



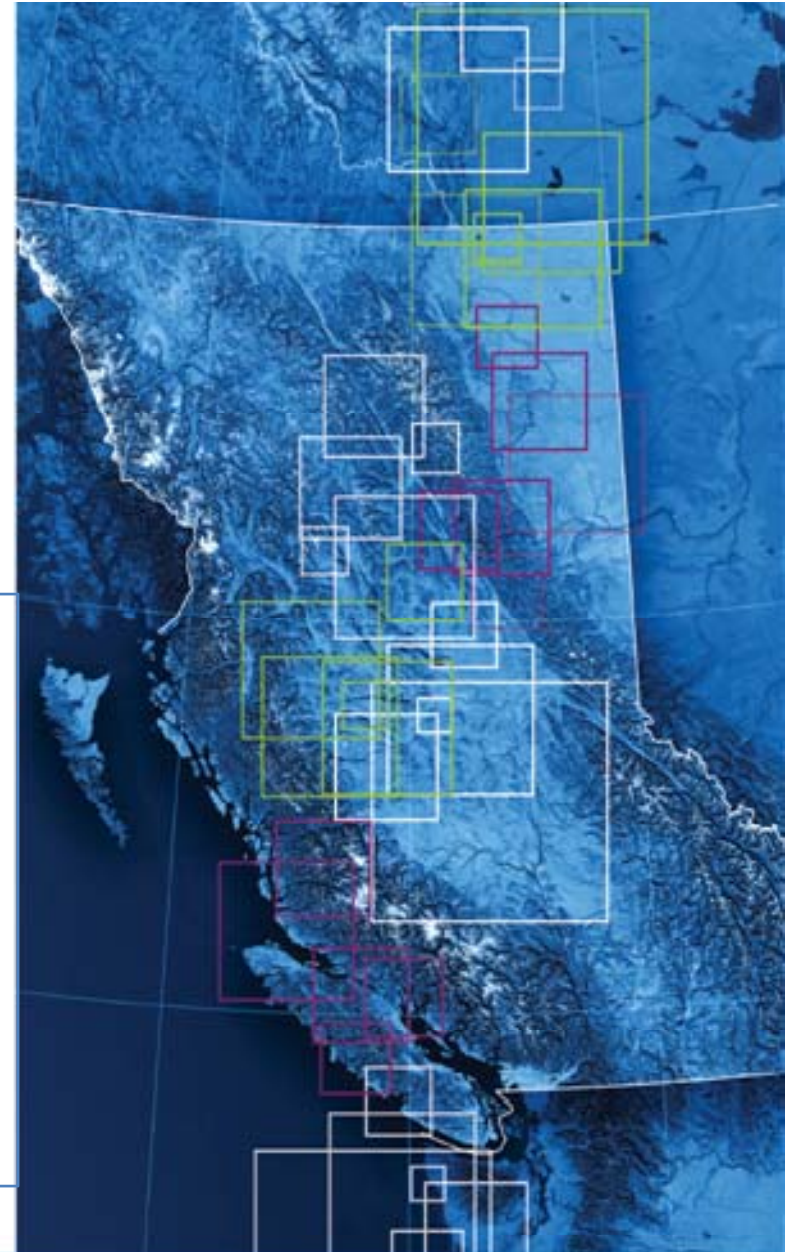
Pacific Institute
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FutureGrid | BC's Energy Options in a Changing Environment

The Export Question

Under What Conditions Should
British Columbia Become a
Major Exporter of Electricity?

