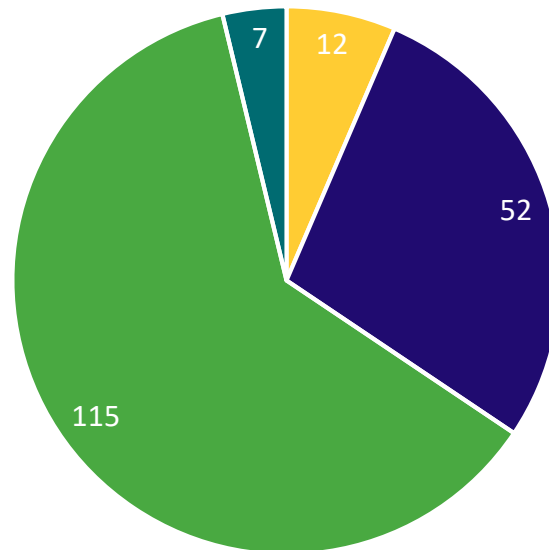
- Measure 12, “Metering Registry Errors” have been 0 and over the last couple of years
- Measure 13, “Non-conformance incidents” resulting from R&P audits will continue to be reported (seeing positive impact from R&P audits conducted to date)

MSP Performance Monthly Breakdown (May 2023 – April 2024)

Measure	Target	May 2023	Jun 2023	Jul 2023	Aug 2023	Sep 2023	Oct 2023	Nov 2023	Dec 2023	Jan 2024	Feb 2024	Mar 2024	Apr 2024
12. # of Metering Registry Errors	0	0	0	0	0	0	0	0	0	0	0	0	-
13. # of Non-Conformance Incidents	0	0	0	0	0	0	0	0	0	0	0	0	-

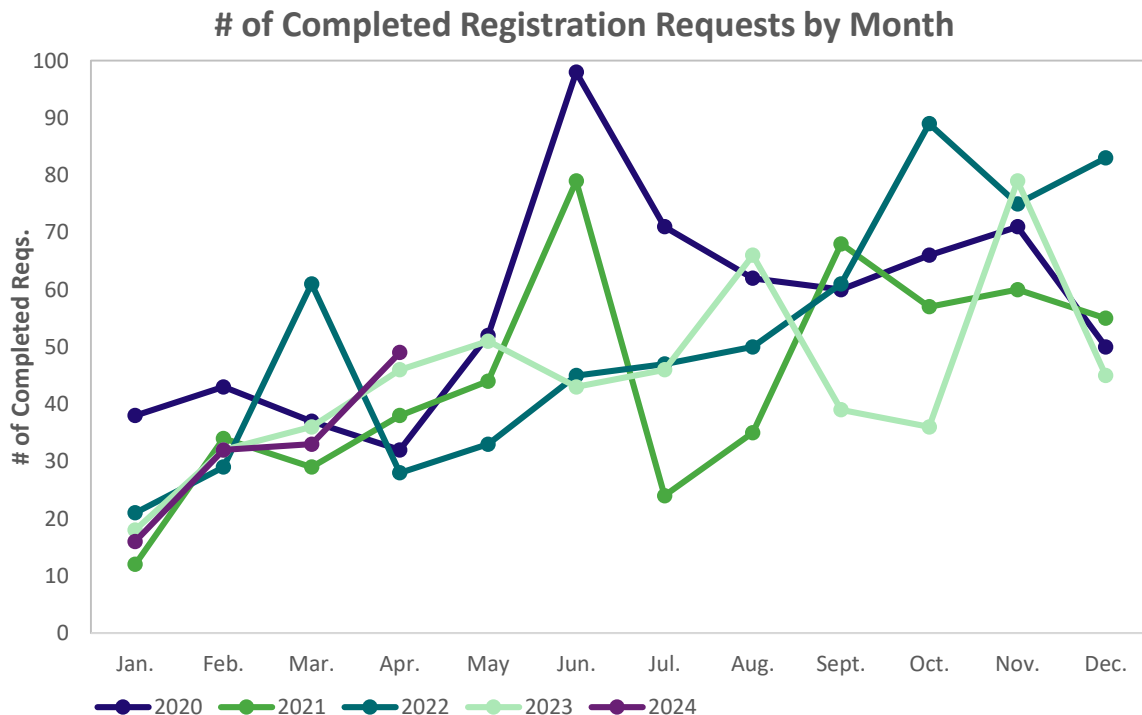
Meter Registration Hotline Activities – Part 1

