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Crow River Biomass



An immediate opportunity to harness innovation for a local, independent energy solution that supports the Rockford area.

City of Rockford
City Council and Planning Commission
October 7, 2008



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Welcome to Kandiyohi.

- ▶ Kandiyohi is a Minnesota-based developer focused on :
 - Renewable Energy
 - Green Buildings
 - Business Development
 - Eco-Industrial Parks

- ▶ Kandiyohi is committed to cost-effective, entrepreneurial solutions to energy and environmental challenges.





What is biomass?

- ▶ What is biomass?
 - Plant material, vegetation, and agricultural waste used as fuel for energy.

- ▶ Examples of biomass fuel sources:
 - Milfoil from area lakes
 - Switch grass
 - Alfalfa
 - Willow
 - Corn
 - Cottonwood
 - Poplar (birch, aspen)
 - Waste wood



cottonwoods



soybeans

Recognize these?

Energy crops are fast-growing plants, raised specifically for producing energy.



switchgrass



corn



alfalfa



willow



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What is biomass energy?

- ▶ Biomass lifecycle:
 - Biomass creates electricity, district energy and bio-fuels.
 - Byproducts such as carbon dioxide, water vapor and ash nourish new plant growth.
- ▶ Biomass is carbon neutral:
 - The carbon lifecycle of biomass is 1–10 years.
 - The carbon lifecycle of fossil fuels is 500 million years.





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Wood as fuel source.

- ▶ Will utilize clean waste wood biomass as fuel.
- ▶ Future fuel may come from other forms of biomass such as corn stover.
- ▶ Partnership with local wood processors such as Tree Top Services.
- ▶ Reduces waste stream volumes and costs of disposal.

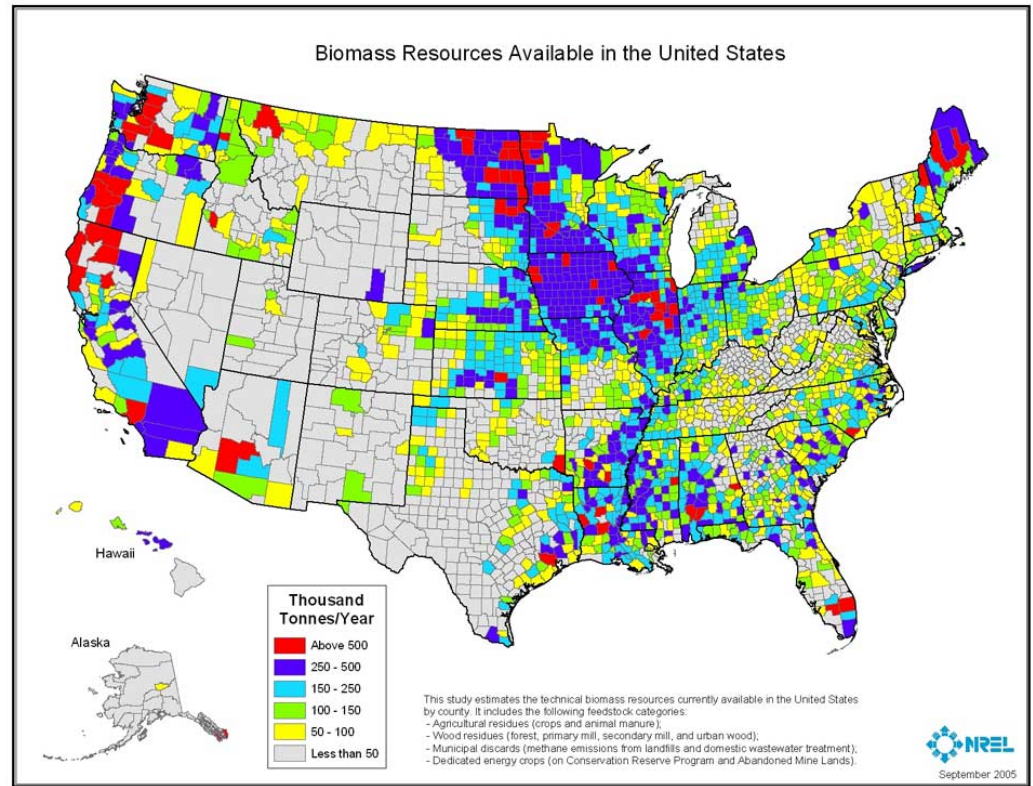




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Biomass availability.

