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REPORT

**Smart Metering Entity (SME)
Time-of-Use Mandate Progress Report
Through March 31, 2012**

Issue 20.0 - April 20, 2012

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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) and 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 Outlook
- MDM/R Enrolled Meter Counts by Distributor
- Distributor Testing Activities with the MDM/R (Three Month Outlook)
- MDM/R Enrolment Wave Calendar (2012)

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

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

- 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.
- The Distributor Testing Activities with the MDM/R (Three Month Outlook) projects those LDCs that will be in System Integration Testing, Qualification Testing and Cutover activities over the next three months from 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) continues to effectively support distributor enrolment and the implementation of TOU billing under the Board's TOU mandate.

The MDM/R production environment continued to experience stable and reliable operation in March. EnergyIP Release 7.2 was promoted to the MDM/R production environment April 13-15. The backlog processing of files submitted when the system was shut down for the promotion was cleared late April 15th, at which time the system resumed normal operation. The promoted version of the R7.2 software included both the Measurement Canada 2011 Solution and Phase 1 of the Measurement Canada 2012 Solution.

The SME remains confident that with ongoing tuning and collaborative support of LDCs, the MDM/R will continue to offer a stable system and effectively support LDCs time-of-use implementation plans and ramp up of meters to full provincial volumes.

2.2 Processing Performance

At the end of March, the MDM/R was supporting 70 LDCs in production with a total of 4.2 million enrolled smart meters. The MDM/R processed an average of 3.5 million meter reads daily with a single day peak of 3.6 million meters reporting on March 30, 2012.

In March, the MDM/R processed 100% of meter reads, meter master data updates and billing quantities. All processing was within contracted service levels except for two instances where meter read processing was delayed for a short period.

To help ensure reliable operation of the MDM/R, the SME is working with LDCs and our vendors to reduce impact on the MDM/R associated with poor quality data submissions from a few LDCs and their metering providers.

A planned post R7.2 promotion stabilization period, during which no discretionary changes are made to the system, is currently active. Its purpose is to closely monitor MDM/R production operation under the new software to validate that the system is functioning properly and the processing capacity remains capable of meeting all service levels at full provincial smart meter volumes. To date, system functionality and performance are both good. A few minor problems, typical in the early aftermath of upgrades of this magnitude, have been identified and are either already corrected or in the process of being remediated.

It is expected that the stabilization period will end the last week in April, at which time we can begin transitioning LDCs to the new billing quantity interface that enables them to comply with Measurement Canada's requirements to include register readings on customers' time-of-use bills.

Note: LDCs continue to be asked to schedule their synchronization files in advance whenever they contain an initial ramp-up of more than 15,000 meters in order to avoid conflicting requests. This is necessary only for the initial ramp up of large numbers of smart meters and will not be needed once full production volumes have been reached.

2.3 Resourcing

The SME continues to make resources available to LDCs in support of their time-of-use implementation plans. There were no significant resource changes in March.

2.4 Training

The SME continues to adjust our training and workshop session offerings to meet the needs of the LDCs. For training details, please refer to the training page and workshop calendar for the first six months of 2012 on the SME website (<http://www.smi-ieso.ca/training>).

2.5 Additional Risks and Issues

Measurement Canada (MC)

With the installation of R7.2 to MDM/R production complete and once the stabilization period has ended, LDCs can begin to transition to the new billing quantity interface that will deliver register readings for inclusion on customer TOU bills. The SME has asked each production LDC to provide a schedule of when they want the necessary modifications to be made in the MDM/R to enable their transition. Once this is done, it remains up to each LDC to implement its own strategy and plan for migrating their TOU customers to bills that include the register readings.

The SME continues to work closely with the LDCs as the Measurement Canada solution rolls out and they prepare their systems. Workshops, drop-in sessions, and webinars have been delivered to support the LDCs preparations. Please refer to the SME website (<http://smi-ieso.ca/>) for materials related to the promotion of Release 7.2 and the Measurement Canada 2011 Solution.

