

Applied *Privacy by Design*: The Smart Grid

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The Challenge

“In order for the Smart Grid to grow and become truly successful, it will *have* to engender consumer confidence, trust, and respect for user privacy.”

Ontario Information and Privacy Commissioner,
Ann Cavoukian, Ph.D.



The Smart Grid: What is it?

A two-way flow of

Information

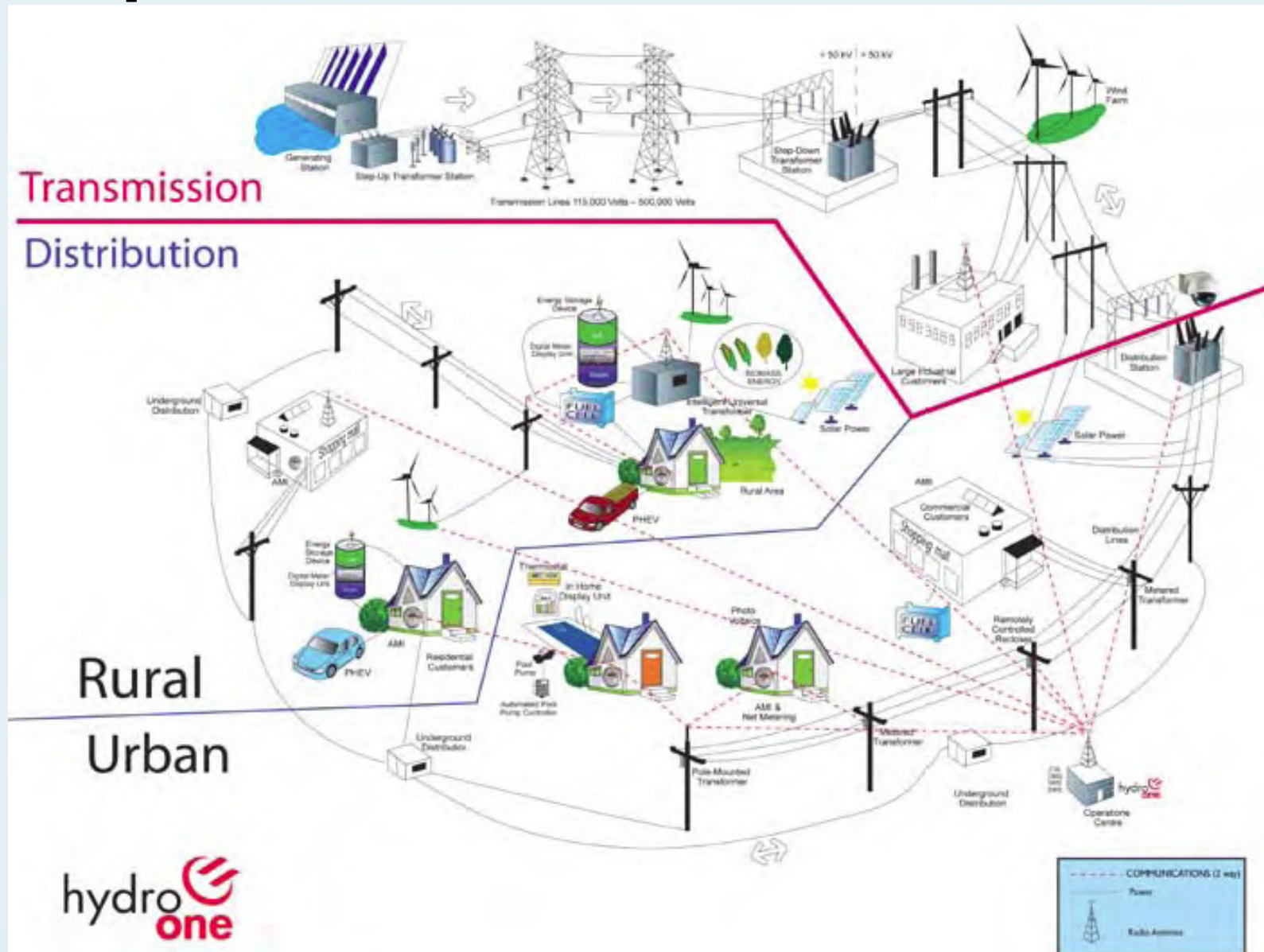
and

Electricity





Sample Smart Grid: Ontario





Imagining the Future: Elements of the Smart Grid

Smart Meters

Load Management

Smart Appliances

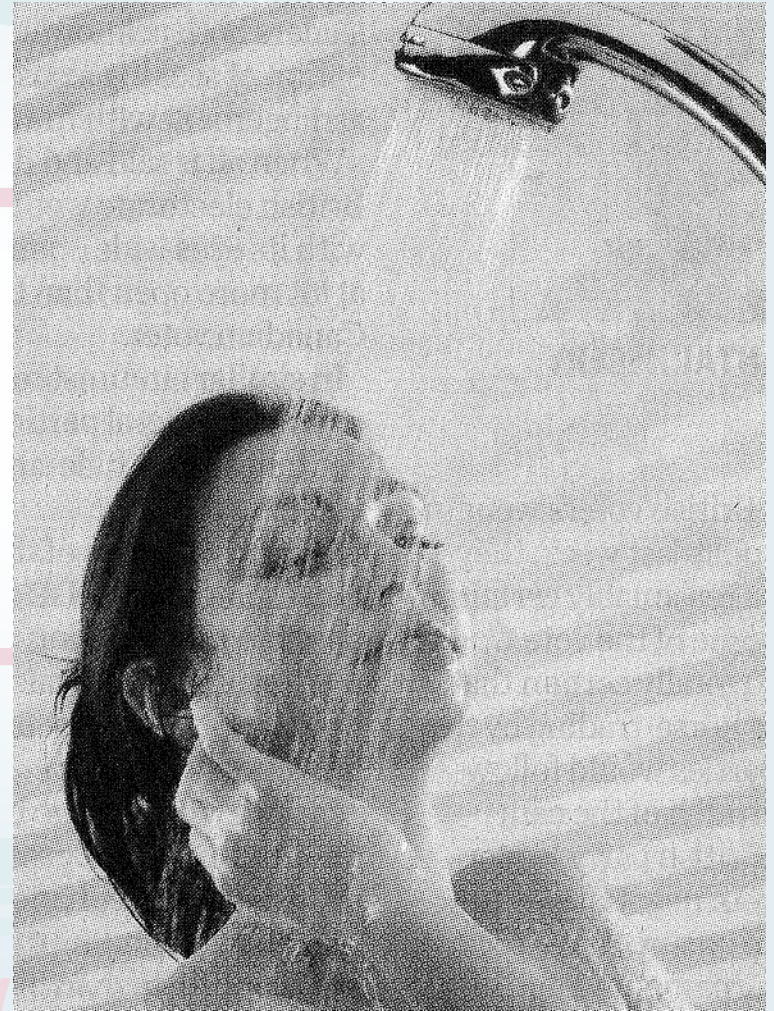
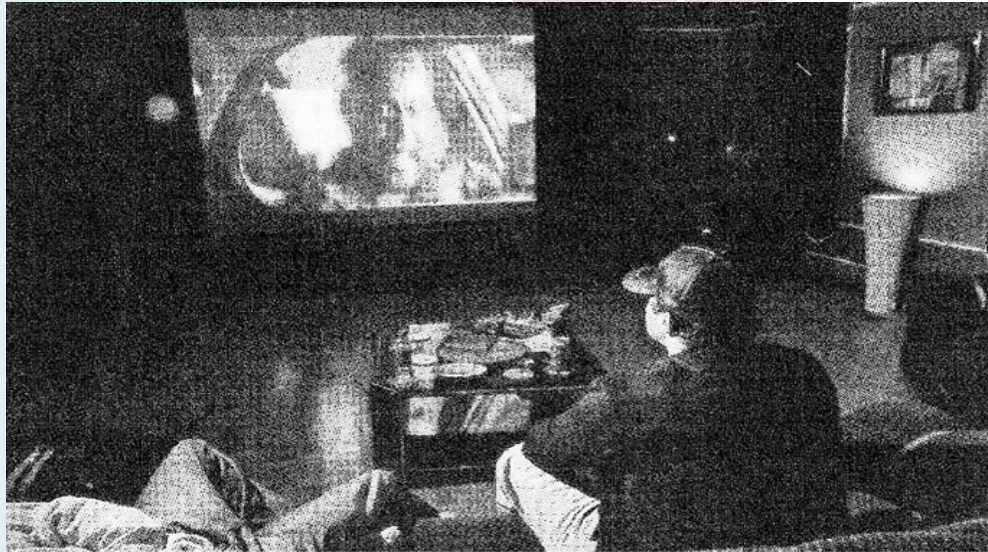
Dynamic Pricing

