


***Smart Grid Privacy:
The Time to Act is Now***

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Information and Privacy Commissioner
Ontario

***Smart Grid Privacy 101:
Privacy by Design in Action – Power Morning
Jerusalem, Israel
October 25, 2010***

www.privacybydesign.ca

A large, faint, light blue oval graphic is centered in the background. Inside this oval, the letters 'PbD' are written in a large, stylized, light red font. The 'P' and 'D' are tall and blocky, while the 'b' is smaller and lowercase. The 'P' has a white circle at the top, and the 'b' has a grey square at the bottom.

**The Honourable
Dalton McGuinty
Premier of Ontario, Canada**

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Presentation Outline

1. *Privacy, the “Sleeper Issue” on the Smart Grid*
2. *CEUD and the Smart Grid*
3. *Change is Coming*
4. *IPC Involvement*
5. *Building Privacy in from the Outset*
6. *Now is the time to Get Involved*
7. *The Bottom Line: Get Privacy on the Radar!*

Privacy – the “Sleeper Issue” on the Smart Grid

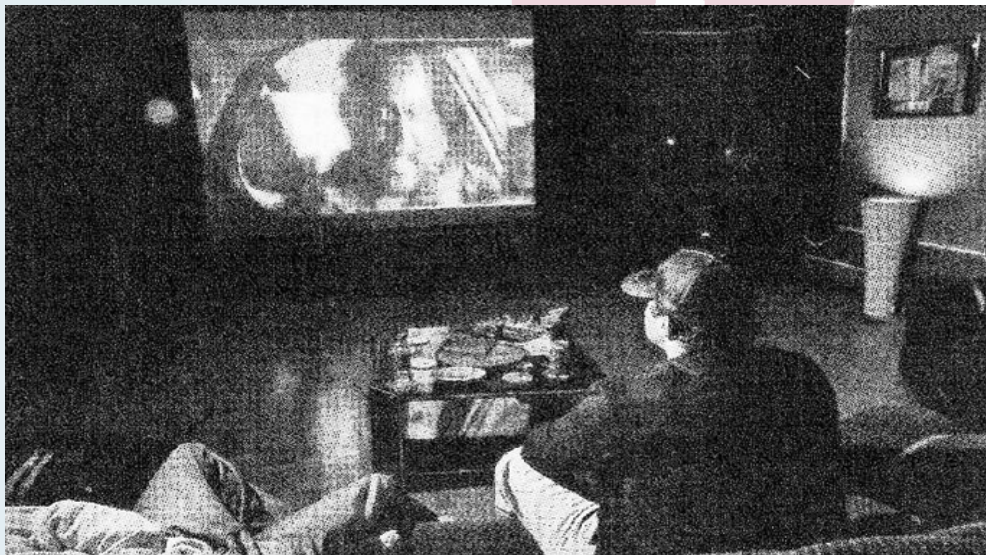
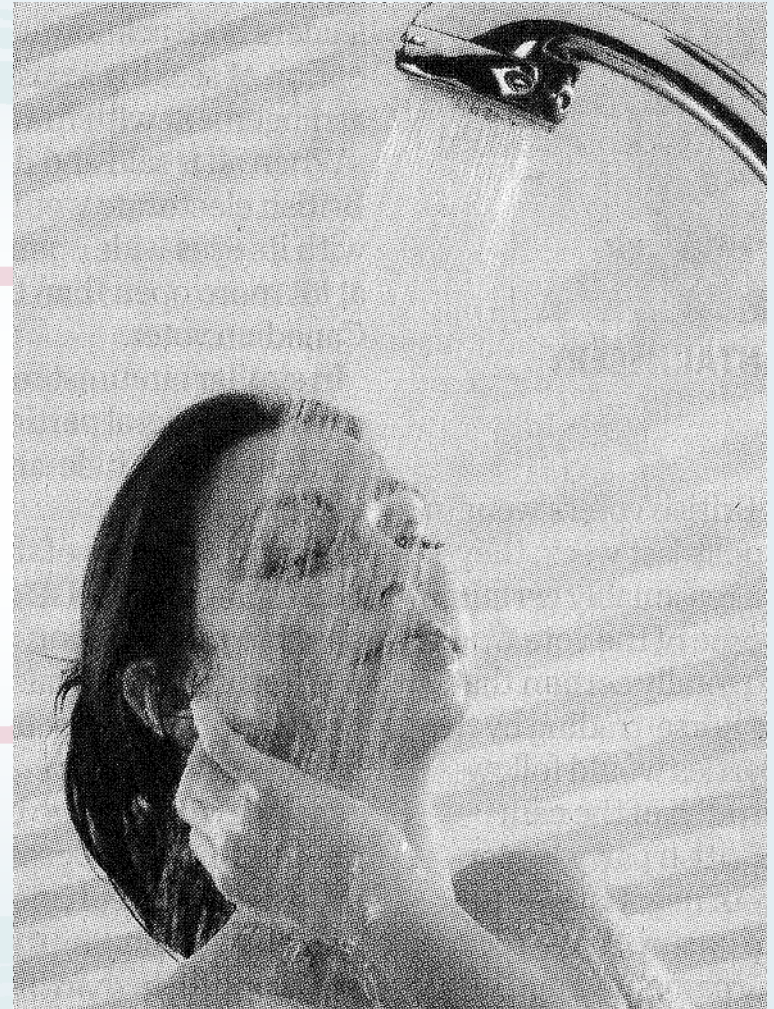
“The smart grid is a good idea, and I'm certainly in favour of it. But the focus is so much on controlling energy use that I think the privacy issue is a sleeper – it's certainly not top-of-mind.”

