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# ENERGIZING

## New Industry

By Julie Aho

### Manufacturers Value High-Tech Reliability

**B**usinesses base their locations on varied factors, but energy is important to them all. The Duluthian spoke to several Northland companies and organizations to gain their viewpoints on energy matters – and why they value our region’s energy reliability.

**NEWPAGE CORP.**

NewPage, North America’s largest coated paper manufacturer, has 10 U.S. mills, including the Duluth mill, and one in Nova Scotia. It produces newsprint and specialty papers, corporate collateral, magazine, catalogs, books, coupons, inserts, packaging and direct mail advertising.

“The Duluth paper machine is a world-class asset, and Duluth should be proud of it,” said Tom Scharff, NewPage Corp’s central director of energy services. In terms of annual capacity, the Duluth mill is the country’s top producer of super-calendered paper.

Electric reliability and power quality are crucial. “Even a millisecond of interruption can affect production and paper roll speeds,” Scharff explained. “You can imagine the fragility of wet paper. Our equipment also uses digital systems that are very sensitive to power quality variations. In the old days, we could tolerate some power quality issues. Those days are gone.”

The company is a Minnesota Power customer and consumes most of the steam produced by Duluth Steam District #2. MP plans to purchase DSD #2 assets from the city, pending regulatory approval (the City

Council unanimously approved the sale). But NewPage’s primary energy source is wood biomass. “We’ve used biomass for about 30 years, long before increased environmental concerns, and are very proud of that,” Scharff said.

The Duluth mill sources biomass internally and from the region, since high transportation costs would make it uncompetitive. “We know how to source wood and cultivate supply chain relationships,” Scharff said. “Our operations are geared toward decreasing coal-based energy and increasing wood waste.”

by 2025 – that will put pressure on energy prices. You can only go so far with hydro and wind; then government turns to biomass. Our concern is utilities could compete with us to get wood. Wood is our source for fiber for making paper and one of our three highest costs of manufacturing. We’re not concerned about wood waste, but burning roundwood – whole trees – is a concern. Utilities could get their money back through a rate case, because they have mandates. We need U.S. utilities to pursue least-cost generation.”



“We’ll continue dedicating capital to efficiency and conservation.”

– Tom Scharff

For that reason, wood sourcing is a paper industry concern, Scharff said: “When states impose a Renewable Portfolio Standard – like Minnesota, where electric utilities must have 25 percent of their power from renewable sources

Since the 1970s, NewPage has curbed costs through energy efficiency and conservation. In 2001, it launched aggressive new goals and by 2006, had cut energy use per ton of paper produced at its mills by 16 percent – a \$40 million savings. “We think

## The IMA and APEX on energy

Iron Mining Association President Craig Pagel said while there's lots of talk about renewable energy, it's critical to retain base-load generation. Our region's base-load needs are primarily met by coal-fired power plants that meet or surpass state/federal emissions laws.



Craig Pagel

"Base-load is not just electricity, but ensuring the electricity needed to support the grid is available at anytime," Pagel explained. "Taconite producers are the state's largest energy users and base-load electricity has powered our industry for years, making us competitive in a global market."

Taconite producers use even more natural gas than electricity; gas-fired furnaces melt concentrated ore that's shaped into pellets. "All energy sources are important – to run equipment, haul trucks, and for railroads and ships transporting pellets," Pagel said. "We use all types of fuels, including biomass and propane."

Because Iron Range mines are so energy intensive, they're leaders in energy efficiency and conservation. They also comply with environmental laws other countries needn't meet.

The industry faces climate change legislation on state/federal levels. "Proposed cap-and-trade regulations on carbon dioxide emissions would require large energy users to pay additional costs for energy, whether purchased or from on-site resources," Pagel said. "The effect could be that some large industries could be forced out of the global market and the void could be filled by China, India or Russia. If we do cap-and-trade, we must do it on an international basis."

### APEX

"When we speak with companies considering Duluth, we often lead with electricity, robust transportation infrastructure, access to raw materials and supply chains, and workforce quality," said Lisa Heyesen, director of business development for the Area Partnership for Economic Expansion. "APEX primarily works to attract businesses that align with what we do in this region – particularly heavy manufacturing, alternative energy projects and data centers. We have competitive advantages in those industries." She said Minnesota Power is one of the country's most cost-competitive utilities.

The renewable energy push is a U.S. paradigm shift, Heyesen said: "We're beyond the tipping point; 29 states have mandates and it's not unrealistic to anticipate the federal government will, too. It's pretty safe to assume renewable energy will resume its growth mode, and we envision our area will benefit from that movement."



