



**Special S.G.F. Workshop:  
The Smart Home Assignment**

## RECALL - November 9, 2010: Minister's Action Item to the S.G.F.:



The Honourable  
Brad Duguid,  
Minister of Energy

*“Specific areas of Forum input sought by the Minister:*

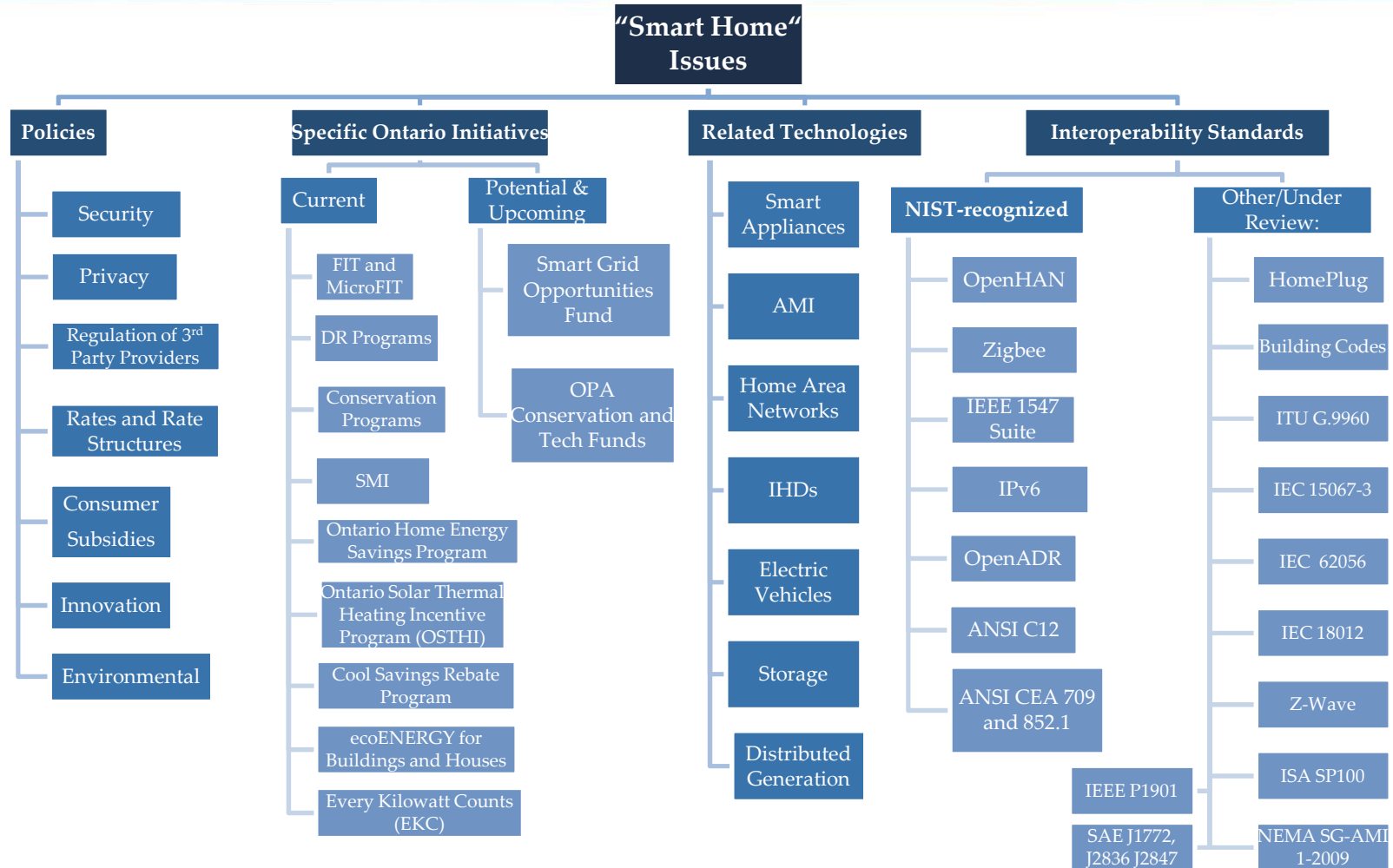
- 1. Recommendations and ideas to help government develop Ontario electricity consumer understanding of Smart Grid, Smart Meters and Time of Use rates;*
- 2. Recommendations and ideas for introducing the concept of Smart Homes and the associated enabling technologies to Ontario residential electricity consumers, while minimizing the risk that residential and in-home Smart Home enabling technologies do not meet minimum standards of operability and utility.”*