***Access to Energy
Information***

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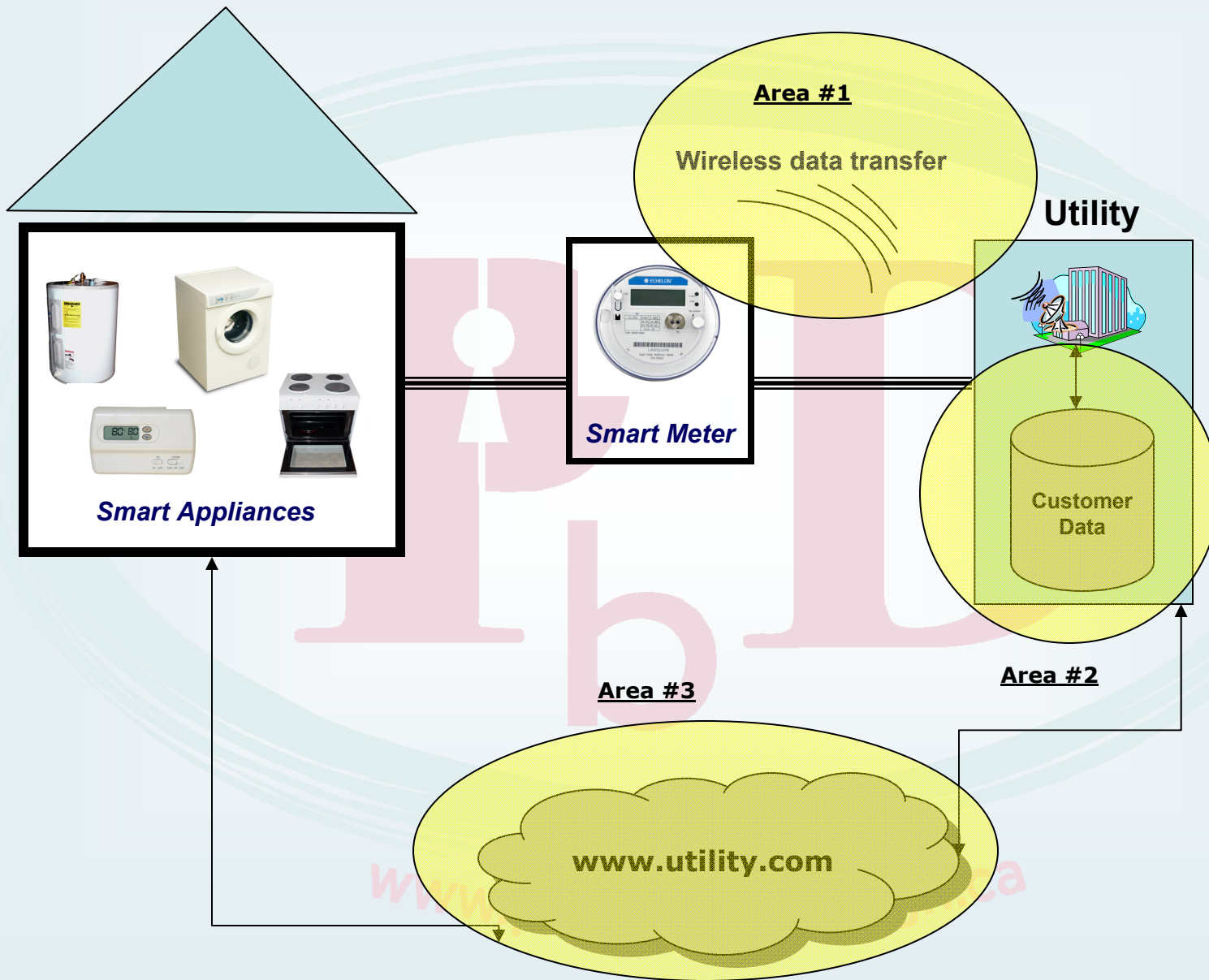


