ADVANCED PROCESS CONTROLS
These stabilizing controls help pulp mills find the ideal operating point.

CONTAINERBOARD
Markets sail smoothly along despite storm warnings all around.
Is ABB committed to pulp and paper?

Absolutely.

Maximizing the performance of your mill by adding cutting edge technology or simply fixing what’s broken is what you should expect from your automation and electrification partner. As an industry pioneer and leader in pulp and paper, ABB will always meet or exceed your expectations regardless of the age or history of your system. We did it yesterday and we will do it tomorrow. That is our pledge.

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Chinese pulp mills increasingly have to rely on imported wood chips for their wood fiber needs. In 2011, record volumes were being imported mainly from hardwood plantations in Vietnam, Thailand and Indonesia.

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Does it matter whether a person reads a story in print versus online? According to a few studies, it does if you want to remember more of what you read.

What got me going on this subject was an article in a local newspaper about an elementary school in my area pushing for a temporary budget hike insisting that kindergarten students (and I use the term “students” loosely because these kids are 4-5 years old) should each have a school-issued iPad. In theory, the school would recoup the investment for the iPads because it would no longer have to purchase text books in the future.

What struck a nerve in me wasn’t just the push to eliminate text books, but the teachers’ total lack of reason to do so, besides the money-saver option, of course. Never once was it mentioned that an iPad held a learning advantage for the kids.

I did some research on the topic of print vs. online in education and there’s evidence that points to printing having a leg up on the e-readers when it comes to learning.

A study published in the Journal of Research in Reading conducted by Anne Mangen, an associate professor of literacy studies at Norway’s University of Stavanger, cautions that reading online may not be as effective as the printed word. The reason: The process involves so much physical manipulation of the computer or device that it interferes with our ability to focus on and appreciate what we’re reading; online text moves up and down the screen and lacks physical dimension; and multimedia features, such as links to videos and animations, leave little room for imagination, limiting our ability to form our own mental pictures to illustrate what we’re reading.

“All of these things are taxing on cognition and concentration in a way that a book is not,” Mangen concludes.

In another study, Medium Matters: Newsreaders’ Recall and Engagement with Online and Print Newspapers, the authors state and ask, “Today, journalism practitioners and scholars find themselves mired in a new debate: How has the message of the written word changed with the introduction of yet a new method of delivery?”

The authors of the study — three doctoral candidates at the University of Oregon, School of Journalism and Communication — referenced research conducted by the Poynter Institute, where researchers used test groups, with half of their subjects reading online and the other half reading the same material in print. The test was done to measure comprehension of how much information a reader retains. Overall, researchers found that print readers remembered more than online readers.

It would be hypocritical of me to say that print is the only way to go when it comes to learning, especially considering that I was able to research this topic on the Internet. Electronic devices allow access to an enormous number of online resources, which is probably their greatest advantage.

However, if today’s educators are proposing that e-readers are more effective learning tools in the classroom than books, they need to prove it, because doing what’s popular isn’t doing what’s best.
If you had to choose a kaolin supplier based on one quality, which would you choose?

- TAILORED SOLUTIONS
- SERVICE
- STABILITY
- LONGEVITY
- GLOBAL REACH
- PRODUCT DEVELOPMENT

The good news is you can have them all with Thiele, a privately held company serving papermakers worldwide since January 1, 1947.
RockTenn, AICC Conclude 700,000 TPY Set-Aside Agreement

RockTenn and AICC (Association of Independent Corrugated Converters) have signed a set-aside agreement in which RockTenn pledges 700,000 tons per year of containerboard to the independent market over the next two years.

AICC’s Board of Directors approved the agreement in late-October 2011.

Andrew Pierson, President and CEO of Mid-Atlantic Packaging and Chairman of AICC, and Jim Porter, RockTenn President, Corrugated Packaging and Recycling, signed the agreement which is effective immediately and runs through December 31, 2013.

“We are extremely pleased and grateful that RockTenn has committed this significant volume of containerboard to the independent market,” said Pierson.

“A major role of AICC has been to help ensure an adequate supply of containerboard to our independent members, and this agreement helps achieve that end, especially in light of continued consolidation in the containerboard industry,” he added.

“RockTenn is a major supplier to North American independents, and this agreement is a natural extension of our commitment to this important market,” said Porter. “We have many wonderful independent customer relationships and we are delighted to make a strong statement of support with our comprehensive portfolio of White Top, Virgin and 100% Recycled products.”

AICC developed set-aside agreements with major suppliers of linerboard and corrugating medium to help ensure that independents’ sources of containerboard would remain reliable in times of tight supply, or worse, major shortages. These agreements, which encourage individually negotiated January 10, 2012 agreements between a supplier and independent converters, are designed to help all independent corrugator operators as well as sheet suppliers and their sheet plant customers.

According to AICC, set-aside agreements do not replace individual supply contracts which independents may already have in place under terms which have been privately negotiated.

Graphic Packaging to Relocate Headquarters to Sandy Springs, GA

Graphic Packaging International (GPI) said that it is relocating its corporate headquarters to Sandy Springs, Georgia, from Marietta, Georgia, in January 2013.