- 186 total completed (January 2024 – March 2024)
- 115 Like for Like Update (61%, ■)
- 52 Update Metering Installation (29%, ■)
- 12 Register Metering Installation (6%, ■)
- 7 Deregister Metering Installation (4%, ■)



Meter Registration Hotline Activities – Part 2

- Note: Graph does not include update metering installation requests
- **IESO MTR Hotline:**
905-855-6441
- **IESO Meter Registration Hotline:** 905-855-6490





IESO MIRT Project

Aaron Murphy | Technical Officer, Meter Data Management

IESO MIRT Project - Introduction

Agenda:

- MIRT, 1488 Form and MVT recap
- Why replace the tools?
- High level overview of new tool
- Benefits of new tool
- Target project timelines
- Survey/polling question

IESO MIRT Project - Recap: What is MIRT / 1488?

- “Meter Installation Registration Tool”
- Created by IESO in early 2000’s
- MSP enters parameters based on meter installation while other parameters are set in the back-end
- Creates MV90 master file
- Master file then sent to IESO via Online IESO
- Like-for-like updates sent to IESO via excel file: form 1488

IESO MIRT Project - Recap: What is MVT?

- “MIRT Verification Tool”
- IESO internal use only
- Verifies “correctness” of master file
- Based on templates for IESO approved device types
- Failing MVT check leads to master file rejection for correction/revision by MSP

IESO MIRT Project - Why Replace the Tool?

Limitations and Current Issues:

- Unsupported back-end
- Incompatibility with new OS' and requires patch to run
- Much back and forth between IESO and MSPs

Need for Improvement:

- Enhancing efficiency
- Improving user experience
- Incorporating modern features

IESO MIRT Project – Overview of New Tool

Core Features and Improvements:

- Embedded within online IESO interface
- Master file created, automatically submitted and downloadable
- Based on device make and element config:
 - Certain meter installation parameters are prepopulated
 - Validations are built in with preloaded templates
- Connected to package 1 information
- Form 1488 no longer required and also embedded in Online IESO
- Supported by IESO internal IT group

IESO MIRT Project – Benefits of New Tool

Efficiencies:

- Faster completion of meter registrations
- Reduction of meter errors
- Streamlined task completion
- Reduced back-and-forth
- Consolidation of tools
- Ability to view master file parameters/records within Online IESO

User Experience:

- Intuitive Interface
- Familiarity
- Functionality

IESO MIRT Project – Target Project Timelines

Stage	Timeline
Planning and Requirements Gathering Started	July 2023
Development Started	November 2023
Final Internal Testing	August 2024
Go-Live	October 2024
Monitoring Period	November 2024

IESO MIRT Project – Market Trials & Survey Question

Is your MSP interested in participating in market trials for the new tool?

If your MSP is interested in participating in market trials for the new tool, what is your preferred method?

Survey Link: <https://s.surveyplanet.com/1o72kkv6>





IESO MIRT Project - Thank You

Any Questions?