George Hoberg with Gerald MacDonald
UBC



University
of Victoria



SEMINAR UNIVERSITY
FOUNDED IN 1925



THE UNIVERSITY OF BRITISH COLUMBIA

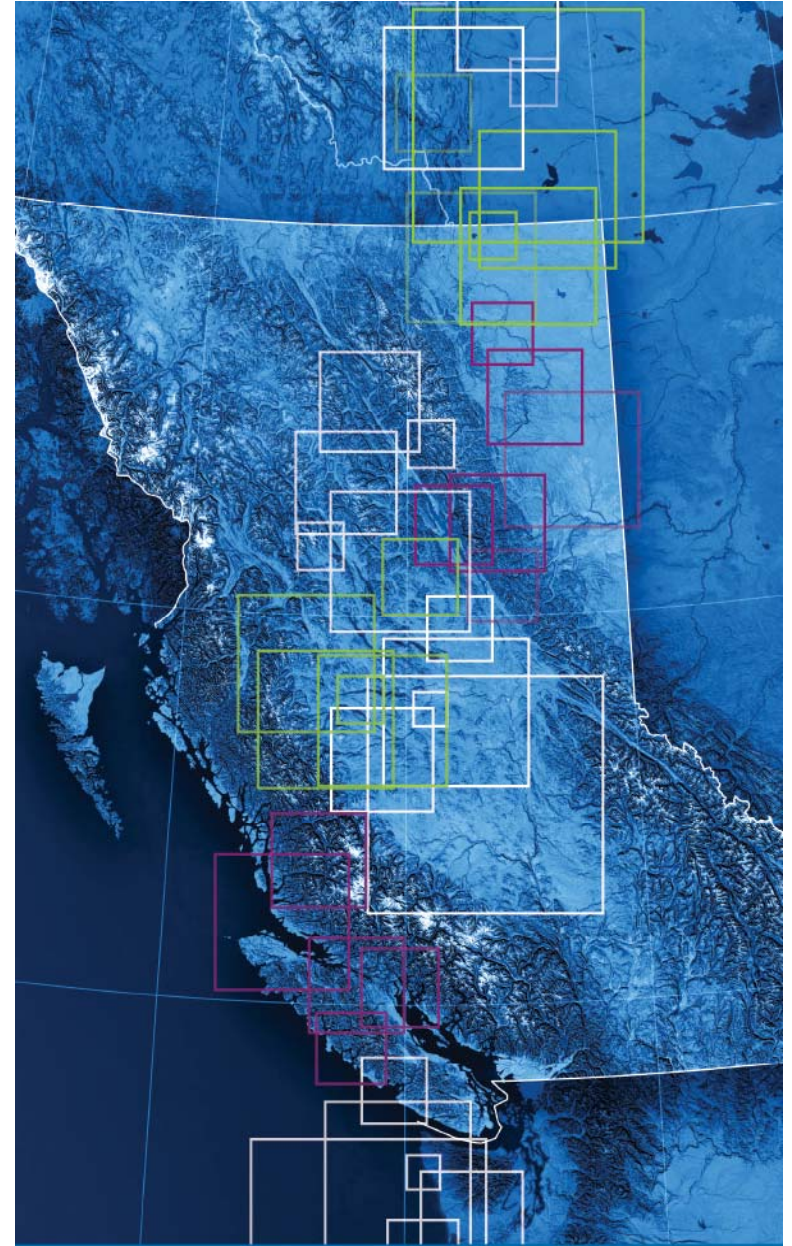


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NORTHERN BRITISH COLUMBIA

PICS is hosted and led by the University of Victoria in collaboration with the University of British Columbia, Simon Fraser University and the University of Northern British Columbia.

Outline

- How electricity trading works
- Numbers controversy
- Evolving policy objectives
- Clean Energy Act and Net Exports
- Next Steps



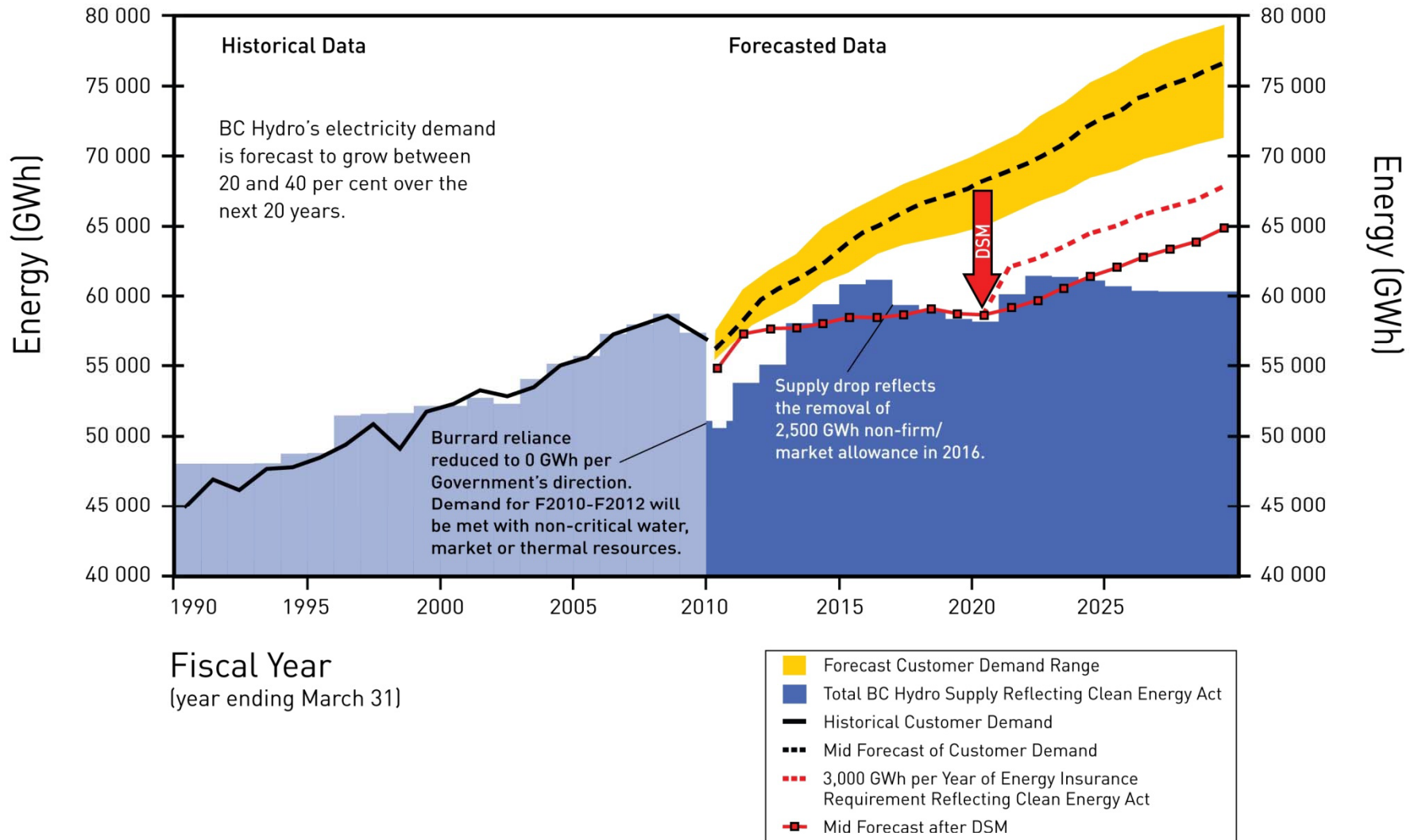
Tensions over Electricity Policy

- 2002 energy plan: Privatizing new sources of supply
- Do we need more?
- Are we getting the right price?
- Is the planning and approval process adequate?
- Should we build new power for export?



