

Ontario Smart Grid Forum - Support Presentation (selected agenda items)

Tuesday, December 6th, 2011



1. Minutes of previous meetings
2. Review of Forum Recommendation Tracking Log, version 8.5
3. 2012 Forum meeting dates
4. Report back form the Corporate Partners Committee
5. Report back form the Working Group
6. OEB *Renewed Regulatory Framework for Electricity* – potential implications for the Forum
7. Discussion: Priorities for the Forum – 2012
8. Upcoming smart grid events
9. Roundtable update by Forum members

- **FINAL September 6th minutes:**
 - no further comments received.
 - Recommended as **FINAL**
- **DRAFT October 11th minutes** circulated for review.
 - Recommended comment deadline: Tues., Dec. 13th

Standing Item: Recommendation Tracking Log

(Issue 8.5)

- **Working Group Proposition: Stand-down recommendation N14**
 - *“A new task force should be established to foster smart grid innovation, technology commercialization and related economic development opportunities, capitalizing on the province’s public infrastructure investment in grid modernization. The task force, facilitated by the Forum but not exclusive to its members, would seek the active participation of public and private-sector organizations in a position to help Ontario realize the broader economic development potential, including export opportunities, related to the smart grid over the longer term”*
- **Rationale:** MEI advisory group on energy and economic opportunities for Ontario, OCE asset map activity underway, and the federal government has the Energy Minister’s Council - Energy Technology Working Group (ETWG) to take an inventory of smart grid activities across the country.

Standing Item: Recommendation Tracking Log

(Issue 8.5)

- **Major Development as of November 8th:**
 - Several Forum recommendations in the tracking log (both from 2009 and 2011) directly intersect with “key issue” areas identified in the OEB staff report (EB-2011-004) as part of the ‘*Renewed Regulatory Framework for Electricity*’ consultation
 - These will be detailed in the upcoming agenda item devoted specifically to this development

Proposal:

- Bi-monthly meetings (approximately)
- Smaller number of meetings, but potentially longer meeting times (i.e. beyond our usual 1:00 p.m.) when necessary
- Where possible, avoid...
 - summer months,
 - dates immediately before/after holiday weekends,
 - known dates for industry conferences, EDA meetings etc.
- Working Group and CPC are free to schedule additional meetings in between Forum meetings.

Results of e-mail poll of Forum members regarding proposed dates (n = 12 members responded):

Proposed Forum Meeting Date:	% of respondents indicating they would be able to attend
Wednesday, February 1, 2012	100%
Monday, April 16, 2012	75%
Tuesday, June 5, 2012	83%
Wednesday, September 12, 2012	92%
Thursday, November 1, 2012	92%
Monday, December 3, 2012	100%

Report back from the Corporate Partners Committee, including 2 sub-committees:

1. Long term architecture sub-committee
 - Sub-committee Chair: Chris Reid
2. Product Interoperability Sandbox sub-committee
 - Sub-committee Chair: Stuart Lombard

Report back from the Smart Grid Forum Working Group

- The Working Group met twice over November, with a focus on the following subjects:
 1. Clarifying its position with respect to 3rd party real-time data access in order to assist discussions with the Corporate Partners Committee
 2. Energy Storage
 3. Implications of the OEB's *Renewed Regulatory Framework for Electricity* on the Forum's existing recommendations and future work.

Third Party Data Access - Update:

- **September 6th**: Working Group presents its views on the “Energy Services Interface” (ESI) to the Forum.
- **October 27th**: Corporate Partners Committee reviews working group’s findings and debates some of the positions put forward, regarding the LDC role with respect to the ESI
- **November 8th**: 3rd party data access and facilitating of the behind-the-meter services identified as part of a “Key Issue” area in the OEB smart grid staff discussion paper.
- **November 17th** Working Group Position paper sent to the Technical Architecture Team of the Corporate Partners Committee
- **Today (Dec. 6th)**: Corporate Partners Committee Technical Architecture Team presentation to Forum

Third Party Data Access – Clarifications made in the Working Group’s position paper:

- An acknowledgement that several facets of this issue now appear to be moving into the regulatory arena with the OEB’s recent launch of the Renewed Regulatory Framework for Electricity
- Further elaboration in the position paper:
 - Principles such as privacy and customer control vs. the logistics of actually implementing them
 - The nature of the Energy Services Interface (ESI) and LDC responsibilities and liabilities for safeguarding data residing within their smart meters.
 - What’s achievable with today’s smart meters in Ontario vs. potential future architectures

Third Party Data Access – Observations of the Working Group:

- Many of the data access issues discussed between the Forum, the CPC and the Working Group are now reflected in the OEB staff discussion paper
- It is not clear to the Working Group how it can further contribute to this effort while these issues play out before the regulator.
- The upcoming OEB consultations may become a critical arena where these issues will play out and this is likely where interested CPC and Forum member organizations should now focus their effort.

