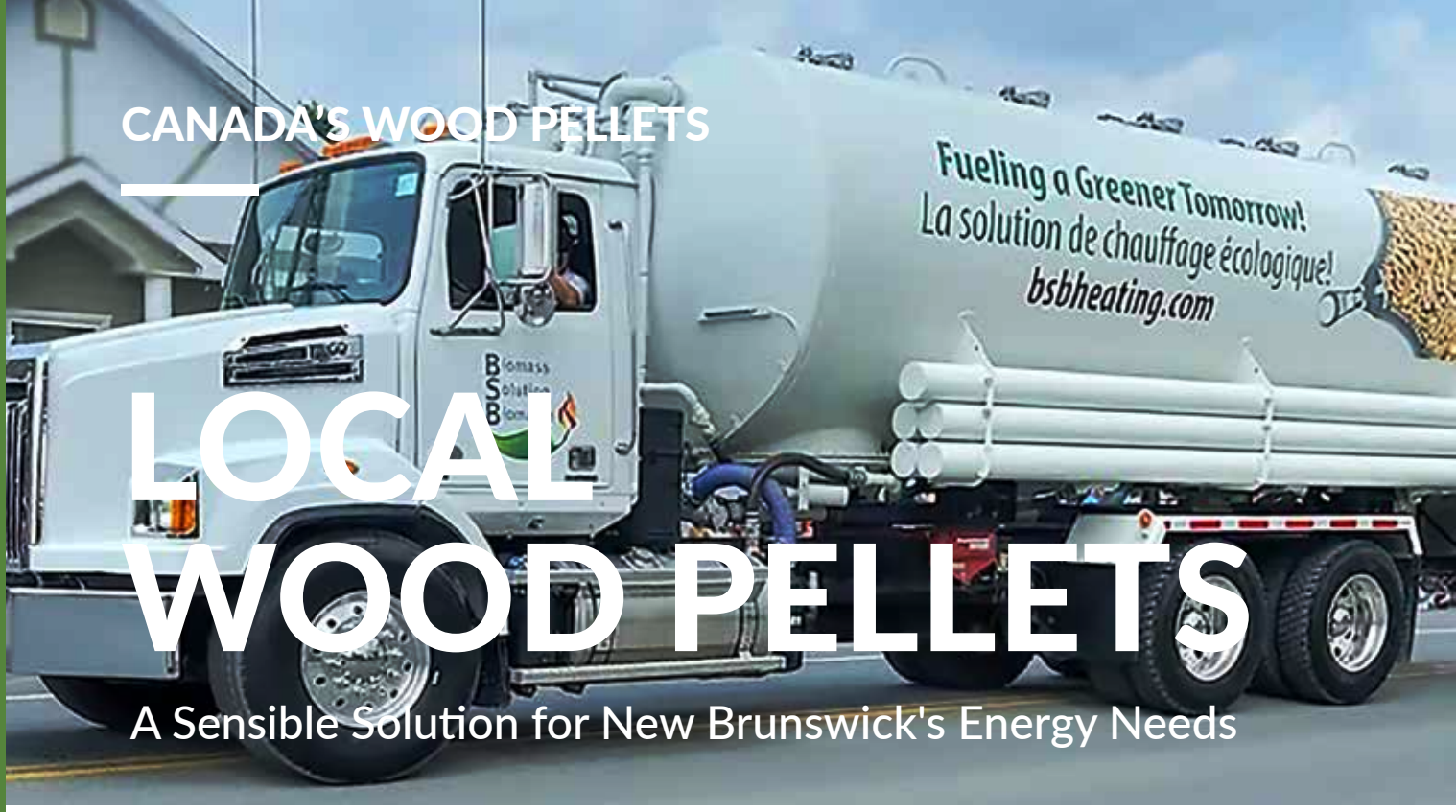


CANADA'S WOOD PELLETS

LOCAL WOOD PELLETS

A Sensible Solution for New Brunswick's Energy Needs

THE CHALLENGE

New Brunswick has among the highest carbon emissions from heating in the world. More than 30 percent of electricity generated in New Brunswick comes from imported fossil fuels such as coal, gas, and heavy oil, most of which is burned in winter to meet electric heating needs.

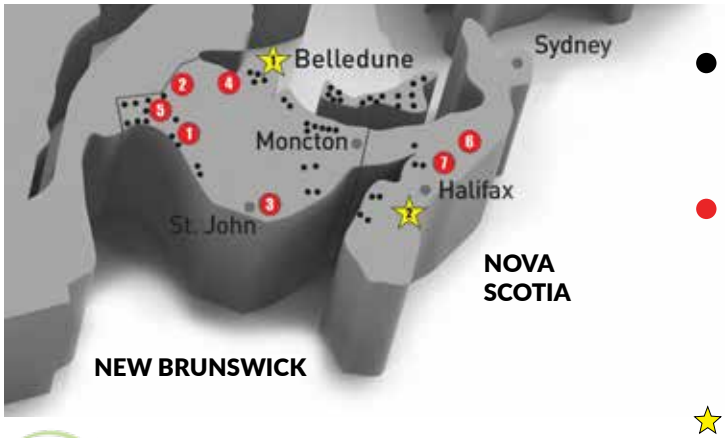
As a result, the province's citizens are highly vulnerable to energy price increases because the province's households rely heavily on electric heating.

The province is facing 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 OPPORTUNITY

New Brunswick is home to five wood pellet plants (see Figure 1) that produce approximately 350,000 tonnes per year. This fuel has an energy content of over six Peta Joules (PJ) and could replace all heat from electricity, oil, and natural gas consumed by commercial and institutional buildings in New Brunswick.