Commissioner Cavoukian quoted in Toronto Star, August 3, 2009

“The time for action is now, before the smart grid becomes a fully established part of our infrastructure. We cannot allow privacy to become the Achilles heel of this new method of energy management.”

Commissioner Cavoukian quoted in Toronto Star, November 17, 2009

Home: The Most Private of Places



CEUD: Consumer Energy Usage Data = PII

The Issue:

Privacy and the Smart Grid

- Increase in the granular collection, use and disclosure of personal energy information;
- Data linkage of personally identifiable information with energy use;
- Creation of an entirely new “library” of personal information. (Elias Quinn, 2009)



Change is Coming

“Governments and private interests worldwide are expected to increase investments in smart-grid technology, spending a total of more than \$45 billion by 2015.”

*— Smart Grid Applications:
Smart Meters, Demand Response, and Distributed Generation.*

ABI Research, July 2010.

Raising Awareness

SmartPrivacy for the Smart Grid:

Embedding Privacy into the Design of Electricity Conservation



November 2009

THE FUTURE OF PRIVACY FORUM
WWW.FUTUREOFPRIVACY.ORG



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INFORMATION & PRIVACY COMMISSIONER OF ONTARIO
2009 ANNUAL REPORT

Recommendations

Protection of Privacy Act (FIPPA) for the purposes of transparency and accountability, but further action is still needed.

In my 2004 Annual Report, I cited universities, hospitals and Children's Aid Societies as three large organizations that should be brought under this legislation. Since then, universities were made subject to the legislation in 2006, and the Ontario Hospital Association — to its great credit — voluntarily stepped forward in late 2009 and asked to have hospitals made subject to the law.

There have been some other progressive steps, including the two largest elements of what had been Ontario Hydro, being put back under FIPPA.

I urge the government to move quickly to bring hospitals under FIPPA. Once this is completed, the next step should be adding Children's Aid Societies, which are significantly funded by taxpayer dollars. In Alberta and Quebec, CASs are already covered under POI legislation.



3. Ensure privacy is embedded into the Smart Grid

The Smart Grid will bring many benefits, including curbing greenhouse gas emissions and reducing consumers' energy bills. But consumer privacy is a crucial element that must be embedded in the electricity reform framework in Ontario.

I am very pleased with the response that my office has received since November when I first drew attention to this issue through a white paper — *Smart Privacy for the Smart Grid: Embedding Privacy in the Design of Electricity Conservation*. I have met with many stakeholders in the Ontario electrical sector and am happy to see a high level of understanding and commitment to privacy. In moving forward

with plans in this area, the government must play a leadership role in ensuring that privacy forms a key part of the ongoing Smart Grid implementation in Ontario.

The infrastructure supporting the Smart Grid will be capable of informing consumers of their hourly and real-time energy use, and in the future, at the individual appliance level. The overarching privacy concern I have raised is that there will be a great increase in the amount of information available relating to the activities of individuals within their homes — their habits and behaviours. In a future Smart Grid scenario that does not build in privacy, intimate details of hydro customers' lives could be easily discerned by data automatically fed by appliances and other devices to the companies providing electric power (e.g. what time you cook, shower, or go to bed — and the security issues such as whether the house has an alarm system).

Once inferences can be drawn on granular energy consumption information flowing outside of the home, such as real-time energy use data, future consumers may have questions including: Who will have access to this sensitive data? For what purposes? What are the obligations of companies making smart appliances and Smart Grid systems to protect my privacy? The best response is to ensure that privacy is proactively embedded into the design of the future Smart Grid, from start to finish — end to end. This is what I call *Privacy by Design*.

