



Great Lakes Regional Biofuels Policy Forum
Wisconsin Rapids Pulp Mill
NewPage Experience With Evaluating Sustainable Wood Bioenergy/Biofuels Options
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- The Pulp and Paper Industry is actively working on improving its competitive position.
- Forest Biorefinery presents an opportunity to improve the Pulp and Paper Industry economics.
- The Pulp and Paper Industry has several skills that it can bring to the table:
 - Regional knowledge of biomass gathering
 - Existing manufacturing infrastructure
 - Location near the raw material
 - Energy intensive and biofuels knowledge
 - Experience with using technology suppliers

- Does the biorefinery direction fit the strategic philosophy of the company?
 - What do you want to be when you grow up?
 - “If you are going to compete, you better have a competitive edge.”
- The biorefinery effort must fit, otherwise you are wasting resources.

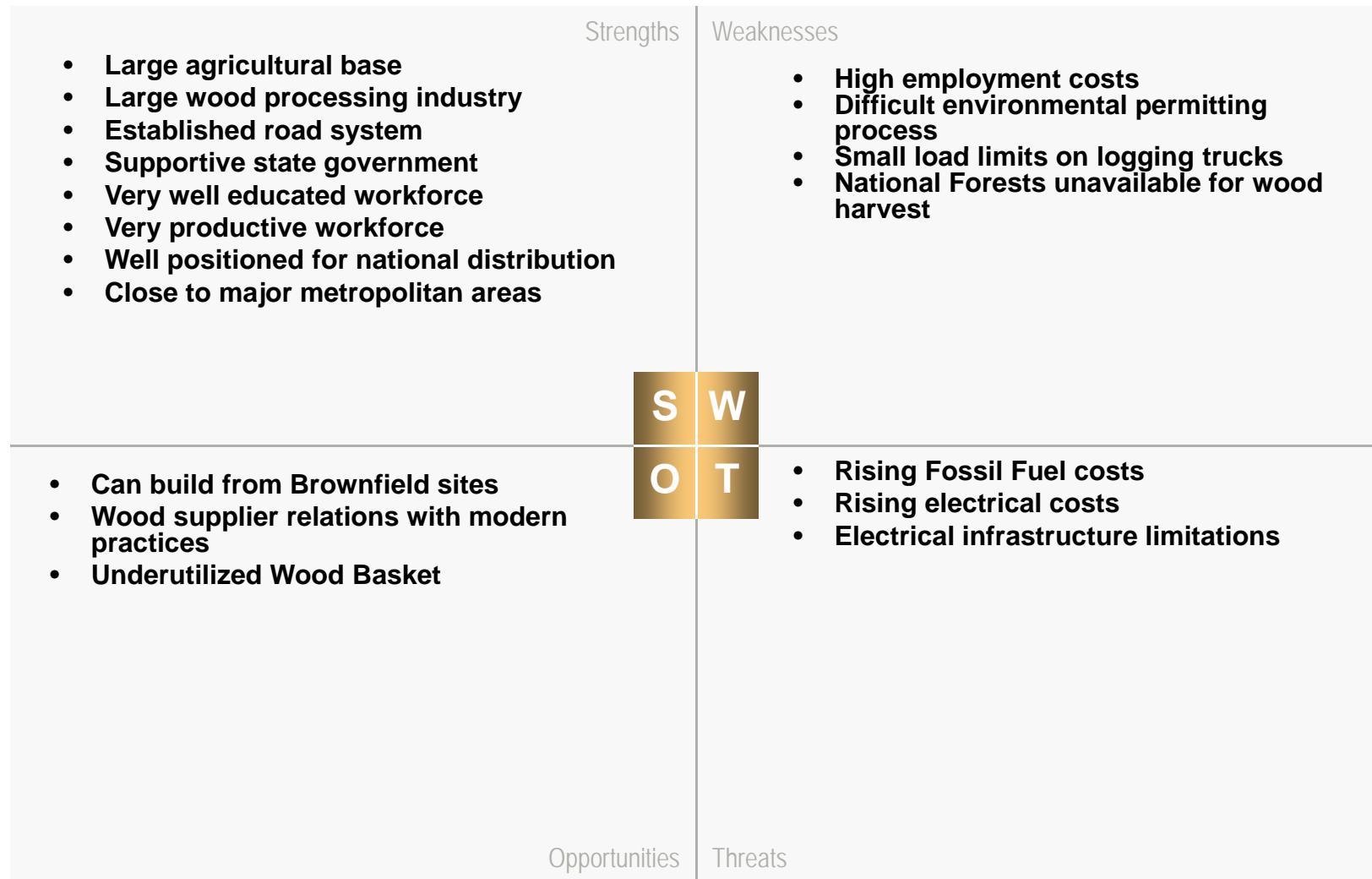
- Develop low cost “Green Power” and Energy capability to significantly reduce dependence on fossil based fuels.
 - Supply 100% Steam and Power Demand with Wood based fuels.
 - Eliminate Natural Gas as energy source for Steam generation and in the Lime Kiln.
 - Strategy to take advantage of bio-mass conversion to liquid fuels or other chemicals if value is created.

- The Biorefinery Strategic Guidelines:
 1. Protect our core business of pulp and paper production
 2. Continue to move towards reduced fossil fuel usage and energy independence for our traditional needs, i.e. steam and electricity.
 3. Investigate biorefinery opportunities that do not interfere with items 1 and 2.

- With these road rules you can look at opportunities and determine if you would pursue them or pass on them.

- Screening opportunities based on the rules that you set out.
 - Does the opportunity meet the criteria that has been set out?
 - Does the economic model have enough return to justify risk?
 - The Pulp and Paper Industry is not a research institute.
 - Do you buy the technology outright or partner with a technology supplier?
 - Technology to pursue depends on other factors:
 - Availability of woody biomass versus delivered cost
 - Consumption in the region
 - Political climate
 - Environmental permitting climate
 - Potential use of bioproduct produced

Example of SWOT Analysis



- Project Independence is the name given to the Biomass to Liquid Fuels Project that has been developed at Wisconsin Rapids Mill and has received a grant of \$30mUSD from the DOE.
- This project consists of:
 - Biomass collection (500 bdtpd)
 - Transporting and drying biomass material
 - Gasifying the biomass using the TRI reformer technology
 - Cleaning the gas stream
 - Generating liquid fuels using a Fischer-Tropsch reactor
 - Selling liquid fraction into refinery applications, naphtha, diesel and wax.
 - Burning the gas fraction in the Lime Kiln and P-3 Boiler
 - Steam generated in the process integrated into mill system