GPI’s new Sandy Springs headquarters will be within the RiverEdge Summit complex.

The new headquarters will enable GPI to consolidate its existing four building campus into a single location. Relocating to the new complex will be the executive team, corporate staff, North American operational headquarters, Product Development Center, and Global Innovation Center.

“The consolidation of our workforce will enhance the impact of our ‘one culture’ message, which makes the Sandy Springs office complex an excellent location for a major corporate headquarters,” said David Scheible, president and CEO.

Verso Paper Completes Renewable Energy Project Michigan Mill

Verso Paper has completed a $45 million renewable energy project at its pulp and paper mill in Quinnesec, Michigan.

The project includes design upgrades to the mill’s existing combination boiler (which burns biomass from waste wood sources), a new biomass handling system, and a new turbine generator.

The project is delivering 28 megawatts of additional green energy for consumption within the mill, which is equivalent to the amount of electricity consumed by 18,000 homes in a year.

“The completion of the Quinnesec renewable energy project is a milestone in the implementation of Verso’s long-term energy strategy,” said Verso President and CEO Mike Jackson. “Besides delivering annual energy savings, the project helps Verso deliver on our commitment to increase our use of renewable biofuel and thereby reduce our carbon footprint.”

The boiler upgrades enable the mill to use renewable, carbon-neutral, wood-based biofuel for more than 95 percent of its on-site electricity generation. The mill’s boilers also will continue to burn black liquor, a byproduct of the wood pulping process.

“In addition to reducing our carbon footprint, these improvements will improve boiler combustion and efficiency and will markedly reduce the mill’s reliance on electricity produced from fossil fuels,” said Verso Vice President of Energy and Technology, Mark Daniel.

Verso began construction in October 2010 and the project was completed with the commissioning of the new turbine in early January of this year.
Paper2012 offers an unparalleled opportunity to network, gather business intelligence and get in-depth perspectives on critical issues in just three value-packed days, March 25-27.

Highlights include:

- Tech visionary Scott Klososky spotlights the latest in digital marketing — don’t get left behind!
- Political insiders Donna Brazile and Dana Perino view Election 2012 from both sides of the aisle.
- RISI presents its annual market forecast for printing-writing papers and paperboard.
- The popular Speed Networking Session returns — quality business, quick and easy.

For 2012, we’re bringing our industry’s most dynamic business gathering to New York’s historic Financial District. With world-class accommodations and amenities, commanding views and easy access to Wall Street, Battery Park and the World Trade Center Memorial, Paper2012 offers attendees a fresh take on the Big Apple.

Register by March 1 to get early-bird savings at Paper2012.com.
**industry news**

**MeadWestvaco Acquires Polytop**

MeadWestvaco is expanding its capabilities in targeted packaging end-markets with the acquisition of Polytop Corporation, a designer and manufacturer of dispensing closures.

The acquisition was completed on December 30.

Terms of the deal were not disclosed.

“We have an aggressive growth strategy that targets more than $1 billion of additional revenue over the next three to five years through initiatives centered on commercial excellence, innovation and emerging markets that we will augment with bolt-on acquisitions that bring us new technologies or capabilities,” said John A. Luke, Jr. MWV chairman and CEO.

“Polytop exemplifies the high-return opportunities we will add to our packaging platform to deliver the best possible solutions to our targeted global customer base,” he added.

Polytop’s offices and manufacturing facilities, located in Slatersville, Rhode Island, will remain in full operation and become part of MWV’s primary plastic operations and global manufacturing platform.

The Polytop management team will remain in place and all 180 Polytop employees will become MWV employees.

Polytop serves the food, home and garden, and beauty and personal care packaging markets.

**Avery Dennison Selling Some Operations to 3M for $550 Million**

Avery Dennison, which sells labels, packaging material, office supplies and adhesives, is selling its office and consumer products operations to 3M Co. for $550 million in cash.

The office and consumer products business includes labels, binders, presentation products, filing and indexing products, writing instruments, and other office and home organization products. It also includes the Avery, HI-LITERS, and Marks-A-Lot brands in the U.S., Canada, Germany, France, the United Kingdom, Australia, New Zealand and several other countries.

The division is based in Brea, California, and includes about 3,000 employees globally. Sales for 2011 are expected to be about $765 million.

Avery Dennison said that proceeds from the sale will be used to lower debt, buy back stock and to make additional pension contributions.

Avery Dennison said that it will now concentrate its efforts on its Pressure-sensitive Materials and Retail Branding and Information Solutions businesses.

The deal is expected to close during the second half of 2012.

**EUROPE**

**Metsa Tissue to Close Konstancin-Jeziorna Mill in Poland**

Metsa Tissue has decided to close its production, converting and supply chain operations at the Konstancin-Jeziorna mill near Warsaw, Poland in April 2012.

The mill had a production capacity of about 18,000 tons per year of tissue papers.

The closure will affect up to 140 employees.

