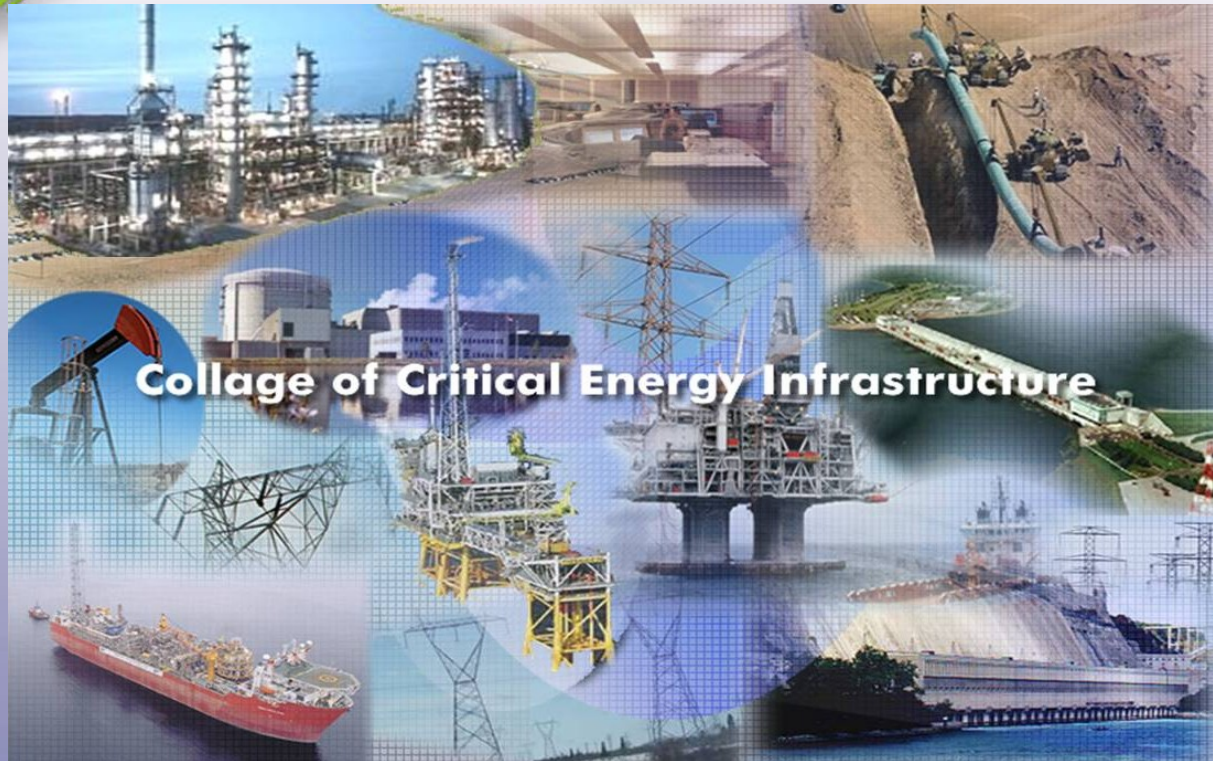




Canadian Defence and Foreign Affairs Institute
Critical Energy Infrastructure Protection:
Value Added Through Collaboration and Partnerships



By

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**Director, Energy Infrastructure Protection Division, Energy Sector
Natural Resources Canada**

Monday, October 29, 2007



**Natural Resources
Canada**

**Ressources naturelles
Canada**

Canada



Presentation Outline

- I. Background**
- II. Why Protect Energy Infrastructure?**
- III. Policy Framework and Mandate**
- IV. Infrastructure Protection Strategy**
- V. Is the Strategy Working?**
- VI. Conclusion**





I. Background

Complex and Challenging Environment





EDMONTON TORNADO 1987





SAGUENAY FLOOD 1996

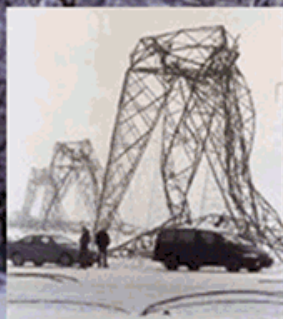


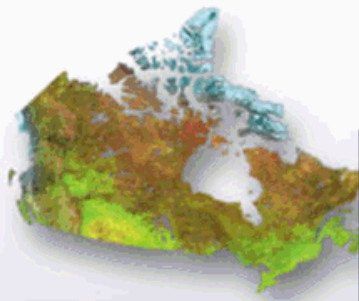
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ICE STORM 98