Sector and IESO Updates

Tiberiu Abid | Engineering Supervisor, Revenue Metering

Topics

- Measurement Canada
- Resource Adequacy
- Enabling Resources Program
- Meter Data Management System Replacement Project
- Demand Side Vision
- Market Renewal Project

Measurement Canada (MC)

- MC plans to launch a regulatory modernization consultation in the near future
- MC is reviewing the Electric Process Advisory Committee (EPAC) and may call for members with expertise in metering
- MC is currently going through an organizational restructuring – the amount and type of roles remain to be seen however, a positive development

Measurement Canada (MC) (cont'd)

- MC is revisiting past Complex Metering Initiatives Joint Working Group (CMI JWG) and will advise as to next steps but, MC continues to see this as an important initiative

Metering Impact:

- Opportunity of getting involved to provide advice and support to various MC initiatives, committees and working groups

Resource Adequacy

- The IESO's 2024 Annual Planning Outlook forecasts that Ontario's total electricity demand will increase by 60 per cent over the next 25 years
- The IESO's most recent Long-Term 1 Request for Proposals (LT1 RFP) has successfully acquired the additional resources needed to meet Ontario's electricity needs this decade

Resource Adequacy (cont'd)

- The LT1 RFP results further augment the suite of resources previously acquired under the Expedited Long-Term 1 Request for Proposals (E-LT1 RFP) and Same Technology Upgrades Solicitation, both executed in 2023
- Across these three initiatives, the IESO has added **3,658 MW** of new capacity, which puts Ontario's electricity system in a strong reliability position throughout the decade

IESO Resource Adequacy (cont'd)

Timing	Activity	Result (MW)
May 2023	Expedited Long-Term 1 (LT1) RFP	1,177 (882 storage / 295 non-storage)
May 2023	Same Technology Upgrades Solicitation	286
May 2024	Long-Term 1 (LT1) RFP	2,195 (1,784 storage / 411 non-storage)
	TOTAL:	3,658

Resource Adequacy (cont'd)

- The new capacity is scheduled to come into service until 2028
- The new resources providing the new capacity will be settled in IESO-administrative markets and therefore, must be metered accordingly

Resource Adequacy (cont'd)

- With the first phase of the Resource Adequacy Framework addressing needs this decade complete, LT2 RFP will look to address needs emerging in 2029 and through the early-2030 s in three streams using non-emitting resources:
 - Stream 1 - Energy Stream: Approximately 2,000 MW of new supply to meet a five terawatt-hour energy need to be in service by 2030. This could include solar, wind, hydroelectric expansions, and biofuels.
 - Stream 2 - Capacity Stream: 500-1,000 MW in service by 2031. This could include storage, hydrogen and biofuels.

Resource Adequacy Updates (cont'd)

- Stream 3 - Long Lead-Time Assets: 500-1,000 MW in service by 2034. This could include new hydroelectric assets, and long lead-time long-duration storage.

Metering Impact:

- Requires proactive resource planning to support the increase of metering installations over the next decade and more
- IESO to ensure IT systems have the capacity to store additional metering data

Enabling Resources Program (ERP)

- While the IESO initially committed to implementing foundational models for storage, hybrids and Distributed Energy Resources (DERs), factors impacting resource needs since the program was initiated have evolved (i.e. significant amount of storage procured; increased demand for clean energy; certainty regarding DER potential; availability of federal funding for system upgrades)

Enabling Resources Program (ERP) (cont'd)

- The IESO has revised the scope of ERP to expedite implementation of the enhanced models for storage and hybrids and elements of the enhanced model for DERs

Metering Impact:

- Resource availability to support the program detail design and implementation
- May impact metering market rules, requirements, hardware standards and policies

Enabling Resources Program (ERP) (cont'd)

Project and Stage	Duration (target)	Metering Impact
Storage & Hybrids (validate high level design)	Aug-Sep, 2024	Low
Storage & Hybrids (detail design)	Sep, 2024 – June, 2025	Low
Foundational DERs (validate high level design)	Oct – Dec, 2024	Medium (tbc)
Foundational DERs (detail design)	Dec, 2024 – Oct, 2025	Medium (tbc)

