

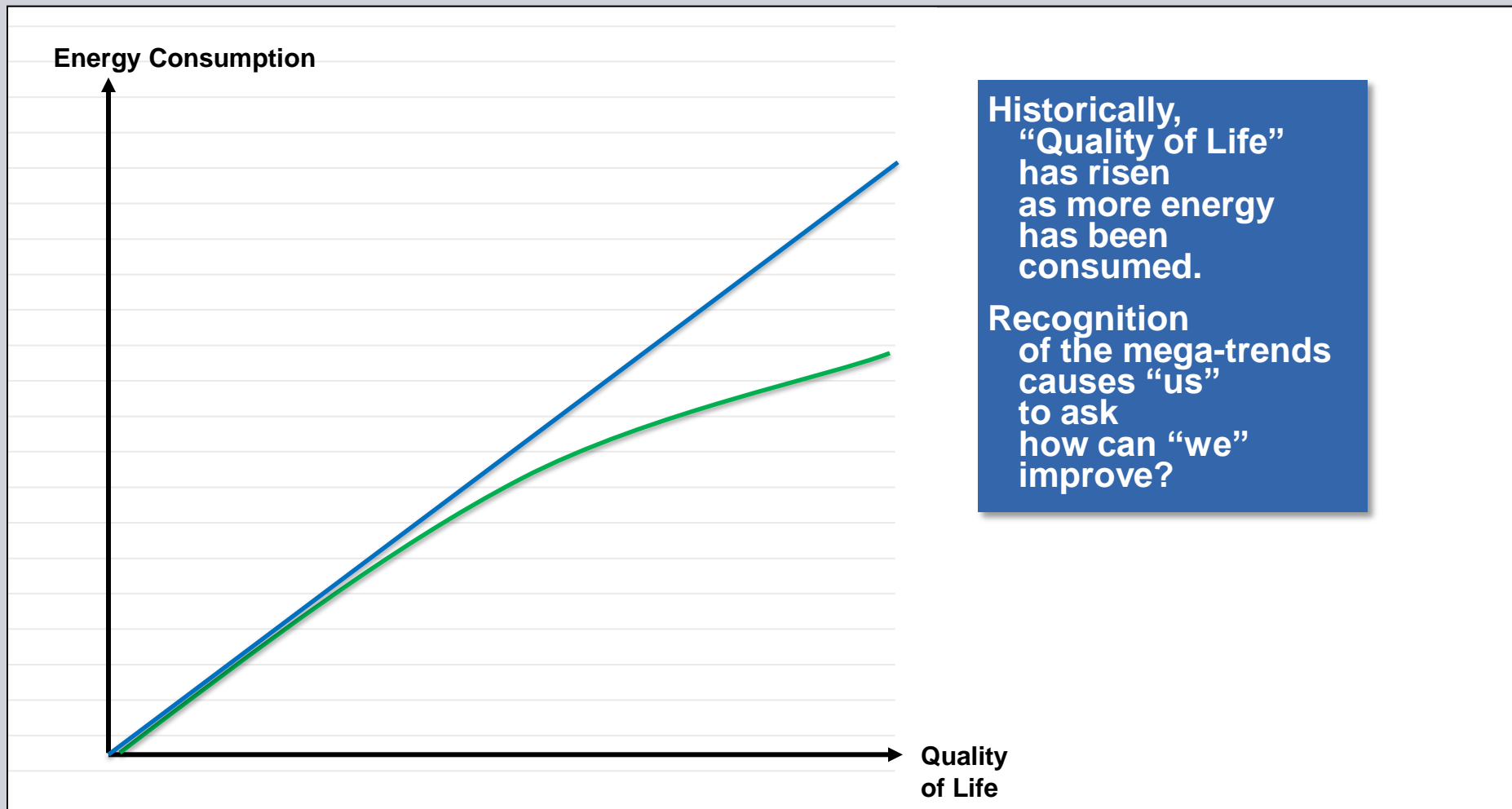


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ISGAN Annex 4 – On-line Smart Grid Workshop
Canadian Smart Grid Perspectives
November 2012

Richard Wunderlich
Director, Smart Grid Initiatives
Infrastructure and Cities (IC) Sector
Siemens Canada