003/45/7844

POWER OUTAGE AUGUST 2003



ISAT GeoStar 45
23:15 EST 14 Aug. 2003



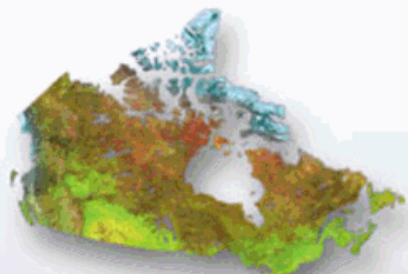
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Hurricane Katrina 2005







I. Background

Ideologically Motivated and Determined Foes





Insignia of the Muslim Brotherhood

Sheikh
Ahmad
Yassin

Dr. A'bdallah
A'zzam



Hassan Al-Bana

Sheikh
Izzedine
al-Qassam

Salah
Shehade

Yehia
Ayash

Hamas poster taken from a CD distributed by the Islamic Block





I. Background

- December 2004 – February 2005
 - Al Qaida ideologue posted a detailed strategic document describing oil and gas infrastructure as the “worthier” target – calling for a focus on economic targets, particularly petroleum
- September 2005
 - Al Qaida web sites discuss American energy infrastructure weakness in light of Hurricane Katrina and Rita
- December 2005 – February 2006
 - jihad postings discuss targeting US oil and gas infrastructure – providing material on infrastructure in Alaska, Texas, Louisiana, California and Oklahoma
- They are in it for the long haul



