

Wood Recycling: Turning Waste Problem into a Resource Solution

Issue

Post-consumer wood waste is an underestimated source of bioproducts and bioenergy. Fostering wood recycling can help Alberta's businesses to create more jobs, significantly lower the cost of disposing and encourage product innovation. In addition, it promotes green, sustainable and diversified economy through bio-industrial innovation and can be an alternative for Alberta's dependency on fossil fuels.

Background

According to the World Bank report titled *What a waste* (2012), the OECD countries generate 44% of global waste.¹ Canada ranks first of the 34 countries participating in this organization, generating almost 780 kg of waste per person as compared to an OECD average of 578 kg per person. At the same time, Alberta generates the most waste among all Canadian provinces, almost 40% more (1100 kg per person) than an average Canadian. Managing these amounts of waste creates a burden for Alberta businesses and municipalities, but it also represents an opportunity to more effectively utilize Alberta's resources and create new sustainable business opportunities.²

Currently, Canada ranks the 3rd in total global wood production and utilizes almost 99% of its manufacturing inputs (pre-consumer recycling) at sawmills and at secondary wood processors (e.g. furniture). The challenge lies in increasing utilization of wood classified as post-consumer, including waste from Municipal Solid Waste (MSW), comprised by Construction, Renovation and Demolition (25% of all waste in Alberta), and Industrial Commercial and Institutional materials. The main types of post-consumer wood waste include crates, poles, boards, wood shavings, sawdust, beams, pallets and cut-offs. The volume of available post-consumer wood disposal in Alberta is difficult to estimate. However, the Natural Resources Canada estimates that on a national level unrecovered wood debris in MSW reaches 1.75 million metric tons per year which is 7% of the total annually disposed and unrecovered waste stream.³

As reported by Statistic Canada, in 2009 forestry biomass was the second, after agricultural biomass, source of bioproducts production and accounted for 16 million metric tonnes.⁴ The wood waste can be used as animal bedding, mulch, soil amendment, compost, ground cover, dust control, pellet plants or an ingredient to manufacture pulp and paper products. There is also a growing market of green buildings and products made with reclaimed wood (e.g. doors, floors, furniture). Wood waste and fiber that cannot be recycled into new products may be better used to support bio-fuels and bio-energy. Reduced use of fossil fuels would help

¹ World Bank, *What a Waste. A Global Review of Solid Waste Management*, March 2012, www-wds.worldbank.org/ (Retrieved on December 22, 2013).

² Recycling Council of Alberta, *Letter to all Alberta MLAs outlining how the government's Too Good To Waste strategy offers resource solution*, November 5, 2012, http://www.recycle.ab.ca/uploads/File/pdf/positionletters/20121105_MLA_letter.pdf (Retrieved on December 4, 2013).

³ J.Howe, S. Bratkovich, J.Bowyer, M. Frank, K. Fernholz, *The Current State of Wood Reuse and Recycling in North America and Recommendations for Improvements*, Dovetail Partners, May 2013, pp. 4-6, <http://www.dovetailinc.org/files/ReportWoodRecyclingUSCanadaReport0513.pdf> (Retrieved on December 19, 2013).

⁴ Statistic Canada, *Results from Statistics Canada's Bioproducts Production and Development Survey 2009*, pp. 8-10, <http://www.statcan.gc.ca/pub/88f0006x/88f0006x2011001-eng.pdf> (Retrieved on December 27, 2013).

