

National Energy
Board



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de l'énergie

National Energy Board Overview and Electricity Mandate

**Presentation to the South Asia
Regional Initiative for Energy**

9 November 2006



Agenda

- **NEB Overview**
- **Authorization of Electricity Exports and International Power Lines**
- **Advisory/Market Monitoring**
- **Electric Reliability**



Introduction to the NEB

- **Independent tribunal, established in 1959**
- **Reports to Parliament through the Minister of Natural Resources**
- **Moved to Calgary 1991**
- **Staff complement of 300, diverse energy related skill sets**
- **90% of our costs recovered from industry**
- **Separate employer within PSEA & TB guidelines**

Areas of Responsibility

*Safety, Security, Environmental Protection ~
Energy Infrastructure*



- **Regulatory**

- construction, operation and integrity of inter-provincial & international pipelines and international power lines ~ full life-cycle
- energy transportation, tolls and tariffs
- international trade in oil, gas and electricity
- frontier oil & gas regulation ~ exploration and production

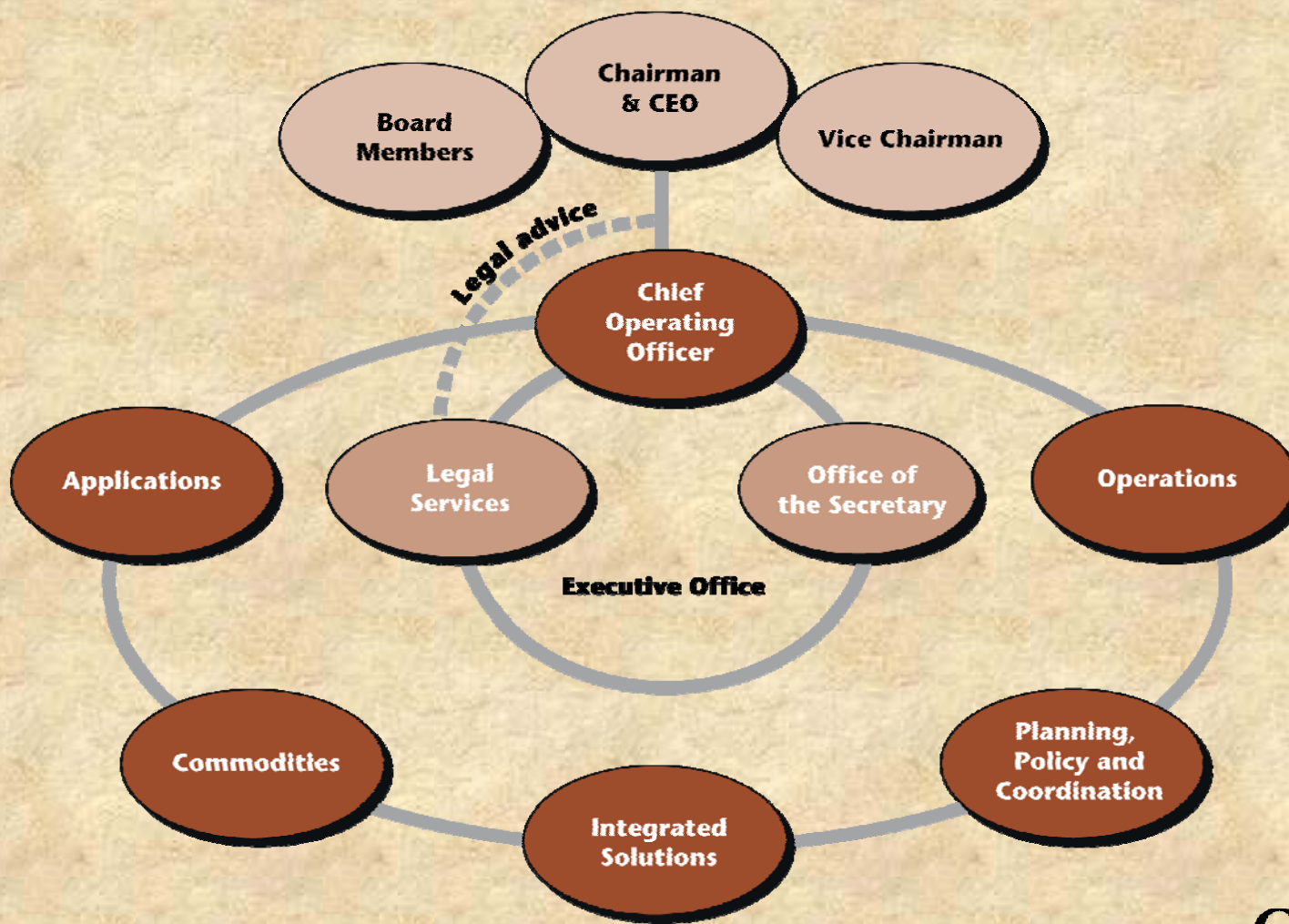
- **Advisory**

- monitor functioning of energy markets
- provide advice to federal government
- issue public reports





NEB Structure



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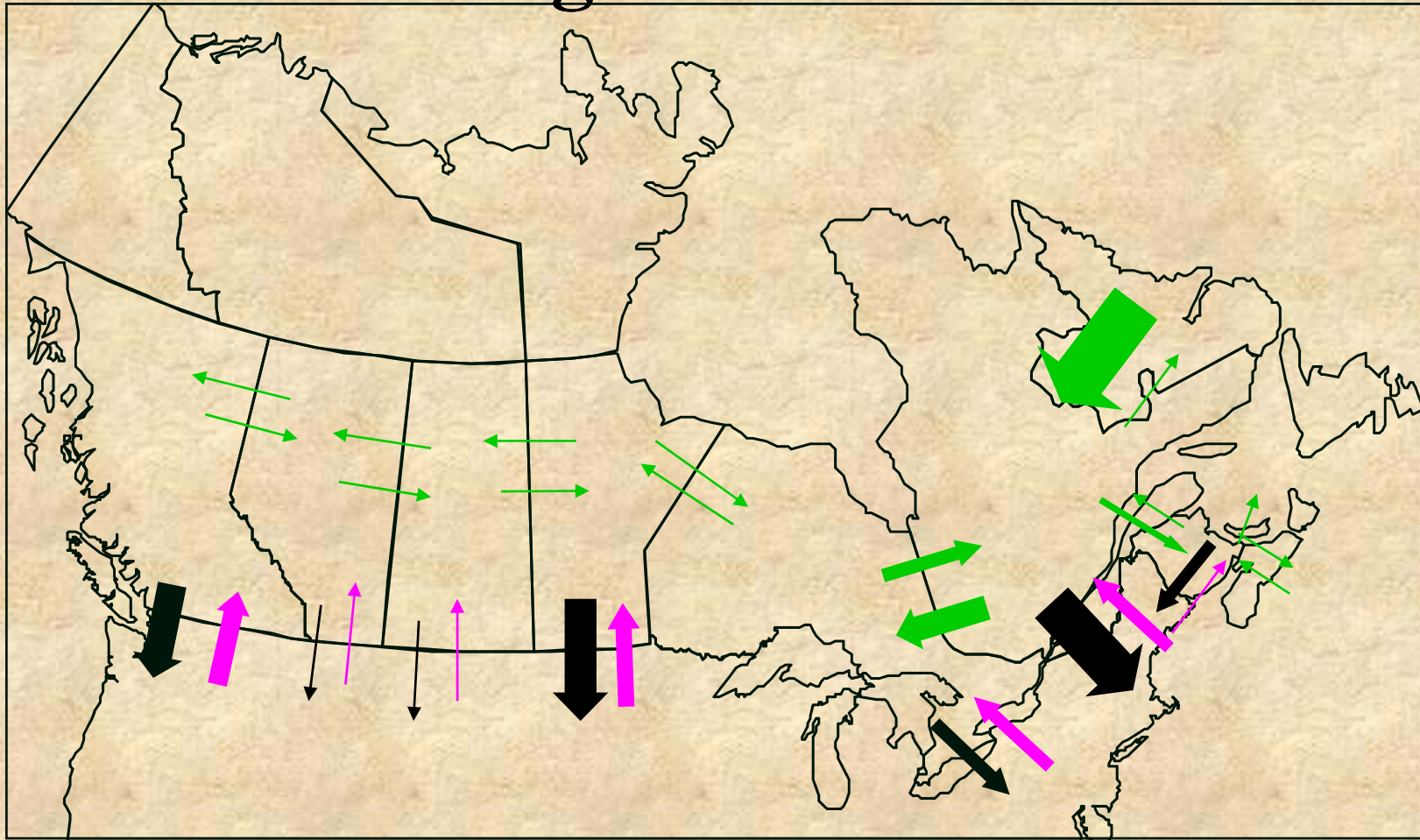


