EXTERNAL





Smart Metering Entity (SME) Time-of-Use Mandate Progress Report Through June 30, 2013

Issue 35.0 - July 24, 2013

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1. Introduction

1.1 Purpose

The purpose of this report is to provide a monthly update to the Ontario Energy Board on the Smart Metering Entity's readiness and performance and the progress in respect to distributor integration with the Meter Data Management and Repository (MDM/R). This report includes information and status updates on:

- The Smart Metering Entity (SME) and the MDM/R Readiness Any issues relevant to the ability of the SME and the MDM/R to support MDM/R enrolment and TOU implementation, such as resourcing, software operation, and processing performance.
- Distributor (LDC¹) Readiness Integrating with the MDM/R is a prerequisite to enable LDCs to execute their individual TOU rollout strategies and contribute to Ontario's provincial targets for total customers on time-of-use (TOU) rates. This report includes information regarding LDC progress against their project plans, testing activities and MDM/R enrolment activities both achieved and projected.

1.2 How to Use this Document

This report presents information and status updates on SME and MDM/R readiness (in Section 2), distributor readiness, and MDM/R enrolment progress (in Section 3). This report focuses on updates through the end of the indicated month. However, in the area of MDM/R readiness (Section 2), important updates that occurred between the end of the reporting month and the date the report is submitted to the OEB will also be reported. More information about the provincial Smart Metering Initiative, the MDM/R and the implementation of Time-of-Use rates is available on the websites of the Ministry of Energy (http://www.mei.gov.on.ca/), the Ontario Energy Board (http://www.oeb.gov.on.ca/OEB/Industry) and the IESO/SME (http://www.smi-ieso.ca/).

SME and MDM/R readiness will include updates on implementation and testing for new MDM/R software, processing performance, status of resourcing and training programs, and any other issues that may affect the implementation of mandatory TOU.

Distributor readiness and MDM/R enrolment progress will be communicated using a series of tables; some summarizing aggregate results and others detailing by individual LDC. The tables provided in the report are:

- MDM/R Cutover Targets
- MDM/R Enrolled Meter Counts by Distributor
- MDM/R Enrolment Wave Calendar (2013)

Each table is accompanied by a description of its contents and how to interpret it. The information contained in two of the tables is interrelated and these relationships are described below.

¹ LDCs in Ontario (meaning each Local Distribution Company or "distributor" as defined in the Ontario Energy Board Act, 1998)

- The MDM/R Enrolment Wave Calendar contains detailed schedules for the planned enrolment testing and cutover to production that each LDC has provided to the SME. The Wave Calendar includes updates received from LDCs verbally and through project plan submissions. If an LDC's self-certification for enrolment testing has been accepted by the SME, this is also indicated on the MDM/R Enrolment Wave Calendar. Verbally provided milestone information, while shown in the calendar, is not included in any of the other tables. The information in the MDM/R Enrolment Wave Calendar can be further refined based on the SME's assessment of an organisation's readiness. The basis for such refinements can include our interactions with the LDC's project team, along with observed levels of testing activity in the MDM/R testing environments.
- MDM/R Cutover Targets uses the actual number of LDCs enrolled in the MDM/R production environment and the number of meters that they have each enrolled at the end of each month. It projects forward the number of LDCs that will be enrolled in subsequent time periods based on the MDM/R Enrolment Wave Calendar.

2. SME and MDM/R Readiness – Relevant Issues

2.1 MDM/R Operation and Software Testing

The Smart Metering Entity (SME) has completed the enrolment of 71 of 72 distributors and their eligible meters under the Board's TOU mandate. The enrolment and transition of remaining customers to TOU billing is subject to the Board's regulatory and exemption processes.

The MDM/R production environment remains stable and reliable, and the SME continues to address LDC support and service requests in a timely manner.

The MDM/R continues to offer a stable, centralized system that effectively supports LDCs with their time-of-use billing. The SME is working with LDCs as they transition to the billing quantity interface that enables them to comply with Measurement Canada's requirements by including register readings on customer's time-of-use bills.

