Smart-Sourced Fuel Products

Fuelled by Natural Solutions

IISD

International Institute for Sustainable Development

What are Smart-Sourced Fuel Products?

These eco-friendly fuel products are blends of under-utilized and waste products, including locally sourced agricultural residues, wetland plants, grassland plants and forestry residues. From these sources, a variety of products can be made to burn in both residential and large-scale agricultural, industrial and commercial systems to produce heat. For instance, with our partners we have tested various mixtures to make:

- Pellets
- Briquettes
- Cubes
- Biochar
- Biogas
- Fuel logs

Why use Smart-Sourced Fuel Products?

Manitoba is increasingly moving towards environmentally-friendly sources of energy. Our smart-sourced fuel products support sustainable development by providing an efficient heating source with environmental and economic advantages.

Key Benefits

- Heating value comparable to or better than that of compressed wood fuels
- Low-ash production
- Capture of the nutrients (phosphorus and nitrogen) in plant materials, particularly cattail, resulting in benefits for Lake Winnipeg and other nutrient-stressed waters.
- Capture of contaminants, such as heavy metals
- Use of sustainable and locally sourced "waste" materials
- Reductions in greenhouse gas emissions when users switch from coal-based systems to biomass-based ones
- Ability to generate carbon credits to offset production costs
- Ability to produce water quality credits where water quality trading programs exist
- Use of harvesting as a management approach for invasive species, such as hybrid cattail and phragmites
- Source of revenue for landowners from marginal agricultural land
- Harvesting plants from ditches and drains and turning these materials into value-added products provides economic benefits to municipalities.

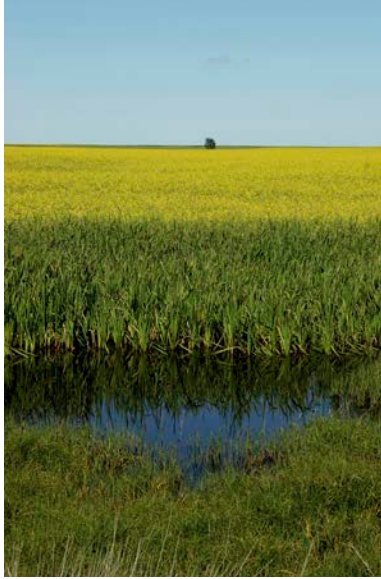
Comparing Smart-Sourced Cattail to Conventional Wood Products

	CATTAIL	WOOD
Pellet heating value (mj/kg)	17–20	17–20
Time to maturity (days)	90	1,095–4,380
Yield per hectare (tonnes)	14–20	7–10
Phosphorus captured (kg per hectare harvested)	10–40	–

Manitoba's Sustainable Biomass Supply

With its substantial supply of under-used plant materials, Manitoba is well positioned to develop a robust and leading-edge bioenergy fuel product industry. The Province of Manitoba estimates that there are 3 to 5 million tonnes of biomass available each year that are not currently used for soil management and livestock. In addition, IISD estimates that 3 million tonnes of cattail grows in the province; a portion of this could be sustainably harvested for bioenergy.

A significant amount of these plant materials are within 100 km of Winnipeg and Brandon, lowering production costs and optimizing sustainability benefits.



Agricultural Residues and Cattail Within 100 km Radius of Winnipeg and Brandon and total biomass in Manitoba (Gross Tonnes)

	AGRICULTURAL RESIDUES	CATTAIL
Winnipeg	3,360,000	1,086,000
Brandon	3,660,000	956,000
Manitoba	9,600,000	4,020,000

Meeting Market Demand

With Manitoba phasing out coal and encouraging coal users to switch to other forms of energy, including biomass, now is the time to kindle the use of new and innovative forms of energy. At the same time, all of Canada is moving towards a price on carbon, which adds extra incentive to create cleaner energy.

Market facts:

- Commercial biomass systems and residential pellets stoves can be purchased from various suppliers in Manitoba.
- According to the Manitoba Bioproducts Strategy, "Replacing all known coal use in Manitoba with biomass would result in a reduction of 200,000 tonnes of GHG emissions."
- Industry experts predict a doubling of pellet production in North America in the next decade.
- By 2017, it is estimated that there will be 42 facilities using more than 1,000 tonnes of biomass per year, and 13 using 500 tonnes per year, representing a need for at least 48,500 tonnes of biomass annually.

Who can use Smart-Sourced Fuel Products?

- Large-, medium- and small-scale agricultural, industrial and commercial biomass users
- Government, university and commercial buildings wishing to demonstrate sustainability to the public and customers
- Homeowners with pellet stoves or other biomass systems
- Cottage owners with pellet stoves

To learn more, we invite you to contact us.
Help us ignite innovation in Manitoba!

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