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Authorization of Electricity Exports and International Power Lines (IPLs)



Electricity markets have evolved on a regional basis





Federal Electricity Jurisdiction

History

- *National Energy Board Act*
- 1988 Canadian Electricity Policy amendments
- *Canadian Environmental Assessment Act*

Regulation

- Electricity Exports and Construction and Operation of International Power Lines
- National Energy Board Electricity Regulations and Memorandum of Guidance



Electricity Exports

- **Permits vs. Licences**
- **The NEB Considers:**
 - **The effect of a proposed exportation on other provinces**
 - **Fair Market Access (FMA)**
 - **Impact of an exportation on the environment**
 - **Nexus**
- **Service Standards**

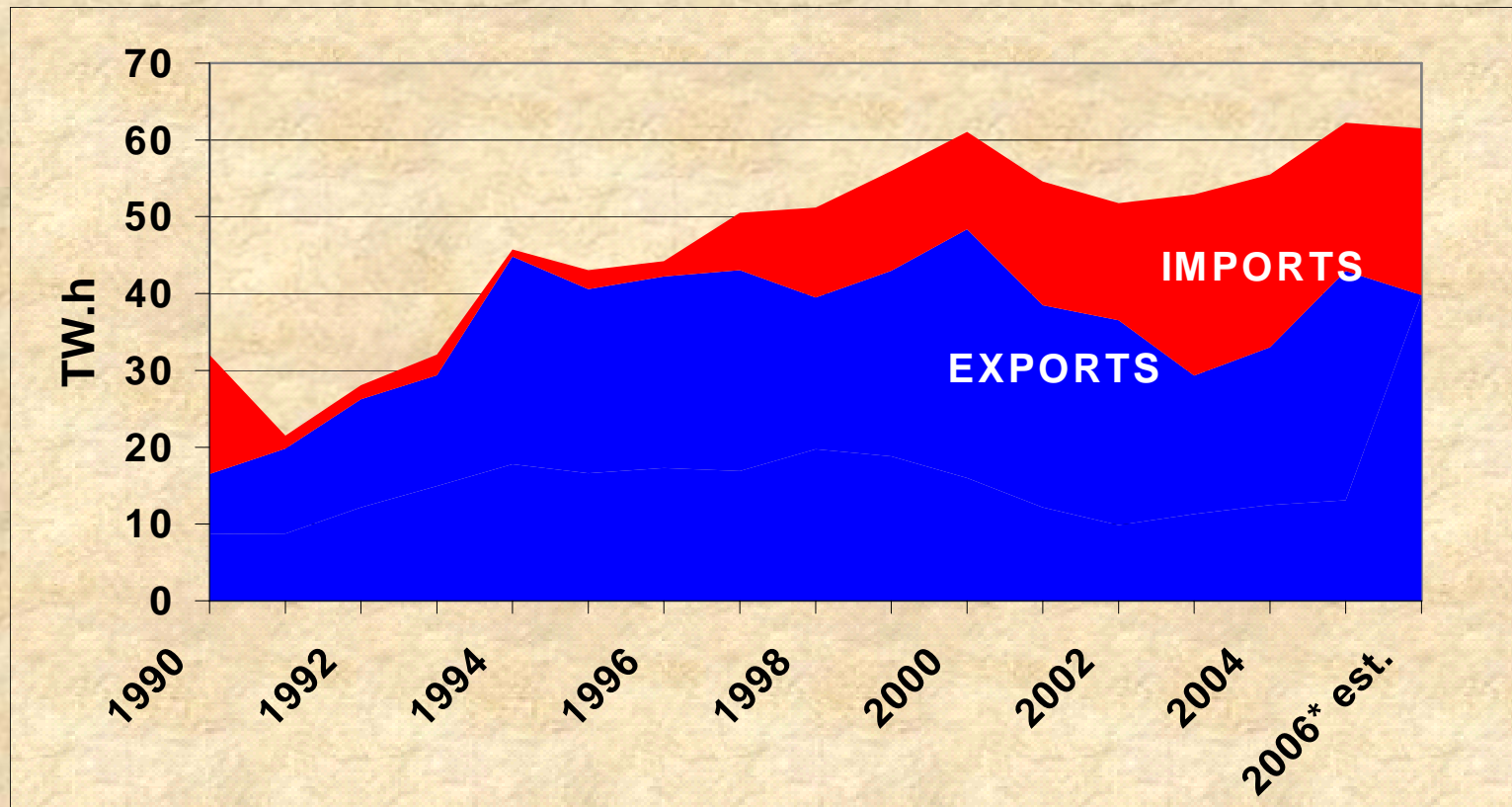


Export Authorization Statistics

- **Authorizations per year (2001-05)**
 - **Export Licences: 0**
 - **Export Permits: 12 applications**
- **Active authorizations (current)**
 - **Export Licences: 7**
 - **Export Permits: 170**
- **29 Amending Orders and Revocation Orders**



Canadian International Trade in Electricity (Exports + Imports)





International Power Lines

- **Construction, operation and abandonment of IPLs**
 - **Permits**
 - **Elective Certificates**
 - **Designated certificates**
- **The NEB considers:**
 - **The effect of the proposed international power line on other provinces**
 - **Impact of the construction and operation of the international power line (e.g., environment, safety, siting)**
- **No duplication of provincial processes**



International Power Lines Statistics

- **1100 km or 0.7% of total Canadian high-voltage transmission systems**
- **85 IPLs in total**
- **Seabreeze, first merchant line**
- **Electricity Filing Manual for Facilities Applications (draft)**



Market Monitoring

- From the Advisory functions in the NEB Act
- Canadian supply of and requirement for energy commodities
- Inform the Canadian public about energy developments
 - Energy Market Assessments
 - Media briefings (recently)

