



Manitoba's Biomass Fuel: Protecting our environment and saving us money

Biomass is a viable, abundant and environmentally sound source of renewable energy in Manitoba. Along with less familiar “ecological” biomass sources, it can provide an even greater host of environmental and economic benefits. The Government of Manitoba can play a crucial role to enable bioenergy markets in the province, so that Manitobans can enjoy those crucial benefits.

Key Messages

- Manitoba has tremendous potential to incorporate bioenergy in its **growing renewable energy portfolio**, as Canada strives to lower greenhouse gas emissions.
- Biomass, abundant in the province and high in demand, can be converted into a **renewable, locally sourced, feasible alternative to fossil fuels**.
- Less familiar unconventional or ecological biomass (such as cattail) **provides an even greater host of environmental and economic benefits**.
- The **Government of Manitoba has an opportunity to champion and facilitate bioenergy markets**, through financial support and coordination, and by supporting markets.

Where Are We Now?

The world is striving to reduce its greenhouse gas emissions and mitigate the ever-intensifying impacts of climate change, in part by shifting to renewable sources of fuel. Manitoba is no exception. With the recent introduction of a carbon pricing system, and North America's first coal and coke ban for space heating, the biomass market has seen considerable growth in Manitoba. **Now is the time for government to continue to champion biomass as an alternative to fossil fuels and diversify its portfolio of clean energy.**

Biomass is plentiful in the province. In fact, according to the new Bioeconomy Atlas from IISD, there is over

5,000,000 tonnes of available biomass in Manitoba per year from agriculture, forestry residue, and marginal lands and roadside ditches. Lots of it is being used but much of what is wasted could be used as fuel.

As Manitoba continues to diversify its renewable energy sources, bioenergy is growing in popularity, with a surging demand for rough (woodchips, sawdust, demo waste) and processed (pellets) fuel. Currently, however, **demand far outweighs supply**, with limited infrastructure and the few processing facilities unable to meet demand for 50,000 tonnes of biomass annually. There are also minimal mechanisms to link producers to suppliers, and suppliers to consumers.

Why is Biomass the Right Choice for Manitoba?

With 5 million tonnes of available biomass per year, Manitobans are sitting on a wealth of potential. Just ask the Hutterite colonies and industries that have recently adopted a variety of biomass options as a primary source of heating over the last few years, and the Living Prairie Museum in Winnipeg that has almost exclusively used locally produced cattail blended fuel pellets over several winters. Biomass can provide the province with diverse uses, and with both economic and environmental benefits.

Manitoba is home to a diverse suite of biomasses with a wide range of uses—but there is great potential for more. Woodchips, agricultural waste, grasses and cattail are used



for livestock bedding and compost, which is important for diverting waste from landfills. But this material can be used to create higher value bioproducts. In Manitoba's current market, biomass can be compressed into solid fuel, such as pellets, or simply shredded to be burned for energy, but technologies in Canada and the United States provide far superior opportunities, including building materials, biogas through anaerobic digestion and ethanol fuel from gasification.

A major national initiative on biofuels is now underway, and Manitoba needs to be at the forefront on adoption. The proposed Clean Fuel Standard seeks to increase use of lower-carbon fuel—including renewable natural gas—and applies to the transportation, building and industry sectors.

Removing barriers to allow biogas injection into the natural gas grid as a source of green, renewable natural gas, for example, would propel the biomass industry to that elusive higher value market. We could learn from Edmonton, whose gasification of landfill and biomass waste could meet Manitoba's waste recycling priorities.

Protecting our Environment

Using biomass for energy instead of fossil fuels immediately reduces greenhouse gas emissions. But an added benefit of harvesting ecological biomass such as cattail from water retention sites and roadside ditches, places where nonpoint sources of nutrients concentrate, is removal of nutrients (such as phosphorus) that contribute to algal blooms. For example, if we were to remove 22 per cent of crop residue from agricultural fields and 25 per cent of harvestable cattail biomass, we can remove 2,000 to 5,000 tonnes of phosphorus from our landscape—a huge boon for the health of our lakes.

Where Has this Worked Before?

Here in Canada, British Columbia has committed to plans for biomass to meet 50 per cent of its renewable fuel requirements, while Ontario and Quebec have allocated significant funds to promote the conversion of fossil fuel plants to biomass-processing facilities. Internationally, there is even stronger governmental support for the shift to bioenergy. China plans to increase the proportion of biomass energy to 15 per cent by 2030, while the European Union embraced bioenergy—a primary energy source in many of its member states—decades ago.

What Needs to Happen Now?

The Government of Manitoba can take the following actions to enable a high-value bioeconomy in Manitoba.

- 1. Support and develop current and future biomass markets**
Provide financial support for fuel pellet processing facilities and new technologies; develop a coordinated system for biomass producers and consumers in the current disorganized biomass market
- 2. Invest in land and water management (water retention) to support a provincial bioeconomy**
Investments in managed water retention and sustainable drainage projects such as “Green Infrastructure” brings co-benefits across multiple programs—flood control and nutrient removal, plus sources of biomass (cattail) that support watershed health by removing undesirable nutrients and contaminants when harvested for management.
- 3. Expand and invest in essential biomass research, science and technologies**
Embrace higher-value innovation and commercialization for biomass, such as biogas as a green natural gas, and high value bioproducts.

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