Home: The Most Private of Places





Key Privacy Risk Areas





Setting the Standard

“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)



Smart Grid *Privacy by Design*

SmartPrivacy for the Smart Grid: Embedding Privacy into the Design of Electricity Conservation



November 2009

THE FUTURE OF PRIVACY FORUM
www.futureofprivacy.org



Privacy by Design: Achieving the Gold Standard in Data Protection for the Smart Grid



June 2010



hydro
one





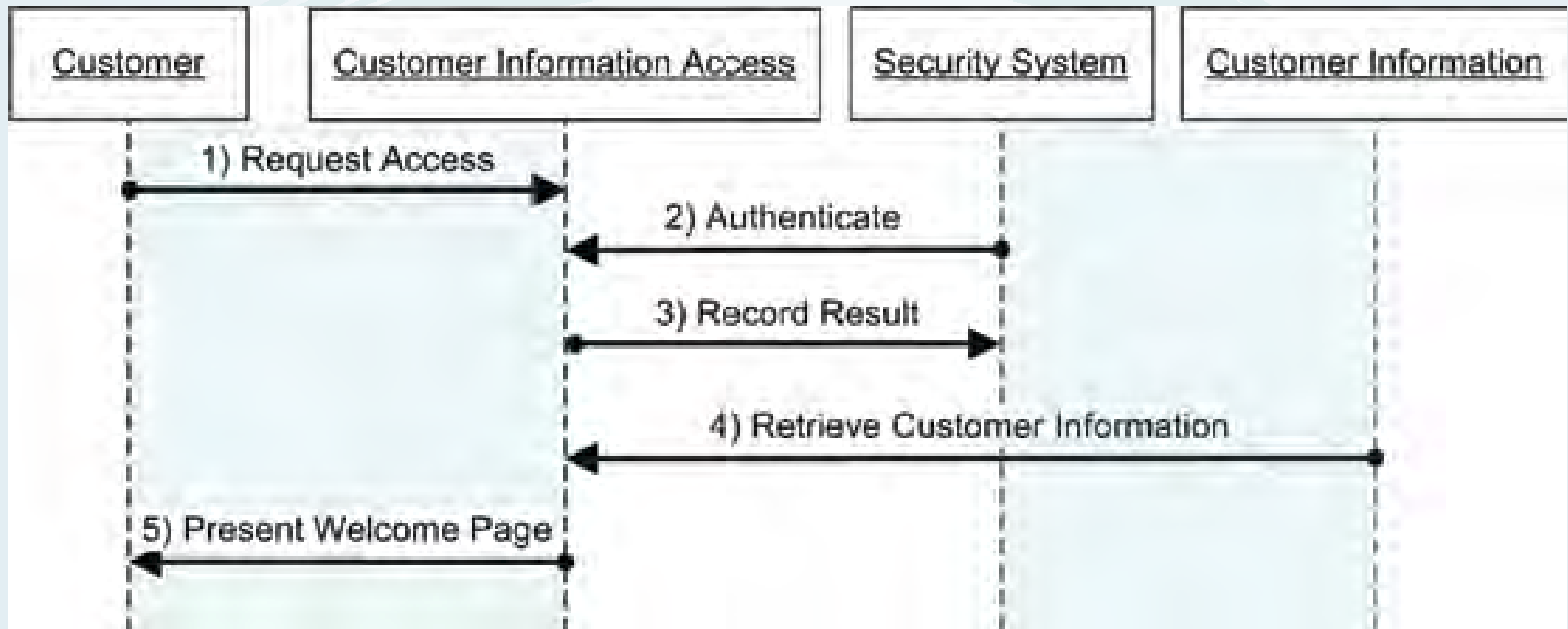
Best practices

The Smart Grid shall:

1. Be proactive, not reactive
2. Build in privacy as the default
3. Embed privacy into its design
4. Avoid false trade-offs between objectives
5. Build in privacy end to end
6. Be visible and transparent
7. Treat consumer privacy as a core functional requirement



Simple Application of *PbD*: Online Customer Information Request

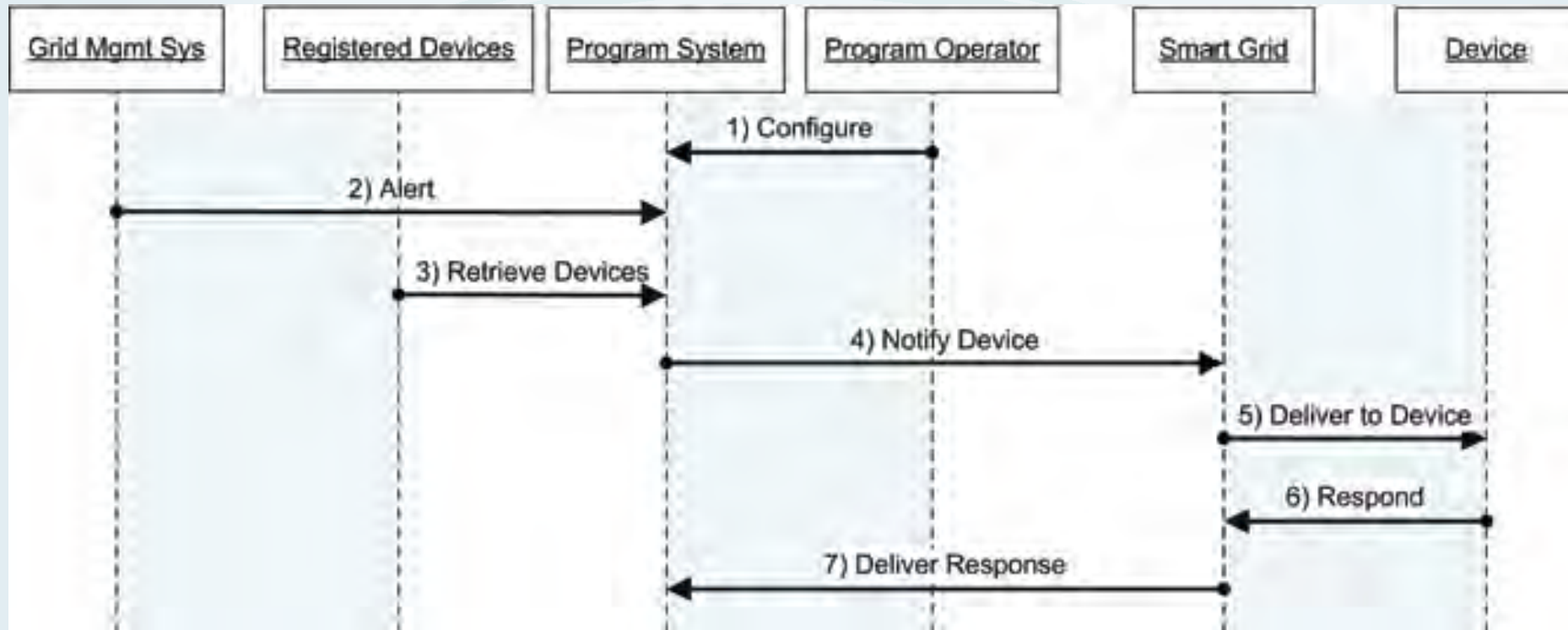


Sequence Diagram for Customer Information Access

From IPC, Toronto Hydro and Hydro One, *Privacy by Design: Achieving the Gold Standard in Data Protection for the Smart Grid*, p. 21