On June 13, 2013 the IESO Board of Directors formed the SME Steering Committee and appointed the existing members of the Operations Working Group to represent LDCs.

On June 17, 2013 the SME deployed a knowledge base application within the MDM/R Service Desk Tool. This knowledge base facility stores MDM/R Manuals, Documents, Guides and other informational media making them more accessible to LDCs and other authorized users.

2.2 **Processing Performance**

At the end of June, the MDM/R was supporting 71 LDCs with a total of 4.6 million enrolled smart meters. In June, the MDM/R processed an average of 10.3% more interval data daily, due to the poor quality of data submitted by some LDCs and their respective AMI agents, which resulted in temporary data estimations as well as the reprocessing of duplicate data submissions.

In June, the MDM/R processed 98.7% of meter reads on time:

• The remaining 1.3% was due to a single instance where an LDC submitted a data file with a poorly constructed record. This caused a large number of estimations which created a delay in processing. LDCs were notified and the Operational Service Provider was able to quickly recover from the incident. The LDC who caused the incident was contacted directly to prevent recurrence.

The MDM/R processed 100% of meter master data updates, and 100% of billing quantities within contracted service level time lines.

The SME has been meeting with the LDCs and their metering providers directly to manage the quality and timing of meter read data submissions to the MDM/R.

2.3 Resourcing

The SME continues to make resources available to LDCs in support of their time-of-use implementation plans and transition to the interface and measurement profiles required for LDCs to receive and present register reads on electricity bills. There were no significant resource changes in June.

2.4 Training

By the end of June, the SME delivered eight Advanced Graphical User Interface training sessions with more sessions scheduled between July and December 2013. The training program has been well received by LDCs, as it provides them with a variety of scenarios for investigation and exploration stemming from meter read data submission, synchronization and billing exceptions. For the complete 2013 training schedule, please consult the SME website.

2.5 Additional Risks and Issues

SME INITIATIVES

Transitioning of LDCs to Enable their Receipt of Cumulative Register Reads from the MDM/R for Inclusion on TOU Bills to Customers

Inclusion of cumulative register reads on customer's TOU bills is the responsibility of the LDC by making necessary changes to their own systems, business processes, and by conducting their own tests before transitioning.

By the end of June, 69 LDCs have transitioned to the MDM/R interface enabling them to receive register reads for billing and support their compliance with Measurement Canada requirements. The last production LDC is currently testing this interface in the MDM/R test environment, one LDC is currently in enrollment, and the other has been provided an exemption by the OEB.

Measurement Canada 2012 Phase 2

The software for the MC 2012 Phase 2 solution is expected to be made available for LDC testing following the refresh of the MDM/R computing infrastructure (referred to below). This solution is expected to be available for LDC testing in early 2014 and be deployed to production in the first or second quarter of 2014. The MC 2012 Phase 2 solution provides additional quality indicators for estimated and calculated register reads and the ability to designate externally submitted register reads as estimated. It also allows LDCs to use the MDM/R for billing based on hourly and periodic consumption in order to further support Measurement Canada requirements.

Phase 2 of the Measurement Canada 2012 solution includes the following components:

- Calculative reads equality adjustment (periodic and hourly) and related measurement profiles;
- Additional quality indicators for externally estimated and calculated register reads using estimated intervals; and
- Extension of the Trilliant meter readings interface for estimated register reads.

MDM/R Data Access

The provincial Meter Data Management and Repository (MDM/R) was procured and implemented in support of the Ministry of Energy's specifications established in 2006. Specifications were focused on the implementation of time-of-use billing, support for LDC metering operations and requirements to provide data access to LDCs and authorized third parties, such as Retailers and the OPA.

The SME is engaged in providing support to the Ministry's initiatives for improving access to electricity data stored in the MDM/R and deriving additional value from that data. Some of those initiatives include:

- The Ministry's 'Green Button Initiative' launched on November 21, 2012 with the objective to provide electricity consumers with greater access to information about their energy consumption, and encourage the creation of new innovative tools for consumers to help conserve energy and save on electricity costs.
- The Ministry's MDM/R Road Map initiative launched in March 2013 to identify opportunities to derive additional value from the investments already made in the Province's smart metering infrastructure and the MDM/R.
- In accordance with a Ministry Directive, on February 11, 2013, the OEB's Supplemental Report on Smart Grid stated that "The Smart Metering Entity (SME) must investigate opportunities for providing access to depersonalized, generic data to third parties for planning, research, and customer benchmarking purposes (e.g., allowing customers to compare their consumption with that of their neighbours)."

