



*Canadian Hydropower
Association
Association canadienne
de l'hydroélectricité*

Hydropower in Canada

**Canada's Number One Electricity Source:
A Solution for North American Energy Security
and Clean Electricity**

17th Annual Renewable Energy and Energy Efficiency Expo + Forum
Washington, DC
July 31, 2014

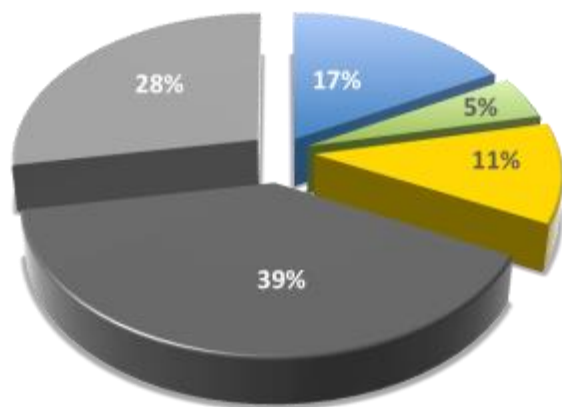
Jacob Irving
CHA President

Hydro Facts

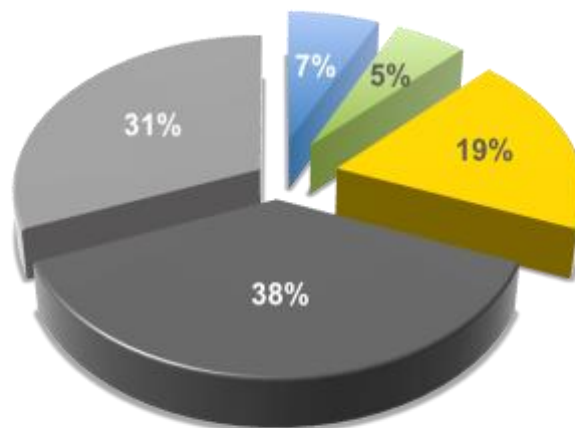
- Over 60% of Canada's electricity
- 97% of Canada's renewable electricity
- Installed capacity over 74,000 MW
 - 4th Largest in world
- ~ 375 TWh/year of hydropower generated
 - 3rd Largest generator in world
- Canadian hydropower exports to USA represent less than 1% of total US electricity supply