Metsa Tissue said that it has carefully analyzed three alternative options for the future use of the Konstancin-Jeziorna site, which the company initially announced in May 2010 — use the site for warehousing and converting, use it solely for warehousing, or rezone it for residential development.

Metsa Tissue said the two latter options are to be studied further.

“As our Polish and other Eastern and Central European customers can be served by our other mills in Poland, Slovakia, Germany and the Nordic countries, after weighing our options, this decision — though not easy — was the only sensible course of action,” said Hannu Kottonen, CEO of Metsa Tissue.

The company said the mill’s obsolete infrastructure, which would have required significant short- and long-term investment, also factored into its decision to close the operation.

**SCA to Increase Kraftliner Production at Munksund Mill**

SCA will invest a total of SEK 540 million to strengthen kraftliner production at its mill in Munksund, Pitea, Sweden. The company plans to upgrade the paper machine and refurbish the soda-recovery boiler at the mill.

The bulk of the investment, SEK 400 million, will be used to upgrade the paper machine. The remaining SEK 140 million will finance the replacement of the pressure vessel in the soda-recovery boiler, which will enhance heat recovery and enable increased future output.

In a written statement, SCA said, “The main aim of the investment is to increase production of the share of value-added products, such as White-Top kraftliner, which, for example, is used for packaging of fast-moving consumer goods with high-quality print.”

As a result of the project, Munksund will be able to increase its total annual kraftliner capacity from 360,000 tonnes to 415,000 tonnes.

The upgraded equipment is expected to be fully operational during 2013.
M-real Agrees to Sell Reflex Mill’s Premium Paper Business

M-real has agreed to sell the Reflex mill’s Premium Paper business to Walzmühle AG, which is owned by Hahnemühle FineArt GmbH, the Hahnemühle management and private shareholders of Hahnemühle. The divestment includes the complete Premium Paper business and related assets as well as approximately 100 of M-real’s employees.

The value of the deal was not disclosed. Closing is expected during the first quarter of 2012.

The divestment would decrease M-real’s annual sales by approximately EUR 20 million, M-real said.

“We are very satisfied that the well-recognized specialty paper producer Hahnemühle takes over the Reflex Premium Paper business,” said Mikko Helander, CEO of M-real.

“Our actions to build a Business Park at Reflex by finding other producers to the site have been very successful. Thanks to our Business Park concept, more than half of the originally over 400 jobs can be saved at the mill. Key issues in the success have been excellent cooperation with the union, works council, local authorities and Metsa Tissue Corporation, who is already our partner at the site,” Helander explained.

Based on this experience we have a good opportunity to implement the Business Park concept successfully also at Gohrsmühle mill,” he added.

After the sale of the Premium Paper business, M-real has no operations left at the Reflex mill. The discontinuation of the carbonless paper converting was agreed in late 2011. In October 2010, M-real sold the paper machine 5 and some related assets at the Reflex site to Metsa Tissue.

European Paper Associations Merge

CEPIPRINT, the Association of European publication paper producers and CEPIFINE, the Confederation of European fine paper industries on January 1, 2012 joined forces to create a new Association based in Brussels.

The new Association, “Euro-Graph,” will represent over 30 companies, operating well over 100 paper mills in Europe, with an annual capacity of approximately 45 million tonnes of graphic papers.

Euro-Graph said that it will remain closely linked to CEPI, the Confederation of European Paper Industries, and will continue to fully support the work and activities of CEPI in helping the industry deliver coordinated messages.

Jyrki Ovaska, President of the paper business group at UPM and currently Chairman of CEPIPRINT, will be Chairman of Euro-Graph.

Frank Leerkotte, Managing Director of CEPIFINE, leaves the Association to focus his efforts on the Print Power/TwoSides campaign, a major communication project supported and funded by the entire print value chain.

“The transformation of the paper industry that we have witnessed over the past few years is now moving to the paper Associations,” Ovaska said. “The merger of CEPIPRINT and CEPIFINE into Euro-Graph represents a historic development for an industry that is aiming at improving its effectiveness, cohesion and quality of products and services.”

UPM to Permanently Close Albruck Paper Mill in Germany

UPM permanently closed down its “unprofitable” Albruck paper mill in Baden-Wurttemberg, Germany on January 31. The mill had the annual capacity to produce 320,000 tonnes of magazine papers.

According to UPM, discussions between UPM, the employee representatives and local authorities did not lead to a solution for continuing the operations at the mill nor was the search for an investor successful.

The closure affects 508 employees.

“UPM Albruck mill has been making a loss for several years due to the age and relatively small size of the machines and the mill is not cost competitive within UPM asset and global customer portfolio,” said Jyrki Ovaska, President, UPM’s Paper Business Group.

The sheeting lines of the mill will be transferred to the company’s paper mill in Plattling in order to complement UPM’s product portfolio.

UPM said that it will participate in the follow-up of the round table discussions about the possible future use of the mill premises.

The Albruck decision finalizes the paper capacity closure plans that were announced by UPM last August.