Energy Storage:

- The Working Group is continuing to consolidate its work to date regarding the Forum’s recommendation to develop an Energy Storage Framework for Ontario.
- Possible joint meeting with the CPC energy storage sub-committee
- While the working group plans to continue to develop a position paper on this topic, it doesn’t want to detract from the emerging importance of the OEB consultations...

Energy Storage and the OEB Staff Report:

- Some mention of storage during the OEB smart grid working group discussions.
- Also raised in the OEB staff discussion in section 4.2.2. regarding recognition of benefits for regulated entities:

*“The SGWG advised that consideration should also be given to broader system or societal benefits, the upstream benefits, such as the deferment of large investment in new transmission or generation capacity. These benefits include environmental benefits such as reduced carbon dioxide emissions. Besides CDM and renewable generation these benefits may be created by other types of distributed generation, gains in energy efficiency not attributable to CDM programs and **distributed storage**.”* (OEB staff report, section 4.2.2)

OEB's Renewed Regulatory Framework for Electricity:

- The Working Group examined the implications of the OEB's upcoming consultation effort for the Forum's existing recommendations and future work.
- This work is reflected in the next two agenda items for today's meeting...

Discussion:

The OEB “Renewed Regulatory Framework for Electricity” – Implications for the Recommendations and future activities of the Ontario Smart Grid Forum