Figure 1



CURRENT BIOHEAT INSTALLATIONS – 50 KW to 5 MW

- Churches
- Municipal buildings
- Hospitals
- Bakeries
- Farms
- Schools
- Universities
- Greenhouses
- Breweries
- District heating systems

CURRENT PRODUCERS

		BULK/ BAGGED (%)	CAPACITY (TONNES/YR)
Crabbe Lumber	Bristol, NB	10/90	40,000
Groupe Savoie	St-Quentin, NB	40/60	90,000
Marwood	Tracyville, NB	30/70	12,500
Shaw Resources	Belledune, NB	100/0	100,000
Grand River Pellets	Saint-Léonard, NB	100/0	100,000
Shaw Resources	Shubenacadie, NB	85/15	50,000
Great Northern Pellets	Upper Musquodoboit, NB	100/0	100,000

PORTS 1. Belledune 2. Halifax

WOOD PELLET ASSOCIATION OF CANADA

MARCH 2023

WOOD PELLETS GAINING LOCAL TRACTION

Bioheat from wood pellets is already gaining traction in New Brunswick. One such example is the CCNB-UDM Shippagan Campus in New Brunswick. The school replaced its three old oil steam boilers with a large enough heating system to meet the requirements of the expanded footprint while at the same time be cost-efficient and support its environmental goals.

The investment in a steam boiler system heated with local wood pellets is delivering immediate benefits:

- heats 36,000 square feet with 100 percent locally sourced wood biomass
- combustion chamber heats up to 800 degrees Celsius
- on average uses 30 tonnes of pellets over 20 days or 548 tonnes/year
- uses 20 percent less fuel even though footprint grew by 36,000 sq. ft.
- payback on the project expected 6-7 years
- emissions reduced by 85 percent (to 108 tonnes of $C0_2$ from 752)

NEW BRUNSWICK WOOD PELLETS HAVE GLOBAL RESPECT

Around three quarters of the world's renewable energy is from biomass. Bioenergy accounts for about 10 percent of total final energy consumption and 2 percent of global electricity generation.

In the United States and the European Union, almost 60 percent of all renewable energy comes from bioenergy. In fact, over the past 20 years, bioenergy is responsible for the most greenhouse gas (GHG) reductions, much of this is in the form of bioheat, which has a 90 percent share of the EU renewable heating market.

However, due to little local demand and lagging public policy, over 90 percent of New Brunswick's wood pellet production is exported.

The Business Case for Wood Pellets

- 5 wood pellet plants in New Brunswick
- 350,000 tonnes/year of wood pellets produced each year.
- Six Peta Joules (PJ) energy content produced by New Brunswick pellets each year is enough to replace all heat from electricity, heating oil and natural gas consumed by commercial and institutional buildings in New Brunswick.
- $300/tonne for wood pellets is equivalent to $0.067/kWh for electricity, making wood pellets 40 percent cheaper than New Brunswick's current residential price for electricity.
- 10-14 percent reduction in New Brunswick's total GHG emissions by switching to wood pellets (1.3-1.7 Mt CO_2 per year).

GOOD FOR OUR FORESTS

Studies conducted by the International Renewable Energy Agency, IRENA, show that when you increase the demand for bioheat, you also contribute to better managed forests. In Sweden, bioenergy, largely in the form of wood, provides 37 percent of the energy supply. Since 1990, Sweden's bioenergy consumption has doubled and, at the same time, its standing timber volume has increased by 40 percent. This increase in standing timber volume is not in spite of bioenergy, it is because of bioenergy.

Bioenergy provides a market for sawmill residuals and low-grade material that permits forests to be better managed for increased productivity, vigour, and health. In fact, the net annual increase in standing timber in Sweden is so large it reduces national GHG emissions by 70 percent.

Wood pellet plants like the Groupe Savoie Pellet Plant in Saint-Quentin are close to local sawmills and forests. Photo: BSB/Group Savoie.

BUILDING STRONGER COMMUNITIES

The five wood pellet plants in New Brunswick support more than 625 direct and indirect jobs. The sector also procures more than $60 million in local services and goods annually, and has invested over $100 million in capital expenditures.

> Wood pellets provide a critical outlet for bi-products from sawmills like sawdust and shavings, and avoid landfilling.

SOLUTIONS FOR CHANGE

1. **DEVELOP A THERMAL ENERGY (HEAT) STRATEGY** THAT INCLUDES WOOD PELLETS.
2. **PROVIDE CONSUMER CAPITAL FINANCIAL SUPPORT/INCENTIVES** TO ADDRESS COSTS ASSOCIATED WITH INSTALLING BOILERS OR WOOD PELLET STOVES. THIS SUPPORT WOULD BE BASED ON GHG OUTCOMES, NOT ONLY ELECTRICITY-BASED SOLUTIONS.
3. **ACCELERATE BIOHEAT PUBLIC PROCUREMENT** AS THE GOVERNMENT OF PRINCE EDWARD ISLAND HAS DONE.
4. **INTRODUCE RENEWABLE HEAT INCENTIVES** LIKE THE HIGHLY SUCCESSFUL PROGRAM IN THE UNITED KINGDOM.
5. **FUND FUEL SWITCHING FEASIBILITY STUDIES** FOR INDUSTRY LIKE THOSE AVAILABLE FROM EFFICIENCY NB FOR SWITCHING FROM FOSSIL FUELS TO ELECTRICITY.
6. **FUND DISTRICT ENERGY FEASIBILITY STUDIES** FOR MUNICIPALITIES.