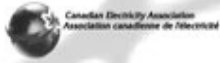




Implementing a Realistic Climate Change Strategy

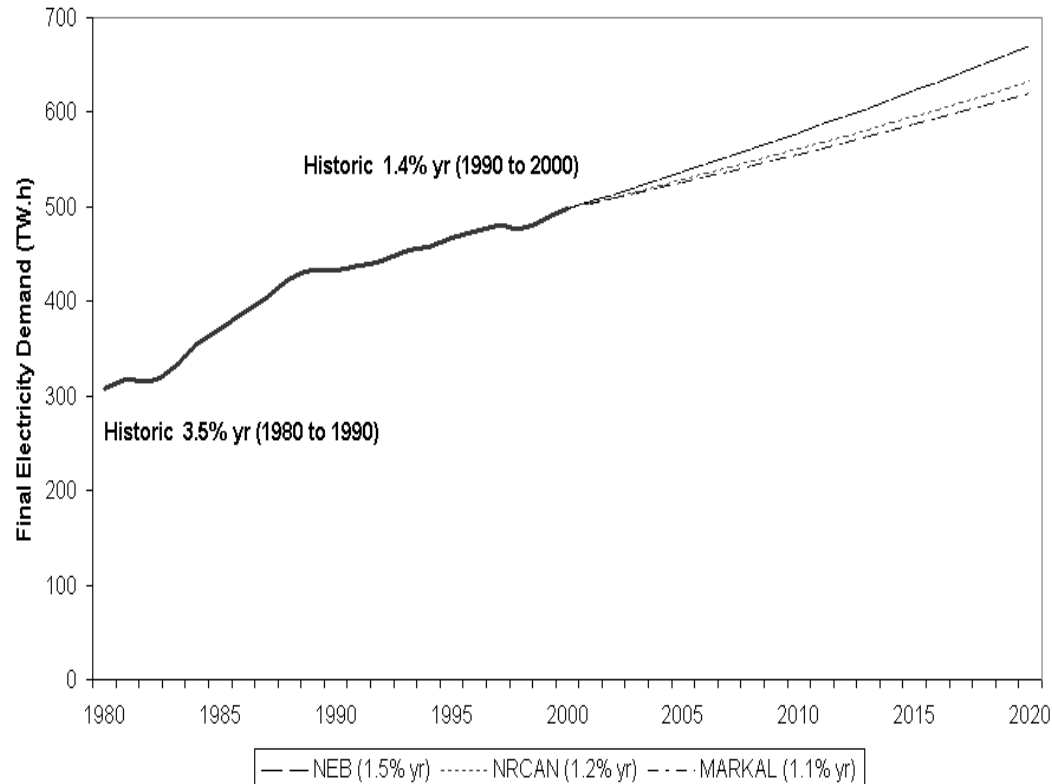
Hans Konow
Canadian Electricity Association