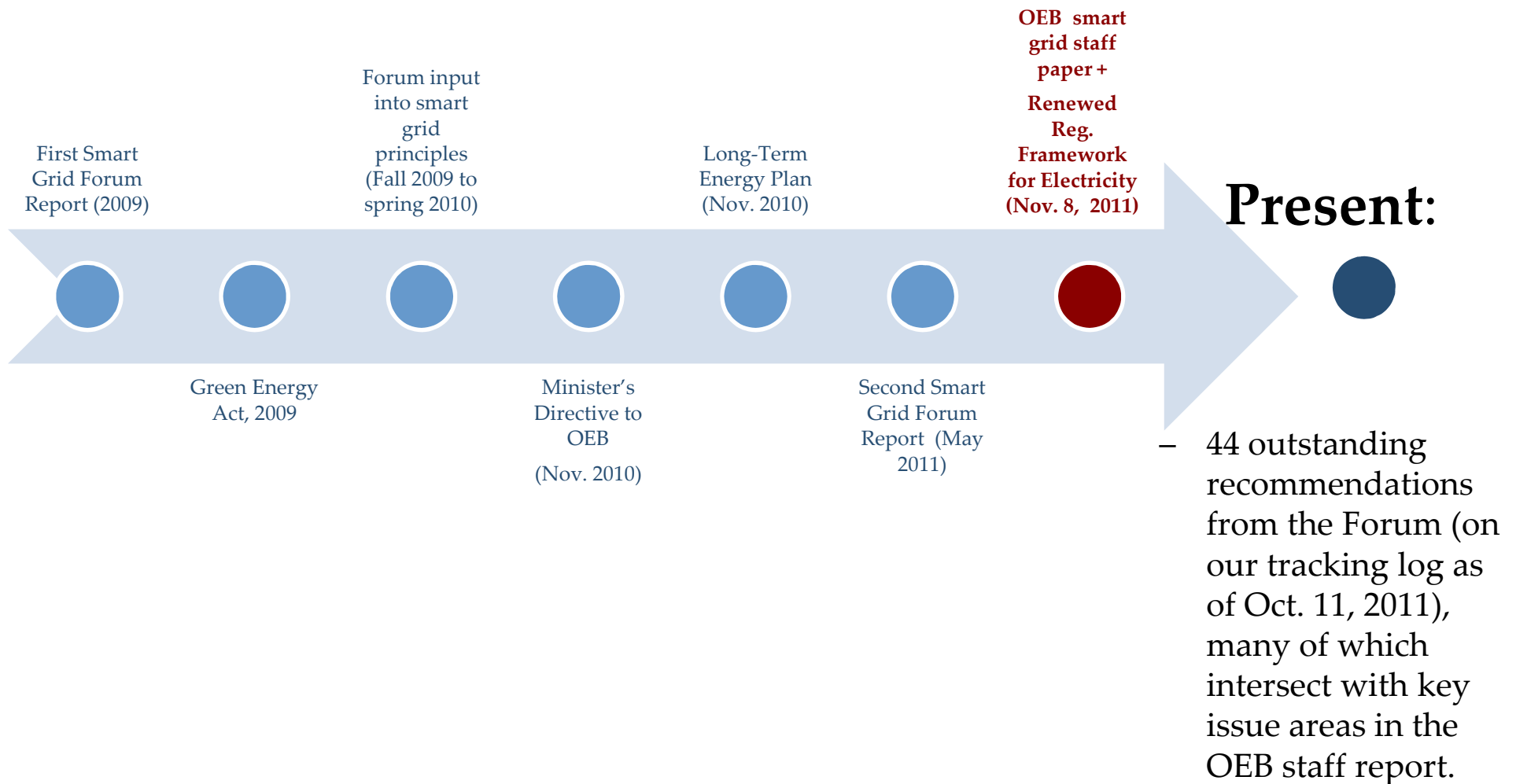
Ontario Energy Board

Staff Discussion Paper

In regard to the Establishment, Implementation and Promotion of a Smart Grid in Ontario