UPM’s Myllykoski paper mill in Finland, with 600,000 tpy of magazine papers was closed down on December 9, 2011 and paper machine 3 at UPM Ettringen paper mill in Germany with 110,000 tpy of newsprint was closed down on December 14, 2011.

The sales process of UPM’s Stracel paper mill in France is ongoing as planned, the company added.
industry news

EUROPE

SCA Divests Its Packaging Operations to DS Smith for EUR 1.7 Billion

SCA’s packaging operations — excluding the two kraftliner mills in Sweden — are divested to DS Smith. The purchase price amounts to EUR 1.7 billion on a debt free basis.

“The reason for the divestment is primarily to enable increased growth in the hygiene business,” said Jan Johansson, President and CEO of SCA.

The packaging operations, excluding the two kraftliner mills, had net sales in 2010 of approximately SEK 24.2bn (EUR 2.5bn) and an operating profit, excluding restructuring costs, of approximately SEK 1.1bn (EUR 117million). The operations have approximately 12,000 employees.

Regarding the French part of the packaging operations, the price for which is included in the announced purchase price, DS Smith has made a formal offer to acquire this business. This process is subject to consultation with relevant works councils and will be treated separately, SCA said.

SCA’s two kraftliner mills in Sweden are not included in the deal as they are well-integrated with SCA’s forest products operations.

“Over the years we have developed our packaging business and we are divesting a competitive operation to an industrial buyer who can continue to develop it,” Johansson said.

The deal is subject to approval from DS Smith’s shareholders and antitrust clearance from the European Commission.

Closing of the sale is expected during the second quarter of 2012.

ASIA

Vietnam’s Paper Industry to Meet 70% of Domestic Demand by 2020

Vietnam’s paper industry expects to meet 70% of the domestic consumption demand by 2020, according to a source from Vietnam’s Ministry of Industry and Trade.

Vietnam now has 500 paper mills with a total production capacity of 2.075 million tons of paper and 437,600 tons of pulp per year. However, the volume is equal to only 21% of designed capacity of mills.

According to the news report, Vietnam currently ranks second largest in the world in terms of exporting timber shavings for the paper industry. Last year the country exported 3 million tons of timber shavings.

The ministry is seeking opinion on the draft master plan on developing the country’s paper industry to 2020 and vision to 2025. The draft will continue boosting the development of the region’s paper sector and increase Vietnam’s competitive strength in the region and international markets.

SUPPLIERS

Metso to Deliver New Tissue Production Line to Mexico

Metso said that it will supply a complete Advantage tissue machine for Fabrica De Papel San Francisco S.A. de C.V., in Mexicali, Mexico.

The value of the order was not disclosed, but Metso said this kind of production line is typically valued at EUR 10-15 million, depending on capacity and scope of delivery.

Metso’s scope of delivery will include a complete 2.6-meter-wide Advantage tissue machine equipped with an OptiFlo II TIS headbox, a Metso Yankee cylinder, an Advantage AirCap Yankee hood, sheet control, tail threading equipment, an Advantage WetDust dust management system and an Advantage SoftReel reel.

The new tissue line will use 100% recycled fiber as raw material and will add another 30,000 tonnes per year of bathroom tissue, napkin and towel grades to the company’s existing production.

Start up of the new production line is planned for the second quarter of 2013.

Fabrica De Papel San Francisco now operates four tissue production lines and converting facilities.

AkzoNobel to Operate Sodium Chlorate Plant for Ilim in Russia

AkzoNobel Chemicals International BV has signed a long-term joint venture agreement with Ilim Group, Russia’s largest producer of forest products, regarding the sodium chlorate production plant located in Koryazhma.

Located in the Arkhangelsk Oblast region of northwestern Russia, the plant will be majority-owned and operated by AkzoNobel.

The sodium chlorate production plant will be fully managed and operated by AkzoNobel’s Pulp and Paper Chemicals business, Eka Chemicals, in cooperation with the on-site partner, Ilim Group.

“This fits very nicely into the AkzoNobel growth strategy for markets such as Russia,” said Ruud Joosten, Managing Director of Eka Chemicals. “By entering into this venture, we look forward to further expanding our opportunities in a market with high future potential.”

Byron Smith, sBU Director of Eka Chemicals Europe, said, “We are delighted to become a local producer of bleaching chemicals in Russia, as this gives us an extended platform for future growth in both pulp and paper chemicals in the country.”
**RECOGNITION**

**Kruger Products Receives Award for Biomass Gasification Technology**

Kruger Products L.P. recently was recognized for its environmental leadership and energy conservation achievements through the 2011 Canadian Industry Program for Energy Conservation (CIPEC) Leadership Awards. The company earned this distinction for its innovative biomass gasification system in its New Westminster, BC, Canada tissue facility. According to Kruger, this state-of-the-art technology is the first of its kind in Canada and in the entire pulp and paper industry.

The award was presented by Natural Resources Canada as part of the Energy 2011 Lean and Green Future conference.

“Since coming online nearly two years ago, the biomass gasification system has already reduced emissions at the plant by 36%, which is equivalent to planting two million trees or removing 3,500 vehicles from the roads,” said Frank van Biesen, Vice President, Technology, for Kruger Products. “This technology is making real improvements and moving us toward our sustainable development goals.”