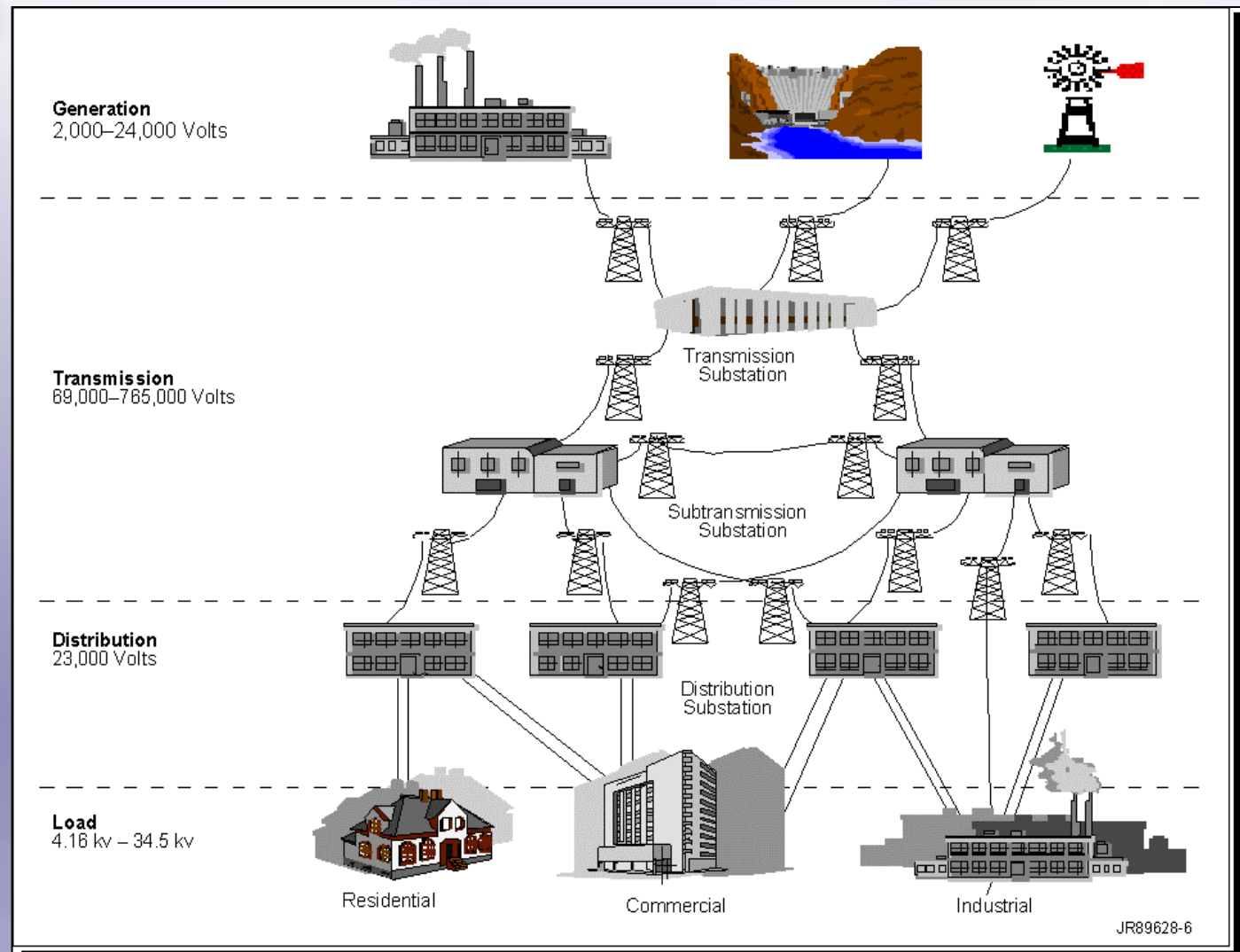
I. Background

Complex Infrastructure Systems



Energy Infrastructure

– Electricity



Energy Infrastructure – Nuclear



Mines



Mill



Refinery



Converter



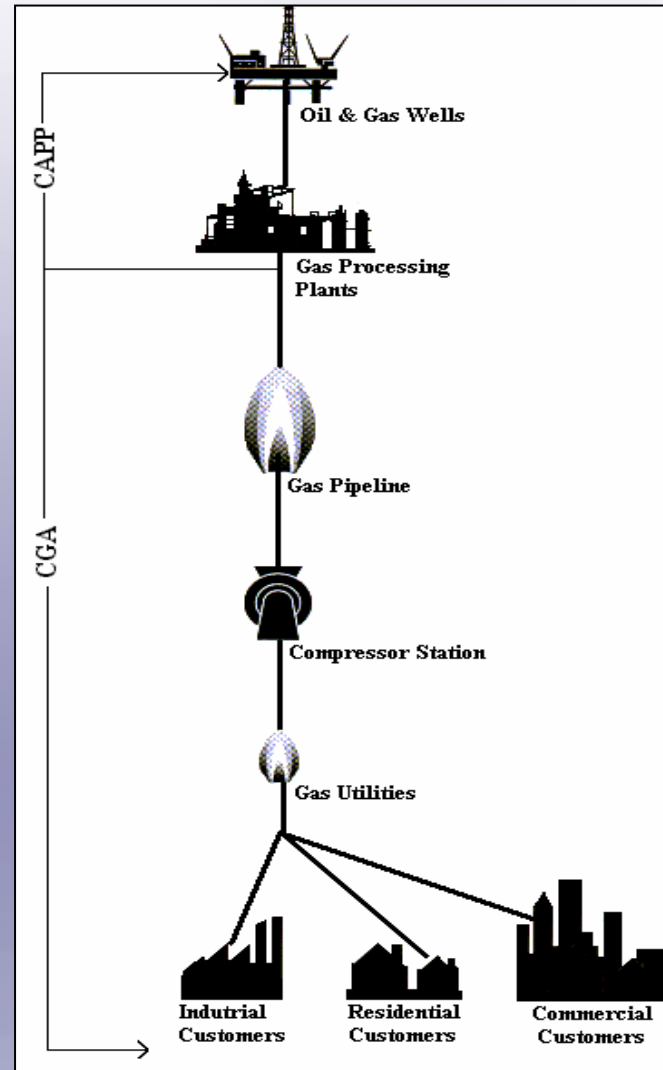
Fabricator



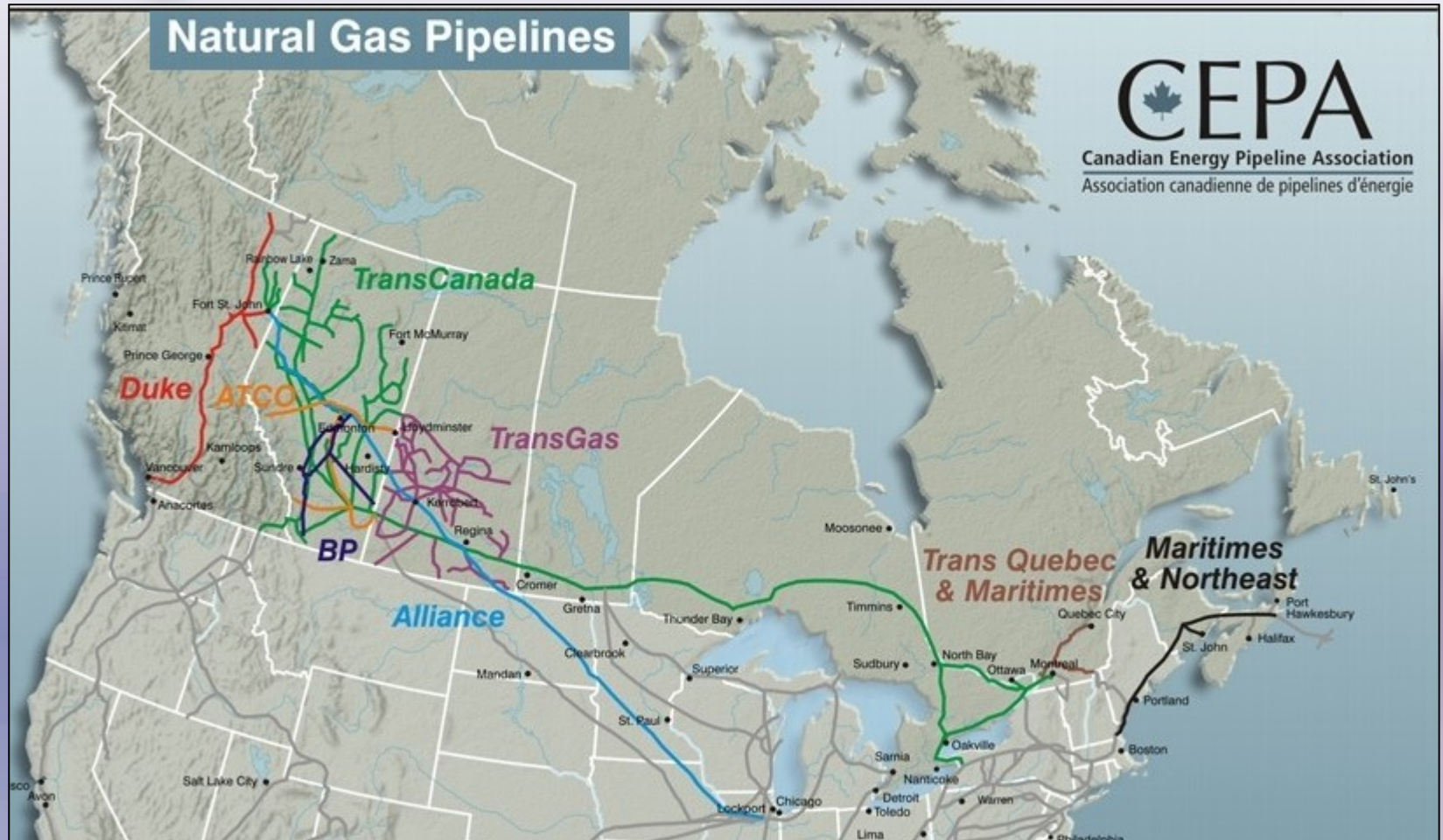
**Nuclear
Power Plant**



Energy Infrastructure – Natural Gas



Energy Infrastructure – Natural Gas



Energy Infrastructure – Oil



**Crude Oil
Production**

CAPP



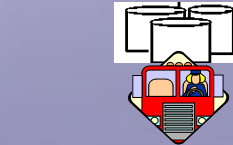
**Crude Oil
Supply &
Transportation**

CEPA



**Petroleum
Refining**

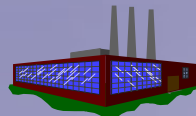
CEPA



**Refined Product
Transportation &
Distribution**

CPPI

**Industrial
Customers**



**Commercial
Customers**



**Residential
Customers**



**Vehicle
Fuels**



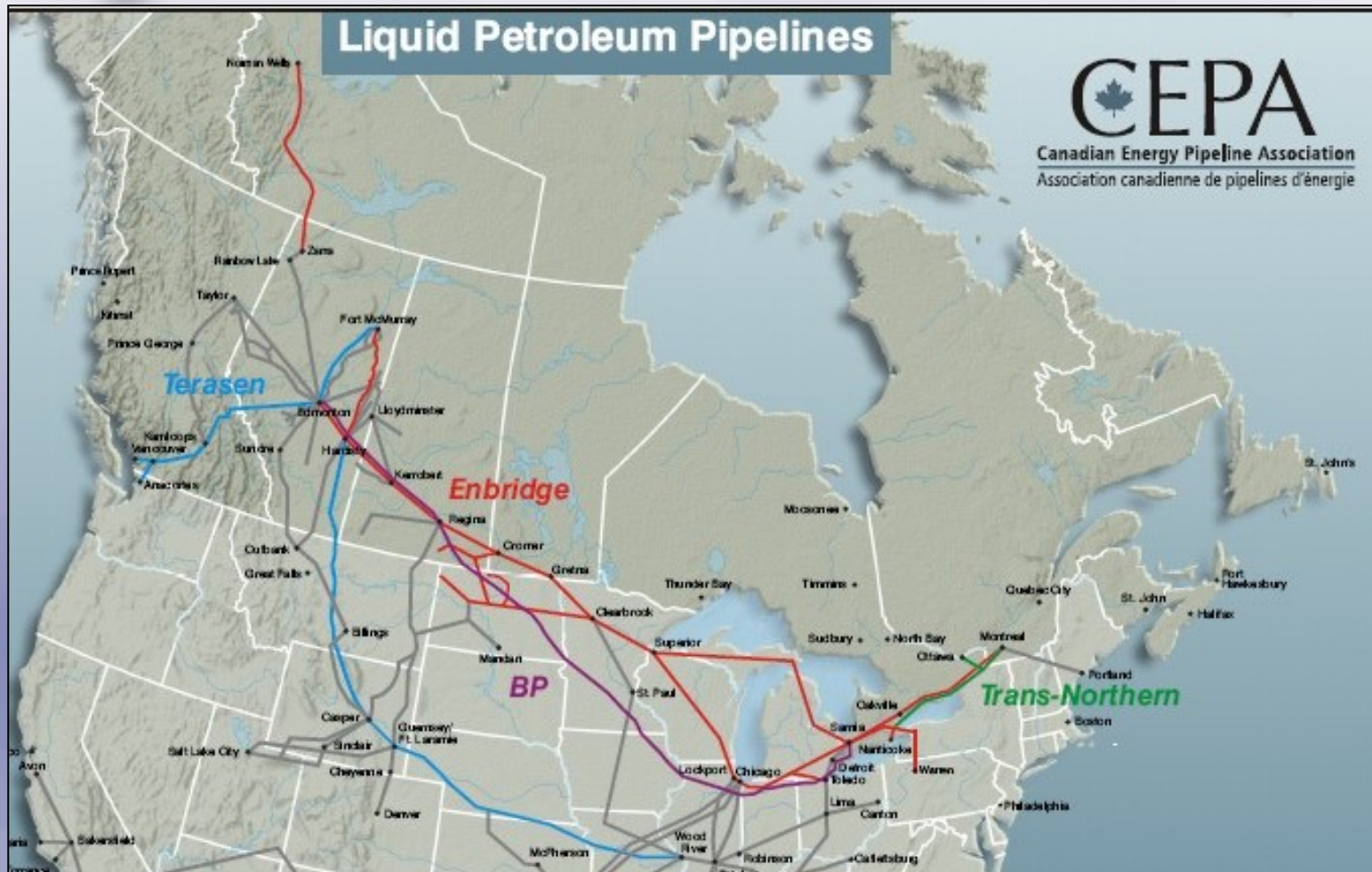
**Refined
Product
Markets**