Many LDCs are accessing the data in ways that were not originally anticipated which further increases the level of access requests. The volume of these requests continues to increase to support the needs of authorized interested parties and those customers authorizing multiple third party service providers access to their data.

The SME initiated a project to define initial requirements, conduct research and technical evaluations of technologies that could be used and scaled cost effectively to address current and anticipated volumes and evolving needs for access to MDM/R data.

The SME continues to work with the Ministry, LDCs, OEB, OPA, the Privacy Commissioner of Ontario, and other stakeholders as needed, to ensure that synergies and cost efficiencies are realized as other projects are initiated within those organizations that intersect with this project.

MDM/R Technology Refresh

The project to refresh the MDM/R infrastructure is underway, and the SME has provided updates and held conference calls with LDCs on this project. Overall demands on LDCs for this project are minimal, however, some LDCs will need to reconfigure their AS2 and firewalls with new internet addresses in order to connect to and facilitate transparent cut-over to the new MDM/R environments. The SME has reached out to all LDCs to identify and work with the impacted LDCs and assist with their transition to the new internet addresses for connecting to the MDM/R.

The SME will be publishing updates to the MDM/R Manuals and Terms of Service to reflect improved service and performance levels late summer and in the fall for LDC comment.

The SME plans to have the MDM/R production, disaster recovery, and production support environments transitioned to the new computing infrastructure by Q4 2013.

3. Distributor Readiness – MDM/R Integration and Meter Enrolment

3.1 June Highlights

By the end of June there were 71 LDCs in production with 4.6 million meters enrolled in the MDM/R. The remaining LDC is currently engaged in Unit Testing, and onsite training was completed on June 11, 2013. This LDC remains on target with their submitted project plan and will begin integration testing with the MDM/R in the third and fourth quarters of 2013 with cutover to production expected in the fourth quarter of 2013.

3.2 MDM/R Cutover Targets²

The MDM/R Cutover Targets table provides both actual and projected numbers of LDCs that have been or are to be cutover to MDM/R production operations in each calendar quarter.

For information on which specific LDCs are included in the *Production LDCs* column for each time period refer to the MDM/R Enrolment Wave Calendar.

The *RPP Eligible Customers* column contains the aggregate total for all the LDCs included in the *Production LDCs* column. LDC filings with the OEB include their total RPP eligible customers and these figures form the basis for the aggregated figures reported in this table.

The *Enrolled in MDMR* column contains the aggregate total number of smart meters for those LDCs that are included in the Production LDCs column. It is included in this table to track the ramp-up of enrolled meters after the LDCs complete their cutover to MDM/R production operations. The source of these figures is the LDC filings with the OEB.

The % complete figure at the bottom of the table indicates the percentage of the total RPP eligible customers enrolled in the MDM/R as of the reporting date.

² As of January 2012, distributors who have implemented TOU for over 98% of their RPP eligible customers are no longer required to report monthly the number of meters enrolled in the MDM/R to the OEB. For a distributor that has met its TOU targets and is no longer reporting to the OEB, their number of meters enrolled will be based on data taken directly from the MDM/R. Additionally, for these LDCs:

[•] If the number of meters enrolled in the MDM/R exceeds their last OEB reported number of RPP eligible customers we will equate their number of RPP eligible customers to the MDM/R meters enrolled count.

[•] If the number of meters enrolled in the MDM/R is less than their last OEB reported number of RPP eligible customers, we will retain the RPP eligible customers last reported to the OEB.