Draft minutes of the S.G.F. Nov. 9<sup>th</sup>

## Can we leverage the work we've done so far?...

- The Smart Homes assignment intersects with several topics that the Forum has spent a considerable amount of time with this year...

# Previously-discussed topic areas



- Development of the high level smart grid principles including in the Customer Control Area:
  - **ACCESS**
  - **VISIBILITY**
  - **CONTROL**
  - **PARTICIPATION IN RENEWABLE GENERATION**
  - **CUSTOMER CHOICE**
  - **EDUCATION**

## Associated General Smart Grid Principles:

- Interoperability
- Safety
- Security
- Privacy

## Associated Adaptive Infrastructure Principles:

- Flexibility
- Forward Compatibility
- Encourage Innovation
- Maintain Pulse on Innovation

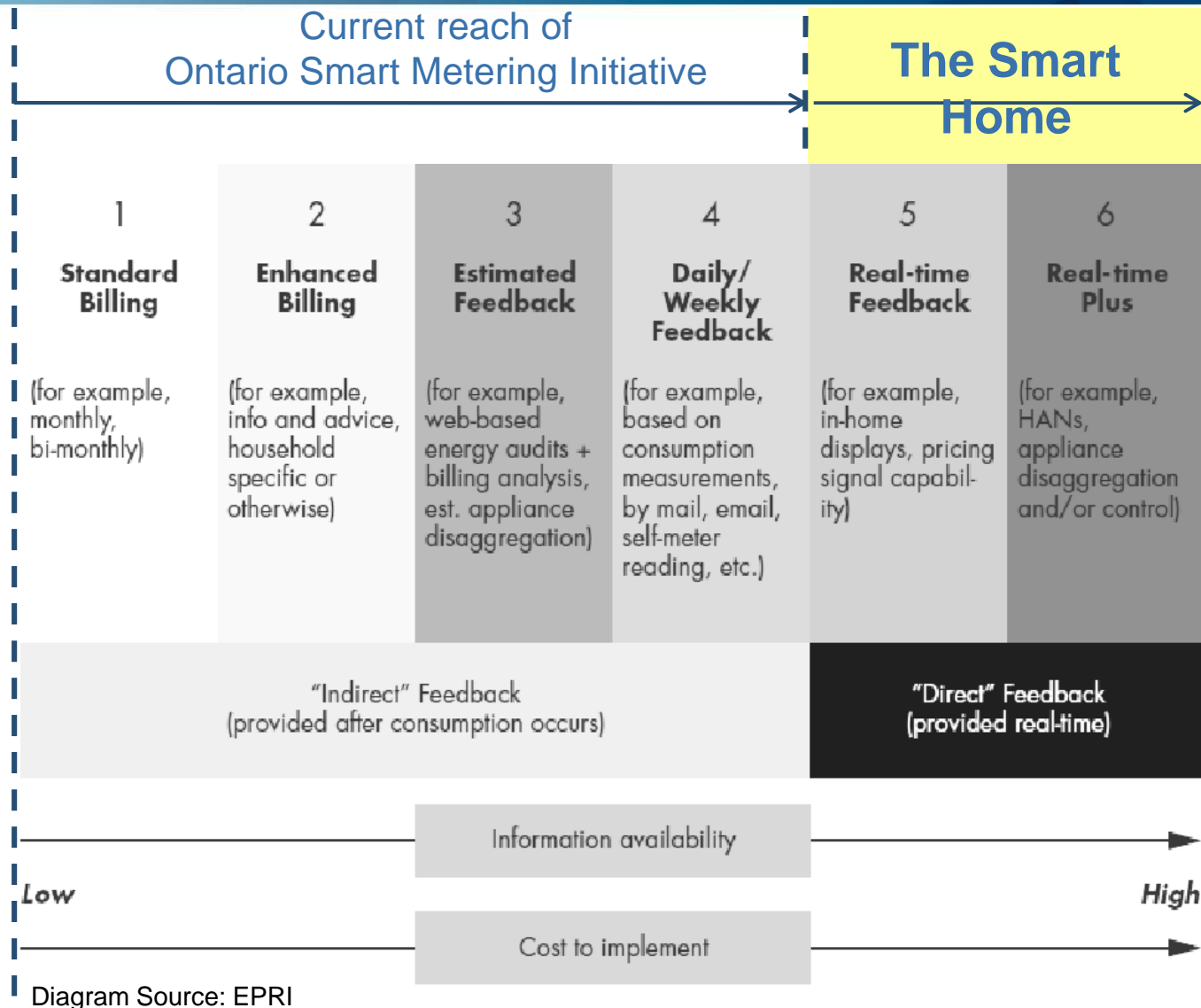
### **Data Privacy:** Including the Forum's recognition of the Privacy Commissioner's Smart Grid "Privacy by Design" Principles:

*"The Ontario Smart Grid Forum recognizes that the 7 Privacy by Design Foundational Principles developed by the Ontario Information and Privacy Commissioner provide valuable guidance with respect to compliance with applicable privacy laws, protecting Ontario Consumers and should be considered as recommended best practice in the implementation of the Smart Grid in the province of Ontario."*

S.G.F. Recognition Statement – June 4, 2010<sup>5</sup>



# Related Issue: Information Intensity



- The smart home involves the intensive usage of real-time smart meter data, local network capacity and close integration with LDC and (potentially) third party systems?
- This in turn involve a complex set of cost and cost allocation decisions beyond those made for the smart metering initiative.

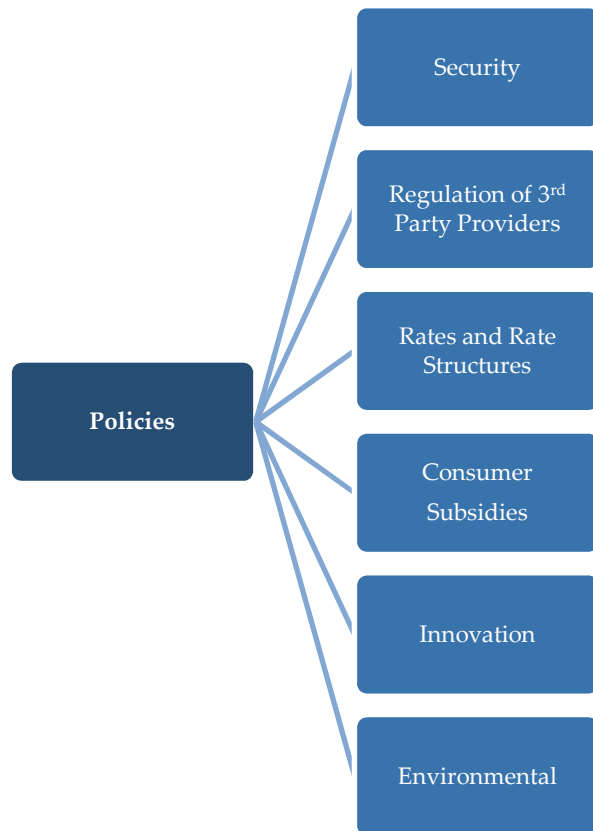
- To date, LDC's, the OEB, the SME and other public sector agencies have largely taken on the responsibility for consumer education about smart meters and TOU rates.

