

Sappi Fine Paper North America

2013 Sustainability Report



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Inspired by life



Redefining the Future

Sustainability has many connotations. To the public, its most recognizable definition deals with safeguarding natural resources. But in the corporate world, economic sustainability is also a key component of any business model or management decision. With recognition of a decline in the use of printing and writing papers, we have developed an aggressive strategy to transform Sappi into a growing and profitable global company.

Case in point: after the Cloquet mill was modernized by a prior owner in the 1990s, two-thirds of its pulp was sold as paper pulp while a third was used in the paper machines. This approach worked for decades, but with increased global competition for paper pulp, Sappi decided to overhaul the mill's fiber production process and make a strategic US\$170 million investment in the company's future aimed at diversifying its revenue streams.

Instead of making kraft pulp for paper, the conversion now allows the mill to produce dissolving pulp, a high-demand material used in a variety of products, including textiles (i.e. rayon), industrial products, cellophane fibers, and sponges. The biggest adjustments came in the modification of the cooking process to make the pulp into a more pure form of cellulose. The many changes needed weren't cheap, nor is the process of making dissolving pulp, but Greg Elton, a chemical engineer dedicated to the project, notes that the investments allow us to produce a high quality, competitive product, strengthening Sappi's market leadership. "With textile grade pulp, costs to produce the

higher purity fiber are greater, but the higher price for the finished product outweighs the increased production costs," says Elton.

The project was made even more economically viable because it was carried out with such excellence. Thanks to a team that included mill management, Sappi's South African partners, former employees, consultants and customers as well as Elton and a team of engineers, operators and maintenance workers, the project, which was allotted 18 months for completion, amazingly finished within hours of its expected start date.

The changes also reduced environmental impacts on several fronts. The operation now uses significantly fewer sulfur-based chemicals, and modified the air system on the recovery boiler, resulting in reduced SO₂ and NO_x emissions. Furthermore, biological oxygen demand in the water discharged from the mill has been cut by around 25 percent. And while more energy is needed to create the dissolving pulp, the mill now generates more renewable energy because more hemi-cellulose, a pulping by-product, is burned in the boiler to make steam and electricity.

Of course, this environmental and economic viability also helps to sustain something else: the community that relies on the mill. "We are one of the biggest employers in Cloquet," Elton says. "By deciding to invest in the mill to grow future business, Sappi is also investing in the future of Cloquet, and that means everything to the people that live here."





Tapping into Synergies at Somerset

A recent rebuild of the No. 3 paper machine (PM3) represents a classic case of a sustainability “win-win”—a project that renders both environmental and economic benefits to Sappi’s Somerset Mill.

Working with equipment manufacturer Metso and contractor Boldt Construction, a Sappi team of management, operations and engineering personnel were able to team up to redesign, reengineer and rebuild the machine. The project took over two years to conceptualize and prepare for, but when time came to implement the changes they were amazingly finished in barely over twelve days.

Once the project was completed it paid instant dividends as PM3 showed a significant improvement in formation. With the enhanced formation the machine is producing a stronger sheet and can now handle a wider range of product grades, including the top end of Sappi’s product line like 60 and 70 pound Opus web.

Products produced on PM3 also showed huge printed color improvements, especially in the mid-tones. “This is really important in the flesh-type tone that you see in cosmetic ads,” says Rod Guillow, PM3’s paper machine manager. “Skin tones are extremely challenging

and can appear mottled or blotchy—they are now looking very homogeneous and sharper than ever.” This turn of events is crucial to the coated paper business, which serves the high-end fashion and design magazine segments.

PM3 is now also much more efficient. In 2013, it produced 4.9 percent more than the prior year, despite being shut down for nearly two weeks during the construction process. Plus, any time a machine improves productivity, there are benefits in terms of energy efficiency and producing less waste of fiber and expensive additives.

More paper. Better paper. Using less energy, chemicals and wood? Sounds too good to be true, but Guillow says it is just good business: “It’s a classic case of sustainability because we are now making a cost-effective product that is more environmentally friendly. It’s just phenomenal.”





Saving Lime and Money

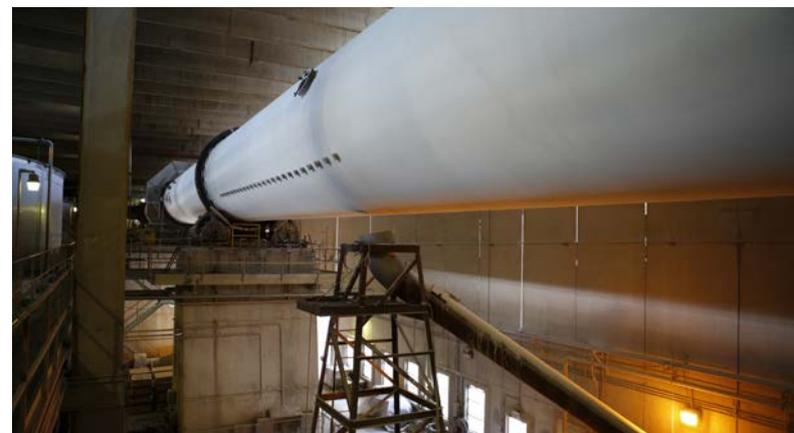
As the key element in Sappi's Somerset mill's chemical recovery system, the lime kiln converts lime mud into re-burned lime, which is used to create pulp. But after the completion of a US\$30 million project designed to expand the capacity of the recovery boiler process it became apparent that the lime kiln was a bottleneck limiting pulp production, and therefore wasting resources.