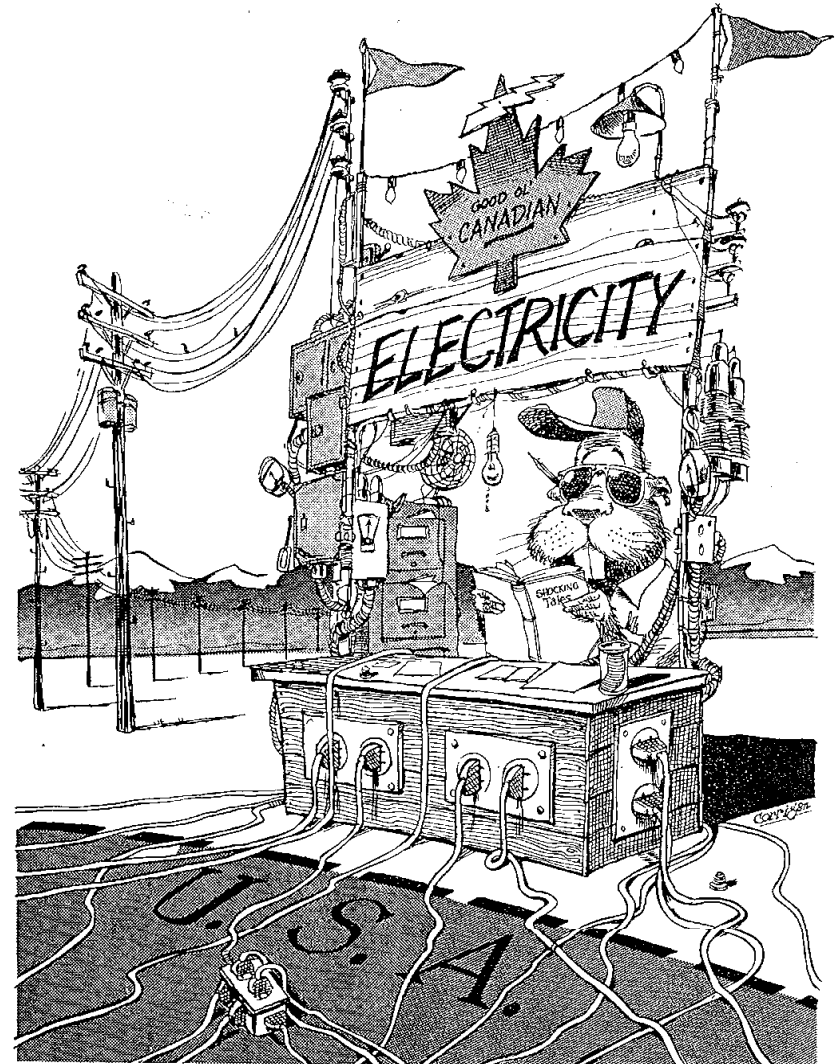
BC HYDRO'S ELECTRICITY GAP

BC Hydro's Supply and Demand Outlook

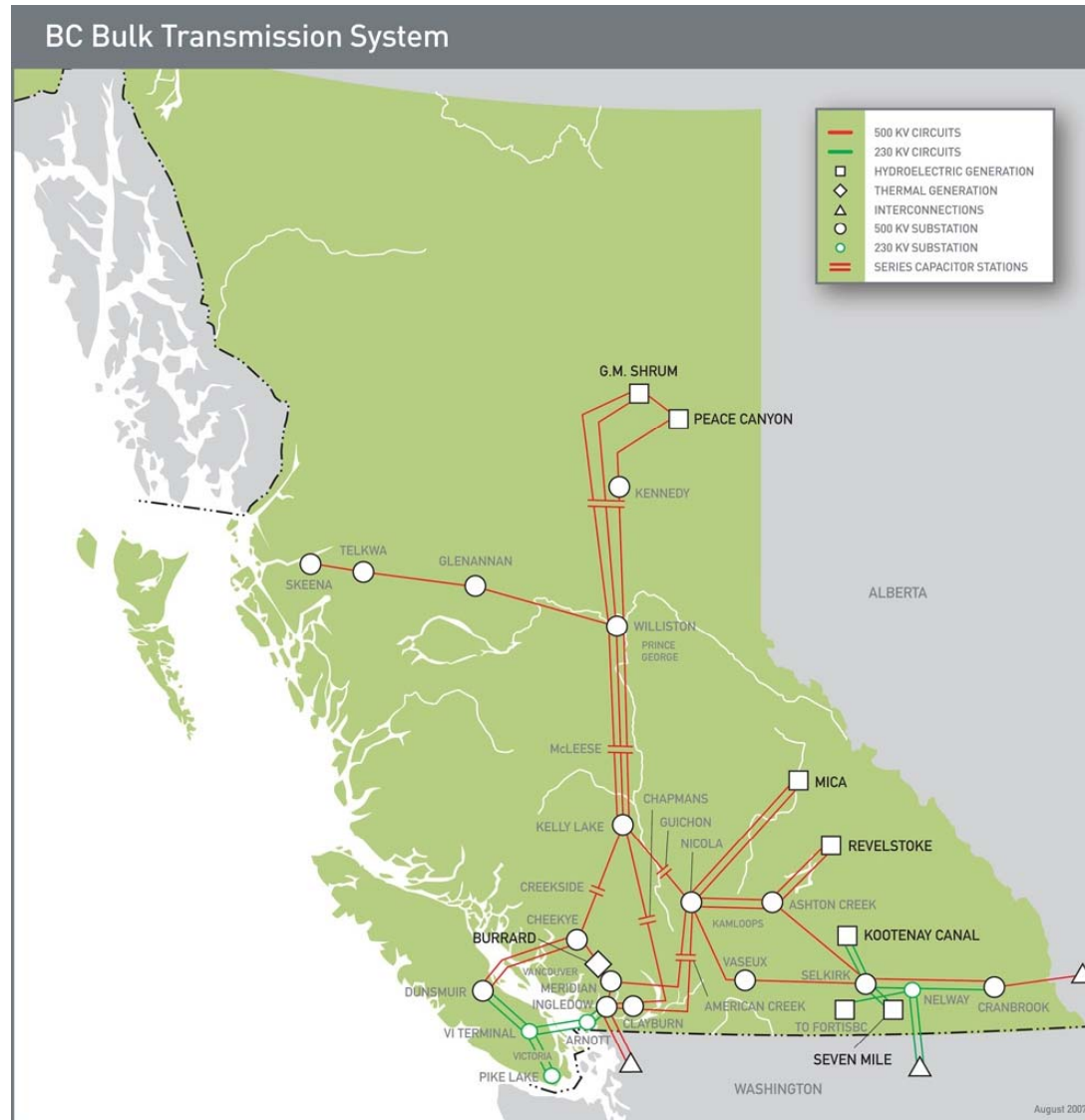


How trading works

- Powerex - BC Hydro subsidiary (1988)
- Balance BC system needs
- Take advantage of daily and seasonal fluctuations to generate revenue