## **For discussion:**

- Does this approach carry over to the smart homes concept, and if so, how?

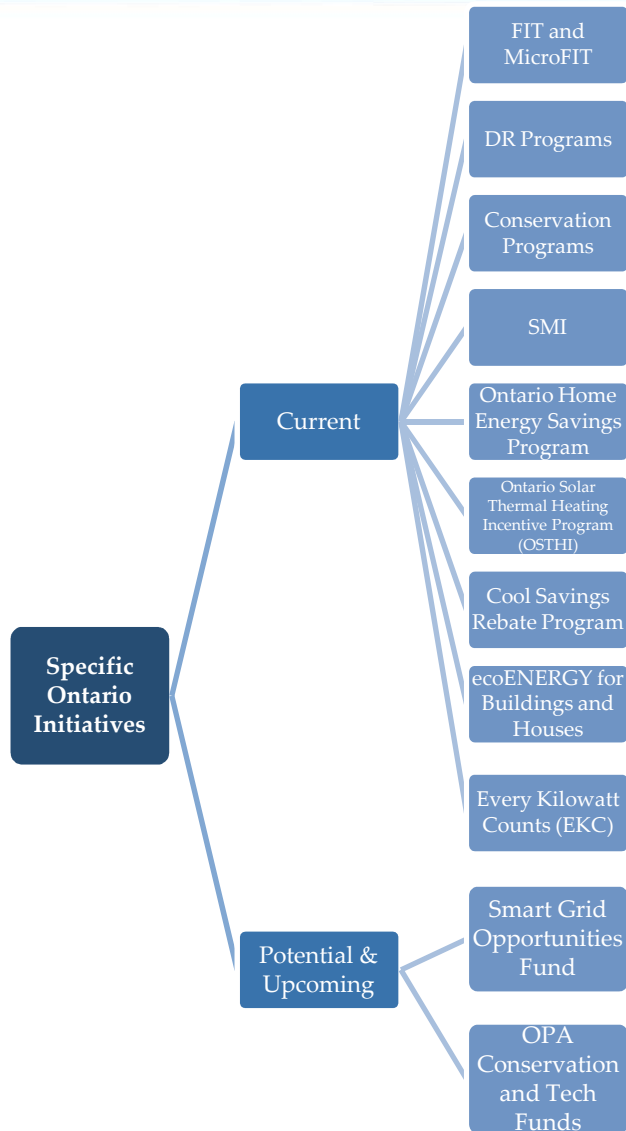
*“The interface between the Smart Grid and the Customer domain is of special importance. It will be the most visible part of the Smart Grid to the Consumer”*

NIST Framework and Roadmap for Smart Grid Interoperability Standards,, Release 1.0, page 41.



- Within Ontario (as well as in other jurisdictions) the deployment of smart grid technologies behind the meter lies at an intersection point between various policy considerations.
- Many of these considerations have factored into the development of the Forum's Smart Grid Principles – particularly, in the area of Customer Control.
- However, it remains to be seen how some of these general principles will manifest themselves in specific programs...

# Related Programs and Initiatives



- Many current Ontario programs and initiatives are already having individual impacts on technological selection decisions behind the meter in businesses and residences.

## High Level Smart Grid Principles

- Including principles from the Customer Control Category that are now part of the Minister's Directive to the OEB

## Information Privacy

- SGF recognition of Privacy By Design Principles
- Smart Meter Data Access Issue

## Demand Response

- Program Design
- Subsidies and programs
- Cost allocation
- Interoperability Standards
- Technology
- Customer Education and Outreach

## Electric Vehicles

## Other aspects of Public Policy

- Security
- Regulation of 3<sup>rd</sup> Party Providers
- Rates and Rate Structures
- Consumer Subsidies
- Innovation
- Environmental

Various aspect of the Forum and Working Group's work on these topics are of direct relevance to the smart homes concept and therefore should factory into the smart homes visions.