The key to this technology is converting locally sourced wood waste that is otherwise destined for landfill into clean-burning “syngas” that replaces natural gas in the steam-generating boilers, Kruger explained.

“The CIPEC Leadership Awards demonstrate the outstanding achievements of companies that have distinguished themselves in their work to improve energy efficiency,” said David Anderson, Parliamentary Secretary to the Minister of Natural Resources. “I congratulate Kruger Products on this award and for their leadership in advancing clean energy technologies.”

Kruger Products is being recognized in the category of Process and Technology Improvements for its achievements as a Canadian company making great strides to contribute to a cleaner environment for everyone.

The Office of Energy Efficiency (OEE) began the Leadership Awards in 2005. Submissions are evaluated in one of five award categories against a clear set of criteria, including the project’s improved energy intensity, potential for broader use, contribution to the environment, innovation, other benefits and the quality of the submission. Each category has two winners.

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**FOEX: PIX BENCHMARK INDEXES** (per metric ton)

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NBSK: long-fiber northern bleached softwood kraft pulp.
LWC: Light-weight coated magazine paper (60-gram offset reels).
Coated WF: Coated woodfree paper (100-gram reels).
A4 B-copy paper: A4-sized sheeted standard-grade copy paper (80 grams per sheet).

ABOUT PIX PRICES: FOEX (www.foex.fi) PIX indexes are benchmark price indexes for various qualities of pulp and paper. They measure weekly the market price of the pulp or paper in question. FOEX receives real trade information from parties in the pulp and paper industry, from buyers, sellers as well as from agents. The highest 10% and the lowest 10% of the prices are eliminated, and the PIX value is calculated as an average price from the remaining prices.
Sappi Limited announced that Mark Thompson, the current Chief Financial Officer, will retire from Sappi in August 2012 having reached the mandatory retirement age of 60.

The company also announced that Steve Binnie, currently the CFO of Edcon (Pty) Ltd, will join Sappi as CFO-designate on July 9, 2012. He will become CFO and join the Sappi Limited Board as an Executive Director on September 1, 2012.

Wausau Paper has appointed Matthew L. Urmanski to the position of Senior Vice President - Tissue and Michael R. Wildenberg to the position of Senior Vice President - Tissue Strategy, effective March 1, 2012.

Urmanski joined Wausau Paper in 2000 and has most recently served as Vice President - Administration for the Tissue segment responsible for Tissue strategy, finance and supply chain operations.

Wildenberg joined Wausau Paper in 1981 and has served as Senior Vice President for Wausau’s Tissue segment since 2009. Wildenberg plans to retire in July and will work with the Tissue leadership team to insure a smooth transition.

Montalvo has named Hans Bruun as its sales support specialist for its European operations. Bruun has been affiliated with Montalvo for some 22 years as manager of production for both Montalvo A/S in Denmark and for Danarota Technic prior to moving to his present position with Montalvo Europe.

Precision Roll Grinders (PRG) announced that Bill Brady has joined the company as an Account Manager. Brady will service North Texas, Oklahoma and the northwest Arkansas territory where he will support PRG’s Texarkana, Arkansas facility.

Voith Paper said that Kurt F. Brandauer, President of the Paper Machines Division and member of the Voith Paper Board of Management, retired on November 30, 2011. He is succeeded by Andreas Endters.

Brandauer, who has been with Voith for almost 37 years, has been central to the development of Voith Paper during the past decades. His corporate career at Voith Paper began in 1975, after successful completion of his studies in mechanical engineering.

Endters, an industrial engineer, began his professional career in 1991 at Sulzer-Escher Wyss in Ravensburg. Four years later he joined Voith Paper, where he eventually led what was then the Rolls Division from 2004 to 2008 and also represented this division as a member of Voith Paper’s Board of Management.

During the last few years, Endters has served as a member of the Management Board of the Voith Hydro Group Division.

The American Forest & Paper Association (AF&PA) announced today that C. Samuel Kerns has joined the organization as the new vice president, administration and chief financial officer. Prior to joining AF&PA, Kerns served 11 years as vice president, finance & administration for the American Public Transportation Association. He has also served as the vice president for finance, treasurer and chief financial officer for the Center for Strategic and International Studies and corporate controller for Hagler Bailly, an international management consulting firm.

The Finnish Forest Industries Federation (FFIF) announced that Juha Vanhainen, Stora Enso Country Manager (Finland), has been elected as the Chairman of FFIF for the year 2012. Additionally, Ilkka Hamala, President and CEO of Metsa-Botnia, and Hans Sohlstrom, Executive Vice President of UPM-Kymmene were appointed vice chairmen.
Count on Paper2012 to bring together the leading players from across the industry — manufacturers, distributors, converters, end users, and service providers — for three days of informative programming and unparalleled networking opportunities.

North American containerboard and box markets have been running smoothly along for over a year and a half like a ship sailing through a dead calm sea. The ride has been nice and smooth with little up and down motion — in prices, output, operating rates, etc. What’s really amazing is that the seas around our proverbial ship have been anything but calm.