Advanced Application of *PbD*: Load Management Program

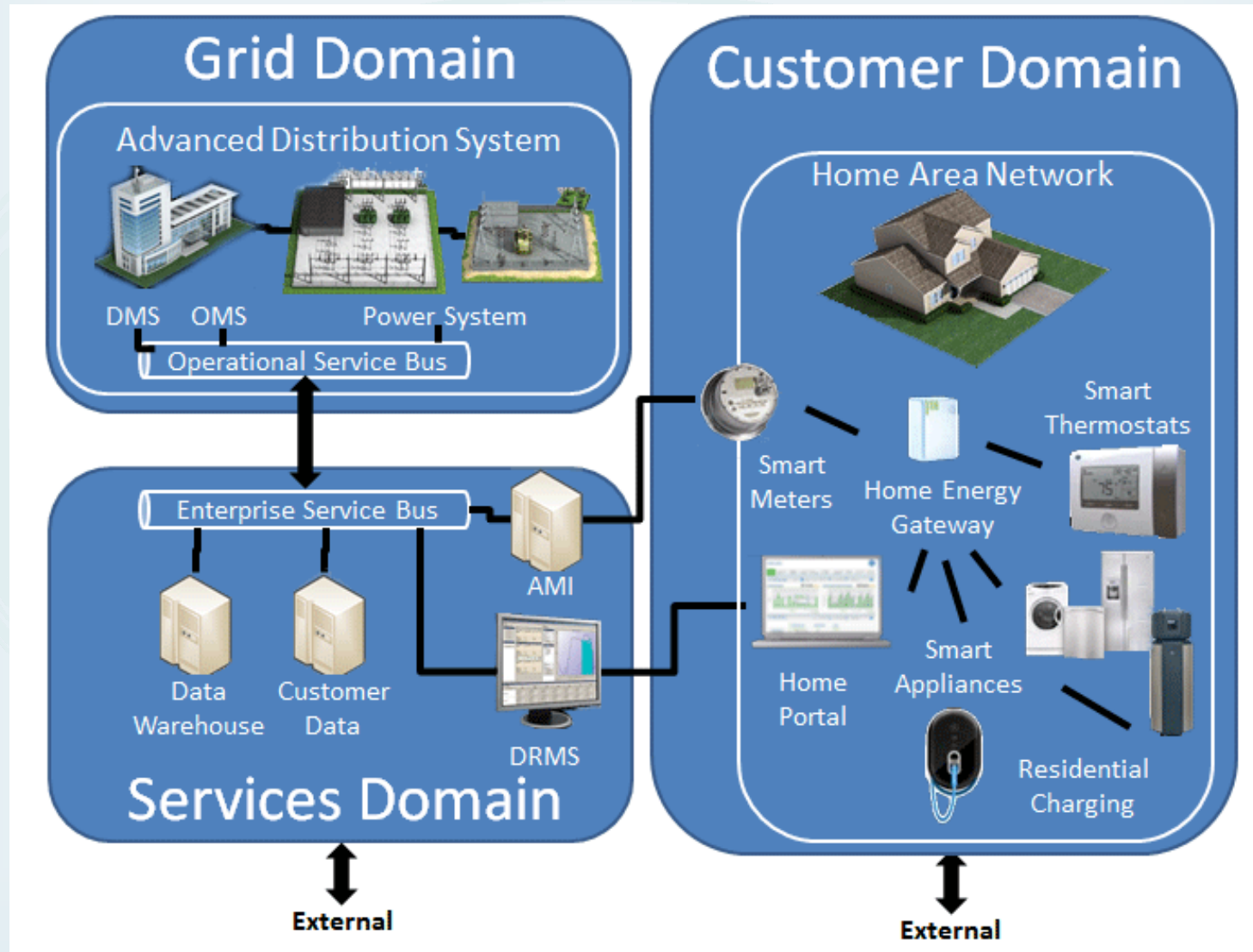


***Sequence Diagram for Usage
(Part of Customer Enablement in the Smart Grid)***

From IPC, Toronto Hydro and Hydro One, *Privacy by Design: Achieving the Gold Standard in Data Protection for the Smart Grid*, p. 24



The Big Picture: A Privacy Perspective on the Smart Grid





Benefits of Embedding Privacy at the Design Stage

- ✓ Clarification of relationship between business and privacy requirements
- ✓ Good business practice that enhances consumer confidence and trust
- ✓ Supports energy conservation by removing barriers to consumer participation
- ✓ Cost-effective and secure

**More information and a growing
library of resources are available at**

www.privacybydesign.ca

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