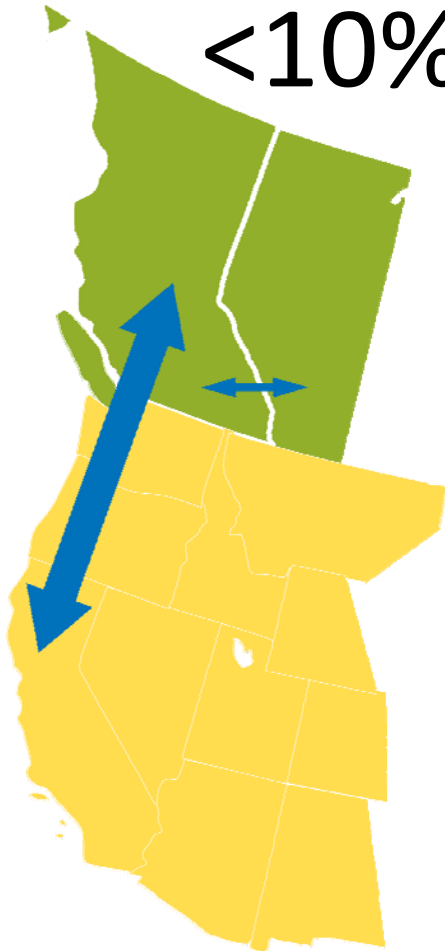
How trading works



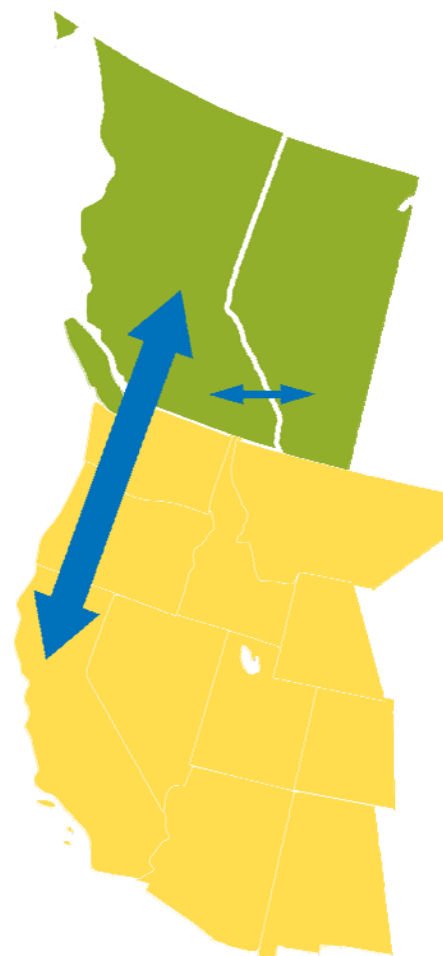
4 types of trades

BC Needs

<10%



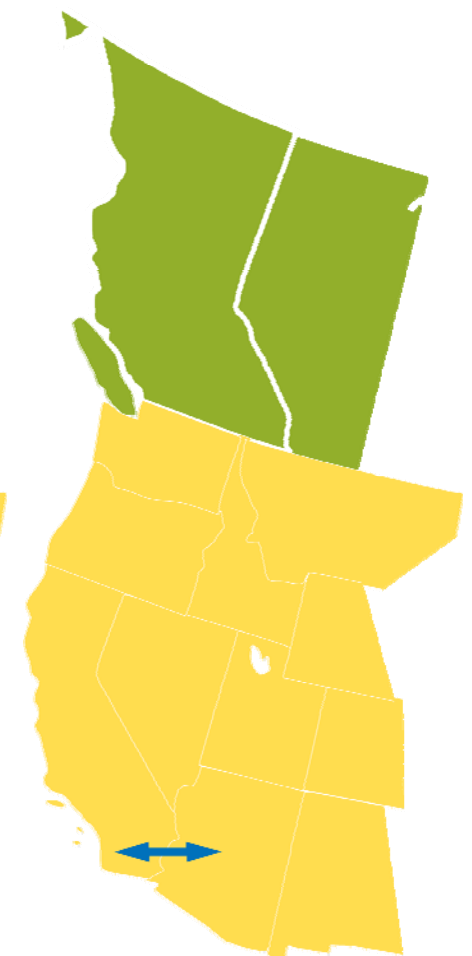
BC Revenue



