

Site C – electricity issues

by Tom Hackney, BCSEA

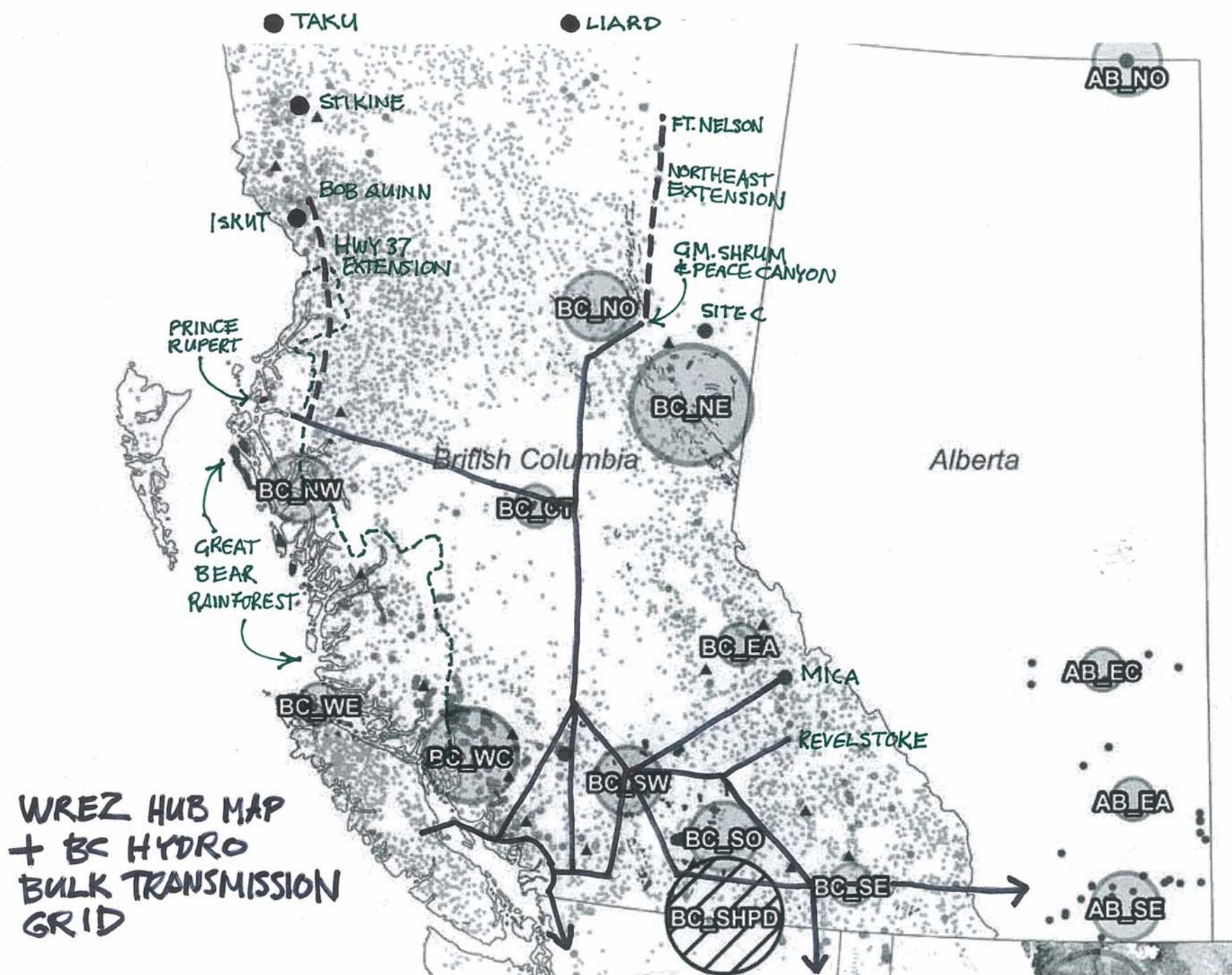


Political context



Electricity demand & supply, based (largely) on BC Hydro's 2008 LTAP

Item (GWh or GWh/y)	F2020 (LTAP)	F2020 (new)	F2028 (new)
Demand forecast (mid)	70,100	70,100	77,700
DSM "A"	-10,900	-10,900	-14,500
"Insurance" requirement	0	3,000	3,000
Net demand (mid)	59,200	62,200	66,200
Heritage hydro (critical water)	42,600	42,600	42,600
Heritage thermal (Burrard)	3,200	200	200
Other existing & committed	10,300	10,300	10,200
Clean & Bioenergy Calls	4,900	4,900	3,500
Future calls	0	0	7,100
Non-firm & market purchases	0	0	0
Total supply	61,000	58,000	63,600
Balance (mid demand) & "Ins."	1,800	-4,200	-2,600
Balance (high demand) & "Ins."	-2,400	-8,400	-8,600
Δ Bob Elton aspirational DSM *	-10,000	-10,000	-10,000
Electrify BC vehicle fleet (v. approx.) *	10,000	10,000	10,000
Downstream benefits **	4,300	4,300	4,300
Site C *	4,600	4,600	4,600
Other renewables **	79,000	79,000	79,000



BCUC transmission inquiry (2009):
BC Hydro potential generation resource options (GWh/y);
costs derived from 2008 LTAP & 2007 CPR (/MWh)

Wind	33,919	\$67 – \$240
Large hydro & pumped storage	16,874	–
Natural gas	10,150	\$75 – \$160
Small hydro	9,598	\$45 – \$160
Ocean: wave & tidal	3,766	\$50 – \$80
Geothermal	3,106	\$45 – \$230
Biomass	1,349	–
Resource Smart	252	–
Total	79,013	–
Site C	4,600	\$46 – \$97
DSM (2007 CPR)	15,000	max. \$88

“As more intermittent resources are added to the BC Hydro system, it is necessary to back them up with dependable generation, and it is ideal to back them up with dependable, flexible generation to match their variability.”

“A dependable resource – such as large hydro, biomass, geothermal and natural gas – is consistently available to meet winter peak demand. A flexible resource – such as large hydro and some natural gas – is able to quickly adjust its generation level in response to changes in demand or intermittent generation.”

– *Peace River Site C Hydro Project; Stage 2 Report: Consultation & Technical Review*. BC Hydro, Fall 2009

Site C – electricity issues
Tom Hackney, BCSEA
May 2010