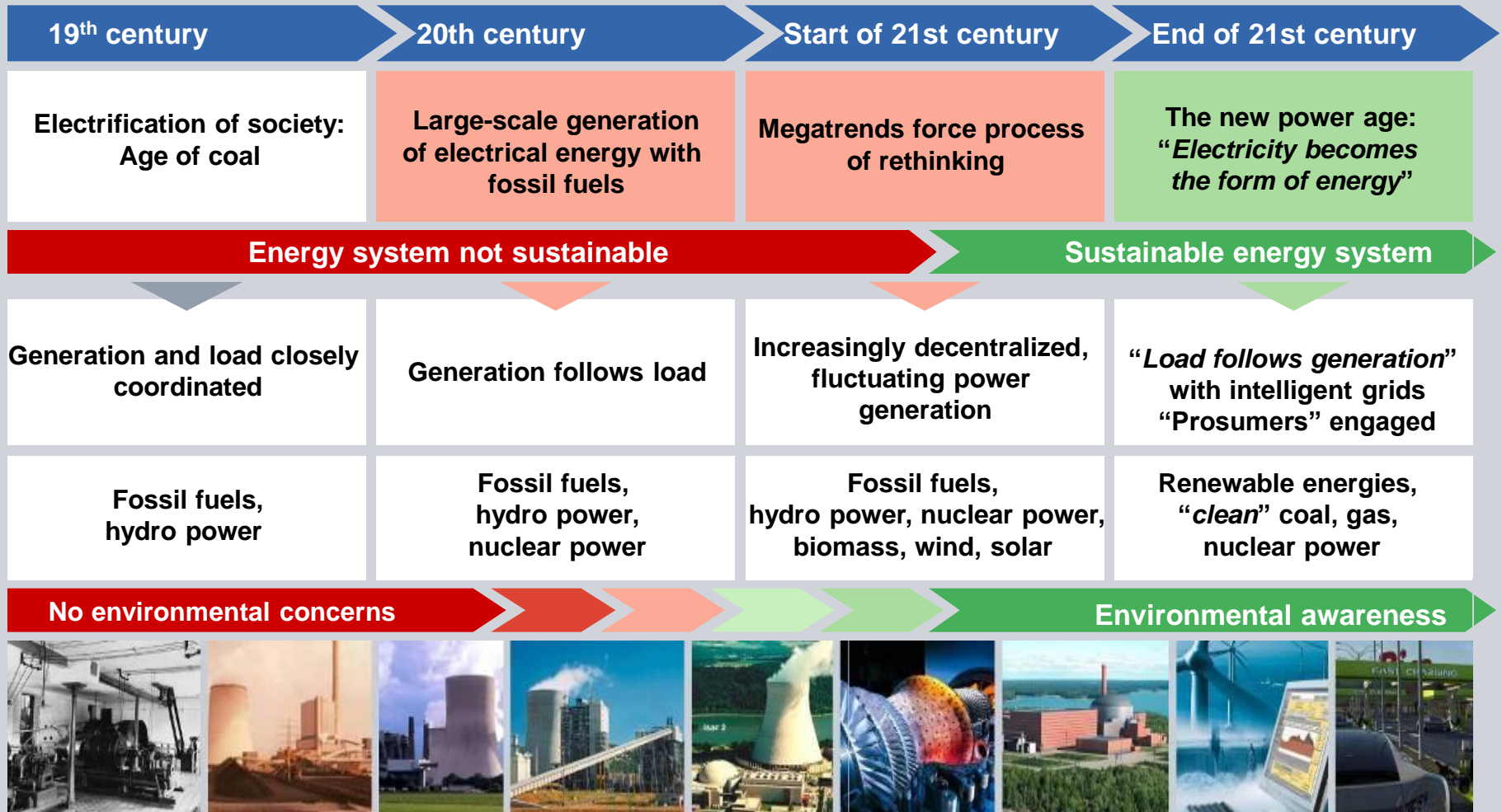
“May you live in interesting times”



Historically,
“Quality of Life”
has risen
as more energy
has been
consumed.

Recognition
of the mega-trends
causes “us”
to ask
how can “we”
improve?

On the way to sustainable energy systems



Transforming cities through sustainable technology

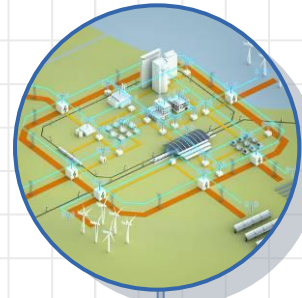
Intelligent traffic management

- Tolling systems
- Traffic flow management
- Adaptive traffic control



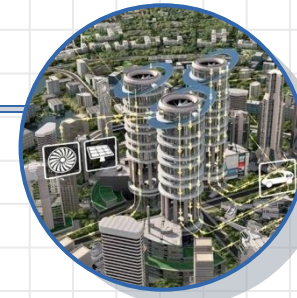
Smart grid solutions

- Grid automation
- Decentral energy management
- Demand response systems



Energy efficient buildings

- Integrated climate, light, and blind control
- Energy performance contracting
- Efficiency monitoring



