

**Nipawin Biomass Ethanol
New Generation Co-operative Ltd.
UPDATE TO PRINCE ALBERT MODEL FOREST**

September, 2008

PROJECT OBJECTIVE:

To develop a cellulose conversion industry for the production of fuel-grade ethanol from residual agricultural and forestry biomass in the Nipawin region, through the commercialization of emerging technologies.

COMPANY OBJECTIVES:

A New Generation Co-operative was incorporated in 2003 to oversee the process, raise commercialization funds, and form the corporate basis for plant development.

- To exploit the advantages of resource diversification and environmental benefits, including economic enhancement and job-creation for regional participants, including First Nations.
- To create a vehicle through which local and institutional investors can participate.
- To create a new market for unused, low-value fiber.
- To provide the format through which shareholders can benefit from both local plant development as well as eventual expansion opportunities.

PARTICIPANTS:

A consortium of participants has agreed through a Memorandum of Understanding signed in September, 2002 to support the incorporation of the New-Gen Co-op to complete the commercialization stage. This consortium includes the following:

Town of Nipawin
AGB Technologies, Inc.
Saskatchewan Research Council (including liaison with the University of Saskatchewan)
TecMark International (a wholly-owned, for-profit subsidiary of SRC)
SaskEnergy International
Rural Municipality of Nipawin
Rural Municipality of Torch River
Metis Local #134
Red Earth First Nation
Shoal Lake Band of the Cree Nation
Cumberland House Cree Nation

In addition, involvement from agroforestry and primary forestry and agricultural producers has been identified and is being promoted.

PHASE 1: PROJECTED COSTS, SCHEDULE, AND FUNDING:

Phase 1 of the commercialization stage was completed in June 2007. Total costs for Phase 1 of this commercialization project were approximately \$2 million. The Co-op has raised \$ 379,500 from local investment, and provincial and federal government support exceeds \$1.3 million. In-kind contributions total \$160,000. This project continues to attract substantial interest from climate change funding programs.

FEEDSTOCK SUPPLY ANALYSIS:

Within a 100 kilometer radius of Nipawin, there were over 70 small forestry companies and over one million acres of cultivated crop land, producing over 500,000 tonnes of residual biomass annually. The Feedstock Analysis has evaluated these volumes, analyzing chemical elements,

and conducting specific field trials for fiber procurement and processing. The results of over 1,600 questionnaires have been analyzed and reflect a high degree of support from regional producers. Opportunities for the three First Nations are also available in the development of a feedstock procurement proposal for a new company to supply residual fiber to the facility.

TECHNOLOGY ANALYSIS:

When compared to ethanol produced from grain, production of ethanol from cellulose, although more capital-intensive, recovers a higher volume of ethanol per tonne of feedstock and results in higher profit margins. Existing gasification technologies will be refined for northeast Saskatchewan feedstock, and will convert the biomass into synthesis gas (syngas). The syngas will then be converted to ethanol through catalytic reaction, using a made-in-Saskatchewan technology developed jointly by Nipawin Biomass Ethanol New Generation Co-operative Ltd and Saskatchewan Research Council, with contributions from the University of Saskatchewan.

PHASE 2 – PROCESS DEMONSTRATION UNIT

While the completion of lab trials on the catalyst for the project were completed in June 2007, there still remains a period of larger trials to test certain catalytic components. In order to complete these trials a Process Demonstration Unit (PDU) has to be designed and constructed. A two-stage budget was developed to cover the design and implementation of the process design and longer-term longevity tests, and then to relocate the test reactor to Saskatchewan and the re-engineering of the process system for the Nipawin plant. Total budget for these two stages is approximately \$3.5 million.

In May, 2008, The Nipawin Biomass Ethanol NGC signed a letter of understanding with Fulcrum BioEnergy Inc. of California to undertake the costs of the process design stage. In addition, Fulcrum has licensed the Nipawin/SRC catalyst into their commercial scale pilot plant and further plants they have on schedule.

The overall budget for management of the project, for both Nipawin and SRC, is approximately \$400,000 to \$500,000. These funds will be raised through various government grants and the results of a new share issue currently underway.

The impact of the contribution from Prince Albert Model Forest to the project will be directly applied to the expenses related to the new share issue. This will cover incidental direct overhead items and travel costs. This will provide cash flow for copying, reproduction of share documents, distribution, and travel for Directors. These are items not normally covered by other grant programs. The PAMF contribution enables us to raise the larger funds necessary to complete Phase 2 of the project.