**Natural Resources
Canada**

**Ressources naturelles
Canada**

Energy Infrastructure – Oil





II. Why Protect Energy Infrastructure?

- Economic Considerations
 - Energy represents 5.9% of Canada's GDP
 - Accounts for \$67 billion in exports per year
 - Provides approximately 250,000 direct, well-paying skilled jobs



II. Why Protect Energy Infrastructure?

- High Consequences of disruption

Impacts

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

Dependencies

- Power Networks
- Telecommunications
- Finance and Banking
- Industrial Processes



II. Why Protect Energy Infrastructure?

- Geography
 - Located in both remote areas and heavily concentrated in urban areas.
 - Widely dispersed across the country.
 - Over 40,000 km (25,000 miles) of crude oil pipelines.
 - Over 300,000 km (187,500 miles) of natural gas pipelines



II. Why Protect Energy Infrastructure?

- Maintain integrity of Canada's energy supply networks
- Canada's energy exports to U.S. to meet growing demand
 - Integrated North American electric power grid
 - Energy trade will continue to grow given projects underway or planned
- Need to keep potential vulnerabilities in mind as the energy trade and infrastructure grow

III. Policy Framework and Mandate



- **October, 2001, Public Security and Anti-terrorism program**
 - **Designated four key sectors:**
Energy; Transportation; Telecommunications; and Banking and Finance
- **December 12, 2001, Smart Border Declaration**
 - **Action Plan for Creating a Secure and Smart Border**
 - Based on four pillars:
secure infrastructure; secure flow of people; secure flow of goods; and information sharing and coordination
 - **Item 21 Critical Infrastructure Protection**
