

PowerGrant Profiles



Georgia Pacific: Compressing Energy Costs

The Georgia-Pacific (GP) Industrial Wood Products plant in Duluth manufactures high-density, pressure-treated hardboard, called Superwood®. This premium product is used in diverse applications, but its largest market is the automotive industry. Many new vehicles feature door inserts, rear shelves, seat foundations, load floors and spare tire covers made of Superwood®.



Minnesota Power Energy Consultant Matt Haley, GP Superintendent of Maintenance & Engineering Dale Reed and Clayhill® Sales Engineer Bill Mestelle inspect the new control valve on GP's compressed air distribution system.

The plant's success has been driven by innovation. Built in 1948, it was acquired by GP in 1986. Continual equipment upgrades and process improvements have kept the facility operating in a fiercely competitive industry, providing stable jobs for more than 150 workers.

Transforming wood chips into hardboard is an energy-intensive process. Heat and pressure bond the natural fibers—generated from forest residue, wood processing waste and recycled wood products—into a strong, stable and marketable product. A labyrinth of conveyors, grinders, boilers, pumps, motors and air compressors require around-the-clock electricity, 365 days per year. Maintenance and engineering personnel aggressively look for ways to reduce electric demand, lower energy usage and save money.

Minnesota Power is a partner in this ongoing effort, helping GP research and implement conservation measures. For example, the utility recently paid \$6,000 of an \$8,000 independent study that assessed how GP utilizes compressed air in its production process and identified potential energy savings.



Energy conservation helps GP remain competitive by lowering the cost of producing its premium hardboard.

“It is easy to think of compressed air as ‘free,’ but it costs a lot of money to operate compressors,” said Dale Reed, superintendent of maintenance and engineering at the GP plant. He noted that compressed air is used to operate valves and controls, blow off dust and debris at various stages of production, provide an air cushion to float sheets of hardboard coming off the machines and to operate numerous air tools. “This was something we really needed to assess for efficiency.”

Vendors used GP's air compressor study to recommend equipment and process improvements at the hardboard plant. Upgrades included replacing water-cooled compressors with air-cooled models; installing a demand valve on the compressed air distribution system to maintain and regulate pressure

PowerGrant Contact Information

For more information, please call Minnesota Power's Conservation Improvement Program toll-free at 800-228-4966 ext. 2902.

"Energizing Our Region" through Conservation Improvement

Minnesota Power's Conservation Improvement Program (CIP) works with local leaders, businesses, community groups, other energy providers and government entities to help customers reap the economic and environmental benefits of sustainable energy savings. Minnesota Power and its partners accomplish this through research, education, evaluation and direct impact initiatives.

Find out how you could get a PowerGrant

Minnesota Power awards grants to commercial/industrial customers who use innovative technologies, improve manufacturing processes, undertake renewable electric energy projects, or who need project design assistance. PowerGrant awards are available for a wide variety of projects employing diverse technologies.

Here are some examples of activities or products that could qualify for MP funding under the PowerGrant Program:

- New electro-technologies that lower energy costs per unit of production in a manufacturing process
- Innovative technologies that are new and underutilized in our regional marketplace
- Inclusion of energy-efficient options in the design phase of a project

Maximum annual grants are determined by a customer's average billing demand:

<i>Customer Demand</i>	<i>Maximum Rebate</i>
0 to 100 kW	\$10,000
101 to 300 kW	\$25,000
Over 300 kW	\$50,000

Customers may submit multiple grant requests.

Other MP Products and Services

In addition to PowerGrants, MP CIP offers commercial and industrial customers other energy efficiency products and services. These include energy audits, rebates, dual fuel, storage/off-peak services, outdoor and area lighting and economic development assistance.



GP's Duluth plant received a \$42,000 MP PowerGrant rebate and will save nearly \$50,000 per year in energy costs due to air compressor system upgrades.

Rebates and projected energy savings make conservation attractive.

based on actual need; and reducing compressed air demand by using low-pressure, high-volume blowers for some applications. Early results show the horsepower needed to run the plant's air compressors dropping from 500 hp to 220 hp.

"So far only one blower has been installed and is operating; they still have two more applications in which to install blowers," said vendor Bill Mestelle, a sales engineer with Clayhill², a division of American Air Products, Inc. "When all is said and done, we think they will be able to run the entire facility's air compressors on less than 150 hp. It is even better than we originally thought."

Air compressor improvements are expected to reduce GP's electric demand by 146.4 kW and

conserve an estimated 1,203,772 kWh per year—an annual cost savings of \$48,071. With the help of a \$42,132 PowerGrant rebate, payback is expected in less than two years.

"At a time when capital improvement dollars are tight, Minnesota Power's rebates and energy cost savings made air compressor improvements so attractive that management found the money to do these projects," Reed said.

"That's the idea behind Minnesota Power's Conservation Improvement Program," said Matt Haley, a Minnesota Power energy consultant. "Our goal is to encourage conservation projects that might not otherwise happen by helping companies like Georgia Pacific justify the investment."