June 30, 2013	MD	M/R Cutover T	argets
	Production LDCs	RPP Eligible Customers	Enrolled in MDMR
Actuals - Based on Productior	n LDCs data		
Pre- Q2 2010	9	3,019,960	2,825,978
Q3 2010	2	162,443	162,443
Q4 2010	4	123,884	123,884
Q1 2011	13	287,285	288,000
Q2 2011	14	293,271	293,271
Q3 2011	16	584,768	581,235
Q4 2011	5	39,253	38,243
Q1 2012	6	208,136	208,136
Q2 2012	2	55,366	55,366
Q3 2012	-	-	-
Q4 2012	-	-	-
Q1 2013	-	-	-
Q2 2013	-	-	-
Q3 2013			
Actual Totals for LDCs in	74		
Production	71	4,774,366	4,576,556
Projected - Based on enrolme	ent plans submitt	ed to the SME	
Q4 2013	1	84,394	
Projected Totals for Committed LDCs	72	84,394	
Totals (Actual and Projected)	72	4,858,760	4,576,556
% Complete of total RPP Eligible (Enrolled in the MDM/R	Customers	9!	5.9%
Notes:			

(1) "RPP Eligible customers" are the total customers reported to the OEB that will ultimately be put on TOU rates and whose smart meters will be enrolled in the MDM/R.

(2) "Enrolled in MDMR" represents the number of "RPP Eligible Customers" whose smart meters are currently enrolled in the MDM/R.

3.3 MDM/R Enrolled Meter Counts by Distributor²

The MDM/R Enrolled Meter Counts by Distributor table shows each MDM/R production LDC's progress in enrolling smart meters over the previous month. The total meters enrolled in the previous and the current reporting months are provided, along with the net increase or decrease over the period. Note that in some cases there may be a small decrease in the number of meters enrolled from month to month. This reflects the routine day-to-day activities within an LDC's operation that involve the removals and deactivations of meters.

The source of the data in the *Total Meters Enrolled* and the *Total RPP Eligible Customers* columns come from data filed by the LDCs with the OEB. The % *Complete* column indicates what percentages of the Total RPP Eligible Customers are enrolled in MDM/R production as of the end of the reporting period. *This number may exceed 100% due to a difference in timing between the data used for this report and the OEB submission of the Total RPP Eligible Customers to the SME.*

As of June 30, 2013	М	DM/R Enrolle	d Meter Count	s by Distribut	or
Distributor	Total Meters Enrolled through 31-May	Total Meters Enrolled through 30-Jun	Increased Meter Enrolment this Month	Total RPP Eligible Customers	% Complete for Production LDCs
Atikokan Hydro*	1,671	1,672	1	1,672	100.0%
Bluewater*	35,624	35,637	13	35,637	100.0%
Brant County Power *	9,915	9,940	25	9,940	100.0%
Brantford Power*	38,104	38,128	24	38,128	100.0%
Burlington Hydro*	64,986	65,017	31	65,017	100.0%
Cambridge*	52,064	52,103	39	52,103	100.0%
Centre Wellington*	6,616	6,620	4	6,620	100.0%
Chapleau*	1,276	1,277	1	1,277	100.0%
CNPI*	40,144	40,161	17	40,161	100.0%
COLLUS Power*	16,115	16,122	7	16,122	100.0%
E.L.K. Energy	10,955	10,961	6	10,924	100.3%
Embrun*	1,949	1,949	0	1,949	100.0%
Enersource	189,393	190,542	1,149	194,620	97.9%
Entegrus*	40,333	40,351	18	40,351	100.0%
Erie Thames*	18,145	18,162	17	18,162	100.0%
Espanola*	3,313	3,315	2	3,315	100.0%
Essex Power*	28,333	28,354	21	28,354	100.0%
Festival Hydro*	19,865	19,879	14	19,879	100.0%
Fort Frances*	3,739	3,739	0	3,739	100.0%
Greater Sudbury*	47,197	47,218	21	47,218	100.0%
Grimsby Power*	10,423	10,430	7	10,430	100.0%
Guelph Hydro*	50,826	50,900	74	50,900	100.0%
Haldimand County *	21,161	21,180	19	21,180	100.0%
Halton Hills*	21,092	21,139	47	21,139	100.0%
Hearst Power*	2,709	2,715	6	2,715	100.0%
Horizon Utilities*	235,168	235,483	315	235,483	100.0%
Hydro 2000*	1,208	1,208	0	1,208	100.0%
Hydro Hawkesbury*	6,537	6,537	0	6,537	100.0%
Hydro One ¹	1,119,801	1,120,486	685	1,208,801	92.7%
Hydro One Brampton*	141,075	141,304	229	141,304	100.0%
Hydro Ottawa*	308,118	308,561	443	308,561	100.0%