ELECTRICITY GENERATION

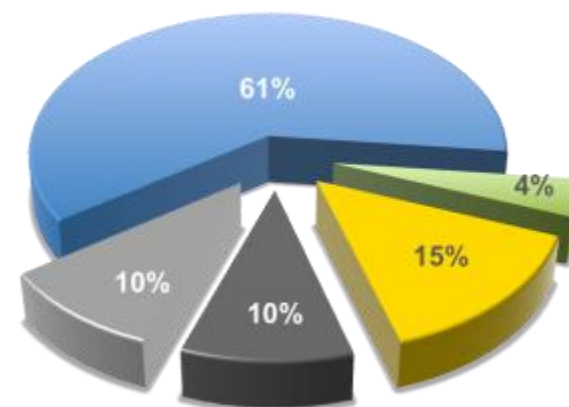
WORLD | LE MONDE



USA | LES ETATS-UNIS

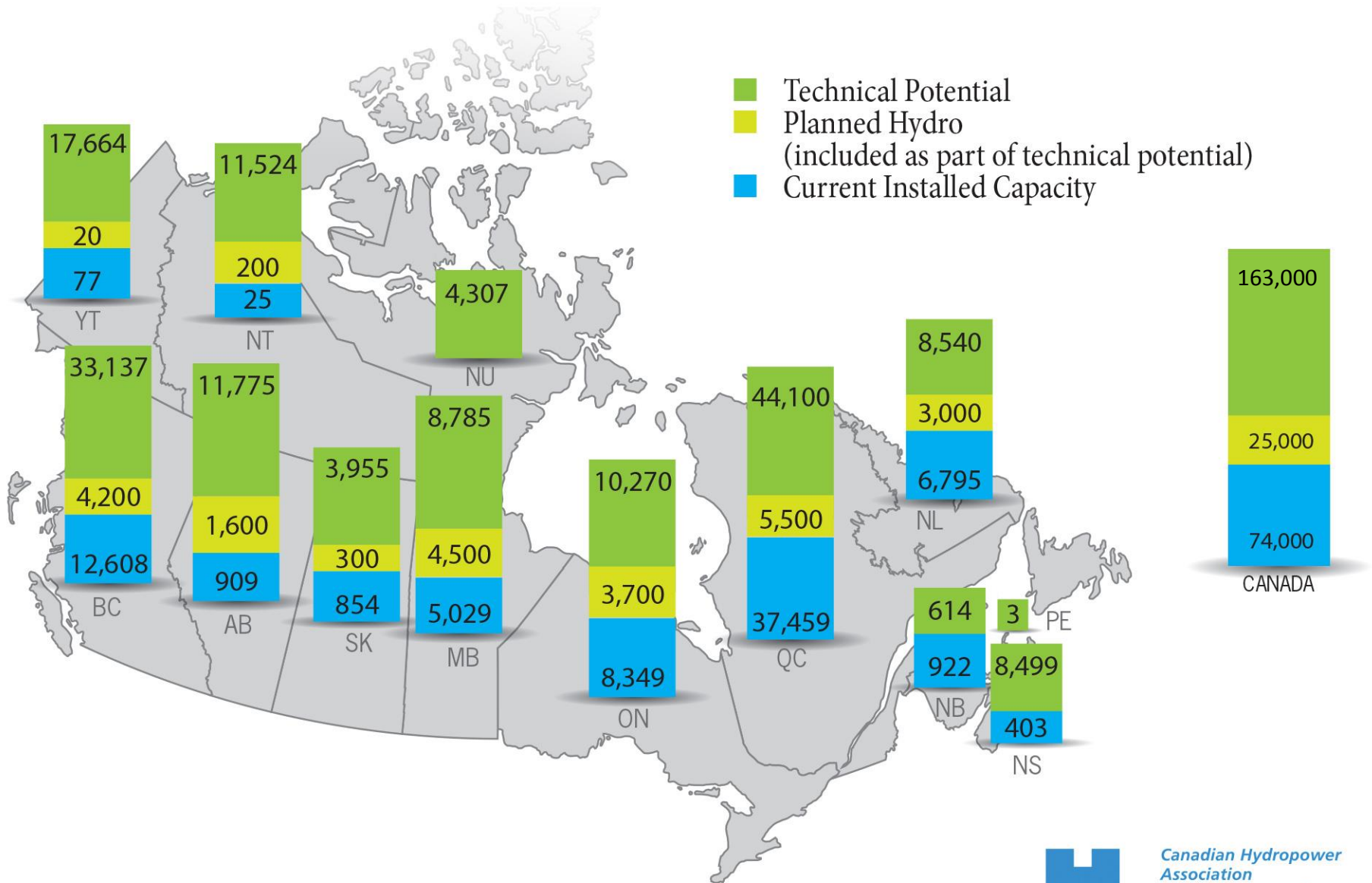


CANADA



● COAL ● OTHER FOSSIL FUEL ● HYDROPOWER ● OTHER RENEWABLES ● NUCLEAR

CANADIAN HYDROPOWER CAPACITY AND POTENTIAL (in Megawatts)



The Hydro Advantage

- Clean, renewable, low emitting
- Reliable and efficient
- Unique operational flexibility - dispatchable
- Base load and peak power
- Multipurpose (flood control, irrigation, etc.)