- ▶ Minnesota is one of the best places in the US for biomass.

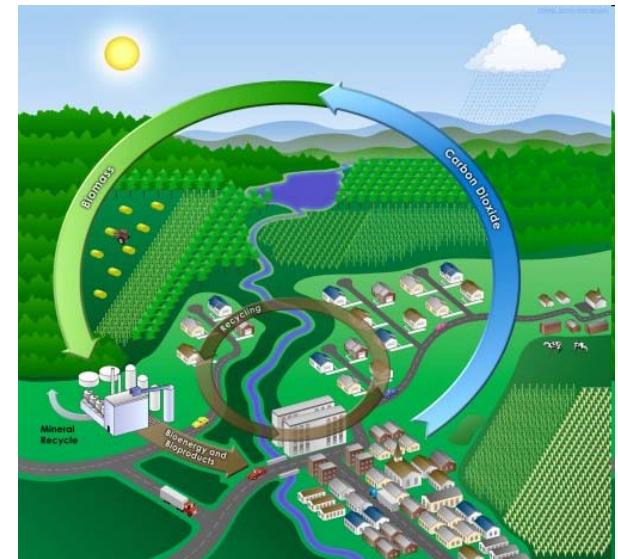




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Why biomass in Rockford area?

- ▶ Employs established technology.
- ▶ Creates 'green-collar' jobs.
- ▶ Utilizes local resources to produce electricity and heat.
- ▶ Keeps money in the community, not sending it out of state or overseas.





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Right here, right now.

- ▶ Wright-Hennepin Electric Cooperative has a rapidly growing demand for electricity.
- ▶ Wright-Hennepin Electric must meet new state mandates for renewable energy – this project helps meet the mandates.
- ▶ Local efforts can lead to energy independence by lessening dependence on out of state and foreign sources.





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Local benefits.

- ▶ Replaces fossil fuel and nuclear energy with 24/7 renewable energy that complements wind and solar power.
- ▶ Ties community's local energy resources to local power supply.
- ▶ Contributes to Homeland Security.
- ▶ Furthers Rockford as hub for growing Green Technology sector.



ER Systems pictured



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Local benefits.

- ▶ Job Creation:
 - 20+ full-time jobs on site:
 - Average salary \$63,000
 - Salary range \$45,000-\$120,000
 - 100 construction jobs.
 - 10-20 fuel handling and transportation jobs.

- ▶ Expands City of Rockford Tax Base:
 - Expected annual tax generation to be at least \$100,000.

- ▶ Process steam and district heat potential can help recruit new businesses.





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Community Impact.

- ▶ No odors.
- ▶ Steam-stack.
- ▶ Fully enclosed equipment with noise and dust controls.
- ▶ 40 truck trips per day Monday through Saturday.
- ▶ Balanced solution for community development.





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Biomass popularity growing in Minnesota.

- ▶ Biomass facilities in Minnesota:
 - Benson
 - Fairmont
 - Orr
 - Shakopee
 - Virginia-Hibbing
 - Bayport
 - University of Minnesota - Morris
 - St. Paul



President Bush and Senator Coleman
at St. Paul District Energy in 2001



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Biomass fits in to urban sites.

Science Museum of Minnesota

St. Paul District Energy
Biomass Facility

Opus Northwest Development

AND COMMERCE

THURSDAY, DECEMBER 2

Riverfront

Continued from page 1

The board will meet again to discuss the situation on Jan. 15.