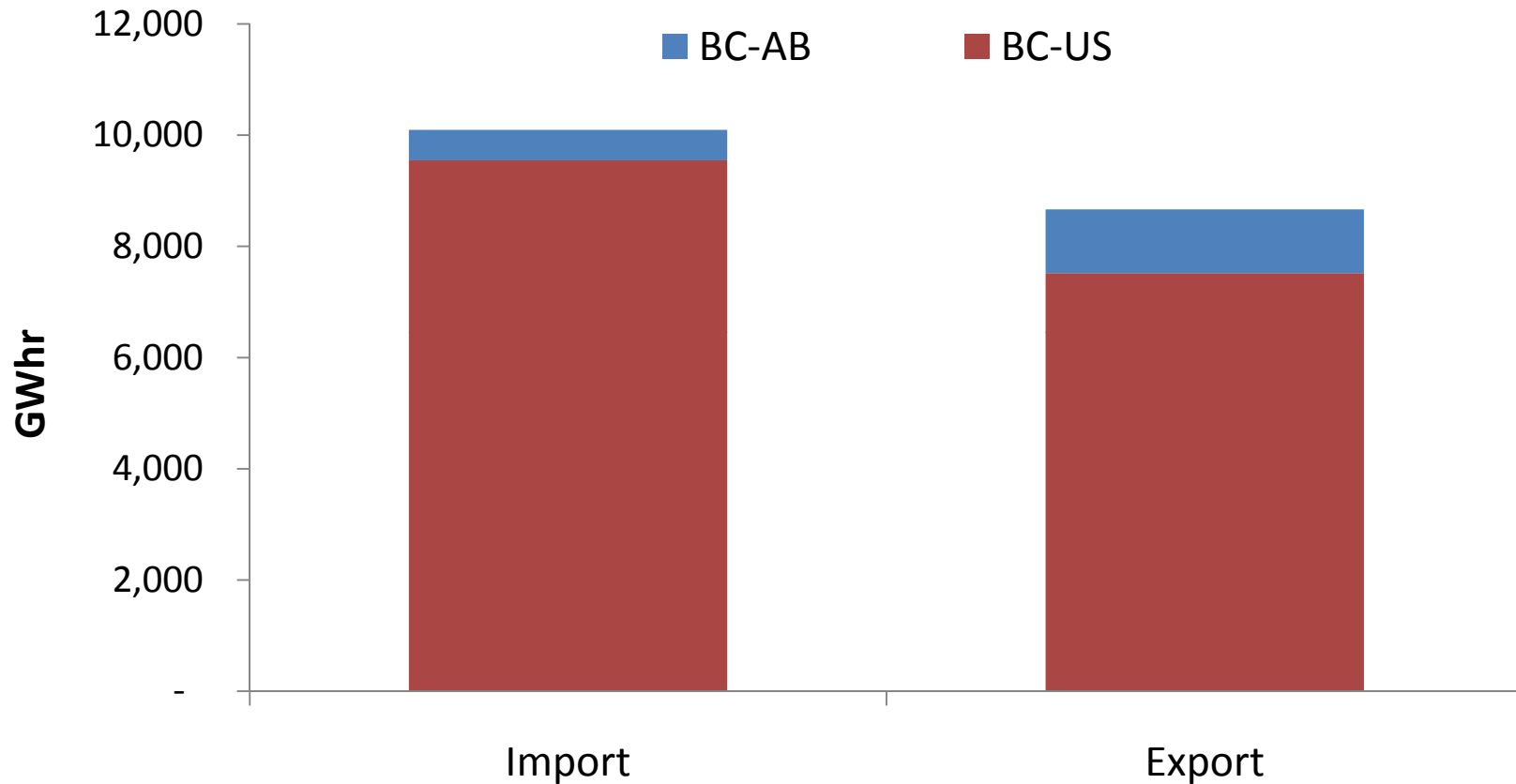
Flow-through



Non-BC



Origins and Destinations of BC Electricity Trade (5 Year Average 2005-2009)



(North-South flow) = 10 x (Trade with Alberta)