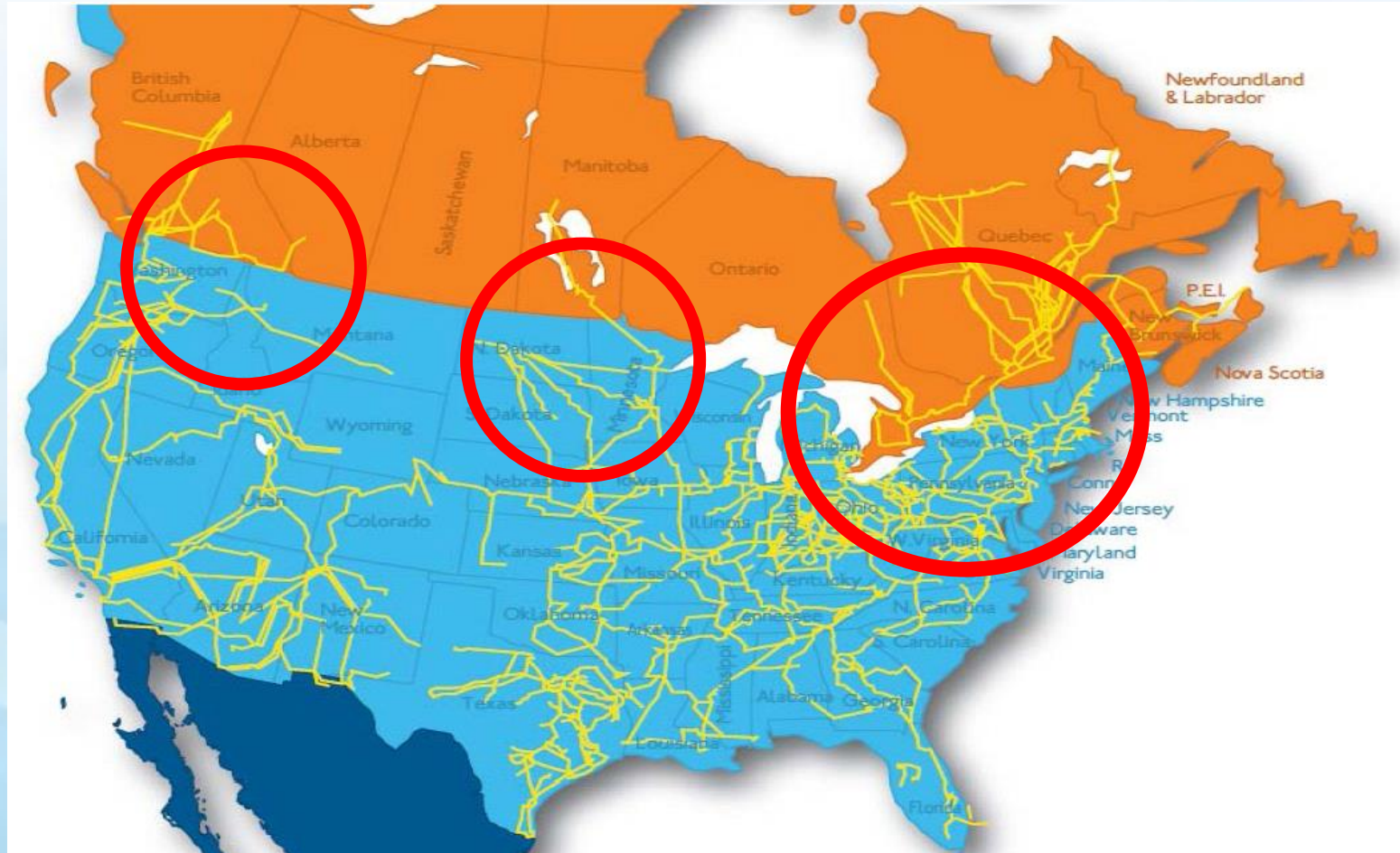
The Hydro Advantage

- Only renewable with energy storage capacity
- Enables new variable renewables such as wind and solar power
- Makes electric vehicles clean and renewable
- Competitive, stable electricity price
- Best long term investment – Helped build Canada's strong industrial base

Climate Change

- Each Terawatt Hour of Canadian hydropower exported to the United States displaces between 500,000 and 1,000,000 tonnes of CO₂
- Canadian and USA hydropower together, help avoid approximately 350 million tonnes of CO₂ emissions per year
- Hydropower helps integrate new renewable forms of energy such as wind and solar power in both USA and Canada to also address climate change

USA and Canada Transmission Is More North-South Than East-West



Map copyright Canadian Electricity Association (CEA)
Lines shown are 345kV and above. There are numerous interconnections between Canada and the U.S. under 345kV that do not appear on this map.

North American Hydropower

- For every dollar the USA spends on Canadian energy, the USA receives back 91 cents from the finished products that Canadians in turn, buy from the USA
- Half of undeveloped Canadian hydro potential alone could fuel all light duty vehicles in Canada and ~25% of the US light duty vehicle fleet
- Combined USA and Canadian hydropower potential (over 250,000 MW) has significant ability to enable other North American renewables to help address issues of climate change and energy security head-on

How to Unlock Canadian Hydro Potential

- Strong Canadian and/or North American climate policy that recognizes hydropower's benefits e.g. price on carbon or incentives
- More efficient regulatory policies that speed the development of clean, renewable facilities
- Greater adoption of electric vehicles powered by clean and renewable hydropower throughout North America



Canadian Hydropower Association Association canadienne de l'hydroélectricité

www.canhydropower.org

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