April 03, 2003



Canadian Demand Growth Forecasts to 2020

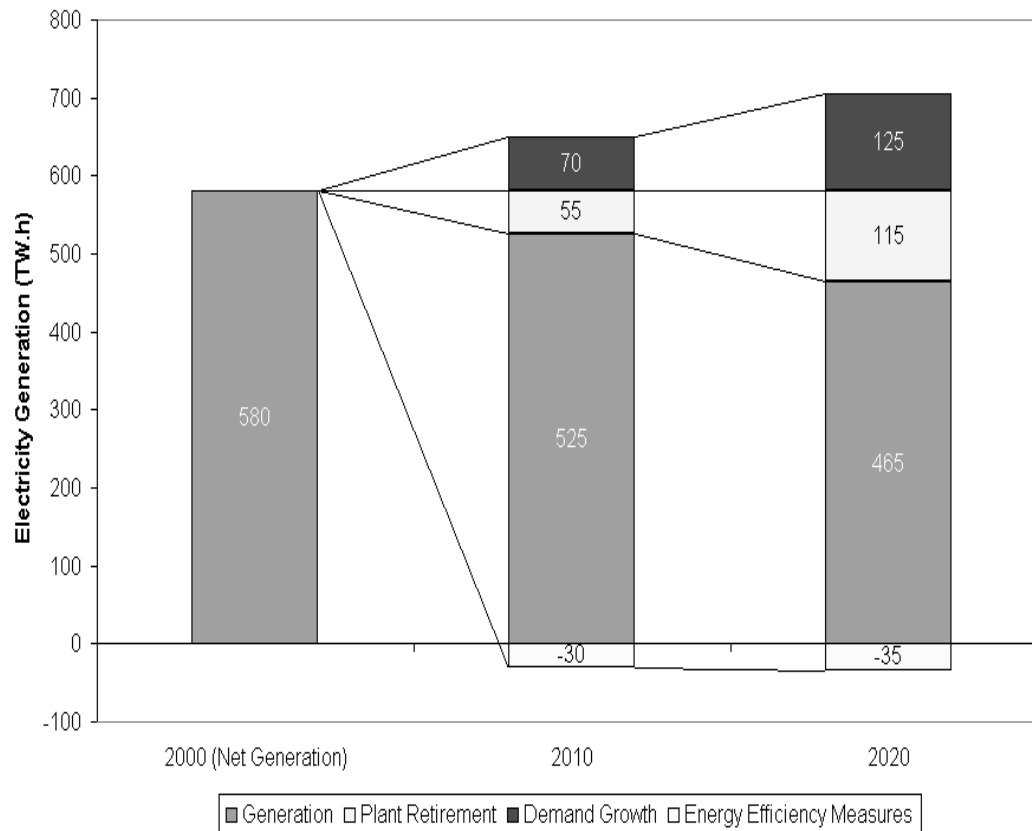
Canadian Electricity Demand, 1980 to 2000 and MARKAL, NRCAN, and NEB Demand Projections to 2020



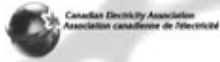
- Three major outlooks indicate an average growth rate of 1.3% per year to 2020
- Electricity consumption will grow more slowly than national GDP but faster than population
- Total final demand in:
 - 2010 ~ 560 TW.h
 - 2020 ~ 640 TW.h