 - **“Conduct bi-national threat assessments on trans-border infrastructure and identify necessary additional protection measures, and initiate assessments for transportation networks and other critical infrastructure.”**



III. Policy Framework and Mandate

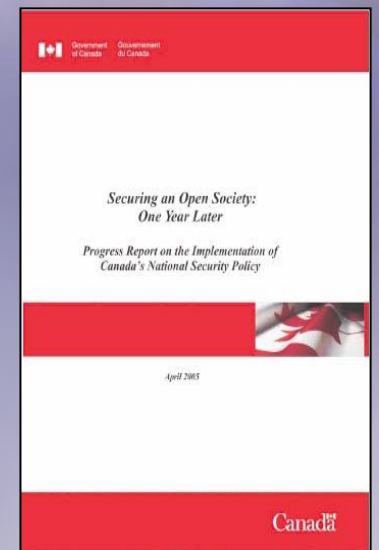
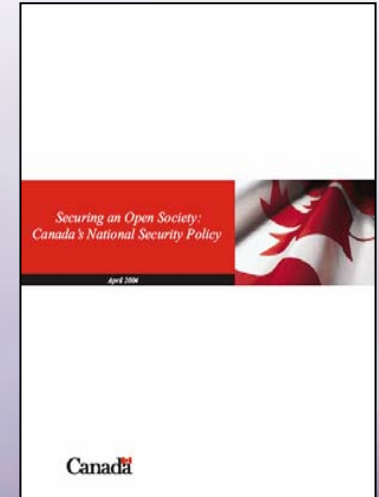
- National Security Policy

“Canadians live in an increasingly complex and uncertain world. Terrorist organizations continue to disrupt societies and claim innocent lives each year....

On April 27, 2004, the Government of Canada released *Securing an Open Society: Canada's National Security Policy*.

The policy articulates Canada's core national security interests and provides a framework within which the Government will work with others
– provinces, territories, first line responders, communities, the private sector and allies

“to address current and future threats to our country...”