The pioneering partner for infrastructure & cities

Clean technology

Efficient use of resources

Connected information

Automation of infrastructure

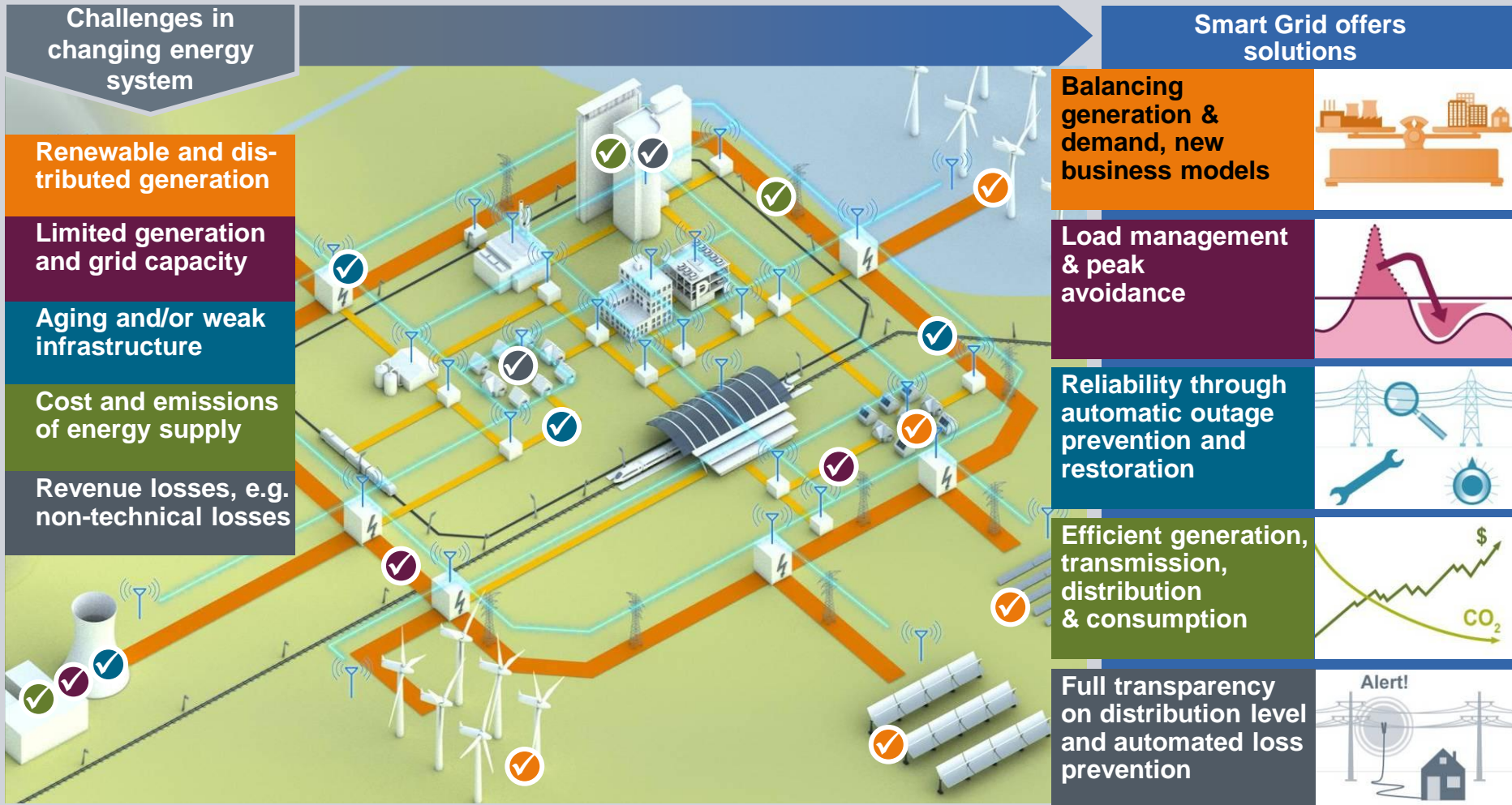


Rail-bound transit solutions

- High-speed and metro rail
- Train control systems
- Traction power supply

Smart Grid: going beyond traditional energy technology

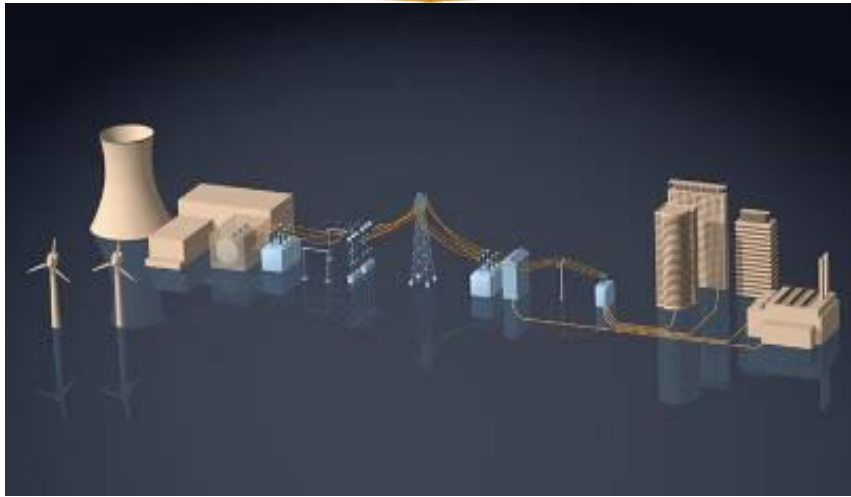
Enabling the “Utility of the Future”



Enabling the paradigm shift in power grids... “May you find what you are looking for”

20th Century

Unsustainable energy system



'Generation follows load'

Fossil energy sources

End of 21st Century

Sustainable energy system - Prosumers



'Load follows generation'

Renewable energy sources

An aspiration to lead and pioneer new territory...

- Where to start?
- Which strategies?
- Where to invest?
- What are the right steps?
- Which technologies?
- How to measure success?



An Ontario example: Durham Smart Grid Operations Center (SGOC) Partnership with governments, university, utilities, and industry

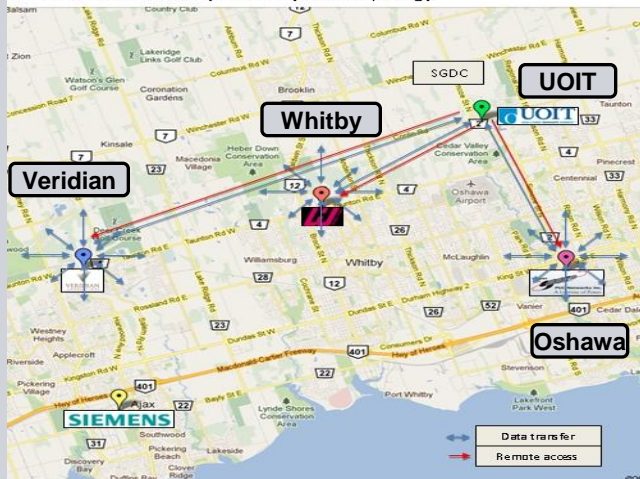


Highlights:

Smart Grid Operations Centre (SGOC)

- Business Objectives (**Siemens Smart Grid Compass™**)
- Multi-utility, multi-vendor collaboration (**Inclusive**) reflecting real world environment
- Legacy operational landscapes (**Utility of Today**)
- Net new technologies (**Innovation**)
- Net new business capability (**Utility of the Future**)

MoE Smart Grid Project – Physical Topology



Program Objectives:

To provide a Smart Grid platform for Ontario Innovation