Meter Data Management System Replacement Project

- In order to continue to sustain the required IESO settlement services provided by the Meter Data Management Solution (MDMS) IESO needs to replace the existing application system
- Current project scope does not consider any changes to upstream or downstream processes and/or systems/tools, e.g., MV-90, MIRT/MVT, Online IESO, MDD, CRS

MDMS Replacement Project (cont'd)

- The assumption is the project will have a minimum or no impact to metered market participants and metering service providers
- The project formally started late May 2024 and the target in service date is by end of 2027

Metering Impact:

- IESO resources to support and deliver the project therefore, may impact metering core work
- We do not foresee any impact to MSP/MMP resources

Demand Side Vision

- The IESO has commenced engagement with the Demand-Side community to explore enhancements to participation models for Demand-Side resources in the IESO-Administered Market (IAM) and programs
- This engagement aims to identify solutions to optimize resource utilization, minimize costs, and enhance grid reliability, while encouraging and incorporating advancements in technology and Demand Response participation models to fuel innovation within the sector

Demand Side Vision (cont'd)

- We encourage all interested parties and Demand-Side stakeholders to participate in this engagement through the public engagement activities
- This initiative will be of particular interest to current and prospective market participants, i.e., large commercial, industrial and institutional loads, aggregators, distributed energy resource proponents and/or service providers and associations

Metering Impact

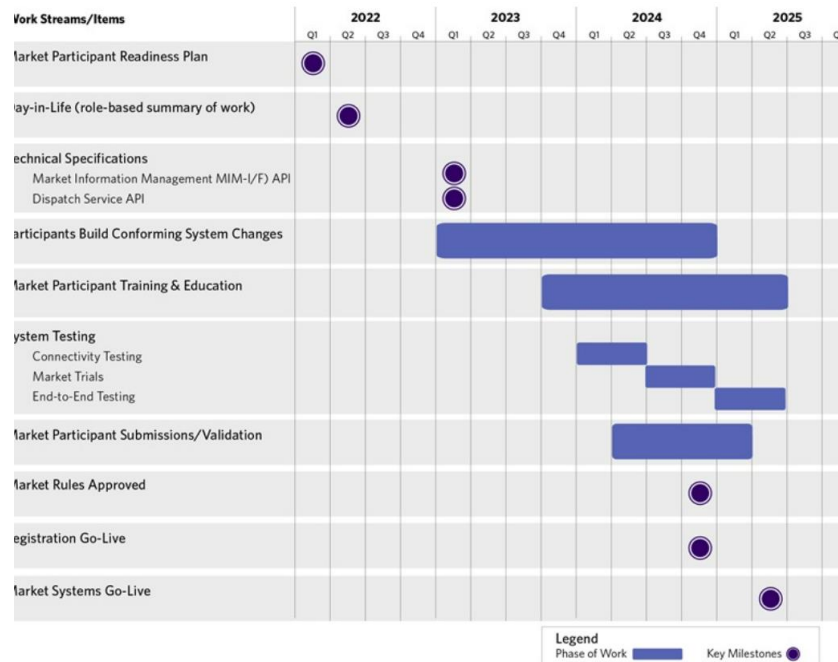
- Still in its early stage hence, we cannot confirm scope and impact on metering

Market Renewal Program

The Market Renewal Program (MRP) will deliver more efficient markets, ensuring that all Ontarians have a stable and reliable supply of electricity at the lowest cost

Metering Impact:

There is no direct impact to metering processes due to MRP implementation and Go-Live activities



References

- Measurement Canada – [Strategic Vision 2021-2026](#)
- Resource Adequacy [Overview \(ieso.ca\)](#)
- Distributed Energy Resources Program [Enabling Resources Program \(ieso.ca\)](#)
- Demand Side Vision [Demand-Side Vision \(ieso.ca\)](#)
- Market Renewal Project [Market Renewal \(ieso.ca\)](#)

Roundtable Discussion



Member Survey

Survey Link: <https://s.surveyplanet.com/lfpm6s2o>



Thank You

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