III. Policy Framework and Mandate

Security and Prosperity Partnership

- **Canada, U.S., Mexico**
- **March 23, 2005**
Security and Prosperity Partnership (SPP)
 - North American framework to address security and economic challenges and promote quality of life
 - Enhance critical infrastructure protection, and implement a common approach to emergency response
- **March 31, 2006**
SPP goals re-affirmed & energy infrastructure included in 3 out of the 5 priorities
 - Emergency Management (including critical infrastructure protection)
 - Energy Security
 - Smart, Secure Borders (including infrastructure vulnerability assessments)
- **August 20/21, 2007 – Summit at Montebello Quebec**
 - Agreement for cooperation on energy science and technology





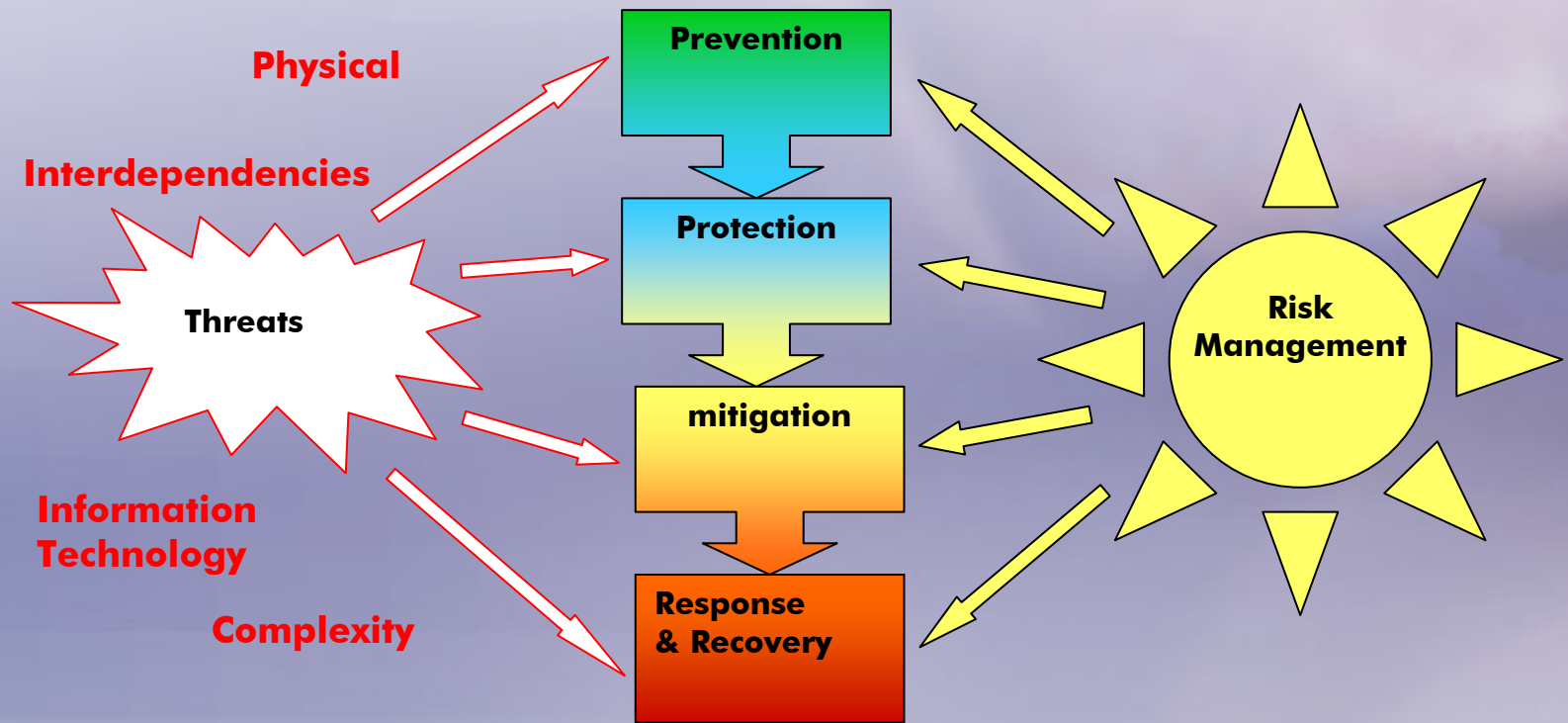
III. Policy Framework and Mandate

- **NRCan Minister has statutory obligations**
 - Including responsibilities for civil emergencies
 - Portfolio agencies: AECL, NEB, CNSC, CNLOPB, CNSOPB
- **Energy Sector**
 - Single window to Government of Canada on all energy matters including energy security and infrastructure protection
- **Energy Infrastructure Protection Division Mandate**
 - EIPD was established following the events of 9/11 to:
 - Promote initiatives to strengthen the protection of Canada's critical energy infrastructure;
 - Provide expert advice and direct program support in the energy sector
 - Public Safety Canada (PSC);
 - National Critical Infrastructure Protection Strategy
 - Liaise with the energy industry in Canada and provide federal leadership; and
 - Represent NRCan in the Canada-U.S.-Mexico North American Energy Working Group
 - To promote international cooperation
 - Exchange ideas of mutual interest related to energy infrastructure and best practices
 - Coordinate emergency preparedness and business continuity for the Energy Sector of NRCan;



IV. Infrastructure Protection Strategy

- Statutory Instruments
- All hazards risk management approach to facility assessments with multidisciplinary team





IV. Infrastructure Protection Strategy

- Shared federal - provincial jurisdiction
 - Involve facility owner's technical experts (private sector)
 - Identify and mitigate vulnerabilities
 - Infrastructure impacts
 - Interdependency impacts
 - Best practices
- Legislative and Regulatory gap analysis
- Strong Public - Private partnership
- Policy and Science and Technology collaboration
- Policy Research
- Harmonized protocols among various levels of government
- Security Clearances - Energy Stakeholders
- Intelligence Debriefing and Information Sharing
- Energy Forums
- Scientific Analysis and Modelling
- Earthquake Alert Notification System
- Threat Risk Assessment