The question remains: At this location, in this market, are these developers crazy?

"We're well aware of the vacancy in St. Paul," said Tim Murnane, senior vice president and general manager with Opus Northwest, of the St. Paul office market. "There's nobody in their right mind who's going to build a half million square feet of spec office space in today's market."

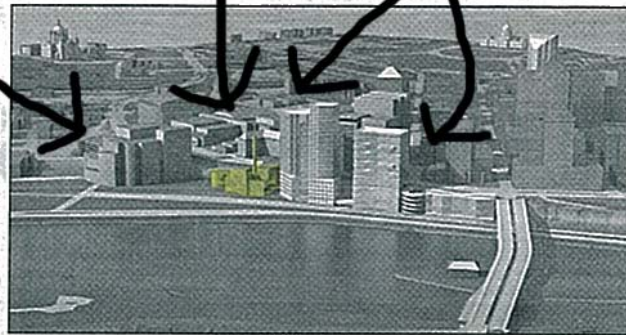
Murnane said that the uniqueness of the riverfront site and Opus' reputation and track record should draw corporate tenants seeking new space. So, while the company does not consider this a spec office situation, they don't have actual office tenants just yet.

"We've had some preliminary conversations," Murnane said of talks with prospective tenants. "I'm not being coy — we don't have anybody in our pocket at this point."

But Murnane said he's confident office clients will turn up. "We think this site represents the best site [in downtown St. Paul] for a mixed-use opportunity that includes a component of office."

The Opus proposal is part of the latest chapter in a long-running redevelopment saga at the development-challenged riverfront site.

Rottlund Homes had a previous deal to



Opus Northwest is pitching a mix of office, hotel, and housing elements along the riverfront in downtown St. Paul. The budget for the proposed project tops \$200 million. (Submitted graphic.)

develop a residential tower on the site, but those plans fell apart in the fall of 2006.

After that, Ramsey County put the property out for bids and drew eight offers. The county board rejected a number of those offers last summer.

The other main contender is Dean Johnson's WingField Corp., but last week the St. Paul Pioneer Press reported that Opus had the edge in the process, citing an unnamed source.

According to the most recent report from the Greater St. Paul Building Owners and Managers Association, the vacancy rate for Class A space in downtown St. Paul is 12.8 percent. That's notably lower than the

overall reported vacancy rate of 21.7 percent in competitive space in downtown St. Paul.

There are only six buildings in downtown St. Paul currently defined as Class A buildings: the 400 Building, Bremer Tower, Landmark Towers, Lawson Commons, UBS Plaza and Wells Fargo Place. Combined, those buildings offer a little more than 2.1 million square feet of office space.

Murnane also acknowledges ongoing challenges in the housing market.

"Today, it's a tough market. But our development won't deliver until two to three years out," Murnane said. "Like every other market, we believe the housing market

will come back and this site will be an opportunity for it."

On the hospitality side, there have been numerous ideas for St. Paul hotels in recent years, but none have come to fruition.

"I think that the reason that you haven't seen a hotel done yet is it's a challenging atmosphere for financing those projects," Murnane said. "To the extent that we're able to make the market work, there are [hotels] that I've pressed an interest in being in St. Paul."

Murnane said the project's budget tops \$200 million.

Opus would likely seek public financing for the project to help defray the cost of parking infrastructure. But Murnane said that if Opus gets the green light, he's not sure how much the company would seek in public aid.

"We don't know. The site is a challenging site," he said.

Murnane maintained that Opus has strong faith in the strength of the riverfront site.

"We've been studying the market well over five years and trying to figure out where the right site was for a project like this," Murnane said.

"We think it's the best piece of real estate in downtown St. Paul and we hope the office market and condo market will come back. We've got some very exciting pre-construction plans that we're looking forward to the next level," Murnane said.