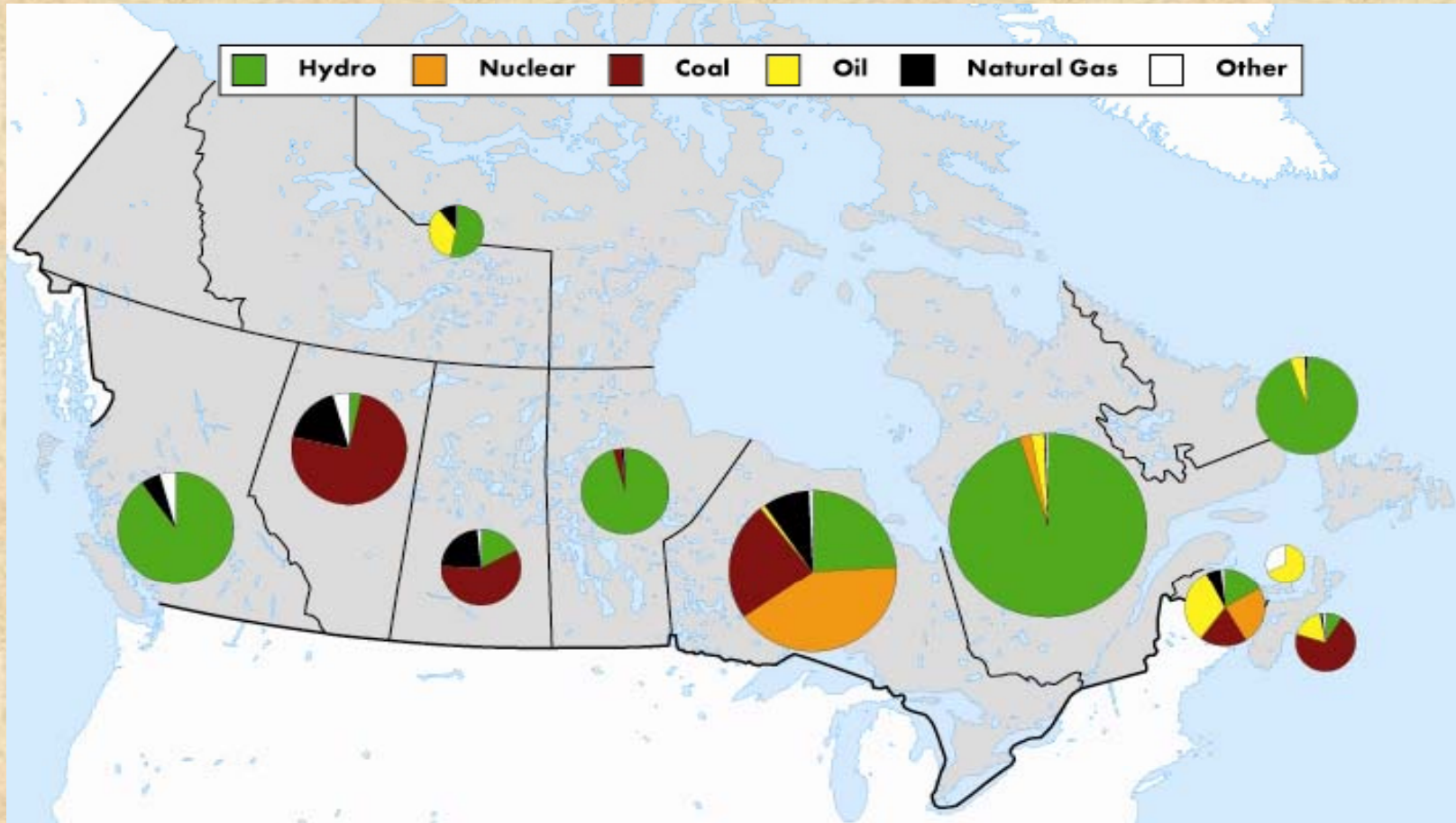


Market Overview

- **Electricity markets organized provincially**
 - **Alberta and Ontario have restructured**
- **Extensive inter-regional trade occurs**
 - **Wholesale access (FERC 888)**
 - **Transmission system expansion**
- **Long-term supply adequacy concerns**
- **Upward pressure on electricity prices**



Canadian Generation Capacity by Fuel



Source: Statistics Canada



Electricity Trade

- **Motivated by**
 - **Commercial opportunities**
 - Regional and seasonal and daily diversity
 - Hydro advantage
 - **Reliability**
- **Current projects**
 - **Sea Breeze, Montana-Alberta Tie Limited (proposed), NB Power**
- **Outlook**
 - **Future interconnections**
 - **Expanded trade**
 - **How much? When?**



