From Forest Residuals
to Northern Heat

HOW WOOD PELLETS REACH THE NORTHWEST TERRITORIES

WOOD PELLET ASSOCIATION OF CANADA

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THE ARCTIC: LEADING THE WAY

- Northwest Territories 2030 Energy Strategy:
  - 25% reduction in GHG emissions from electricity generation in diesel-powered communities
  - 40% share increase of space heating using renewable energy
- Public buildings lead adoption:
  - 33% of Yellowknife territorial government buildings are wood pellet heated
- Highest per-capita renewable heat use in Canada

WHY SUPPLY CHAIN MATTERS IN THE NORTH

- Heating life-safety infrastructure
- Delivery windows short and non-negotiable
- Distance drives cost and risk
- Storage is not optional — it is system infrastructure
- Systems must operate reliably in extreme cold


Photo: Shutterstock


Photo: Investigative Journalism Foundation


Photo: Energy North Website

WHY PELLETS

- High energy density
- Uniform, engineered fuel
- Compatible with automated, enclosed systems
- Proven performance in cold climates
- Scalable and reliable supply

Photo : WPAC

HOW PELLETS ARE MADE

1

Raw material sourcing

2

Screening rocks and tramp metal

3

Wet particle size reduction

4

Drying using a rotary or belt dryer

5

Dry particle size reduction using a hammermill

6

Pelletizing

7

Forced air cooling

8

Screening

9

Temporary silo storage

10

Rail car loading

WHERE PELLETS COME FROM

Northern communities rely on a proven, Canadian, northern-adjacent supply chain.

Production

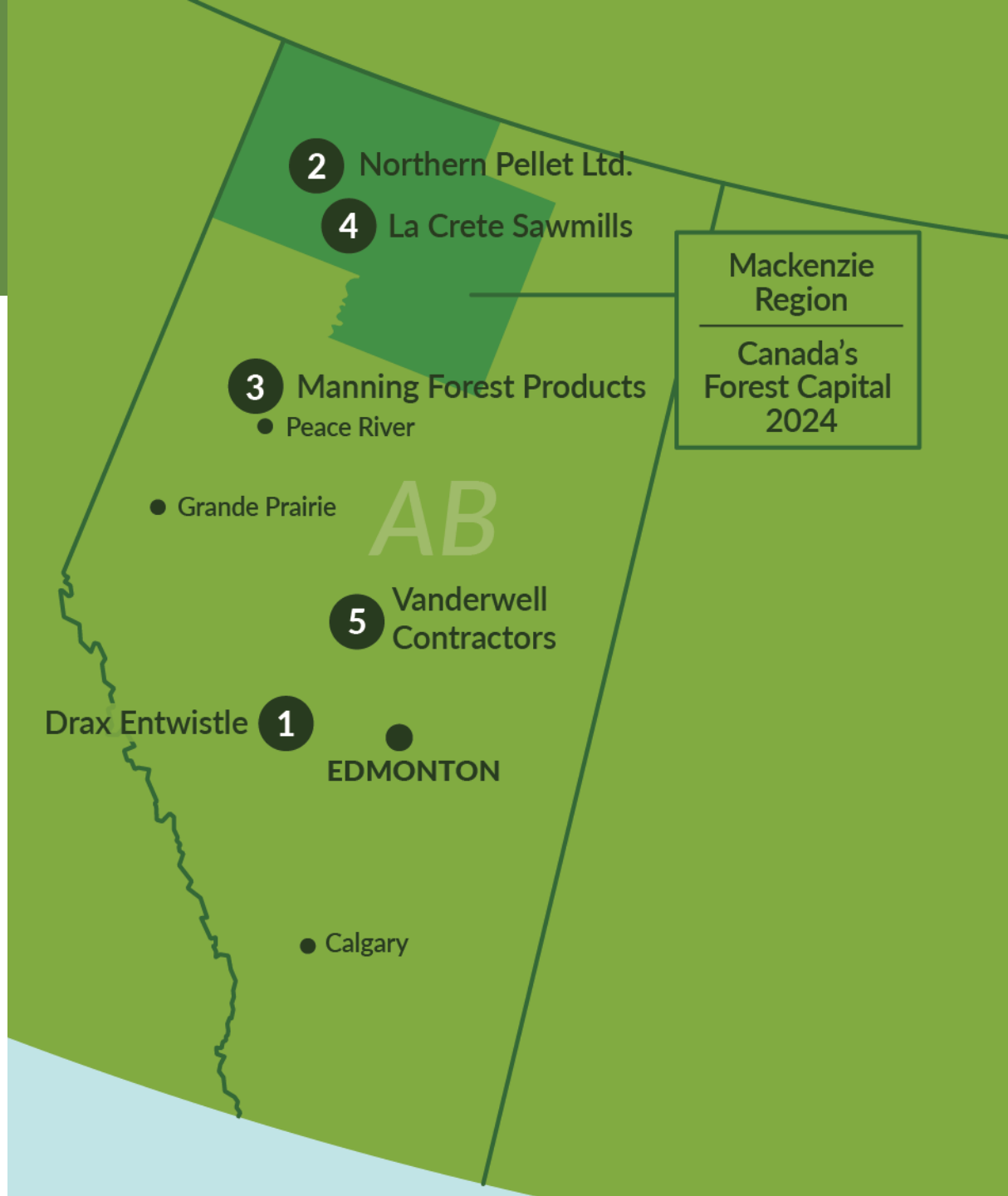
- Manufactured in Northern Alberta
- Made from sawmill residues and low-grade fibre
- Year-round production using existing forestry infrastructure