EB-2011-0004

November 8, 2011

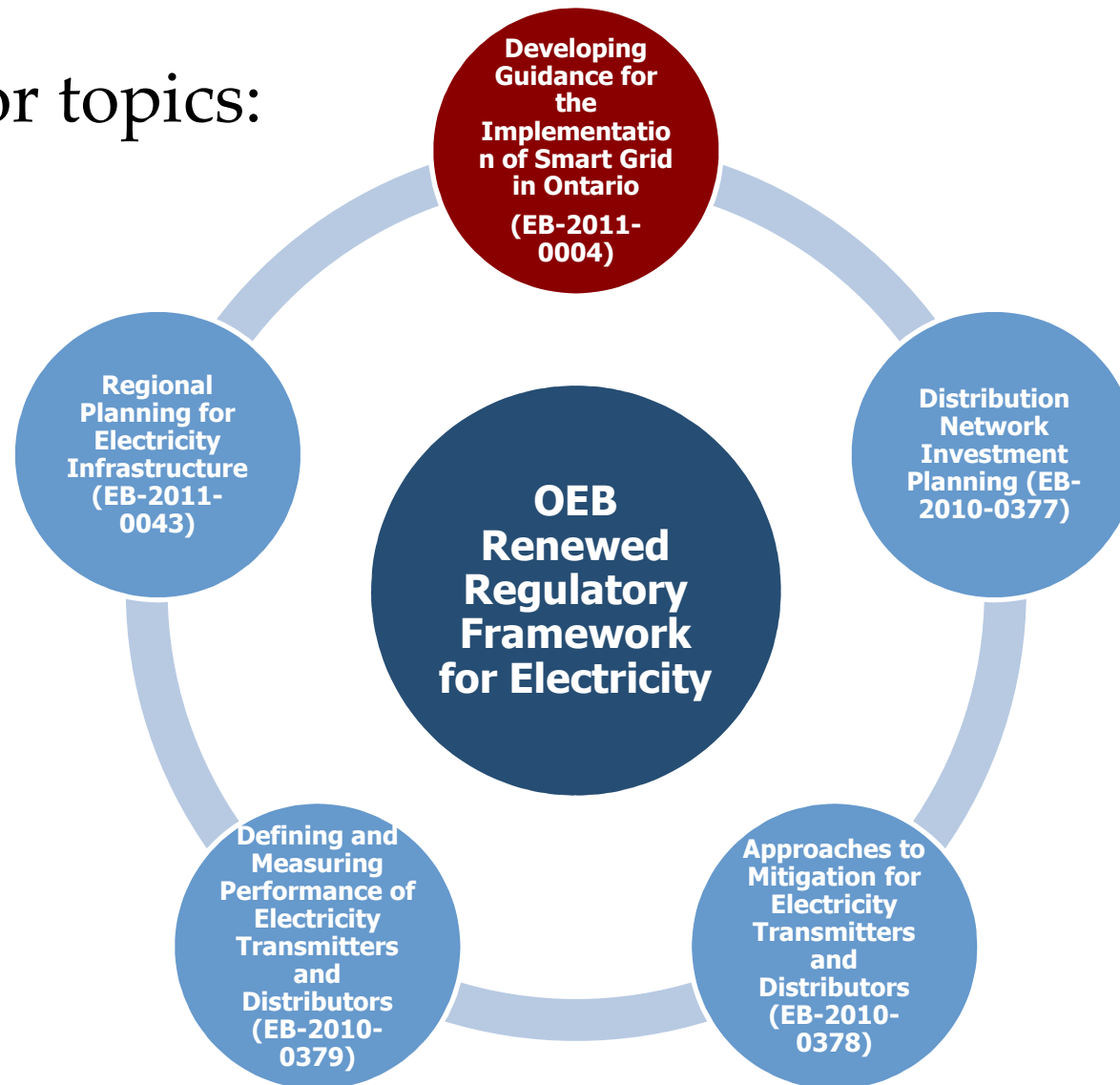




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OEB Renewed Regulatory Framework for Electricity

Five major topics:



- November 8th 2011: Published as part of the “*Renewed Regulatory Framework for Electricity*”
- OEB Staff information session on December 8/9
- Major stakeholder session upcoming in February, 2012
- Potential implications for the Forum’s work:
 - Where do we overlap with this effort?
 - What Forum recommendations can and should continue to progress while this regulatory effort moves forward?

Ontario Energy Board

Staff Discussion Paper

In regard to the Establishment, Implementation and Promotion of a Smart Grid in Ontario

EB-2011-0004

November 8, 2011

- 8 “Key Issue” areas identified
- Smart grid benefits framed by the Minister’s Directive* that the Forum provided great deal of input to over the course of 2010
- Several ‘Key Issue’ areas directly intersect with recommendations previously made by the Forum in both its 2011 and 2009 reports.
- Other Forum recommendations have an important, though indirect relationship with other ‘Key Issue’ areas.

Ontario Energy Board

Staff Discussion Paper

In regard to the Establishment, Implementation and
Promotion of a Smart Grid in Ontario

EB-2011-0004

November 8, 2011

* Order in Council 1515/2010, November 23, 2010

OEB Staff Paper: Identified “Key Issue” areas

Key Issue Area	OEB Staff Paper Questions (Quoted from Appendix 1)	Potential Intersection points with Forum Recommendations
1	1. Staff invites comments from stakeholders on which model is preferred: (A) the smart grid is an evolution of the modernization of the grid or, (B) it is a collection of distinct technologies that are separate from the “traditional” grid?	<p>Relevant Forum Recommendations:</p> <ul style="list-style-type: none"> •C4 (Smart grid investments as part of their capital plans) <p>Working Group Observation:</p> <ul style="list-style-type: none"> •Working Group still affirms the original position taken by the Forum back in 2009.
2	Does Board staff’s classification of benefits appropriately capture all of the benefits of the smart grid?	<p>Working Group Observation:</p> <ul style="list-style-type: none"> •Aligns very closely with Forum’s input into the Minister’s Directive

OEB Staff Paper: Identified “Key Issue” areas

Key Issue Area	OEB Staff Paper Questions (Quoted from Appendix 1)	Potential Intersection points with Forum Recommendations
3	<p>What is the level, if any, of BTM services should the consumer expect from distributors? Should third parties other than retailers be allowed to provide BTM services? What minimum level of functionality should distributors provide for BTM applications that use distributor meter data?</p>	<p>Relevant Forum Recommendations:</p> <ul style="list-style-type: none"> • N1 & N2 (Privacy) • N3 & B1 (3rd party access) • N4 (AMI test bed) • N5 (Smart Home roadmap) • N6 (Interactions between LDCs and 3rd parties) • N7 (Aggregators) <p>Working Group Observation:</p> <ul style="list-style-type: none"> • Questions reflect the same debate between the Working Group and Corporate Partners over the past year. This debate has now clearly moved into the regulatory arena. • Many of the Forum recommendations will be affected by the regulatory outcomes from this discussion.