Canadian Supply Growth: Average of Modelling Results for 2010 and 2020

Average of MARKAL, NRCAN, and NEB Canadian Supply Projections to 2020

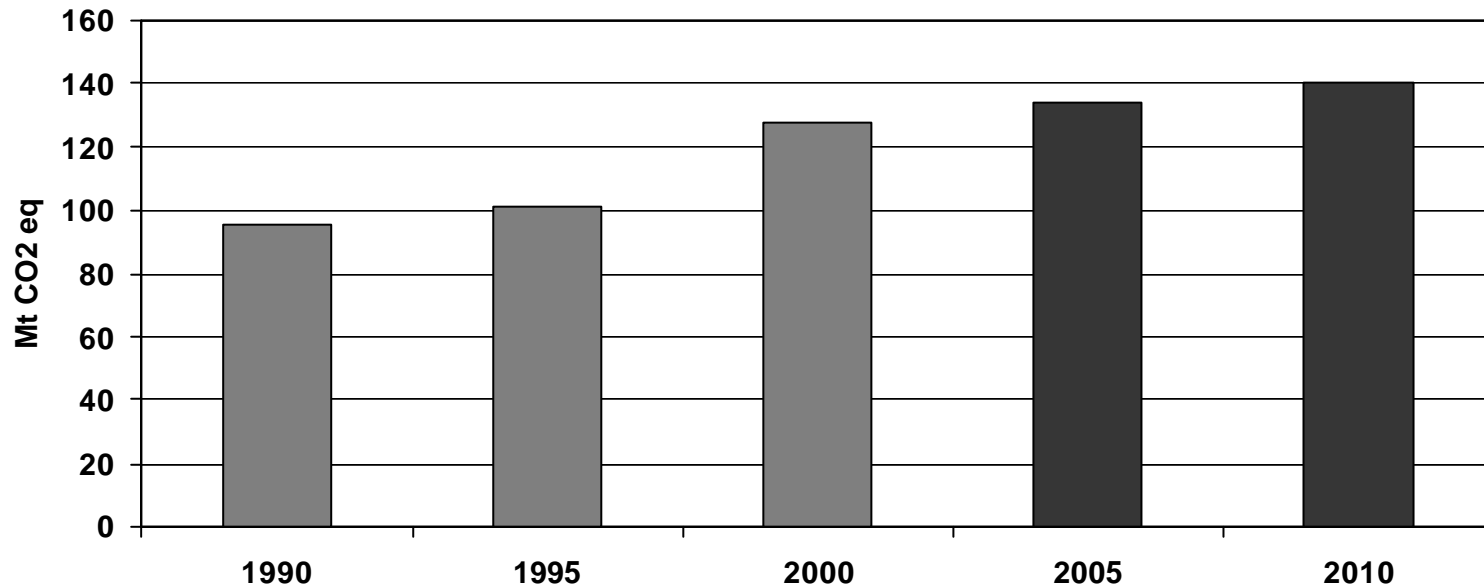


- New demand, plant replacement and exports require significant new capacity built over the next twenty years
- By 2020, 205 TW.h from new plants - 35% of 2000 production
- Indicates new and replacement investment of over 20,000 MW per decade to 2020 (2000 capacity ~ 111,300 MW)

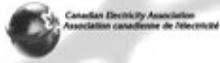


GHG Emissions are Expected to Grow by Close to 2% per Year from 1990 to 2010

Electricity GHG Emissions 1990-2010



Sources: (1) EC 2001. Canada's GHG Emissions 1990-2000, (2) 2002 NRCan Business As Usual Projections to 2010



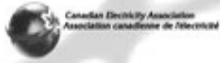
Federal Government Expectations

- Against this backdrop of increasing electricity demand, tightening supply capacity, increasing GHG emissions, the sector is expected to contribute towards:
 - 55 Mt reduction from Large Industrial Emitters under a covenant framework - Electricity could be asked to reduce as much as 18 Mt
 - Action Plan 2000/Budget 2001 measures – Electricity sector is expected to contribute 18-22 Mt
 - Any reduction measures that the provinces undertake – e.g. Alberta



Constraints for Emission Reductions

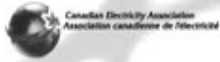
- In reality, what electricity sector could achieve in terms of physical reductions from BAU is limited in the Kyoto timeframe because:
 - Consumers are resistant to demand growth limitations
 - Long-lead times and regulatory issues are likely to limit the development of large scale, low GHG sources such as hydro and nuclear in the Kyoto timeframe
 - Emerging renewables would only make marginal impact by 2010
 - Early retirement of thermal plants will lead to stranded costs
 - New generation will include significant quantities of coal/combined cycle natural gas



Stretching the Constraints: Taking Action

- However, electricity sector is already a leader in sustainable development:
 - Electricity industry was one of the leaders in the creation of the Voluntary Challenge and Registry (VCR) program and continues to report GHG reductions through various measures
 - The CEA's Environmental Commitment and Responsibility (ECR) program requires all members to have an EMS system in place
 - Memorandum of Understanding (MOU) with the Department of Fisheries and Oceans (DFO)
 - Emissions Performance Equivalent Standard (EPES) to reduce GHG emissions

Key Elements of a Framework Agreement Should be Consistent With the EPES Model



Performance Standard	CCGT (current technology) subject to update on an agreed basis and schedule
Application	To all existing coal and oil at 40 years (except in Newfoundland and north) To all new (exceptions as above)
Time horizon	Starts in 2008 – extends beyond 2012 to unspecified future date
Basic rule	Plant that is short of the standard either replaced or offset New or increased capacity that beats the standard earns transferable credit
Conditions required	Access to functioning international credit system Level playing field – application to all power in Canada and in US
Related Policy	Appropriate tax treatment Improved regulatory conditions R and D commitments



Moving Forward with Implementation

- CEA and its members are ready to engage governments to agree on a framework agreement and subsequent set of covenants on the basis of the EPES model
- Negotiations should ideally involve the federal government, provincial/territorial governments, electricity generators and CEA
- Looking beyond 2012, we need to ensure that Canadian realities in the North American context are taken into consideration during future international negotiations
- We need to start today framing Canadian ideas to bring the US and the developing countries into an effective global solution.