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## **Innovation the secret to future gains in forestry, agriculture and energy *Conference speakers discuss challenges and need for new solutions***

CALGARY... Integration between Alberta's energy sector and its agriculture and forestry industries could have major economic benefits for all parties while improving environmental sustainability, but who needs to integrate and how is changing. That was one of the messages delivered on Tuesday, September 17, at the 2013 Agricultural Biotechnology International Conference, and it's a challenge those that support innovation and the province's bioeconomy are more than willing to accept.

"I think what we heard today is that there is going to have to be some serious thought given to the cheaper energy that's emerging with shale gas. There are still real opportunities for integration, but the whole system will have to work together to deliver the bio-derived products that are going to give customers value in terms of cost, performance and a reduced carbon footprint," says Dr. Stan Blade, Chief Executive Officer, Alberta Innovates Bio Solutions (AI Bio). AI Bio co-hosted the conference.

As speaker Craig Crawford, President and CEO of the Ontario BioAuto Council, explained, plans to manufacture interior auto parts out of bio-based plastics—plans pursued since the council formed in 2007—have disintegrated as shale natural gas and natural gas liquids have made hydrocarbons more affordable. That, said Crawford, means that advancements in the bioeconomy requires looking at new opportunities, including developing "green" drilling muds and fracking fluids. It also means using agricultural and forestry feedstock to develop bio-based alternatives to chemicals produced from hydrocarbons, as shortages are expected in these, especially butadienes, and the auto industry relies on them.

AI Bio is already responding, funding a project that's exploring a way to make auto door panels from renewable fibres. When it's fully commercialized, the new bioproduct will be low cost, environmentally friendly, and lighter, increasing the value.

Dr. Jack Saddler, professor, faculty of Forestry, University of British Columbia, shared the opportunities the bioeconomy offers the forestry sector. Saddler explained that the forestry industry is in transition and there is a need to get more value from the tree at the same time that energy use is growing rapidly. He likened the evolution of forestry to that of the hydrocarbon industry, pointing out that a significant part of the value in a barrel of oil lies in products other than those used for transportation.

The big opportunity for forestry is to use residues and other waste material in a similar way, such as for feedstock for chemicals. Saddler believes that integrating biorefineries with pulp mills that can make use of waste in innovative ways makes sense and will help the forestry sector diversify and succeed. And, he explained, Canada has the opportunity to build on its reputation for certified sustainability in forestry to enhance its competitive advantage.

One challenge facing both agriculture and forestry, but particularly agriculture, is the need to reduce greenhouse gas (GHG) emissions. Here, too, innovation will be key. Speaker Susan Wood-Bohm, executive director of AI Bio's Biological GHG Management Program, shared some of the research AI Bio is currently funding that is exploring ways to reduce the quantity of methane and other gases being released into the atmosphere as a result of agriculture. She said that the amount of GHGs released into the atmosphere can be improved by the application of best management practices, but it can be transformed by innovation.

One of AI Bio's focuses is on supporting innovation in this area.

"We know that agriculture is an emitter of GHGs, but we have a lot of ways of solving some of those issues, such as improving fertilizer application and exploring ways to change the volumes of methane produced by Alberta's significant livestock industry," said Blade. "This is very much part of our work at AI Bio."

Advancing the bioeconomy and biological GHG emission management are two of AI Bio's key business lines. The organization has made significant and targeted investments in both areas.

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### **About Alberta Innovates Bio Solutions**

Alberta Innovates Bio Solutions is a board-governed research agency funded by the Government of Alberta that leads and coordinates science and innovation to grow prosperity in Alberta's agriculture, food and forest sectors.

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