As we move forward, the Government of Ontario — in leading the province towards full Smart Grid implementation — must continue to ensure that privacy is a cornerstone of the Smart Grid.

www.ipc.on.ca

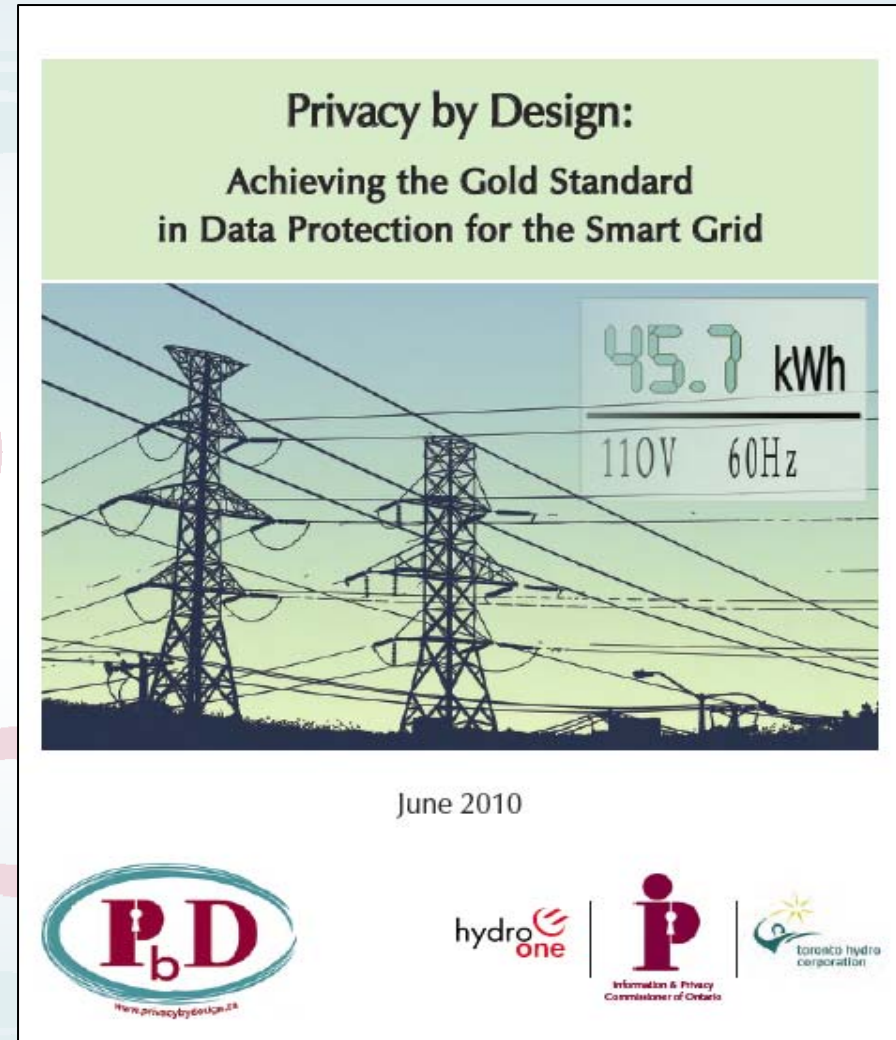
Moving Forward, Making Connections



- One of the largest electricity delivery systems in North America;
 - Owns and operates virtually ALL of Ontario's electricity transmission;
 - Also engaged in distribution to over 75% of the province – an **area twice the size of Texas**;
 - Installed over 1 million smart meters;
 - 1.3 million customers.
- Largest municipal electricity distribution company/utility in Canada;
 - Government has mandated smart meters in every home and small business by the end of 2010, **making Toronto one of the most densely “smart metered” cities in North America.**

Working *With* our Utilities

- Our utilities recognized the importance of privacy, from the outset;
- Utilities understood that *Privacy by Design* was the best way to achieve strong data protection;
- Worked together to jointly develop Best Practices for the Smart Grid – laying a clear path forward.



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Coming Soon

- Smart Grid *Privacy by Design: A European Perspective*, with Dr. Alexander Dix, Commissioner for Data Protection and Freedom of Information, Berlin, Germany.
- Upcoming paper – *Operationalizing Privacy by Design: An Ontario Smart Grid Case Study* – with Hydro One, IBM, GE and Telvent, relating to the Ontario Smart Grid pilot project (launching February, 2011).