Merchant Power Lines



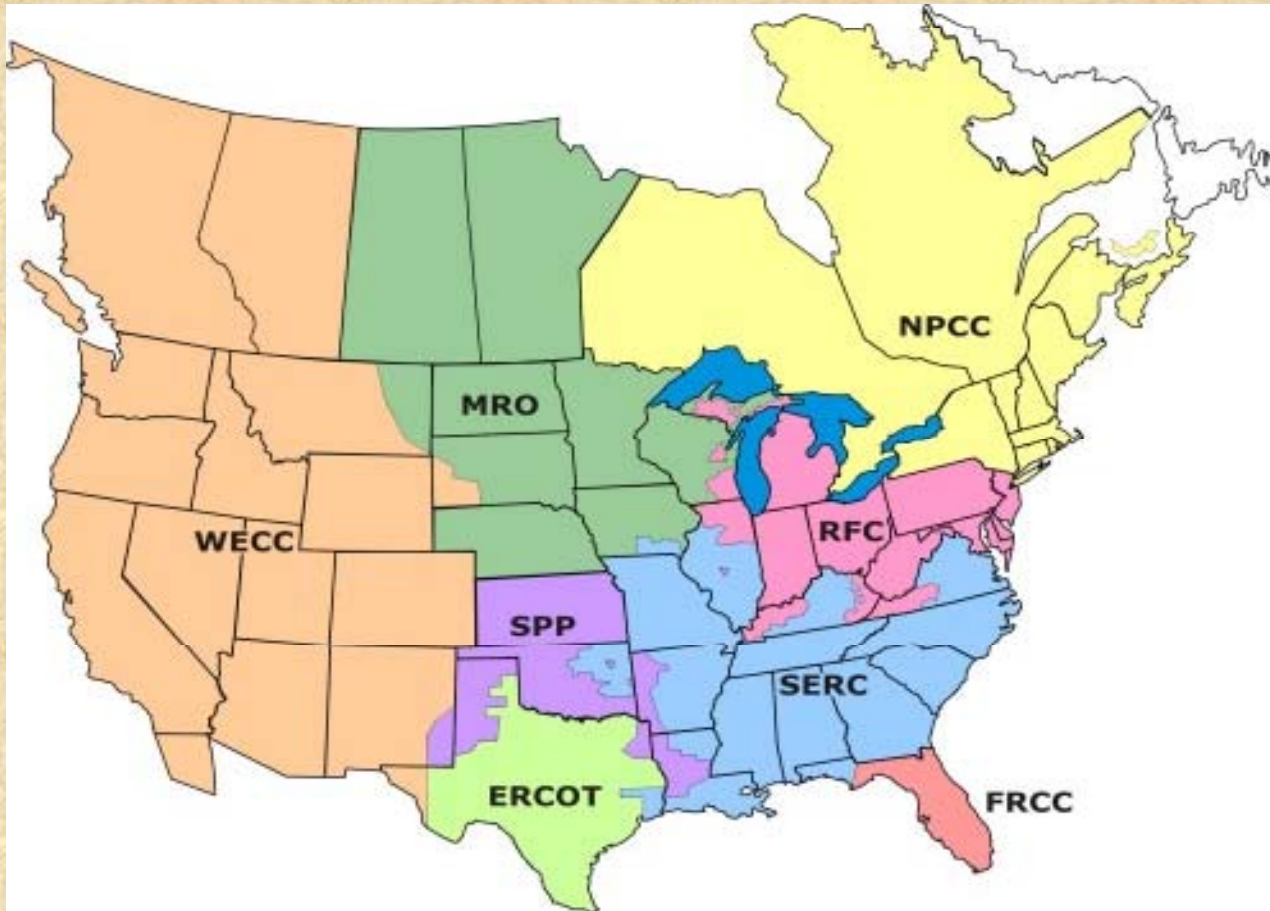


Electric Reliability North American Grid

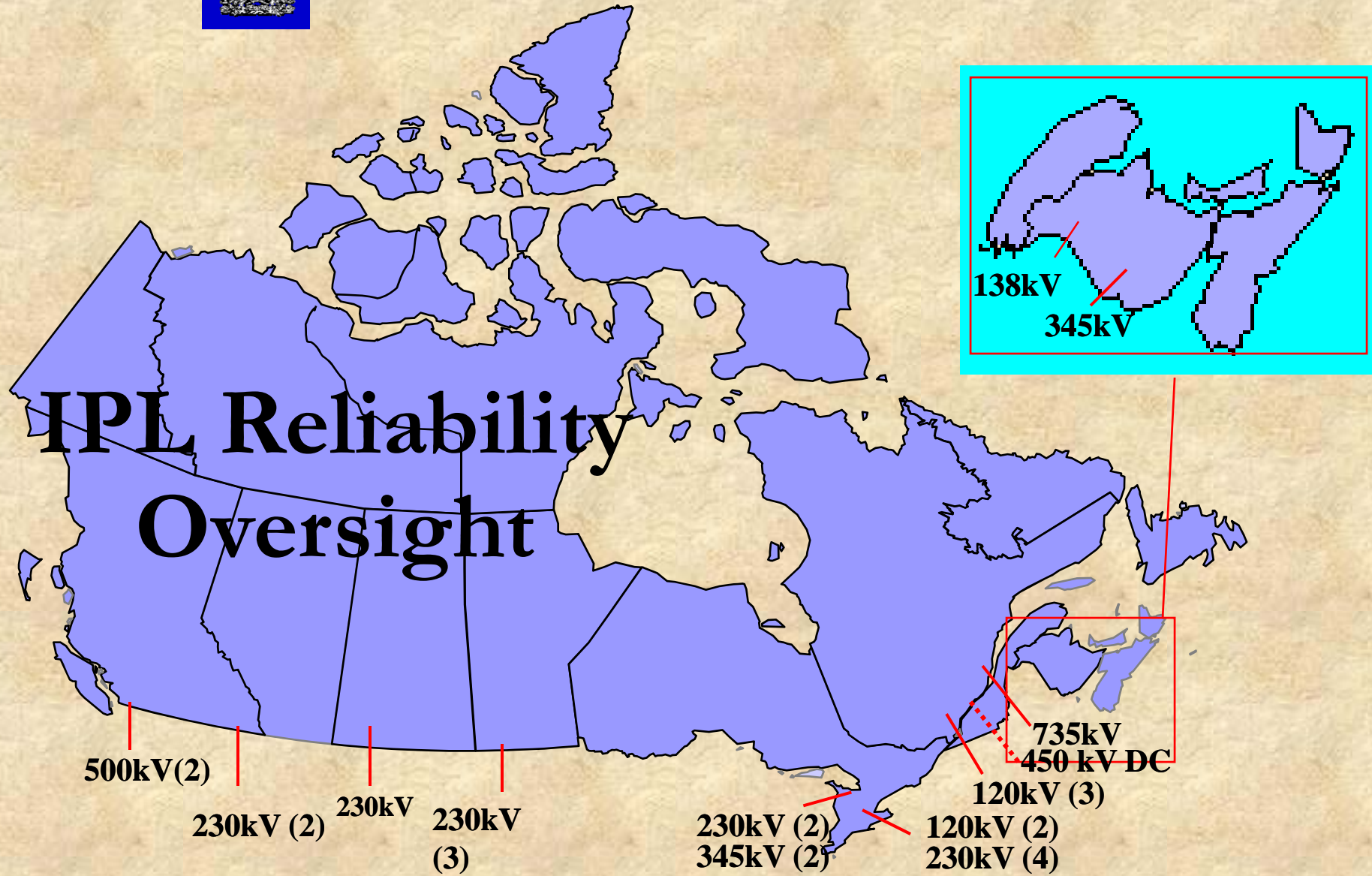
- **Refers to the interconnected grid (Bulk Power System) in Canada and the U.S.**
- **2 main aspects**
 - **Operating reliability**
 - **Resource adequacy**
- **Reliability standards and compliance**
 - **Have been voluntary**



NERC* Regions



* North American Electric Reliability Council





Events Leading to Mandatory Reliability Standards

- **1990s restructuring put the grid under stress**
- **14 August 2003 Blackout**
 - Task Force recommendations call for mandatory reliability standards
- **U.S. Energy Policy Act, August 2005**
 - Legislated mandatory reliability standards in the U.S. to be implemented by an Electric Reliability Organization (ERO)
 - Regulatory oversight by the Federal Energy Regulatory Commission (FERC)



(Cont'd)

Events Leading to Mandatory Reliability Standards

