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MARKETING REPORT

MARKET POTENTIAL FOR BIOFIBRES TO REPLACE E-GLASS IN COMPOSITE MATERIALS

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EXECUTIVE SUMMARY

This Marketing Report assesses the potential commercial opportunities for flax and hemp fibres produced in Canada to replace E-glass in composite applications from an economic perspective. The market demand for E-glass in North America is projected to be over 632,000 tonnes in 2007 and growing. At present, commercial biofibres cannot compete as an equal to E-glass in all aspects. However, biofibres could gain a portion of the market where mechanical properties can be compromised in order to access weight and cost savings. Biofibres could find an export market in Europe, where recyclability of parts is a driving force in design. However, changes to the European subsidies on biofibres could heavily influence the profitability of this export market. Asia is experiencing double digit growth in the field of composites. Unlike North America which is largely a thermoset industry, Asia's primary processes use thermoplastics. Technologies incorporating biofibres into thermoplastic materials are more advanced than the technologies for thermosets. Also, thermoplastics offer a recyclability aspect thermosets do not. As glass limits the recyclability of thermoplastics, biofibres naturally have an advantage over their glass counterparts. The Asian market for North American biofibre products could be profitable so long as the Asian demand out paces their ability to produce biofibres locally.

While the conversion of straw to composite grade fibre is known to be possible, this does not necessarily justify a business case or prove marketability. This report examines the Cost of Goods Sold (COGS) of various combinations of biofibre processing technology and estimates the end value of products by their performance against fibreglass reinforcements. An approximation of the profitability of the biofibres processing systems was produced. Further, based on the processing capacity of the cases, the amount of straw input needed to generate the desired output was determined. This input demand helped identify regions in Canada with sufficient crop densities to support the location of a processing plant. The volume of fibre output for the scenarios was also compared against the market share available for that material.

Scenarios incorporating a biofibre mat line(s) suggested sizable profits could be gained producing most types of mat forms for the composites industry. Of the material types investigated, the production of loose fibres from oilseed flax was the only form that was not considered commercially viable. Profit margins were determined to be significant enabling flexibility in choosing options for a business case. Lower selling rates for the product, higher expenses or a secondary manufacturer separate from the primary processor could be viable. The market share captured by the volume of product from one production operation is considered small enough to avoid over saturating the market during the composite industries' transition to biofibres. As the market for biofibres grows, it should accommodate the establishment of additional plants and/or increasing plant capacities.

The Marketing Report is the second phase of a larger project, the Sector Profile. The first phase, the State of the Art Report, described Canada's current capabilities in the biofibres sector with a focus on biofibres produced from agricultural crops being used in composite manufacturing in connection with ground transportation applications. Phases 1 and 2 will lead to the preparation of a report and a workshop, targeting industries and investors enabling them to gain a better understanding of the biofibres industry and to identify technology gaps, commercialization opportunities and market potential. Knowledge collected in the first two phases will be used to identify three prime opportunities for Canada which will be expanded into detailed business cases in the third phase. The business cases will include additional data collected to support each unique case including patent literature, crop assessments and technology selection.

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