Build Privacy in – right from the outset

“At the end of the day, it’s all about standards. If we get that right at the outset, we create an ecosystem for the development of technologies that will thrive in the present and future.”

— Chuck Adams, President of IEEE
(Institute of Electrical and Electronics Engineers)

Now is the Time to Get Involved

1. **Understand the playing field:**

Are Smart Grid projects being developed in your jurisdiction (perhaps through the introduction of Smart Meters)? Which utility companies are involved? Who are the market leaders? What is their vision for the future?

2. **Engage:**

Talk to your utilities about privacy. Find out how much they know and start a dialogue about the key risk areas – educate them about FIPs and privacy issues – this will be key.

3. **Partner:**

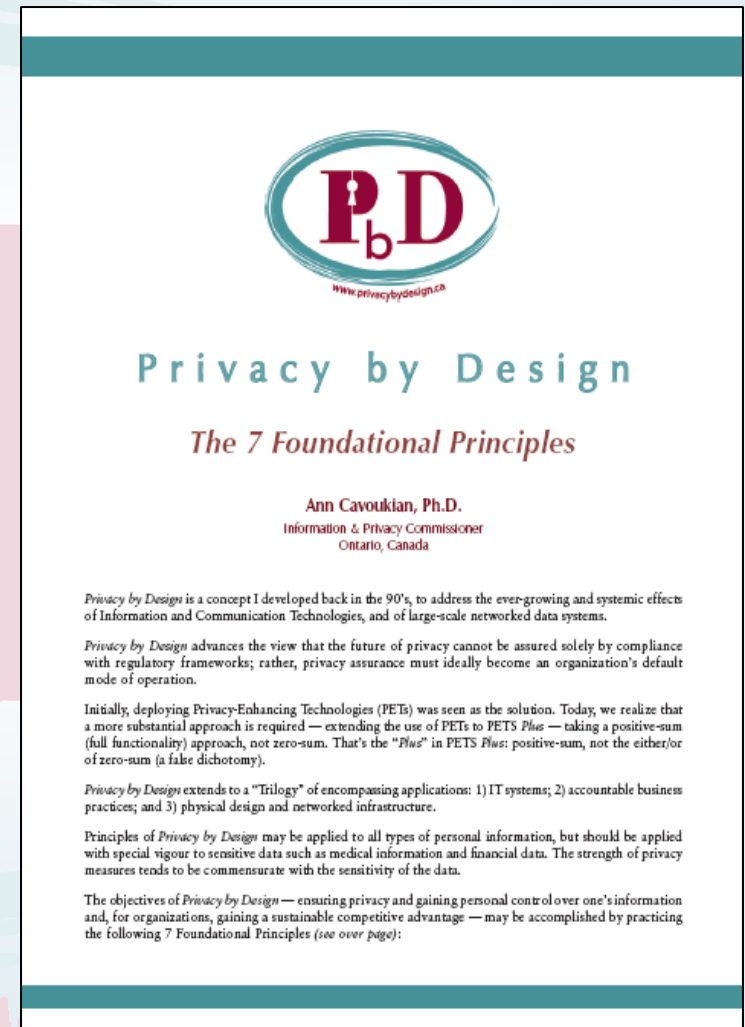
Where appropriate, seek out opportunities to partner with your utilities, to develop tools and resources. White papers, best practice guides, and public FAQs are just some of the tools you can work on together, fostering greater trust and understanding.

Key Messages

- ***Affirm*** the essentially one-to-one relationship of trust that consumers and utilities currently have as the standard for going forward;
- ***Explain*** the 7 Foundational Principles of *Privacy by Design*, emphasizing the need for proactive privacy protection to be embedded into the systems being contemplated as the default condition; and
- ***Seek*** positive (opt-in) consent for unauthorized third-party data sharing.

Privacy by Design: The 7 Foundational Principles

1. *Proactive* not *Reactive*;
Preventative not Remedial;
2. Privacy as the *Default*;
3. Privacy *Embedded* into Design;
4. *Full* Functionality:
Positive-Sum, not Zero-Sum;
5. End-to-End *Security*:
Lifecycle Protection;
6. Visibility and Transparency;
7. *Respect* for User Privacy.



The Min/Max Principle

Use the *minimum* amount of
personal information
to achieve the *maximum* functionality

RESULT:

**Data Minimization *and*
Achievement of Stated Objectives**

WIN/WIN

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Make sure Privacy is on the Radar

**P...
LOUD AND CLEAR!**

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**For more information on *Privacy by Design*,
please visit: www.privacybydesign.ca**