Lisa Heyesen

APEX is working to attract a wind component manufacturer to the Twin Ports. "Wind power's increasing in the U.S., but there's not enough transmission line capacity," Heyesen said. "The country must invest significant resources in infrastructure to bring wind to more densely populated areas. We anticipate the federal stimulus package will provide a portion of those resources."

Incentives are important to wind component companies. If the state wants to remain competitive, it must offer qualified businesses training grants and tax breaks.

government is recognizing the value of energy efficiency," Scharff noted. "We'll continue dedicating capital to efficiency and conservation." And he said Northeastern Minnesota electricity rates are competitive: "Minnesota Power's done a great job over the years and is sensitive to what rate charges do to customers."

### HYDRO SOLUTIONS

"It's tough as energy costs and business taxes increase," said Dan Larson, president of Hydro Solutions. "However, we'll stay in Duluth as long as we can compete in the world. My major customer's here, so energy was not the most significant driver in deciding to locate here. But for regional business growth and diversification, low-cost energy sources are important – plus the region's work ethic, innovation, training opportunities and high quality of life."

Hydro Solutions' primary customer is Cirrus Design Corp. "The aerospace industry is the number-one consumer of waterjet services in the U.S. and worldwide," Larson said. "Well over 150 parts per plane for Cirrus come from us." Hydro Solutions serves five other aviation clients in the U.S. and Canada and diversified its product lines to serve domestic and foreign clients in the petrochemical industry, too.

Larson's 12 employees use waterjets to shape aircraft components meeting clients' exacting specifications and Federal Aviation Administration standards. "The FAA and customers don't like anything that can affect the metallurgy content of aircraft parts, such as heat," Larson said. "Waterjets provide high-end precision cutting and don't leave a heat-affected zone around the cut area."

Electric reliability is crucial to that precision. Hydro Solutions is also sensitive to power quality (fluctuations involving momentary outages, voltage sags or flickering lights). "Minnesota Power has been very cooperative," Larson said. "They provide wonderful notice if they have to do work that may affect us." He also described the utility as a "corporate partner" that works to attract businesses to the region.

Energy costs comprise about 12 percent of Hydro Solutions' annual budget, including natural gas from ComfortSystems to heat its facility and transportation-related energy for product shipping.

Larson is past president and current board member of the Arrowhead Manufacturers & Fabricators Association. He's also on the Great Lakes Manufacturing Council and an APEX member. "Our region has become a high-end area of quality craftsmanship and it will expand as long as we support manufacturing," he said. "I can't afford to send work overseas, though there's low-cost labor there – because the quality can't match ours. Here, we have a quality workforce that produces quality parts."

### ME GLOBAL

"The Iron Range drew us to this area," said Plant Manager Bill Grau of ME Global, "but with today's transportation and logistics, we also serve the mining industry all over the world."

The Duluth facility has 145 employees. ME Global's other U.S. plant is in Tempe, Arizona, and it has facilities in Santiago and Rancagua, Chile. The company produces grinding mill liners, crushing components, track pads, pump components and castings for the mining industry.

ME Global's main energy sources are electricity, natural gas and some propane for running equipment like forklifts. Electricity powers steel-melting arc furnaces, a vacuum system for molding and air compressors for running mechanical devices and grinders that shape parts. It also has an electrical load for lights and motors.

Natural gas is used to heat the plant and "heat-and-treat the furnaces," Grau explained. Parts used by the mining industry are heated in furnaces to modify metallurgy content as needed for hardness and durability.

"Reliable delivery of natural gas and electricity are important," Grau said. "Without gas, we couldn't maintain compliance with air emission permits. And if we have an outage of 10 minutes or more, we lose a day of production and all our molds."

Grau ranks reliability highly. "In South America, we get curtailed on energy supply and delivery is definitely not as good," he said. "If you look at that, we're in good shape in this region. Reliability and costs are important to all businesses, especially when considering expansion."

Energy is ME Global's third highest cost, after raw materials and labor/benefits. "When we give employees goals to reduce

costs, it's those three things," Grau said. "Our board gave us a directive to reduce energy usage by 5 percent in 2008 and we're working to reduce more in 2009." Last year's goal included fairly simple actions – such as motion detectors for lighting – to aggressive shutdown plans so equipment doesn't idle needlessly.

Regarding state/federal laws and proposals on climate change and renewable

energy, Grau said: "If our region and country are going to be competitive, you can't mandate different laws in different states. Pollution crosses regional, state and international boundaries. It's important to understand that the U.S. will cease to exist as an economic power with no manufacturing." **D**

Julie Aho is editor of the Duluthian.

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