- **July 2006 - FERC certified NERC as the ERO**
 - Requires “recognition” in Canada
- **Sept 2006 - NEB/NERC MOU**
- **Recognition by Provincial authorities is pending**
- **ERO start-up in 2007**



Summary

- **NEB must approve exports and IPLs**
- **Important trade is transacted over IPLs**
 - **Commercial opportunities and reliability**
- **Proposed and prospective interconnections**
- **Mandatory standards for the interconnected North American grid starting in 2007**
 - **NEB “recognizes” ERO via MOU**

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Questions?

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Additional Information



Board Members

- **Up to 9 permanent Board Members**
- **Appointed for initial terms of 7 years by the Federal Governor in Council**
- **Typically chosen for their wide experience in energy industry and government**
- **Chairman and Vice Chairman also appointed by Governor in Council**
- **Primary responsibility is to take decisions to promote safety, environmental protection, and economic efficiency in the Canadian public interest**



NEB Staff

- **Currently, there are about 300 staff positions at the NEB**
- **Our role is to support Members in their decision making**
- **Have expertise in economics, markets, supply, finance, engineering, environmental sciences, law, geology & geophysics**
- **Support staff – administration, human resources, information technology, finance, etc.**



Vision

- **Vision**

- **The NEB is an active, effective and knowledgeable partner in the responsible development of Canada's energy sector for the benefit of Canadians.**

- **Purpose**

- **We promote Safety and Security, Environmental Protection and Efficient Energy Infrastructure and Markets in the Canadian public interest within the mandate set by Parliament in the regulation of pipelines, energy development and trade.**





