



**Alberta  
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FACT SHEET, FEBRUARY 2016

# Alberta database to provide investment-grade data on biomass resources

BY TONY KRYZANOWSKI

Alberta has reached the final stage in its quest to provide comprehensive public data on the quality, quantity and availability of forest and other biomass resources. Among other things, this will help potential investors in the bioeconomy make informed decisions about their ability to access these raw materials.

The province is preparing to launch its online and state-of-the-art Bio-Resource Information Management System (BRIMS) in early 2017, developed with funding provided by Alberta Innovates Bio Solutions (AI Bio).

The overall vision of BRIMS is to create a world-class, publicly available, data and information management system where buyers and sellers collaborate and develop opportunities, using online tools to support investment, guide policy development, and foster further analysis to advance the bioeconomy in Alberta.

The decision was made to start with an inventory of Alberta biomass due to the demand for the information, and immediate opportunities for new bioindustrial sector and business development. BRIMS has made it possible to map the locations and different types of biomass available across the province.

“The data will be updated regularly to ensure it is valid and remains current,” says Carol Bettac, AI Bio’s executive director of



emerging opportunities and strategic alliances.

AI Bio partnered with Silvacom—a company that provides geospatial software and consulting services—to research other systems, test the concepts, integrate and align data sources, and build the online platform on which BRIMS will operate. The complex project has required a multi-phase approach.

“Over the past few years, there has been a shift in the market toward green products,” said Jordan Hayes, a resource analyst at Silvacom. “The interest and demand for green products has led to increased interest in the supply of (biomass), but we need better information.”



Phase 3 of BRIMS development, currently underway, is refining the pools of data. These include: forestry harvest and processing residue; crop residue; livestock manure and processing waste; organic and other useable biomass received at landfills, and potential resources from other biomass feedstocks and sources.

To improve the quality of forest biomass data, Silvacom partnered with seven Alberta forest companies to develop a comprehensive automated land inventory program called CALI, using some of today's best high-resolution imagery and data-processing technology. It provides a more refined analysis of wood fibre attributes in a particular area, down to the individual tree level.

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In its final form, BRIMS will represent much more than a clearinghouse for information about the quantity and location of biomass resources in the province. It will be unique in that it will give the online user the ability to break down and calculate the amount of useable biomass constituents from a biomass source. For example, it will have the ability to break down the availability of lignin, cellulose and hemicellulose from a wood resource. This knowledge is critical for individuals interested in the production of biofuels such as cellulosic ethanol.

AI Bio made the development of BRIMS a priority as identified in its Ecosystem Services Roadmap in 2012. The roadmap's goal is to bring Alberta to the forefront of innovation by using an "ecosystem services market approach." with environmental excellence. It identified the need for a data and information management system like BRIMS as an important step forward, Bettac says.

The term "ecosystem services" is defined as "benefits society enjoys from a range of resources and processes supplied by nature." This concept has been a guiding principle behind BRIMS' development. Biomass is considered an ecosystem service. Other examples include clean water, food and wildlife habitat.

A market approach puts an economic value (dollar amount) on natural resources and processes. This helps industry and government understand the relative value and benefits of these "ecosystem services," and gauge how they will be affected by human activities.

The plan is to eventually add several more layers of ecosystem services to the BRIMS application beyond biomass, such as carbon, biodiversity, range and forest production, terrestrial water and human impact on the environment. This will create a one-stop-shop for a variety of ecosystem-services needs. It will also assist with land use and conservation planning, environmental monitoring, economic development, and research and development in the future.

For more information about AI Bio's Ecosystem Services and Biodiversity programs, go to <http://bio.albertainnovates.ca/stratthemes/ecosystem-services-and-biodiversity/>

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This article originally appeared in the February 2016 issue of the Logging and Sawmilling Journal. Used with permission. [http://www.forestnet.com/LSissues/2016\\_feb/edge.php](http://www.forestnet.com/LSissues/2016_feb/edge.php)

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