The world economy remains uncertain owing to a huge cloud hanging over Europe from the debt crisis that threatens to wreak havoc not only in Europe but potentially overseas as well. And while the U.S. economy has grown, high unemployment and the worst housing market in a generation continue to wreak havoc on millions of households. So how have containerboard markets remained so steady and more importantly can it continue?

A look at market fundamentals sheds some insight into how this long run developed. First, it is readily apparent that the smooth sailing has not been the result of a strong recovery in any basic driver of demand such as domestic demand for containerboard or corrugated boxes or strong growth in the U.S. economy.

The U.S. economy continues to plod ahead, and while fear of a double dip recession in 2012 appears to have subsided, growth has been less than stellar. Real GDP growth has been weak, rising 1.8% in the third quarter of 2011, the most recent. This tepid growth was actually an improvement over growth in the first two quarters of the year, when GDP rose 1.3% and 0.4%, respectively. In 2010, real GDP rebounded and grew 3.0%, ending a two year decline, including a 3.5% drop in 2009. Strong U.S. exports have been of some help overall and as covered later this has been particularly true for linerboard.

In contrast, Industrial Production (IP), a general indicator that relates more closely to box demand, has been steadily improving, rising 6.1% in third quarter 2011, the ninth straight quarterly increase. IP rebounded in 2010, rising 5.3% and ending a two year slide. In November 2011, IP fell by 0.2%, the first decline after six straight monthly increases. However, the non-durables sector which includes the key food segment, a major box market, remains weak and output has fallen for each of the last three quarters.

In response to a sluggish and uneven economy, box demand has been flat. U.S. box shipments through November 2011 were 329.8 billion sq. ft. (BSF) up 0.5% compared to year earlier levels, reports the FBA. This equates to an annualized rate of 359.8 BSF. U.S. box shipments have rebounded from the bottom reached in 2009, when they fell...
to the lowest level in decades at 345 BSF. Last year, shipments hit 357 BSF but they remain well below much higher historical levels, which exceeded 400 BSF in the late 1990s and the 390 BSF level attained during the 2004-2007 period.

As has been the case for some time, linerboard exports have been a key piece of the recipe for smooth sailing. Export tonnage has continued to provide underlying support to help offset a lack of significant domestic growth. Export linerboard production remained essentially flat in November 2011 at 304,000 tons, bringing year-to-date export shipments to 3.4 million tons, a 6.4% gain over the prior year level, and equate to an annualized rate of 3.77 million tons.

These gains continue to provide much needed support to containerboard production levels that result in strong operating rates — well over the level required for a balanced market. Containerboard production in November was up 1.6% and overall containerboard production through the first eleven months was running 0.3% over last years' level at 31.2 million short tons, according to AF&PA data.

Exports continue to be an area of strength for North American mills due to two key factors: a low global cost position and a continued need for virgin fiber content in the global fiber mix. About 70% of North American production is virgin Kraft liner content, compared to 30% of world production, and essentially zero of the production in China, which is all recycled. Liner exports now represent over 21% of production, vs. just about 15% ten years ago.

Supply side management has also been important. When the economic recession hit in 2008-2009, producers responded with permanent capacity closures that were a huge contributor to maintaining a healthy balance. Over the last three years, about 3 million tons of North American capacity, or about 7% of capacity in place prior to the economic recession of 2008-2009, were closed. This includes over 2 million tons of liner and almost 900,000 tons of medium capacity, with most of the closures in the 2008-2009 period. These were partially offset by some incremental additions, but the net decrease was still about 6%.

In turn, operating rates have been favorable, running very high in late-2010 before easing a bit in early 2011 but remaining solid. Beginning in August 2011, operating rates improved to over 95% and in November were 95.8% for linerboard and 96.1% for overall containerboard. Inventories remained low as well in November at 2.3 million tons for mill and box plant combined.

With supply and demand remaining in a healthy balance and tipping to favor producers, linerboard prices have been steady for well over a year. Prices rose steadily from the bottom reached in 4th quarter 2009 and reached $640/ton in second quarter 2010, where they essentially remained to the end of 2011, one of the longest such streaks ever. Medium prices have held steady over the same period at $610/ton.

Rising cost inputs notably for OCC have been a concern for mills and also one factor helping to sustain containerboard prices. In 2009, OCC prices fell to under $100/ton — one of the lowest levels in years — then rose substantially in 2010 to about $160/ton due to strong export demand. Prices reached the $170-$180/ton range in 2011 according to various industry sources, but as of late, OCC prices dipped by $40 to $50 per ton as the export market slowed marginally.

The question now is whether all of the factors that aligned to keep supply and demand in a narrow range of balance will continue in 2012. It appears a big surge in domestic box demand is unlikely to provide an added boost. Most 2012 economic forecasts are subdued, in part because of the huge uncertainty hanging over the economic outlook in Europe. While box demand has risen incrementally, overall sluggish U.S. economic growth remains a formidable barrier.