Development of additional MDM/R functionality to further fulfill Measurement Canada's requirements (known as the "Measurement Canada 2012 Solution") is well underway. The first element of the solution, that provides the equality adjustment of TOU billing quantities to register reads, has been delivered, tested and is part of the R7.2 now in MDM/R production. Other elements of the solution are targeted for delivery in May 2012. Implementation dates for these elements are to be determined.

Distributor Readiness – MDM/R Integration and Meter Enrolment

3.1 March Highlights

By the end of March there were 70 LDCs in production with 4.3 million meters enrolled in the MDM/R.

Enrolment activities in March included:

- **Enrolment Testing in Progress:** Festival Hydro, Peterborough Distribution.

Note: At the end of March, there were two LDCs that had not connected to and started testing with the MDM/R.

3.2 MDM/R Cutover Targets

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. Monthly breakdowns are provided for the current quarter only.

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.

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.

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.

The number of meters enrolled in the MDM/R for Welland was not available from the OEB filings and therefore the source used for this number in the March report was the MDM/R.

As of March 31, 2012	MDM/R Cutover Targets		
	Production LDCs	RPP Eligible Customers	Enrolled in MDMR
Actuals - Based on Production LDCs data			
Pre- Q2 2010	9	2,970,980	2,747,176
Q3 2010	2	156,976	156,625
Q4 2010	4	121,044	120,405
Q1 2011	13	283,208	283,889
Q2 2011	15	295,281	294,472
Q3 2011	16	570,469	535,267
Q4 2011	5	39,063	37,950
Q1 2012			
January 2012	2	81,726	81,572
February 2012	4	111,317	111,435
March 2012	4	0	0
Actual Totals for LDCs in Production	70	4,630,064	4,368,791
Projected - Based on enrolment plans submitted to the SME			
Q2 2012	2	54,395	
Projected Totals for Committed LDCs	2	54,395	
Totals (Actual and Projected)	72	4,684,459	4,368,791
Not Committed - LDCs have not provided enrolment plans			
Schedules not yet determined	2	95,571	
Totals including non-committed LDCs	74	4,780,030	4,368,791
% Complete of total RPP Eligible Customers Enrolled in the MDM/R		91.4%	
<p>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.</p> <p>(2) "Enrolled in MDMR" represents the number of "RPP Eligible Customers" whose smart meters are currently enrolled in the MDM/R.</p>			

3.3 MDM/R Enrolled Meter Counts by Distributor

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.

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 their 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. An asterisk will be shown next to the LDC's name to denote they are no longer filing monthly reports to the OEB. 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.

The number of meters enrolled in the MDM/R for Welland was not available from the OEB filings and therefore the source used for this number in the March report was the MDM/R.

As of March 31, 2012	MDM/R Enrolled Meter Counts by Distributor				
Distributor	Total Meters Enrolled through 29-Feb	Total Meters Enrolled through 31-Mar	Increased Meter Enrolment this Month	Total RPP Eligible Customers	% Complete for Production LDCs
Atikokan Hydro *	1,686	1,686	0	1,686	100.0%
Bluewater	35,405	35,401	-4	35,409	100.0%
Brant County Power *	9,637	9,693	56	9,693	100.0%
Brantford Power *	37,545	37,588	43	37,604	100.0%
Burlington Hydro *	64,417	64,475	58	64,475	100.0%
Cambridge	50,794	50,837	43	50,837	100.0%
Centre Wellington	6,459	6,516	57	6,516	100.0%
Chapleau *	1,271	1,271	0	1,274	99.8%
Chatham (Entegrus) *	32,096	32,104	8	39,705	80.9%
CNPI - Fort Erie	27,998	28,109	111	28,180	99.7%
COLLUS Power *	15,787	15,798	11	15,798	100.0%
E.L.K. Energy	10,726	10,826	100	10,826	100.0%
Embrun *	1,943	1,944	1	1,944	100.0%
Enersource	77,752	153,264	75,512	192,248	79.7%
Erie Thames *	17,966	17,980	14	17,980	100.0%
Espanola *	3,286	3,295	9	3,295	100.0%
Essex Power *	28,095	28,141	46	28,141	100.0%
Fort Frances *	3,732	3,732	0	3,732	100.0%
Greater Sudbury	46,132	46,171	39	46,317	99.7%
Grimsby Power	10,174	10,236	62	10,284	99.5%
Guelph Hydro	48,227	48,343	116	48,044	100.6%
Haldimand County *	20,919	20,975	56	20,975	100.0%
Halton Hills *	20,742	20,761	19	20,761	100.0%
Hearst Power *	2,690	2,691	1	2,691	100.0%
Horizon Utilities *	229,645	230,529	884	233,828	98.6%
Hydro 2000 *	1,197	1,199	2	1,199	100.0%
Hydro Hawkesbury *	5,393	5,393	0	5,393	100.0%
Hydro One	1,082,301	1,082,301	0	1,203,010	90.0%
Hydro One Brampton *	135,636	135,864	228	136,215	99.7%
Hydro Ottawa	296,880	297,616	736	302,679	98.3%
Innisfil Hydro *	14,679	14,757	78	14,781	99.8%
Kenora Hydro *	5,531	5,531	0	5,531	100.0%
Kingston Hydro *	26,365	26,981	616	26,981	100.0%
Kitchener-Wilmot	87,297	87,349	52	87,350	100.0%
Lakefront Utilities	9,556	9,575	19	9,575	100.0%
Lakeland Power *	9,588	9,591	3	9,591	100.0%
London Hydro	139,595	146,092	6,497	140,499	104.0%
Middlesex (Entegrus) *	7,958	7,962	4	7,962	100.0%