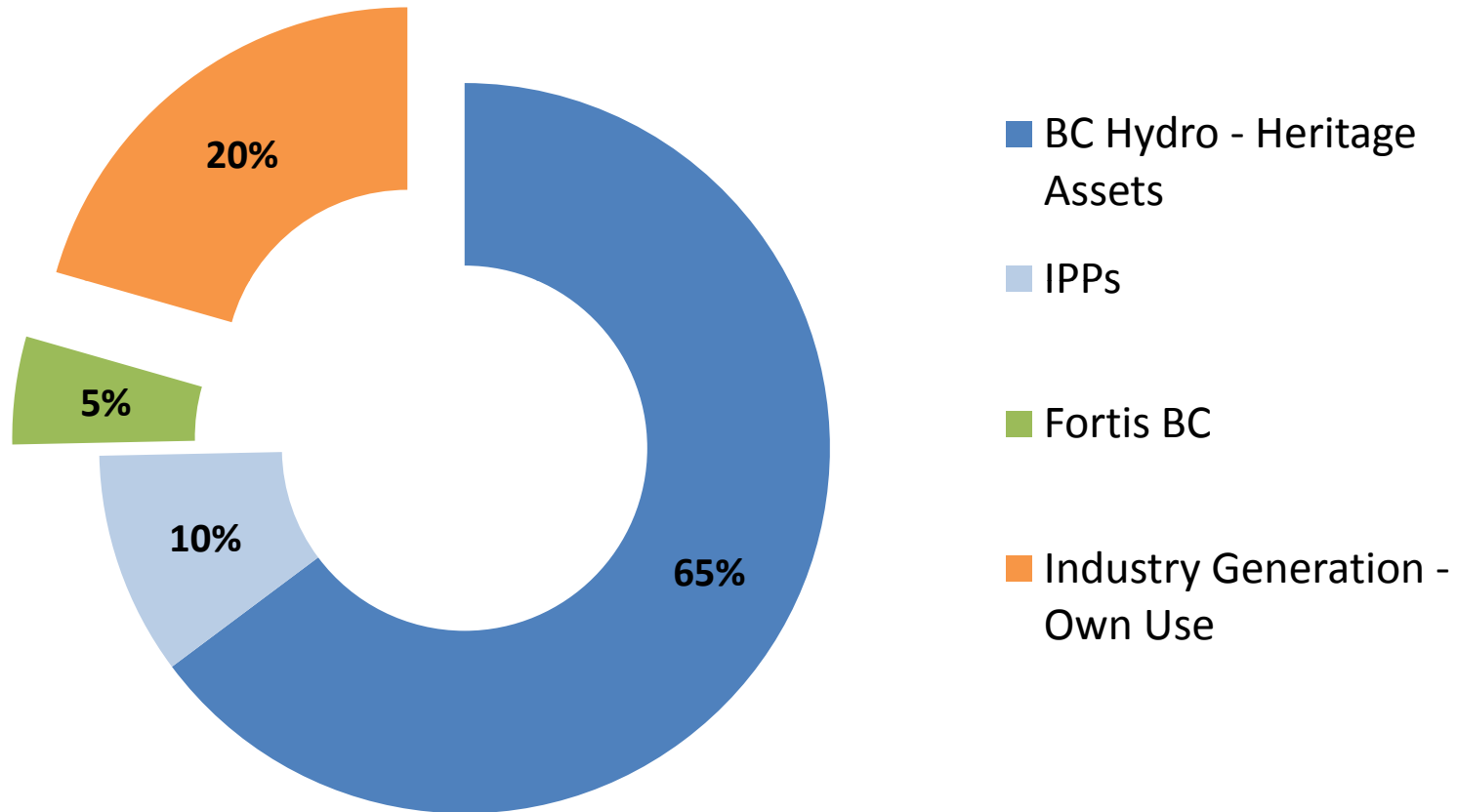


Numbers Controversy

- different sources of data
- different choices about what to include
 - BC Hydro vs. whole system
 - Columbia River Treaty



BC Electricity Generation by Power Producer (5 Year Average 2005-2009)