OEB Staff Paper: Identified “Key Issue” areas

Key Issue Area	OEB Staff Paper Questions (Quoted from Appendix 1)	Potential Intersection points with Forum Recommendations
4	<p>What are the most appropriate considerations in setting a demarcation point or points? Should the Board set one demarcation point for all purposes or different points for different purposes? What should the point(s) be?</p>	<p>Relevant Forum Recommendations:</p> <ul style="list-style-type: none"> •N6 (Interactions between LDCs and 3rd parties) •N7 (Aggregators) <p>Working Group Observations: Same comments as Key Issue Area 3</p>

OEB Staff Paper: Identified “Key Issue” areas

Key Issue Area	OEB Staff Paper Questions (Quoted from Appendix 1)	Potential Intersection points with Forum Recommendations
5	<p>5. Which model is preferred: (a) privacy and cyber-security requirements as part of the approval of smart grid plans; (b) privacy and security as conditions of licence either by licence amendments or code requirements; or, (c) a combination of both?</p> <p>6. What guidance should the Board provide regarding evidence of co-ordination?</p>	<p>Relevant Forum Recommendations:</p> <ul style="list-style-type: none"> •N1 and N2 (Privacy)

OEB Staff Paper: Identified “Key Issue” areas

Key Issue Area	OEB Staff Paper Questions (Quoted from Appendix 1)	Potential Intersection points with Forum Recommendations
6	<p>7. What evidence should the Board require in COS and/or GEA plans that future flexibility has been addressed ?</p> <p>8. What guidance, if any, should the Board provide regarding cost recovery of technology monitoring and forecasting?</p> <p>9. Are the existing DS Filing Requirements clear enough with respect to these kinds of activities?</p>	<p>Relevant Forum Recommendation:</p> <ul style="list-style-type: none"> •N8 (Ongoing research role of the Forum) •E3 (Ongoing research activities of the IESO) •H1 (Ongoing research roles of IESO, OPA, universities and OCE) <p>Working Group Observation:</p> <ul style="list-style-type: none"> • LDC’s are presently not encourage to spend money on pure research though other aspects of new technology integration and info. sharing could be addressed.

OEB Staff Paper: Identified “Key Issue” areas

Key Issue Area	OEB Staff Paper Questions (Quoted from Appendix 1)	Potential Intersection points with Forum Recommendations
7	10. What level of materiality should be applied to applications involving smart grid investments?	Relevant Forum Recommendation: <ul style="list-style-type: none"> •N15 (SG success metrics)
8	12. How should the Board take cognizance of international standards processes?	Relevant Forum Recommendation: <ul style="list-style-type: none"> •N13 (Use standards recommended by such groups as the Can. Nat. Committee of the IEC) •F2 (open standards for home area networks)

Implications for the Forum Recommendation

Tracking Log:

- Are the OEB consultations an opportunity to close out some of the issues on the Forum's Recommendation Tracking log?

Working Group Observations:

- Some recommendation topic areas have clearly moved into the regulatory arena. At the very least, this may limit what the Forum can do advance its recommendations in some areas while they play out at the OEB.
- The working group was not unanimous in terms of a near-term course of action for the Forum regarding these regulatory proceedings.
- Regardless if the Forum makes a submission to the OEB, many of its member organizations will do so, and in the process, have an opportunity to put forward the Forum's recommendations.