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4 35,487 20 327,212	2 83 2 492		
20 327,212	2 492	35,487	100.0%
2 22 011		327,212	100.0%
5 55,011	. 13	33,011	100.0%
3 4,191	3	4,191	100.0%
5,803	0	5,803	100.0%
2,741	4	2,741	100.0%
2 16,630	18	16,630	100.0%
4 49,867		49,867	
6,683	0	6,683	100.0%
612,241	1 0	717,908	85.3%
05 115,696		115,696	
5 12,595		12,595	
9 54,044		54,044	
7 22,253		22,253	
			100.0%
3,340			100.0%
3 822	8	3,022	
		22 587	100.070
6 22,587	21	22,587 40,786	
6 22,587 6 40,786	21 0	40,786	100.0%
6 22,587	21 0 3 13	40,786 15,358	100.0% 100.0%
	5 3,646		4 3,822 8 3,822

TOU implementation for some of their hard-to-reach customers.

3.4 Distributor Enrolment Testing Activities with the MDM/R

The System Integration Testing, Qualification Testing and Cutover timelines identified are sourced from the details in the Enrolment Wave Calendar. Unit testing timelines are provided by each LDC in their MDM/R project plan.

No new enrolment testing activity is expected until September of 2013.

3.5 MDM/R Enrolment Wave Calendar

The MDM/R Enrolment Wave Calendar is an integrated plan illustrating the three formal enrolment testing milestones of SIT, QT, and Cutover for all non-production LDCs. The background colour for each LDC's name indicates the source of the information used in the calendar:

- Green indicates that the LDC has submitted a project plan, completed Unit testing and the SME has accepted the LDC's Self-Certification for Enrolment Testing.
- Blue indicates that the SME has reviewed and accepted the LDC's project plan.
- Yellow either indicates that the SME has not received a project plan but has received verbal confirmation of the LDC's three enrolment testing milestones or that the LDC has verbally indicated that it will re-submit a new plan. This information is not used for projecting LDC cutover dates in any of the other charts in this report.
- Red indicates that the LDC has not shared their plan with the SME.
- White indicates a production LDC that has completed Cutover.
- Orange indicates that the LDC is scheduled for amalgamation.

The RPP eligible customer counts come from data filed by the LDCs with the OEB. As LDC plans change, the reason code will indicate one of five possible reasons:

- 1. The change may have been initiated by the SME due to resource or system constraints.
- 2. The LDC may have re-submitted a new plan.
- 3. The LDC may have missed timelines for their project tasks and therefore was not ready to proceed in accordance with their plan.
- 4. The LDC may have entered enrolment testing but subsequently had to withdraw because they were unable to successfully complete the tests.
- 5. The LDC's previous plan has changed but they have not re-submitted a new plan.

When an LDC's schedule is changed, the milestones for the previous schedule remain on the calendar but are greyed out.

Finally, each section on the timeline represents a one-week period starting on a Monday.