Alberta meet its growing electricity demand, diversify and green the power supply. Nonetheless, continued support from the Government of Alberta for this transition is needed.⁵

Since 1972, when the first provincial recycling program called Beverage Container Recycling Program was established, Alberta has been continuously working on developing waste management best practices and has been a leader in implementing waste management legislation on a national scale. It was a pioneer in introducing Hazardous Chemicals Act (1985) and Electronics Recycling Program (2004) as the first province in Canada. However, the wood waste management has never occupied a central position in provincial strategies.⁶ As of now, there are only five regulated stewardship wastes programs introduced in the province and they encompass used tires, electronics, beverage containers, used oil and the new paint and paint container programs.⁷

Moreover, in 2011 the Government of Alberta closed two of three grant programs introduced by Nine Point Bioenergy Plan (2006), called Biorefining Commercialization and Market Development Program (BCMDP) and Bioenergy Infrastructure Development Program (BIDP). These two grants helped to fund, among other projects, a commercial scale plant that uses forestry wood waste to generate thermal and electrical power.⁸ They have also partially funded Waste-To-Biofuels facility in Edmonton that is able to convert 100,000 tonnes of municipal solid waste into 38 million litres of biofuels annually.⁹ ¹⁰ The third grant, called Bioenergy Producer Credit Program (BPCP) has been discontinued by Budget 2013.¹¹

Last but not least, for many businesses the wood recycling is still not an option worth considering since the majority of landfills in Alberta continue to accept wood waste. It is particularly surprising given the fact that the price of wood waste recycling is lower than dumping it in the landfill. As estimated by one of the main recycling wood waste companies in the province, the Greater Edmonton and northern Alberta landfill costs reach \$68 per metric tonne plus roll-off container, rental, fuel surcharge and haulage transportation. At the same time, the average rate for wood waste recycling services is \$40 per metric tonne and includes scaling fee, unloading and wood waste grinding.¹²

The Alberta Chambers of Commerce recommends the Government of Alberta:

1. Set recovery targets for wood and other materials along with the reliable reporting systems and information collection to allow for appropriate measurement and analysis.
2. Develop a stewardship program dedicated to post-consumer wood recycling and promote creativity in finding end markets for recycled wood.
3. Reopen grants for businesses that are interested in developing bioproducts or bioenergy projects based on wood recovery. Encourage partnerships between municipalities, businesses, academics and engineers to promote development of bioproducts and bioenergy based on wood waste.
4. Address wood waste issues through awareness campaigns that promote community benefits of wood recovery as well as indicate development opportunities for businesses in this field.
5. Introduce measures that would limit the landfills' access to wood waste and that would promote the utilization of wood waste management centres. The only exception would be if a landfill has a wood waste recycle program or hires a contractor who offers recycling services.

⁵ Alberta Innovates Bio Solutions, *Forest Products Roadmap*, http://bio.albertainnovates.ca/media/39149/alberta_forest_products_roadmap_booklet.pdf (Retrieved on December 28, 2013).

⁶ The main documents that should be taken into consideration are the Alberta's Environment waste strategy titled *Too Good To Waste* (2007), an energy strategy *Launching Alberta's Energy Future – Provincial Energy Strategy* and *Alberta Climate Change Strategy*, both published in 2008. At present, the main provincial document that regulates the waste management is the Alberta Environmental Protection and Enhancement Act (EPEA), updated in December 2013.

⁷ Alberta Environment and Sustainable Resource Development, <http://environment.alberta.ca/02795.html> (Retrieved on December 4, 2013).

⁸ Alberta Energy, News Release, *Provincial dollars help convert waste into watts*, <http://alberta.ca/release.cfm?xID=22668A70EB041-DF87-229C-E8C546906FE1FDCA> (Retrieved on December 27, 2013).

⁹ The City of Edmonton, *Waste-to-Bio Fuels Facility*, http://www.edmonton.ca/for_residents/garbage_recycling/biofuels-facility.aspx (Retrieved on December 28, 2013).

¹⁰ Full list of BCMDP and BIDP recipients is available here: <http://www.energy.alberta.ca/BioEnergy/1636.asp>.

¹¹ Alberta Energy, <http://www.energy.alberta.ca/bioenergy/1400.asp> (Retrieved on December 27, 2013).

¹² Waste Reduction and Recycling Consultants, <http://www.wrrci.ca/closedloop.php> (Retrieved on January 24, 2013).