- Engage academia to increase knowledge base/leverage expertise
 - Partnership with Canadian Centre of Intelligence and Security Studies, The Norman Paterson School of International Affairs
 - Commissioned research papers



V. Is the Strategy Working?

- Treasury Board mandated 2006 evaluation

**Energy Infrastructure Protection Division (EIPD) -
Formative Evaluation
(E05021)
September 29, 2006**

This formative evaluation has found that EIPD has made significant contributions in bringing stakeholders together, assisting with underlying information-sharing processes, advising on relevant policy matters, and contributing to security-related changes to pertinent legislation. The EIPD is becoming the single window for the energy industry into the Government of Canada for energy infrastructure protection and emergency preparedness.

<http://www.nrcan.gc.ca/dmo/aeb/aeb-rpts-2006-E05021-e.htm>





V. Is the Strategy Working?

- Treasury Board mandated 2007 evaluation

Energy Infrastructure Protection Division (EIPD) - Summative Evaluation (E08003)

There have been incremental gains in the security of Canada's critical energy infrastructure over the past five years. These gains are, to a considerable extent, attributable to EIPD efforts.

EIPD is the only Canadian government unit intricately involved in critical energy infrastructure protection, and has played a lead role in coordinating vulnerability assessments, facilitating information exchanges and security clearances, building and maintaining relationships with all members of the community, and providing key policy, technical and academic advice. At least partially as a result of these activities, key respondents interviewed for the evaluation felt that Canada is better prepared and its critical energy infrastructure is more secure now than it was when EIPD was established.

<http://www.nrcan.gc.ca/dmo/aeb/aeb-rpts-2007-E08003-e.htm>





VI. Conclusion

- Have tried to answer the question – Are we ready?
 - By discussing what we are doing on a range of fronts
- Protection of energy infrastructure is a high priority for NRCan, especially given world events and the ever present threat of terrorism
- We will need to protect critical energy infrastructure as disruption of energy supply impacts the lives of Canadians
 - Overall economic well being
 - Health, safety, travel, manufacturing, etc.
- In order to meet our responsibilities we must work in partnership with energy stakeholders
- NRCan is committed to providing a leadership role in matters related to critical energy infrastructure protection and emergency preparedness
- We have made progress but more remains to be done
- We must remain vigilant