MDM/ As of June	R Enrolment Wave C 30, 2013	Calendar		S S	ilT - no	ormall	y 2 w	veeks		а от -	norm	nally 4	l wee	ks	C C	Cuto	over -	norr	mally	2 we	eeks			
		Reason for Latest Change Reason Code: 1: IESO Change 2: LDC Plan change 3: LDC Not Ready	M	M	мм	м	м	M N		Der N			W N									Br W	er W	M
		3. LDC Not Ready 4: LDC Wave Failure 5: Update pending	February	March	Mav	June	luly	August Sentember	io Contraction	achtember 10 26ptember	23 September	05 September	1 October	12 October	2 October	Povember	11 November	Co Novellibel	C Novembe				23 December	8 December
RPP Eligible Customers	LDC Name																							
84,394	ENWIN Powerlines Ltd.							S	S S	S S	Q	Q	2 0	Q			C	0	C					
	ect plan submitted]																						
	I indication of major milestones plan submitted																							
	nent self-certification accepted																							
White = Produc																								
Orange = Sche	duled for amalgamation																							
1,672	Atikokan Hydro Inc.																							
35,637	Bluewater Power Distribution Corp.																							
9,940 38,128	Brant County Power Inc Brantford Power Inc.	-																						
65,017	Burlington Hydro Inc.																							
52,103	Cambridge & North Dumfries Hydro Inc.																							
6,620 1,277	Centre Wellington Hydro Ltd. Chapleau Public Utilities Corp.	1																						
27,564	CNP - Fort Erie																							
9,075 3,522	CNP - Port Colborne Hydro Inc CNP - EOP	1																						
16,122	Collus Power Corp																							
1,949 10,924	Cooperative Hydro Embrun Inc. E.L.K. Energy Inc.																							
194,620	Enersource Hydro Mississauga Inc.																							
40,351 18,162	Entegrus Erie Thames Powerlines Corp.																							
3,315	Espanola Regional Hydro Distribution Corp.																							
28,354 19,879	Essex Power Lines Corp. Festival Hydro Inc.																							
3,739	Fort Frances Power Corp.																							
47,218 10,430	Greater Sudbury Hydro Inc. Grimsby Power Inc.																							
50,900	Guelph Hydro Electric Systems Inc.																							
21,180 21,139	Haldimand County Hydro Halton Hills																							
2,715	Hearst Power Distribution Company Ltd																							
235,483 1,208	Horizon Utilities Corporation Hydro 2000 Inc.																							
6,537	Hydro Hawkesbury Inc.																							
1,208,801 141,304	Hydro One Hydro One Brampton Networks Inc.																							
308,561	Hydro Ottawa Limited																							
15,184 5,579	Innisfil Hydro Distribution Systems Ltd. Kenora Hydro Electric Corp Ltd																							
27,250	Kingston Hydro Corporation	-																						
88,815 9,912	Kitchener-Wilmot Hydro Inc. Lakefront Utilities Inc.																							
9,732	Lakeland Power Distribution Ltd.																							
148,731 6,902	London Hydro Midland Power Utility Corp																							
31,993	Milton Hydro	-																						
33,955 49,995	Newmarket Hydro Ltd./Tay Hydro Niagara Peninsula Energy Inc.	-																						
8,128	Niagara-on-the-Lake Hydro Inc.	1																						
19,250 23,673	Norfolk Power Distribution Inc. North Bay Hydro Distribution Ltd																							
5,991	Northern Ontario Wires Inc.	-																						
63,561 11,388	Oakville Hydro Electricity Distribution Inc. Orangeville Hydro Ltd.																							
13,140	Orillia Power Distribution Corp.	-																						
53,425 10,578	Oshawa PUC Networks Inc. Ottawa River Power Corp.	-																						
3,418	Parry Sound Power Corp.	-																						
35,487 327,212	Peterborough Distribution Inc. PowerStream Inc	-																						
33,011	PUC Distribution Inc.	-																						
4,191 5,803	Renfrew Hydro Inc. Rideau St. Lawrence Distribution Inc.																							
2,741	Sioux Lookout Hydro	-																						
6,630 19,867	St. Thomas Energy Inc. Thunder Bay Electricity Distribution Inc.																							
5,683	Tillsonburg Hydro Inc.																							
717,908	Toronto Hydro Electric Services Ltd.																							
L15,696 L2,595	Veridian Connections Wasaga Distribution Inc.	-																						
54,044	Waterloo North Hydro Inc.																							
22,253 3,646	Welland Hydro-Electric System Corp. Wellington North Power Inc.	-																						
3,822	West Coast Huron Energy Inc.																							
22,587 40,786	Westario Power Inc. Whitby Hydro Energy Services Corp.	-																						
15,358	Woodstock Hydro Services Inc.																							
4,774,366	Production total customer count	1																						