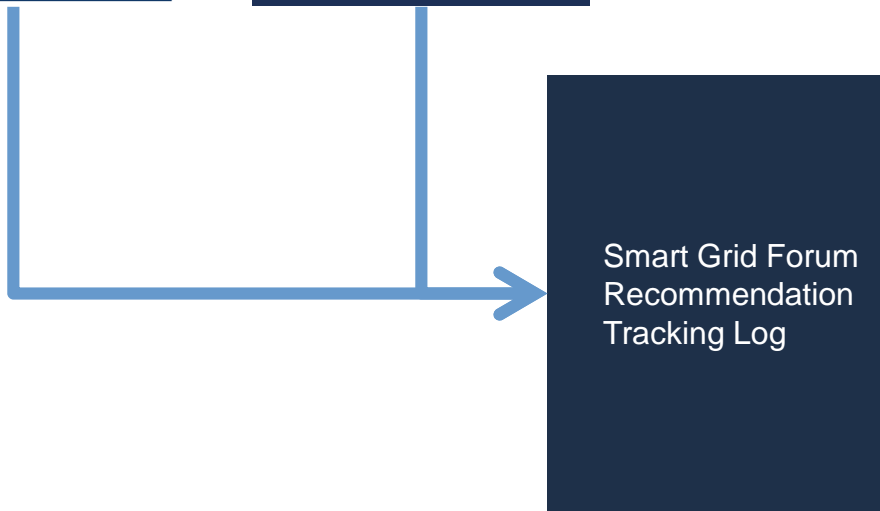
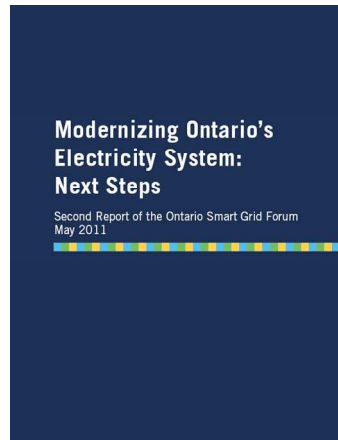
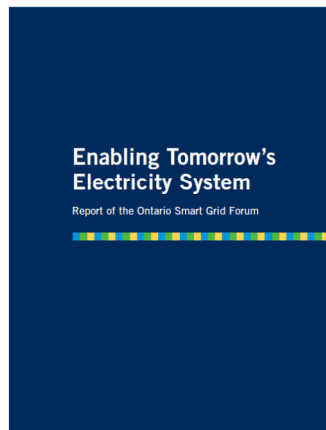


Priorities for 2012

Overview:

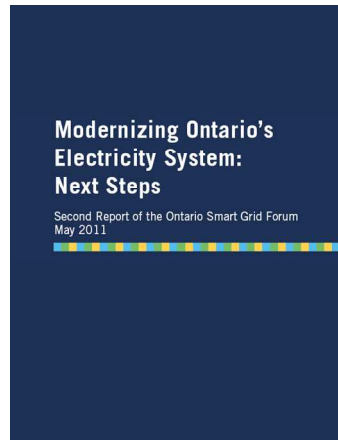
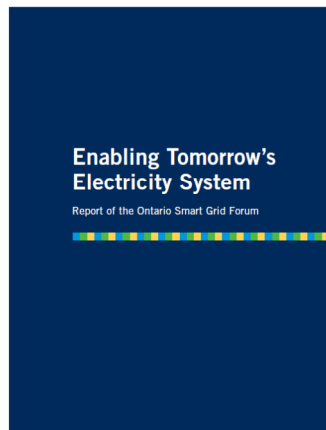
- As we go into 2012, the Forum's activities are potentially shaped by:
 - **Recommendations already made by the Forum in 2009 and 2011:** 44 recommendations are currently outstanding but who should move them forward and how?
 - **Emerging regulatory consultations:** The Forum is not the only arena where smart grid issues will be debated and discussed in Ontario in 2012.
 - **Other considerations:** A growing body of smart grid standards, technologies and industry practices

2009 Forum Report 2011 Forum Report

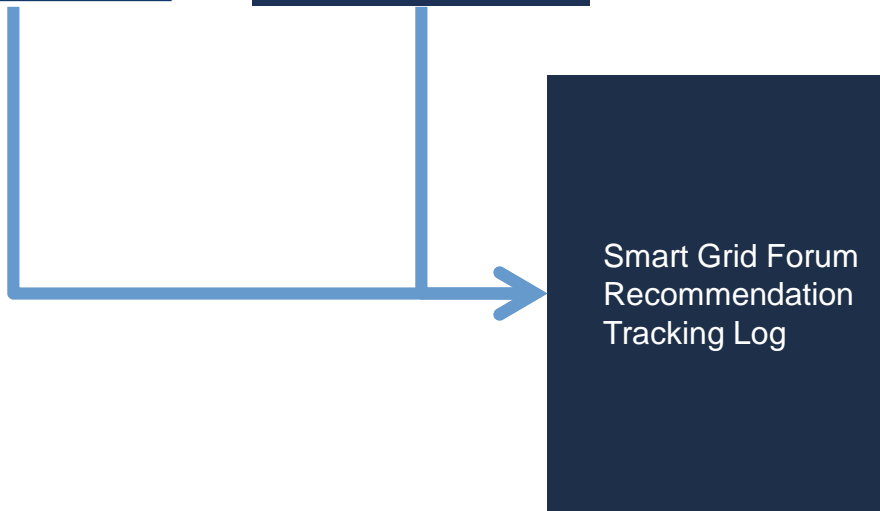
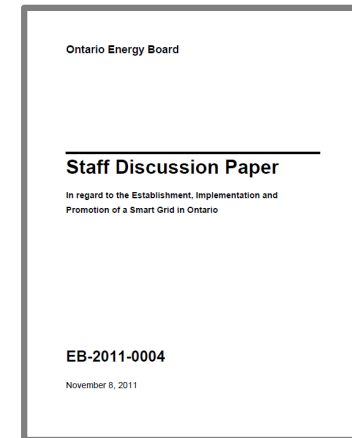


