

Government of Canada / Gouvernement du Canada

## 2012 APEC Smart Grid Workshop



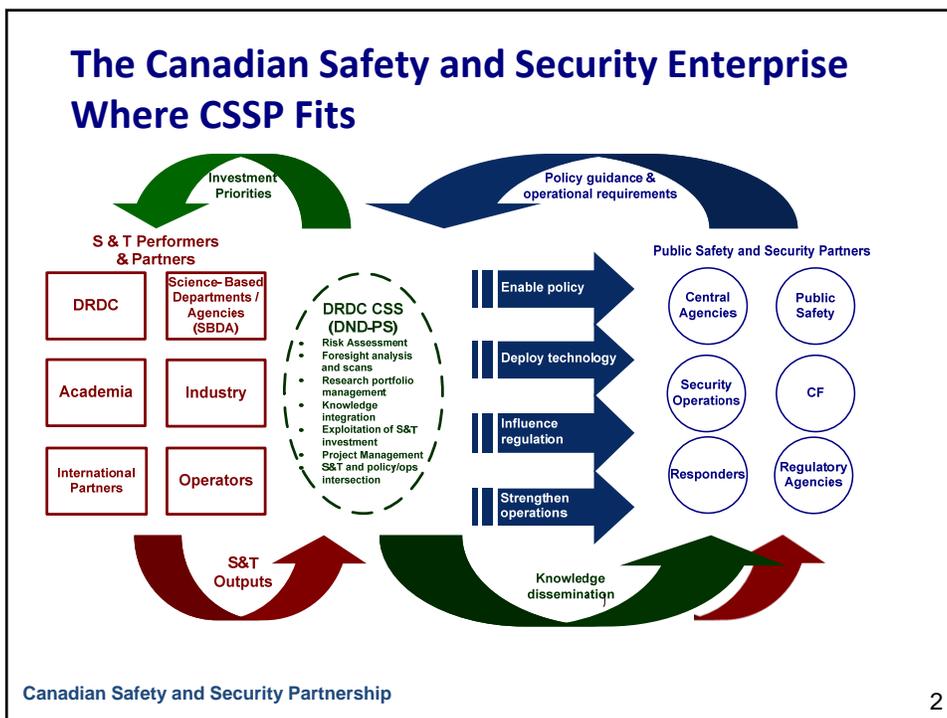
**CANADIAN SAFETY AND SECURITY PARTNERSHIP**

Presented by:  
Rod Howes

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A Partnership Led by Defence R&D Canada – Centre for Security Science

Agriculture and Agri-Food Canada • Atomic Energy of Canada Limited • Canada Border Security Agency • Canadian Food Inspection Agency • Canadian Intellectual Property Office • Canadian Security Intelligence Service • Communications Security Establishment • Defence Research and Development Canada • Environment Canada • Fisheries and Oceans Canada • Health Canada • Industry Canada • National Research Council • Natural Resources Canada • Privy Council Office • Public Health Agency of Canada • Public Safety Canada • Public Works and Government Services Canada • Royal Canadian Mounted Police • Transport Canada • Treasury Board Secretariat

## CSSP element of Defence R&D Canada Mission



- **Advise** PS Canada & partners in providing Public Safety & Security on relevant S&T
- **Conduct** public security R&D and analysis to meet the Federal Government's needs
- **Assess** and report on technology trends, threats, and opportunities
- **Engage** industrial, academic and international partners in the transition of S&T to fielded national capabilities

## CSSP Program Themes

- Chemical, Biological, Radiological/Nuclear, Explosives
- Forensics
- Risk Analytics (Modeling and Simulation, Architecture Frameworks)
- Emergency Management and Systems Interoperability
- Surveillance Intelligence and Interdiction (Border Security, Biometrics)
- Critical Infrastructure Protection (Physical and Cyber Security)
- Operations Analysis
- Tri-Service (Blue Light) - Emergency Responder Test and Evaluation Establishment

## CSSP - Cyber Areas of Development

- Architecture Framework Development using DODAF, DINDAF for Cyber Analysis
- Community of Practices
  - Industrial Control Sector (Oil, Water, Gas, Electricity)
  - Telecom Sector (Service Providers, Telecom Equipment Providers)
  - *Financial Sector (Banks, )*
- Multi Agency Situational Awareness (MASAS)
- Cyber Security Tool Development and Training
  - SCADA self assessment tools
  - Smart Grid Cyber Situational Awareness
  - Malware detection Tools
  - Data Analysis and Visualization Tools

## Smart Grid Communications will transform the energy industry.

Primarily it plays a critical role in maintaining high levels of reliability, performance, and manageability.

But also introduces the need for an integrated security infrastructure.

Many of the technologies being deployed to support smart grid projects can increase the vulnerability of the grid to attack.

Technologies include:

Smart meters,  
Sensors, and  
Advanced Communications Networks

## Smart-grid Technology Outpacing Security

- Development and deployment of smart-grid technology such as intelligent electric meters has outpaced security, setting up a delicate dance with risk
- Recent survey of 104 energy security practitioners indicated that many believe the smart grid modernization does not translate to improved security.

## Smart Grid Communications introduces the need for an integrated security infrastructure.

- Integration of distributed energy suppliers such as independent power producers of renewable energy generation, and of distributed energy resources
- Proliferation of digital devices to enable automation, management, and control.
- Regulatory mandates to comply with standards to critical infrastructure protection.
- Migration to enhanced systems for outage management, distribution automation, condition-based maintenance, load-forecasting, and advanced metering infrastructure
- Demand for new levels of customer service and energy management

## Smart Grid- Safety and Security Research

- Researchers work to make future smart grid safe and secure.
- Researchers working on a future power grid for the nation envision a network similar to the Internet.
- Users and utility companies interact to share and swap energy from distributed systems, much like computer users tap into the web to transfer files.

## CSSP objectives of investing should attain the following benefits:

- Reduced system vulnerabilities to physical attack or cyber-attack
- Operating resiliency against security disruptions
- Secure access and data privacy for smart grid information.
- Optimized network reliability, computing, and operational support for grid communications.
- Establishment of a framework for compliance

Questions?