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Minneapolis project.

- ▶ Some in the neighborhood were anti-business and anti-growth.
- ▶ 'Not In My Back Yard' (NIMBY) caused some local politicians to flip-flop.
- ▶ Denver-based Xcel Energy was difficult to negotiate with.
- ▶ Activists exaggerated emissions.
- ▶ Complaint of 'cumulative' impacts even though facility had low emissions.

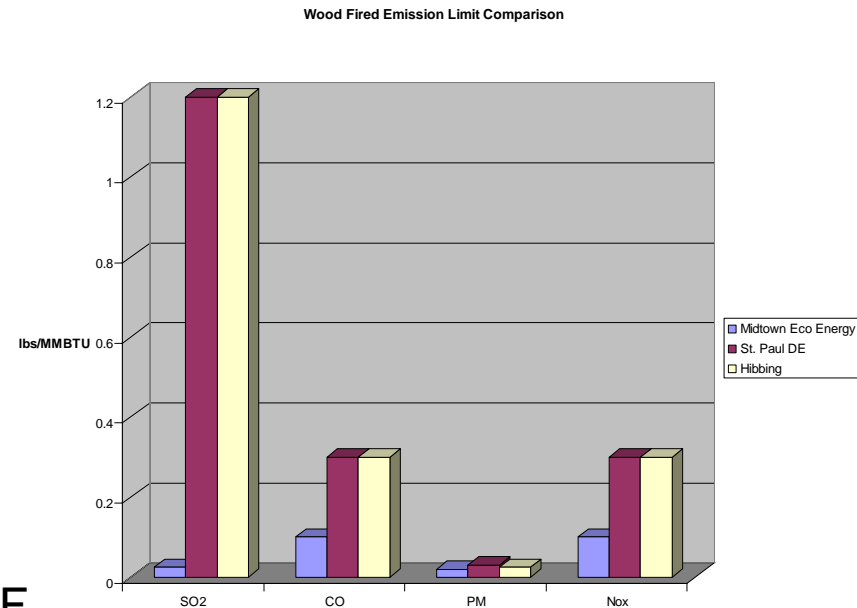




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Environmental tradeoffs.

- ▶ Emissions:
 - BACT and MACT standards.
 - Lower emissions than St. Paul and Virginia-Hibbing.
 - A 'Major Source' criteria threshold is equivalent to approximately 200 fireplaces.
- ▶ Renewable electricity for approximately 18,000 households.
- ▶ District heat for nearly 2.5 million SF of commercial space.





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Fire safety and water use.

- ▶ Full fire suppression system.
- ▶ Traditional cooling system uses up to 500 gallons per minute.
- ▶ Clean warm water discharge.
- ▶ Multiple options on water use and discharge:
 - Air cooled system.
 - District heat customers.
 - Reuse of treated waste water.
 - On site well and discharge.
 - Geothermal heat sink.





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How does it benefit the environment?

- ▶ Reduces emissions that may cause climate change.
- ▶ Efficiently creates electrical power and heat.
- ▶ Generates local energy from local biomass.
- ▶ No power loss from long-distance transmission.





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Project financing.

- ▶ Private capital investment of \$75 million.
- ▶ Uses federal tax incentives for renewable energy.
- ▶ Financing package prepared by Piper Jaffray.
- ▶ Carbon credits & green tags.

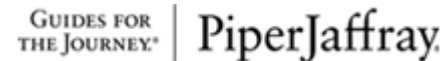




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Project team.

- ▶ Project team experience:
 - 12 MW biomass co-gen, MN
 - 12 MW biomass co-gen, AR
 - 7.5 MW biomass co-gen, CA
 - 15 MW biomass co-gen, AR
 - 5 MW biomass co-gen, AL
 - 35 MW co-gen, IL
 - 30 MW co-gen, IL
 - 90 MW simple cycle, DE





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Thank you!

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