- Presently, the Forum's body of work includes 44 outstanding recommendations from two previous public reports...

2009 Forum Report 2011 Forum Report



OEB Staff Report

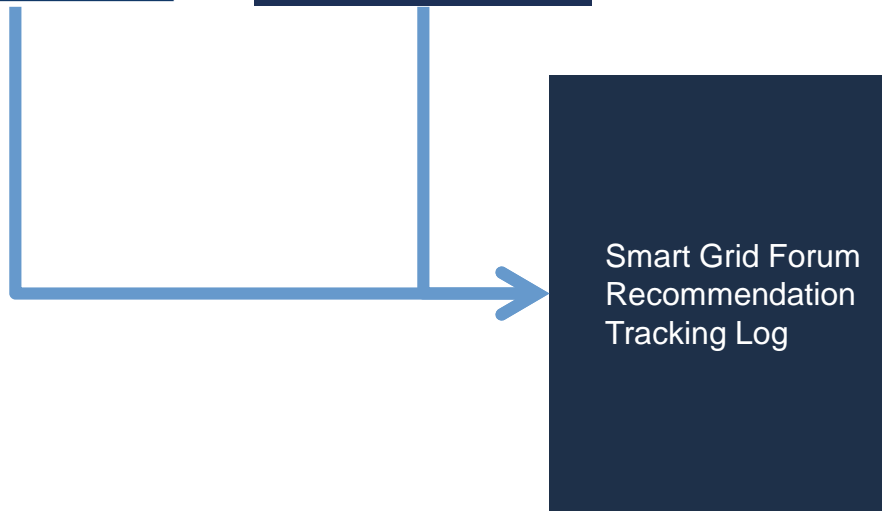
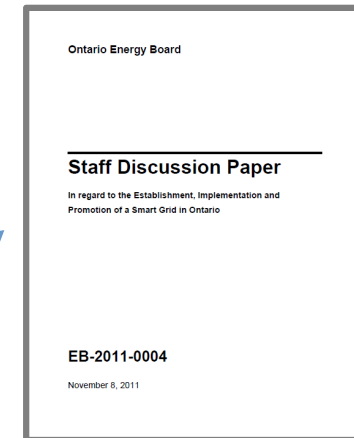
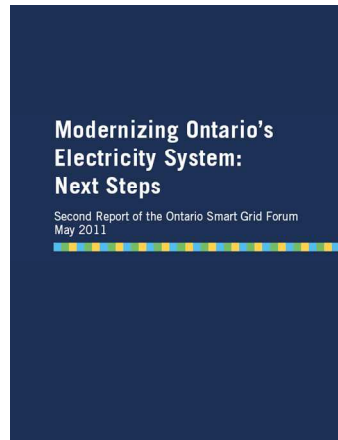
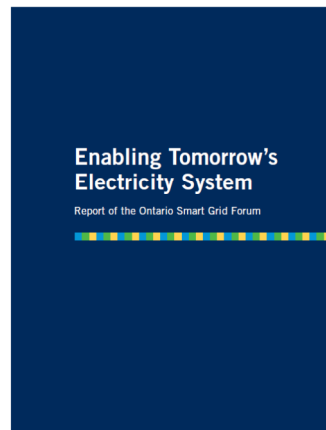


- Many issues examined by the Forum over the past year have also played out in the OEB's Smart Grid Working Group and are now reflected in the November 8th staff report.