Common wisdom is that prices will slip a bit over the seasonally slower winter months, i.e. into the first quarter 2012 due to several factors. Exports appear to be weak in the short term, due both to sluggish demand in Asia and aggressive marketing by producers such as those in Europe and cost pressures are easing due to lower OCC prices. With domestic demand sluggish, prices may slip $30-$40 per ton.

Going forward, the devil will be in the details. Much of it centers on producers being able to continue to closely manage supply and avoid a run up in inventories. If they succeed, 2012 could be another solid year despite the huge amount of uncertainty about the global economy. U.S. mills will continue to be the low cost producers, and thus exports should continue to be a key outlet. While Asian demand has weakened recently, it’s likely just a typical pause in orders caused by a year-end drawdown and the drop in export prices.

U.S. demand isn’t expected to register any large gains, but at the same time steady, albeit incremental growth is likely to continue. After an initial weakening early on, 2012 could be another solid year unless the European Euro crisis pulls the global, and U.S. economy, into a tailspin. The recipe may still continue to work.

Harold Cody is a contributing writer for PaperAge. He can be reached by email at: HCody@paperage.com.
Europe: The Year Ahead

After four years of financial pain, closures and job losses, pulp and papermakers in the Eurozone face another grim year. The only grade performing well is tissue.

By David Price

Europe is moving into its fifth year of recession, the euro currency is losing value against the dollar and sterling, south European countries are defaulting on loans and piling up massive debts, and business confidence is low in all sectors. Loans and credit are hard to get. The euro currency may vanish in a year’s time. Germany and the UK are the only countries which show signs of modest recovery. European Russia is also losing its credibility as member of the BRIC “club.”

Against this backdrop, pulp and paper makers have to do business.

Pulp

For several years China’s pulp demands have sustained European producers, but since mid-2011 the Chinese market has slowed due to overcapacity in that country. But I believe Chinese pulp buyers will return to the market later this year once they sort out their problem.

For European producers this will not be enough to help them through the next two years as business sentiment weakens. Some integrated pulp and paper producers like UPM are now selling pulp on the spot market, while other pulp producers have invested in power generation. This will lead to overcapacity and then downtime. PaperAge market analyst Harold Cody in the Nov/Dec. 2011 issue wrote, “Demand in the developed areas will continue to shrink into next year.”

But like this writer, he is deeply worried by the debt crisis over here.

As European pulp mills juggle production, supply and capacity, they face relentless competition from Brazilian pulp producers. Most of their production will go to Asia but some serious tonnage will reach Europe. Between 2012 and 2015 four greenfield pulp mills will start up. They are: CMPC, Fibria, Klabin and Suzano, each producing 1.5 million tpy.

Recovered Paper

European mills that use recovered fiber as feedstock are now finding their supplies squeezed by the insatiable demands of the Asian market and by the activities of new national waste management companies. These have no roots at all in the paper industry, they are simply export companies. The European recovered paper merchant of 30 years ago is almost extinct. The impact on European mills that make newsprint and printing & writing grades is one where they are forced to tap into lower grades of recovered paper for their feed stock. This is expensive to process and the increased price can no longer be passed on. All the “good stuff” has been collected and exported by the national players. European legislators have identified 90 grades of recovered paper which mills may use. But in practice the mills — especially in P&W grades — do not have the resources to operate in such detail.
heads up

Newsprint
The long-term decline continues and we all know why. Daily newspapers account for 80% of total newsprint consumption in Europe. According to Poyry, the key factors in reduced demand in Europe are declining circulation (70%), and pagination (30%). Newspapers like The Times, The Guardian and The Independent in the UK have downsized their broadsheets.

Like most readers, I have dropped my subscription to paid newspapers mainly because I can get the news online for free or at lower cost. I also read a tablet version.

The newsprint sector has cut overcapacity in the recent years. The largest shutdowns last year were the PM61, 95,000 tpy Holmen mill in Spain and UPM’s Myllykoski mill in Finland which produced 600,000 tpy from three PMs. Poyry reports that the only planned capacity increases will be in Russia.

The prospects for newsprint in Europe aren’t good. All newsprint publishers are losing money, demand is falling, and capacity shutdowns will continue.

Tissue
Finally, some good news. In Europe, tissue consumption has increased steadily at 3.4% a year. Current European production is 7.1 million tpy, over half of which is consumed by Germany, France and UK. Per capita consumption in Western Europe is an average of 15.3kg. — highest in Norway and lowest in Russia.

Between 2110 and 2020, growth in this sector is expected to grow rapidly, especially in Poland and Russia, however they do start from a much lower base line.

Comment
In writing this I am always aware of the looming presence of China and its influence on not just European industry, but everywhere else. Europe’s domestic markets for pulp and paper will evolve again this year with more closures and job losses then, later, China will return to the market and start buying. Was there ever a time when a region’s pulp and paper production depended so much on one customer? ■

David Price is a contributing writer for PaperAge. He can be reached by email at: DPrice1439@aol.com.