Canadian Entitlement

to downstream benefits of Columbia River Treaty



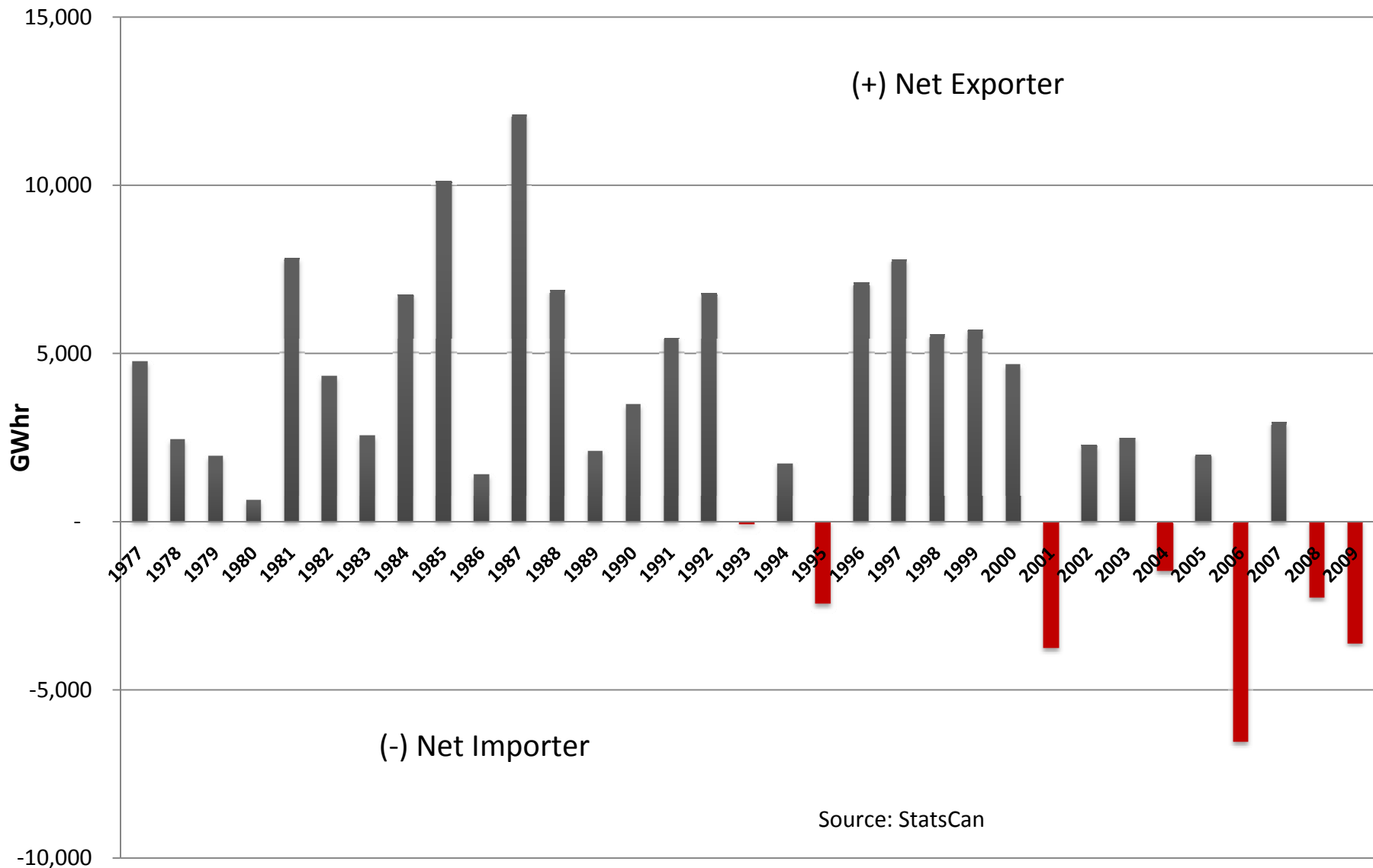
Canadian Entitlement

to downstream benefits of Columbia River Treaty

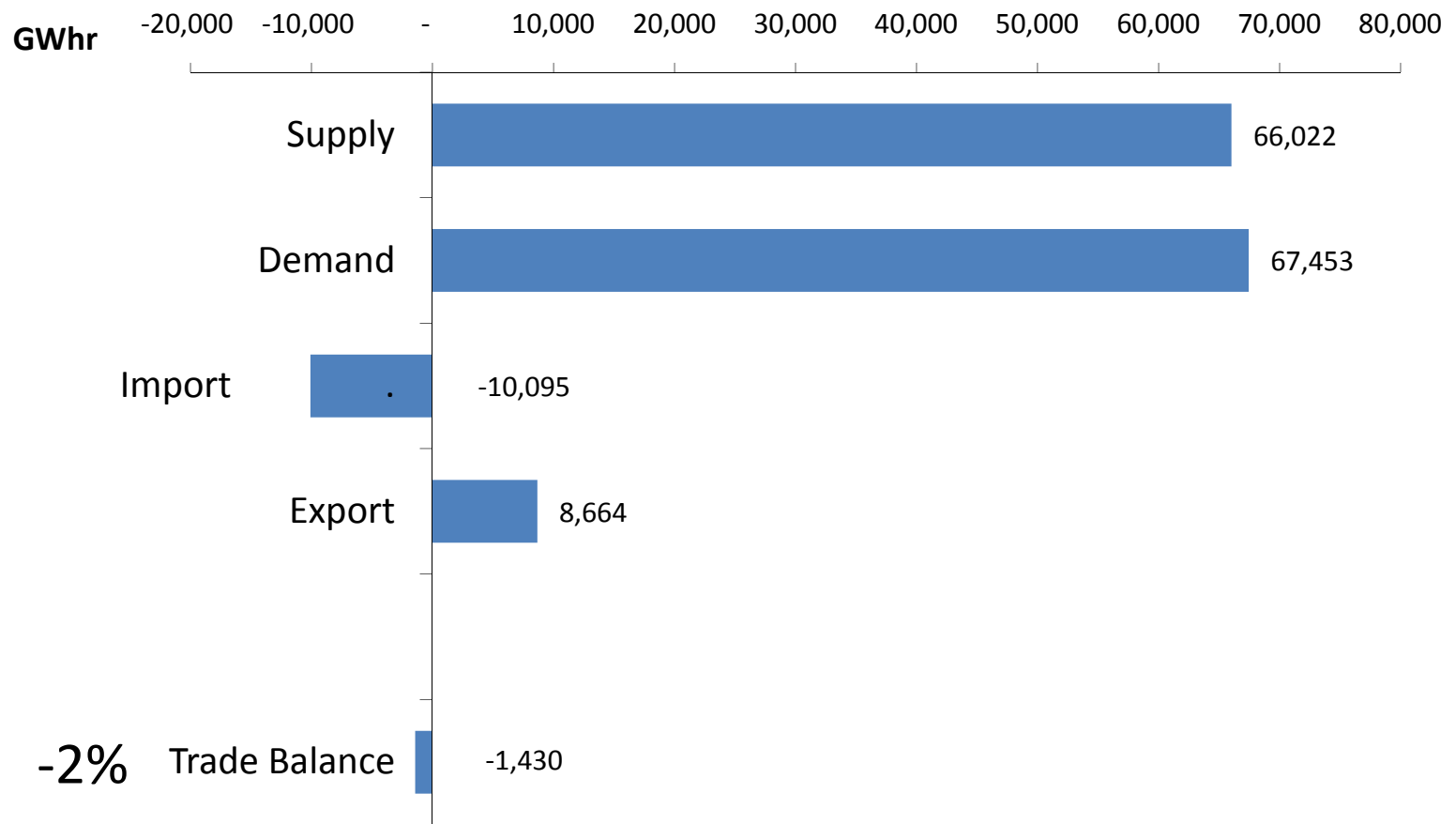
- 1350 MW of power
 - 1.5 times Site C
 - ~10% BC Hydro
- We don't take power; we trade it for revenue (\$255 million in 2008/09)
- Should it be counted as domestic supply?
- Note: Treaty minimum length ends in 2024



Figure 2: British Columbia's Electricity Balance of Trade (1977-2009)