2009 Forum Report

2011 Forum Report

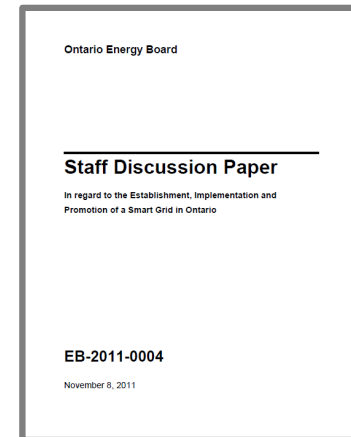
OEB Staff Report



- At present, there is no formal plan for the Forum to make a submission into the OEB's consultation process, though we share many common issues with it.

- Regardless if the Forum acts a whole, or through its various member organizations...
 - ...it has the potential to both influence, and be influenced by, the regulatory process that is now getting under way.
 - ...it must reconcile its ongoing work with the new OEB consultation effort under in order to avoid overlap, confusion and wasted effort.

OEB Staff Report



- Demonstration projects:
 - Many technological concepts that have a direct relationship with Forum recommendations (e.g. storage, renewable integration, smart homes, etc.) are expected to be reflected in various upcoming demonstration projects.
- Interoperability Standards:
 - Both the U.S. National Institute of Standards and Technology (NIST) and the Canadian National Committee of the IEC are expected to provide a large body of recommended standards over the coming year.

- SmartGrid Canada and other groups:
 - At least one Forum member (Hydro One) and several CPC members (IBM, GE, Ruggedcom, S&C Electric) are now members of **SmartGrid Canada**
 - Over 2011, SmartGrid Canada, EMC Canada, Plug 'N Drive and other groups have had activities in a number of issue areas that touch on Forum recommendations.
 - By choice, there has been no formal protocol in place between the Forum and any of these groups thus far.

- Reports and statements in the public domain:
 - To date, the Forum has confined its public-facing statements to two major reports (2009 and 2011)
 - As we know from past experience, the production of such a major report takes 6-9 months development time. If such a report were to be undertaken in 2012, it would be against a backdrop of uncertainty as to what might emerge from the OEB regulatory development process (and when).

Emerging smart grid topic areas:

- Over the past year, the Forum has become aware of various emerging smart grid topic areas that have not figured prominently into the Forum's recommendations thus far. **For example...**
 - Security (cyber and physical)
 - Climate change/environmental policy
 - Data Analytics
 - Building Codes
 - Social and economic policy implications of smart grid technologies
 - Impact of greater energy self-sufficiency on the rate base
- **Are there new areas where the Forum should turn its attention to in 2012?**

Question

Should the Forum make a group submission to the OEB consultation process?

Working Group Input

- No clear consensus in the working group.
- It was pointed out that many member organizations of the Forum and CPC will likely make their own submission and reference the Forum recommendations, regardless.
- Some member organizations would not be able to participate.
- Logistics of preparing a joint submission

Question

Should the Forum issue another report in 2012?

Working Group Input

- No clear consensus in the Working Group – though most felt that there were few pertinent issue areas that weren't already covered by an existing Forum recommendation.
- Some felt that 2013 would likely be a more prudent timeframe given that it may be some time before the full impact of the current regulatory development process will be fully understood.

Scenario Assumptions: No major report in 2012 and no joint submission to OEB consultation process

<p>Q1 2012</p>	<ul style="list-style-type: none"> • Conduct annual review of the Forum's "<i>Terms of Reference</i>" • Continue to pare down and reprioritize the Recommendation tracking log • Monitor OEB consultations • Make decision about issuing a minor report or progress report card for 2012
<p>Q2 and Q3 2012</p>	<ul style="list-style-type: none"> • Monitor OEB consultations • Examine emerging smart grid topic areas that have not been the focus of the Forum's work to-date • Review recommendations of the Canadian National Committee of IEC • Make decision about a major Forum Report in 2013
<p>Q4 2012</p>	<ul style="list-style-type: none"> • Approve draft outline of Forum Report for 2013 and engage report writer if required • Review progress of Smart Grid development against metrics recommended in 2011 report.



Upcoming Smart Grid Events

(near-term)

Upcoming Smart Grid Events



December 8/9	OEB Renewed Regulatory Framework for Electricity – Information Session
January 23	SGF Working Group
January 26	Corporate Partners Committee
February - TBD	OEB Renewed Regulatory Framework for Electricity – Stakeholder Conference
February 1, 2012	Smart Grid Forum Meeting
February 22/23	Conference: EV Infrastructure (Toronto)





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Thank you.