Enter a team of analysts led by Doug Brooks, a Lean Six Sigma Black Belt tasked with improving overall performance of the mill, who looked to use their DMAICS (Define, Measure, Analyze, Improve, Control, Sustain) system to solve the problem. "To make the kiln run more energy efficiently, we knew we needed to increase the pre-coat solids, basically removing more water from the lime mud before it goes into the lime kiln," Brooks notes. "Doing this increased the production of the lime kiln by more than 6 percent."

The systematic process by which Brooks and his team approached the problem, which included going into the field to observe and work closely with the kiln operators, also allowed them to pinpoint and fix two other issues. First, they made the tests for the re-burned lime coming out of kiln two and a half times more precise, thereby increasing energy efficiency by 10 percent. They also uncovered that the kiln

could take more lime than operators were feeding it but, because of the imprecise tests, there wasn't enough mud to give it. "Using balancing methods we helped the operators manage the mud inventory better so they always had sufficient mud to feed the kiln at the new, higher rates," Brooks says. "Overall, the better throughput has meant we create more pulp to use or sell, we buy less mud, saving us over US\$1.1 million dollars, and we've dumped 80 to 90 percent less mud in local landfills."

There were also secondary benefits of making the lime kiln run more efficiently. "Now less mud sticks to the inside of the kiln," Brooks says. "By avoiding this lime ring buildup, there is less waste and the kiln doesn't need to be shut down and cleaned, a process that costs over a million dollars and halts production." Also, with the mill set for a natural gas conversion, the increased throughput capability of the kiln will offset natural gas' lower BTUs, making the upcoming fuel transition more energy efficient and cost-effective. In the end, Brooks and his crew took a muddy job and, thanks to teamwork and good process, ensured a cleaner future for Sappi and the Somerset community.





Job Growth

For years, Sappi has maintained long-standing relationships with many nearby academic institutions, making donations and providing scholarship money for students. Of course, the connection goes beyond financial support, with several Sappi employees serving as lecturers and advisors at local schools and the company sponsoring co-op programs to provide work experience to undergraduates.

Gordon Lane was studying environmental science at the University of Southern Maine when he applied for a co-op position with Sappi's Westbrook hydropower unit. With an interest in river policy and ecology, Lane brought an undeniable passion to his regulatory report writing, data collection analysis and dam safety monitoring. "The opportunity to work in industry on environmental regulations and water quality was interesting to me," Lane says. "Plus, I loved that I was doing real work, not getting coffee and making copies."

Having proved his worth, by December of 2012, Lane, now a USM graduate, was hired full-time as an environmental health and safety specialist. "My main jobs are in the environmental realm with the wastewater treatment process, boiler air emissions and the various manufacturing processes," Lane says. "I also work with the safety

manager on industrial health, safety, and security, potential exposure problems, security plans and managing the emergency operations center."

While he's benefited from working with the experienced personnel at Sappi, Lane also feels that there are opportunities for him to repay that debt by integrating new ideas into the day-to-day operations. "Capturing data and using various information technologies is natural to somebody of my generation," Lane says. "But when you do it and someone says 'I didn't even know that was possible,' it's really exciting."

Along with giving the company a return on its investment, Lane is also giving back to the community. As the lead Ambassador for the Westbrook Mill's sustainability team, he's helping connect Sappi employees to local community groups through various activities. He's also hoping to work with one of his former professor's classes on a Sappi wastewater treatment case study, showing that the newest generation of Sappi employees are already cultivating the next generation.





Open Water / Common Ground

Building strong, positive relationships within the local community is a valuable outcome of corporate social responsibility efforts. In essence, successfully managing reputational risks creates our “social license” to operate. For any given project, collaboration between the private sector, non-profits and public interests can be fraught with roadblocks. Each group involved may have its own desired outcome and concerns as well as its own set of protocols and decision-making processes. The time it takes to coalesce and make progress can be disheartening for everyone participating. Sappi’s Westbrook Mill has been deeply involved in this type of multi-stakeholder engagement for years after the Gambo hydroelectric facility was relicensed in 2003.

Sappi’s license required creating recreational access to the river. The process did not go smoothly until 2009, when Hydro Manager/ Utilities Engineer Brad Goulet became a part of the project. Working closely with Richard Curtis, board president for the Presumpscot Regional Land Trust (PRLT), Goulet and Sappi were able to demonstrate their commitment to opening up public access on company property, as well as their willingness to dedicate time and money to the plan.

After convincing Curtis that Sappi’s intention was as much about doing something good for the community as complying with federal regulations, Sappi and the PRLT were able to work together to overcome the legal and logistical hurdles stalling the project, including securing easements on a third-party owned land parcel adjacent to PRLT’s property. “We saw not only a tremendous amount of cooperation but also active involvement from Sappi,” Curtis says. “It’s a refreshing change and is tremendously supportive to the kind of conservation work that we do with the land trust.”

In terms of recreational opportunities, the project created a boat portage downstream from Gambo Pond, established fishing access via the dam property and created nature trails that connect to those on the adjoining PRLT land. “This is fairly pristine water that was inaccessible by the local population,” Curtis says. “Now we can get to and use this stretch of river, and that’s a real treat for the local people.”

The Gambo project is one of many public access initiatives that Sappi has undertaken on the six hydroelectric dams it owns on the Presumpscot River. Now that the issues of the past are water over the dam, Sappi and the local community are looking forward to working together on more programs that will let everyone enjoy this great waterway to the fullest extent possible.