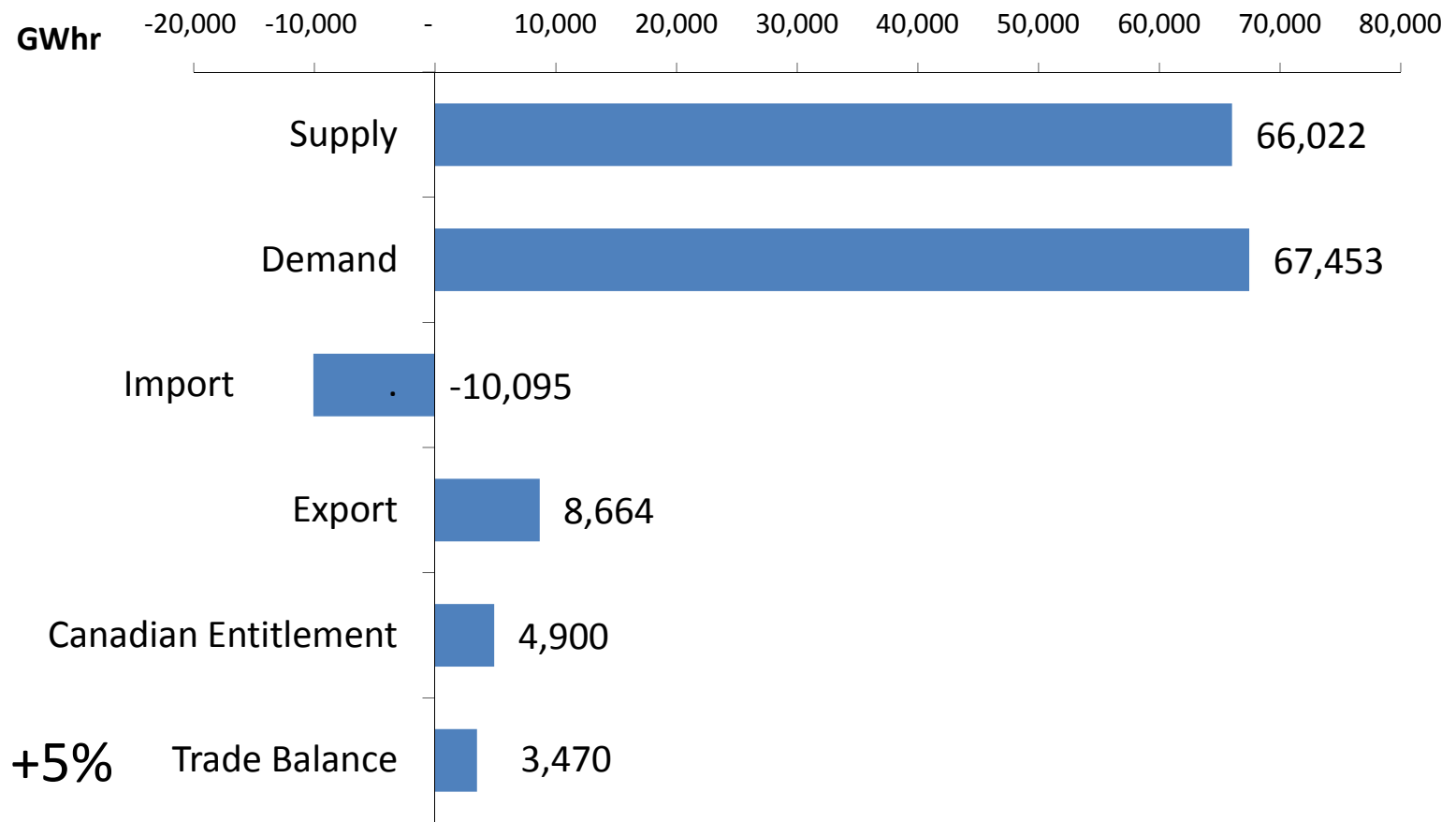
BC Electricity Trade Balance - Impact of Canadian Entitlement (5 Year Average 2005-2009)



Source: BC Stats



BC Electricity Trade Balance - Impact of Canadian Entitlement (5 Year Average 2005-2009)



Source: BC Stats



Concluding the Numbers Story

- Deteriorating trade balance: net importer 4 of past 6 years
- past 5 years
 - (not considering Canadian Entitlement) consumed 2% more power than it has produced
 - If Canadian Entitlement was considered to be domestic supply: surplus of 5%
- Projected next 20 years: increased demand of 20-40%
- Push to be a “clean energy powerhouse”



Electricity Policy: Core Objectives

- Prior to 2007: cost-effective reliability
- 2007-2010: self-sufficiency
- 2010- net export



Cost-effective reliability

- increasingly influenced by environmental objectives
- Some argue that you can achieve reliability at lower cost by occasional reliance on imports



Self Sufficiency in 2007 Energy Plan

- self sufficient by 2016, + insurance of 3000 GWh/year by 2026
- assume “critical water conditions”
- result: ensures substantial surplus available for export in almost every year
- New Clean Energy Act continues this policy (insurance date moved up to 2020)



Net Exports in Clean Energy Act

- Clean Energy Act objective “to be a net exporter of electricity from clean or renewable resources with the intention of **benefiting all British Columbians** and **reducing greenhouse gas emissions** in regions in which British Columbia trades electricity while **protecting the interests of persons who receive or may receive service** in British Columbia”



Clean Energy Act (cont)

- include planning for exports market in new “integrated resource plan” (cabinet reviews and approves, not BCUC)
- if the government determines it is in the public interest, the Cabinet may direct BC Hydro to acquire new power for export (no BCUC review)
- BCUC rate review prohibits BC Hydro from recovering the costs of export projects



Under what conditions?

- 2009 Throne Speech: “principled, economically-viable and environmentally-sustainable”
- Act:
 - “in the interests of British Columbians”
 - reducing GHGs in importing areas
 - protecting the interests of persons who receive or may receive service in BC



Issues for Discussion this Afternoon

1. Exports must be **economically advantageous** to consumers, communities, investors, and the provincial government
 2. Exports must not jeopardize the **reliability** of domestic supply
 3. Exports must demonstrably contribute to **greenhouse gas reductions** in importing jurisdictions
 4. BC electricity policy must respect **First Nations Rights and Title**
 5. Exports must be based on a planning and approval process designed to foster public legitimacy and promote environmental, social, and economic **sustainability in BC**
 6. Exports must be **reversible**
- Others?



Next Steps

- World Café Dialogue this afternoon
- Summary report of dialogue posted on PICS website
- Working group to elaborate policy framework
- Results included in PICS White Paper
 - Posted
 - Submitted to government
- Open to ideas about next steps