As of March 31, 2012	MDM/R Enrolled Meter Counts by Distributor				
Distributor	Total Meters Enrolled through 29-Feb	Total Meters Enrolled through 31-Mar	Increased Meter Enrolment this Month	Total RPP Eligible Customers	% Complete for Production LDCs
Midland Power *	6,842	6,843	1	6,843	100.0%
Milton Hydro *	29,016	29,016	0	29,016	100.0%
NewmarketTay *	32,633	32,674	41	32,674	100.0%
Niagara Peninsula	47,977	48,065	88	49,819	96.5%
Niagara-on-the-Lake	7,933	7,942	9	7,948	99.9%
Norfolk Power	17,949	17,949	0	18,853	95.2%
North Bay Hydro	22,509	22,516	7	23,629	95.3%
Northern Ontario Wires *	5,918	5,923	5	5,991	98.9%
Oakville Hydro	63,734	63,734	0	62,950	101.2%
Orangeville Hydro *	11,113	11,137	24	11,137	100.0%
Orillia Power *	12,869	12,878	9	12,885	99.9%
Oshawa PUC *	52,307	52,371	64	52,687	99.4%
Ottawa River	10,363	10,363	0	10,399	99.7%
Parry Sound *	3,330	3,331	1	3,333	99.9%
PowerStream *	316,956	317,536	580	317,948	99.9%
PUC Distribution	32,672	32,605	-67	32,605	100.0%
Renfrew Hydro *	3,872	4,154	282	4,154	100.0%
Rideau St. Lawrence	5,775	5,775	0	5,775	100.0%
Sioux Lookout *	2,698	2,698	0	2,698	100.0%
St. Thomas *	16,323	16,337	14	16,337	100.0%
Thunder Bay *	49,530	49,535	5	49,535	100.0%
Tillsonburg *	6,358	6,383	25	6,683	95.5%
Toronto Hydro	612,241	612,241	0	698,961	87.6%
Veridian *	112,910	113,159	249	113,159	100.0%
Wasaga	12,290	12,325	35	12,328	100.0%
Waterloo North	52,004	52,060	56	52,083	100.0%
Welland Hydro.	22,002	22,002	0	22,002	100.0%
Wellington North *	3,591	3,608	17	3,608	100.0%
West Coast Huron	3,659	3,683	24	3,683	100.0%
Westario Power	1	22,253	22,252	22,016	101.1%
Whitby Hydro *	39,928	39,972	44	40,170	99.5%
Woodstock Hydro *	15,131	15,146	15	15,146	100.0%
Total Meter Counts	4,259,534	4,368,791	109,257	4,630,064	94.4%
*This LDC has implemented TOU for more than 98% of their customers and has been given an exemption by the OEB from having to report monthly enrolment numbers.					