Transportation

- Trucked north via established logistics corridors
- Delivered during seasonal windows (winter roads/sealift)
- Bulk shipments planned months in advance

REGIONAL SUPPLY: ALBERTA AS THE ANCHOR

COMPANY	CAP (MT)
1. Drax Entwistle	400,000
2. Northern Pellet Ltd. Drax/Tolko partnership	200,000
3. Manning Forest Products division of West Fraser Mills	15,000
4. La Crete Sawmills	80,000
5. Vanderwell Contractors	60,000
Total	**755,000**



PRIMARY SUPPLIER: LA CRETE

- Strategically located close to northern highways and winter-road networks
- Largest supplier to NWT (20,000 to 25,000 tonnes)
- Supplied pellets reliably to remote and northern markets for years
- Key to NWT biomass transition

Photo Credit: WPAC

OPERATIONAL REQUIREMENTS IN THE NORTH

- **Consistent quality**
  Predictable performance in automated systems
- **Storage stability**
  Maintains integrity through long storage periods
- **Winter operability**
  Works reliably in extreme cold
- **Safe handling**
  Designed for bulk delivery and enclosed systems

GETTING PELLETS NORTH

- Long trucking distances drive landed cost
- Seasonal access:
  - Winter roads
  - Summer barge routes
- Delivery timing critical
- Missed windows create year-long risk

Photo : CBC

STORAGE CLOSES LOOP

- Enables early delivery
- Buffers climate and access risk
- Reduces emergency freight
- Stabilizes fuel costs
- Decouples delivery from consumption


Photo credit: GNT Website


Photo credit: Grain Journal


Photo credit: Energy North Website

EVIDENCE ALIGNS WITH EXPERIENCE

- Logistics — primary constraint
- Delivery windows define system risk
- Adequate storage improves reliability
- Local access conditions drive performance
- Tailored solutions outperform standardized designs

Development of Supply Chain for Wood Pellet Heating Applications in the Canadian Northwest Territories

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&

Mitacs Business Strategy Internship Program

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WHERE OPPORTUNITIES ARE

Targeted Improve-ments

Expand bulk storage

Diversify routes & suppliers

Advance procurement planning

Strengthen Indigenous partnerships

IN THE NORTH, LOGISTICS ARE ENERGY INFRASTRUCTURE

When fuel can be delivered, stored, and relied on — renewable heat works.

WOOD PELLET

ASSOCIATION OF CANADA