- Use a similar approach to that used by the U.S. Department of Energy to develop a succinct roadmap for this particular topic...

Vision

Goals and Related Smart Grid Principles

Challenges

Milestones – 5  
years

Milestones – 10  
years

Milestones – 20  
years

- Overlaid on this approach are three potential streams of Smart Home-related topics...

“Provide and  
Protect  
Information”

“Develop and  
Implement  
‘Plug and  
Play’  
Technology”

“Recognize  
and reward  
behaviour  
that benefits  
Ontario”

- Can these three streams form the basis of today’s break-out sessions?



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Smart Homes  
Workshop

## In today's break-out sessions:



- Each group will have a facilitator to prompt discussion, and record key points
- Lunch break at 12:00
- Common questions for each breakout session, plus questions specific to each theme:

“Provide and  
Protect  
Information”

“Develop and  
Implement ‘Plug  
and Play’  
Technology”

“Recognize and  
reward behaviour  
that benefits  
Ontario”



Common questions for the three  
breakout groups....

**Common Questions For Discussion:** What are the big near-term challenges for achieving the smart homes vision in Ontario?

Examples:

- Deciding upon roles, responsibilities and the degree to which commercial competition should play a role in the smart home?
- Data access, security, privacy, and costs to the common infrastructure?
- Evolving technologies and standards?

## **Common Questions For Discussion – Informing the Customer Base:**

1. Who is ultimately responsible for raising customer awareness about the Smart Home?
2. How does customer education about the Smart Home differ from the Smart Metering Initiative?
3. Are there tangible, near-term steps to be taken on the part of government, LDC's and other public agencies?

## Common Questions For Discussion – the Annual Report:

- Beyond the Forum's response to the Minister's response, what should the Annual Report convey about the Smart Home?
  - Is it the appropriate nexus point for other issues we have discussed, such as data privacy, demand response, etc.?
  - What are the dangers of putting too much emphasis on the smart home at the expense of other aspects of the smart grid?



Specific questions for each of the  
three breakout groups....

*“Provide and  
Protect  
Information”*

*“Develop and  
Implement ‘Plug  
and Play’  
Technology”*

*“Recognize and  
reward behaviour  
that benefits  
Ontario”*

“Provide and  
Protect  
Information”

## Specific Questions:

- Are **current** behind the meter programs/initiatives in Ontario (individually or in aggregate) adequately addressing the broader development of the smart home?
- LDC’s and public sector institutions have largely borne the responsibility for educating consumers about smart meters and TOU rates, but does this approach carry over to the smart homes concept, and if so, how?
- Where and how should the province go about finding the appropriate balance the competing interests of the “Access” principle vs. ‘privacy’ and ‘security’?
- What do the 5, 10 and 20 year end states look like?

**“Develop and  
Implement ‘Plug  
and Play’  
Technology”**

## Specific Questions:

- Are current Ontario programs/initiatives (individually or in aggregate) yielding the correct technological selection decisions that will be compatible with tomorrow’s Smart Home? Who should bear the ultimate responsibility for those decisions?
- How important is it that Smart Homes develop at a uniform pace across the province? How should this be managed?
- Does Ontario have an adequate approach to ensure that the smart grid principle of ‘Interoperability’ is applied within the Smart Home?
- What do the 5, 10 and 20 year end states look like?

**“Recognize and  
reward  
behaviour that  
benefits  
Ontario”**

## Specific Questions:

- What areas of smart home services should be open to competition? What areas should be left to the “natural monopoly” of the local distribution company?
- What role should public subsidies and incentives play in smart home development?
- Do current TOU rates adequate incentives for the development of the smart home?
- What do the 5, 10 and 20 year end states look like?



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Thank you.