3.4 Distributor Testing Activities with the MDM/R (Three Month Outlook)

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

The projected activities for the next four months now include:

- One distributor is scheduled for enrolment testing in April.
- Two distributors are scheduled to cut over to production in May.

As of March 31, 2012	<i>Distributor Testing Activities with the MDM/R (Three Month Outlook)</i>		
	Apr-12	May-12	Jun-12
In Enrolment Testing - SIT	Peterborough		
In Enrolment Testing - QT	Peterborough		
Cutover Cutover		Festival Hydro Peterborough	

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.

MDMR Production LDCs	
1,686	Atikokan Hydro Inc.
35,409	Bluewater Power Distribution Corp.
9,693	Brant County Power Inc
37,604	Brantford Power Inc.
64,475	Burlington Hydro Inc.
50,837	Cambridge & North Dumfries Hydro Inc.
6,516	Centre Wellington Hydro Ltd.
1,274	Chapleau Public Utilities Corp.
39,705	Chatham-Kent Hydro Inc. (Entegrus)
15,591	CNP - Fort Erie
9,062	CNP - Port Colborne Hydro Inc
3,527	CNP - EOP
15,798	Collus Power Corp
1,944	Cooperative Hydro Embrun Inc.
10,826	E.L.K. Energy Inc.
192,248	Enersource Hydro Mississauga Inc.
17,980	Erie Thames Powerlines Corp. (amalgamated with Clinton Power and West Perth Power on June 1, 2011)
3,295	Espanola Regional Hydro Distribution Corp.
28,141	Essex Power Lines Corp.
3,732	Fort Frances Power Corp.
48,044	Guelph Hydro Electric Systems Inc.
46,317	Greater Sudbury Hydro Inc.
10,284	Grimsby Power Inc.
20,975	Haldimand County Hydro
20,761	Halton Hills
2,691	Hearst Power Distribution Company Ltd
233,828	Horizon Utilities Corporation
1,199	Hydro 2000 Inc.
5,393	Hydro Hawkesbury Inc.
1,203,010	Hydro One
136,215	Hydro One Brampton Networks Inc.
302,679	Hydro Ottawa Limited
14,781	Innisfil Hydro Distribution Systems Ltd.
5,531	Kenora Hydro Electric Corp Ltd
87,350	Kitchener-Wilmot Hydro Inc.
26,981	Kingston Hydro Corporation
9,575	Lakefront Utilities Inc.
9,591	Lakeland Power Distribution Ltd.
140,499	London Hydro
7,962	Middlesex Power (Entegrus)
6,843	Midland Power Utility Corp
29,016	Milton Hydro
32,674	Newmarket Hydro Ltd./Tay Hydro
7,948	Niagara-on-the-Lake Hydro Inc.
49,819	Niagara Peninsula Energy Inc. (includes Peninsula West @ 14,351)
5,991	Northern Ontario Wires Inc.
23,629	North Bay Hydro Distribution Ltd
18,853	Norfolk Power Distribution Inc.
62,950	Oakville Hydro Electricity Distribution Inc.
11,137	Orangeville Hydro Ltd. (includes Grand Valley (659))
12,885	Orillia Power Distribution Corp.
52,687	Oshawa PUC Networks Inc.
10,399	Ottawa River Power Corp.
3,333	Parry Sound Power Corp.
317,948	PowerStream Inc
32,605	PUC Distribution Inc.
4,154	Renfrew Hydro Inc.
5,775	Rideau St. Lawrence Distribution Inc.
2,698	Sioux Lookout Hydro
16,337	St. Thomas Energy Inc.
49,535	Thunder Bay Electricity Distribution Inc.
6,683	Tillsonburg Hydro Inc.
698,961	Toronto Hydro Electric Services Ltd.
113,159	Veridian Connections
12,328	Wasaga Distribution Inc.
52,083	Waterloo North Hydro Inc.
22,002	Welland Hydro-Electric System Corp.
3,608	Wellington North Power Inc.
22,016	Westario Power Inc.
3,683	West Coast Huron Energy Inc.
40,170	Whitby Hydro Energy Services Corp.
15,146	Woodstock Hydro Services Inc.
4,630,064	Production total customer count
4,780,030	All LDC total customer count