Critical Infrastructure Protection
A Canadian Perspective

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Presentation Outline

• Energy and Canadian Economy

• Roles and Responsibilities

• Energy Infrastructure Protection Policy Framework

• Summary
ENERGY AND CANADIAN ECONOMY
Contribution of Energy to the Canadian Economy, 2001

- 6.5% of GDP
- 222,000 well-paid jobs
- $57 billion in exports, 15.2% of total merchandise exports
- $37.6 billion in new capital investment, 19.2% of total Canadian investment
- High tech, capital intensive industry
- Government non-nuclear energy R&D spending $244.2M in 2000
- $14B annual payment to governments from oil and gas industry
Contribution of Energy to Canadian Trade, 2001

- Canada is a major supplier of energy to the U.S. and Japan
  - 14% of U.S. crude imports
  - 93% of U.S. natural gas imports
  - Largest uranium exporter
  - 45% of Japanese coking coal
- Our energy industries have developed innovative, world-class technologies
  - Leaders in, e.g., pipeline, high voltage transmission technology
- A stable policy and regulatory environment creates confidence in Canada as energy supplier
Energy Policy – Context

• A sustainable development framework which balances:
  – Economic development
    • Creating the conditions for a competitive and innovative energy sector that contributes to economic growth and job creation
  – Environmental stewardship
    • Addressing the environment impacts of energy development, transportation and use, with an emphasis on climate change and air quality
Energy Policy – Context

- Social objectives
  - Ensuring that current and future generations of Canadians have reliable access to competitively priced energy
  - Opportunities for rural and remote communities including aboriginal
Energy Policy Underpinnings

Open-market framework
• Prices established, investments made in a competitive and freely functioning energy market, which encourages capital investment

Focused interventions where necessary
• Regulation, e.g.
  – Regulatory capability
  – Energy efficiency standards
  – Consumer access at fair market prices
  – Health and safety
Energy Supply Disruption

Impacts

• Health Care
• Education
• Food Processing
• Manufacturing
• Air Travel
• Office Systems
• Other Energy

Dependencies

• Power Networks
• Telecommunications
• Banking
• Industrial Processes
ROLES AND RESPONSIBILITIES
Constitutional Context for Canada’s Energy Policy

Provincial and Territorial Government Jurisdiction

- In-province resource management
- In-province trade and commerce
- In-province environmental impacts

Federal Government Jurisdiction

- Federal lands: i.e. North and offshore resource management
- Uranium and nuclear power
- Interprovincial and international trade and commerce
- Transboundary environmental issues
Energy Infrastructure – Natural Gas
Energy Infrastructure - Electricity

- Interprovincial Transfers: 48,330 GWh
- Exports to U.S.: 42,911 GWh
- Imports from U.S.: 14,682 GWh
- Electricity flows north and south along the border
Energy Infrastructure – Nuclear Power

NATIONAL NUCLEAR SITE MAP

ONTARIO

GUÉBEC

Port Elgin
BRUCE (4)

Darlington (4)

Pickering (6)

Port Hope

Mines

Mill

Refinery

Converter

Fabricator

Nuclear Power Plant

Legend

Nuclear Reactor

Nuclear Facility

Provinces

0 200 400 200 Kilometers

Natural Resources
Canada

Ressources naturelles
Canada

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NRCan Responsibilities

• **Lead Minister for**
  – Economic security of energy, forestry and minerals sectors
  – International energy policy
  – Remote sensing data

• **Statutory Instruments**
  – Safety, security and infrastructure protection
    • *National Energy Board Act*
    • *Nuclear Safety and Control Act*
    • *Canada-Newfoundland Atlantic Accord Implementation Act*
    • *Canada-Nova Scotia Offshore Petroleum Resources Accord Implementation Act*
    • *Canadian Explosives Act*
NRCan Responsibilities

- Emergency preparedness and response
  - Energy Supplies Allocation Board
  - Emergency Preparedness Act
  - Emergency Monitoring Act
  - Nuclear Liability Act
CRITICAL ENERGY INFRASTRUCTURE PROTECTION POLICY FRAMEWORK
Definition of Critical Infrastructure

• Physical and Information Technology Facilities, Networks and Assets

• Consider: Strategic importance, economic and political impact, public impact, replacement time and cost, interdependencies and availability of substitutes

• “Interdependent, interactive, interconnected networks of institutions, services, systems and processes that meet vital human needs, sustain the economy and maintain continuity of and confidence in government.”
  -- Dr. David Charters, University of New Brunswick
### Threats to Energy Infrastructure

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<th>Abnormal Accidents</th>
<th>Natural Accidents</th>
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<td>Product failures</td>
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<td>Exodus of key personnel</td>
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<td>Workplace violence or vandalism</td>
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Policy Framework

- Safety and environmental protection and security are related but not the same
  - Challenge in moving from safety to security culture

- Promote initiatives to strengthen the protection of Canada’s critical energy infrastructure through close liaison with federal and provincial governments, regulatory agencies, energy industry and associations

- Safeguarding of proprietary information

- Accountability to Parliament
Legislative Changes to Permit Regulators To:

- Order infrastructure owners to take measures to ensure the security of their facilities, buildings, structures or systems, including computer or communication systems, or methods employed to protect them
- Promote the safety and security of operations
- Make regulations respecting security measures
- Keep information (relating to security) confidential
- Provide advice to the Minister of NRCan on issues related to security of energy facilities
Challenges of Critical Infrastructure Protection

• Clear, concise and coordinated public messages

• Information sharing protocols and procedures
  – Real time risk and threat assessments

• Government – private sector partnerships
  – Federal – provincial – municipal - industry
Summary

• Energy critical to Canadian economy
  – Security of supply

• Need to partner with other federal departments, energy regulators, energy associations and provincial governments to promote Government of Canada’s security policy

• Need legislative basis for critical infrastructure protection
  – Accountability to Parliament

• Need to respond to changing environment and evolving pressures
Questions?

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