- Identify potentials for innovation (Future Phases)
- Commercialize existing innovations
- Provide an Ontario global reference
- Develop local competency and resource capacity
- Engage with the University community (UOIT)

A New Brunswick example: Multi-year Smart Grid Deployment Program Partnership with governments, universities, utilities, and industry

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Published July 28th, 2012 NB Newspapers

ITEM: NB POWER AND SIEMENS
TO BRING 'SMART GRID' TO
PROVINCE'S ENERGY SYSTEM

GREG
PERRY

NOW IF THEY COULD
ONLY COME UP
WITH A 'SMART
GRID' PROGRAM
FOR THAT PLACE...



A London example: Multi- year Infrastructure Enhancement Partnership with government, university, utility, and industry

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Highlights:

Siemens and London – a close partnership

- We started working intensively with London in 2007
 - City Account Manager drives early engagement and representing our entire portfolio
 - We offer the specific domain know-how
- **Interurban mobility:** 1,200 vehicles for regional trains
 - **Automated video surveillance:** Comprehensive CCTV services to improve community safety
 - **Hybrid Buses:** Consume ~40% less fuel and emissions
 - **Toll System:** City congestion charging system and enforcement of low-emission zone
 - **E-mobility project:** Supply of software solutions, related services and charging stations
 - **Smart Grid:** Collaboration with UK Power Networks to develop a power distribution concept for 2020

