

WPAC CONFERENCE

BIO-HEAT DECARBONIZATION AND COST SAVINGS



WOOD PELLET
ASSOCIATION OF CANADA



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ELECTRICITY: A PRECIOUS RESOURCE

- **Electricity is precious—using for heating and domestic hot water is inefficient (energy-intensive).**
- Bioheat (both pellets and chips) eases grid pressure.
- Green grids require fossil fuels in winter to keep up with peak demand — mostly for heat.
- Hydro insufficient for peak and future loads:
 - BC: Almost 25% of electricity imported in 2024.
 - Quebec and Ontario: swap energy demand peak.



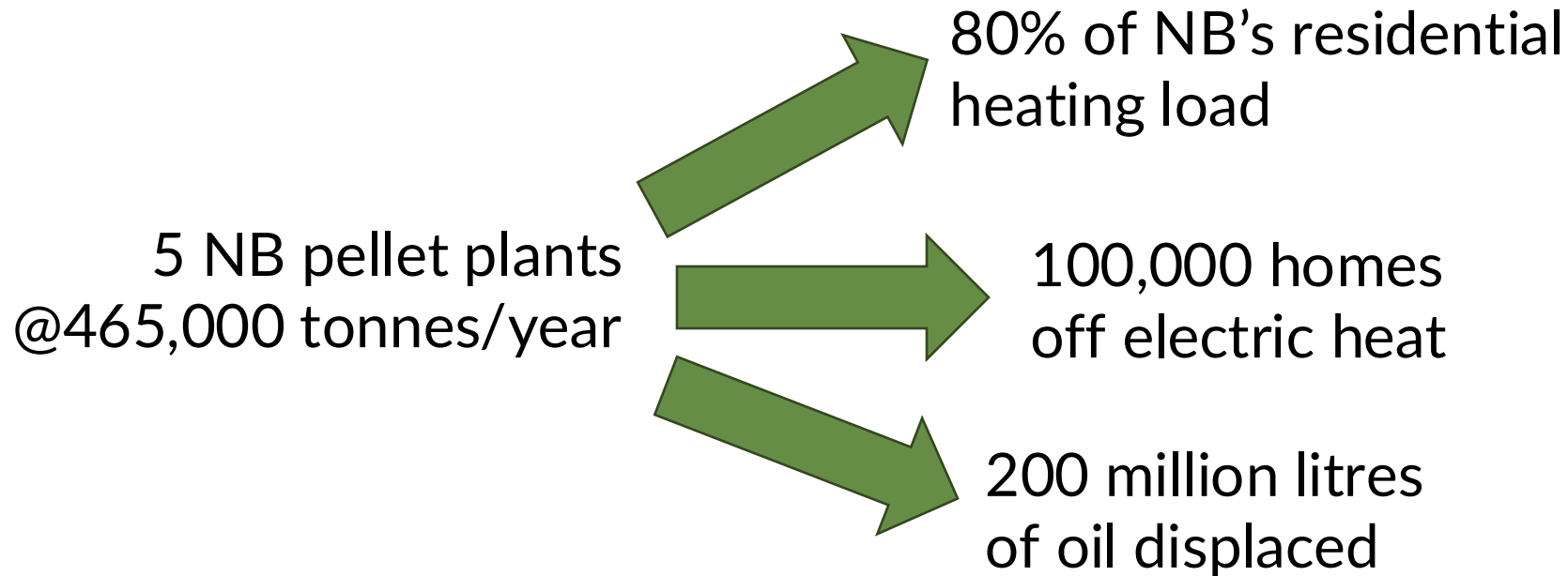
To reduce reliance on fossil fuels & shift to emissions-free, Canada needs 2X or 3X amount of power we make now.

ALLEVIATING ENERGY POVERTY

New Brunswick has among the highest carbon emissions from heating in the world.

- Roughly 1/3 of electricity generated in New Brunswick comes from imported fossil fuels (coal, gas and heavy oil), most is burned in winter to meet electric heating needs.
- New Brunswickers are highly vulnerable to energy price increases because the province's households rely heavily on electric heating.
- The Province faces difficult choices. Coal generation must stop in 2030.
- At the same time, electricity demand will increase as transportation moves more to electric cars. New generation capacity will be very expensive.

THE CASE FOR NEW BRUNSWICK



\$300/tonne
bulk wood pellets =
\$0.07kWh electricity

37% less than NB's
current residential
electricity price

KEDGWICK CHURCH: FROM WOOD TO OIL TO PELLETS

- Pre-2020: Firewood
- 2020: Switched to oil
 - 38,000 litres burned (on average)
- 2025: Switched to pellet
 - 75-80 tonnes/year (projected)

3 buildings

- Church
- Recreation centre
- Presbytery



KEDGWICK CHURCH: FROM WOOD TO OIL TO PELLETS

Oil	\$ 60,000/year
Wood pellets	\$ 25,000/year
Savings	\$ 35,000/year
5 years of savings (projected)	\$175,000
Investment cost	\$160,000
saveenergynb grant	25%
Community fundraising.	75%



150kw boiler with 20 tonne silo and
2000 litre buffer tank

SAINT QUENTIN CHURCH

Pre-2013: Oil	\$ 41,000/year
Post-2013: Pellet	\$ 15,500/year
Pellet maintenance	\$ 1,800/year
Savings	\$ 23,700/year
Savings (11 years)	\$260,700
Investment cost	\$ 95,000 (no saveenergynb grant)

~4-year payback



two 56 kw boilers

POTENTIAL MARKETS: REMOTE COMMUNITIES

Example:

- Hydro Quebec is subsidizing oil and propane heating in remote diesel-powered communities.
- Quebec's green incentive program policies make it difficult to convert to biomass heating.



Iles-de-la-Madeleine diesel-powered generating station

LET'S HEAT LOCAL

- Bioheat: Cost-effective and ready to scale.
- Heating with Canadian wood means:
 - Stronger rural economies
 - Safer forests: increase waste management to reduce forest fires and increase forest growth
 - Lower emissions
 - Energy resilience



Kingsclear Nursery
Full Circle: Residuals from trees that came from the nursery are now used to help grow the next generation of trees.