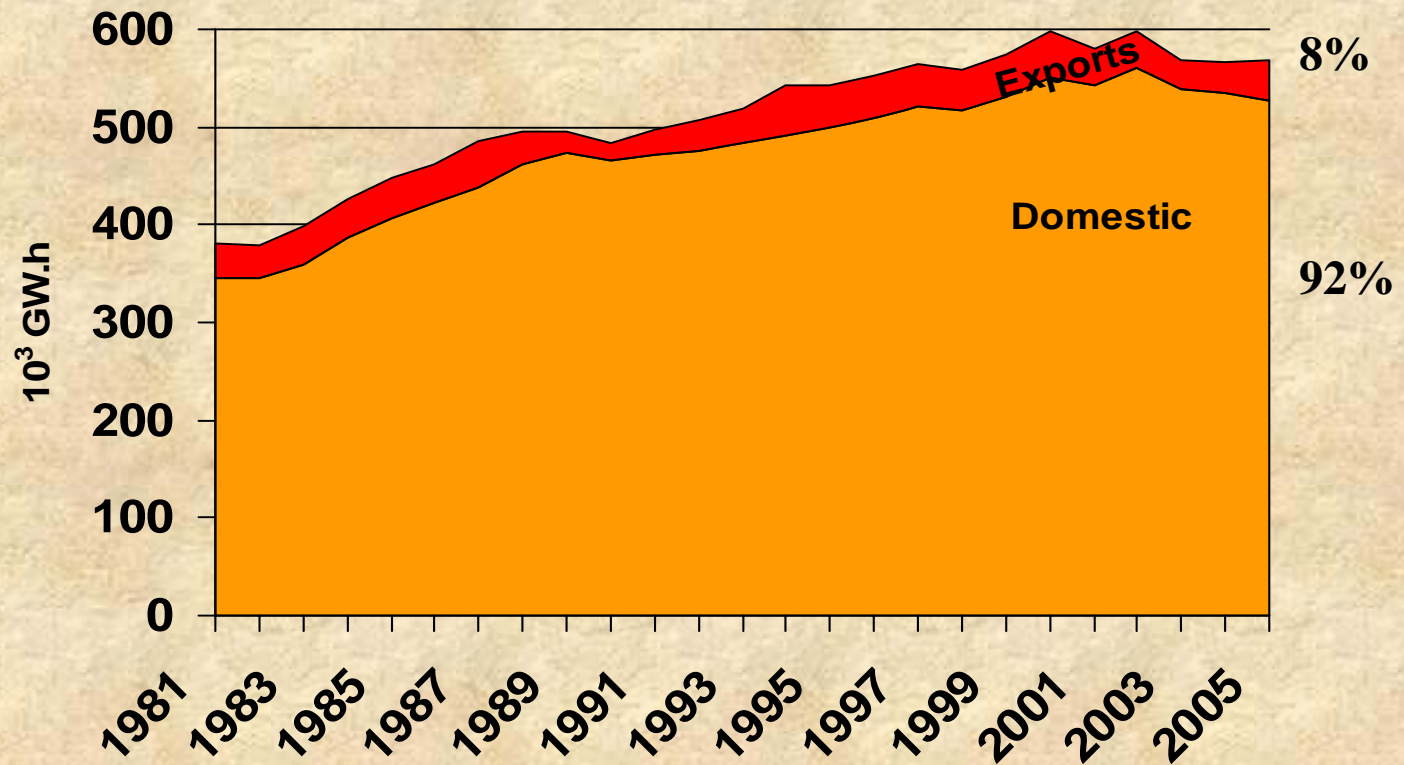
Canadian Statistics

- **Electricity Generation (2005) - 569 TW.h**
 - Hydro - 60 %
 - Fossil-fired and other - 25%
 - Nuclear - 15%
- Exports - 43 TW.h, Imports – 19 TW.h
- Federation of 10 provinces, 3 Territories
- Population (2005) - 32 million
- Land Area - 10 million sq. km.



Canadian Electricity Disposition

Electricity exports to the USA are a small proportion of Canadian electricity production





NEB-regulated energy exports: annual revenue