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It’s often said that a stable pulping process is an efficient pulping process. There’s a lot of truth in that, since operators can manage a fiber line or recovery line with more self-confidence and concentration if it’s running smoothly, with minimum variation. But operating a pulping process to minimize material consumption and lower costs is a lot more than just wishful thinking as it is not an easy task. After all, chemical pulping and recovery plants are complex and interdependent multi-stage operations with variable quality wood chips as a raw material and many other disturbing variables. Moreover, upsets caused by chip quality are often unforeseen, so trying to predict upsets without enough information is a bit of guesswork. As an added complication, the chemical reactions take place over several hours and adjustments made in one shift are often not seen until the next shift comes in. Then, more often than not, the process settings have changed.

Experienced shift operators often know how to handle upsets and deal with them, most of the time by instinct and learned skills. But even experienced operators, and certainly those with less experience, need process and product quality information immediately at their fingertips and the automation tools to achieve that elusive “sweet spot” for process operations. That’s where stable quality, smooth process operations and lowest costs come together. To achieve this equilibrium point, operators need an early detection and warning system which sees changes as they are happening, and reacts quickly and decisively.

EARLY WARNING AND REACTION
Today, Metso analyzers and advanced process controls (APCs) have assumed that role of the early warning and reaction system by measuring and managing each of the unit operations in the pulping and recovery line, responding to...
process upsets in the most direct and timely way, and leaving the overall process management to the operating crews. Then they can focus on the most efficient and profitable state of operation.

This stability of operation is achieved in several ways;

- Process analyzers frequently measure the state of the chemical reaction processes and fiber quality and provide a profile of their development throughout the line. With frequent updates, faster reaction to upsets and more precise control is possible.

- Model-based process controls regulate the chemical reaction rates of pulping and recovery processes in the presence of disturbances. Measured input conditions determine the actions taken so the end result is process and product quality stability. In many cases the advanced controls emulate the best operating practices, as if that best operator were on duty twenty four hours per day.

- Since the controls work tirelessly and consistently, the operating conditions from shift to shift are steady and shift transfers are made without disturbances. The communication between shift operators improves considerably.

- Startups, shutdowns and transitions in fiber species are handled seamlessly with minimum upset.

- Energy generation and heat transfer processes are managed for maximum energy output and minimum energy waste.

With these stabilizing tools in place, operators can then manage operating targets to stabilize the pulp quality, increase yields and minimize the raw material and energy costs that are critical to the economic viability of a pulp mill. Some typical case studies for APCs are presented below.

**VARIABLE CHIPS MAKE UNIFORM PULP**

Variation in wood chip quality is one of the most important disturbances that affect the kraft pulp digesting process, and one which pulp makers struggle to deal with the world over. Uneven wood chips can contribute to irregular cooking conditions and variable pulp quality. So, to effectively deal with these chip quality issues and other process instabilities, Cenibra in Belo Oriente, Minas Gerais, Brazil commissioned Metso Continuous Cooking Optimizer systems on fiberline 1 and fiberline 2, which together produce 1,170,000 tonnes per year of ECF bleached eucalyptus pulp.

The continuous digester systems were intended to even out disturbances to the pulping processes and reduce Kappa number variability, thereby stabilizing pulp quality. With this steadiness, pulp yield could be increased, thus reducing the cost of wood per tonne of pulp. And the goals have become reality, as the pulp quality control objectives of Cenibra have been fully met by complying to control targets, opening the door to reduced specific wood consumption or increased pulp production.

**MINIMUM BLEACHING COSTS**

In chlorine dioxide bleaching stages, adding more chemical past a certain optimum point no longer produces a corresponding brightness response. In many cases the chemical dosage is kept above this optimum limit in order to ensure that the brightness target will be achieved. This is typically what operators do in a manually controlled operation. When the standard deviation of brightness is reduced by more effective process control, this “safety margin” can be cut, resulting in significant chemical savings.

Veracel Celulose’s 900,000 tpy ECF eucalyptus pulp mill in Bahia State, Brazil reports excellent cost savings in the bleach plant while maintaining very precise quality control of their final product. The mill claims that their consumption of chlorine dioxide is near the lowest in the world. The credit goes to Metso’s process analyzers and advanced process controls.
Chlorine dioxide consumption has been reduced in a controlled way since the mill startup. Initial control evaluation tests confirmed that the chlorine dioxide consumption was reduced by 7.4% in the D0 stage. Those initial results have been improved even further to achieve at least 11% savings from startup.

DE-BOTTLENECKING

Over a period of several years Zellstoff Rosenthal’s 330,000 tpy ECF bleached kraft pulp mill in Germany has made significant efficiency and productivity improvements by employing Metso advanced process controls in the recovery and fiber lines. First, the optimization control of the causticizing process increased the Effective Alkali (EA) of the white liquor by 4.6%. Next, lime kiln controls cut lime kiln energy consumption by 3% and increased re-burned lime production by 20%. The optimized control of the D stage in the bleach plant lowered chemical consumption and stabilized the process. All of these controls de-bottlenecked the pulping and recovery processes and supported increased mill production, not to mention chemical and energy savings.

MORE GREEN ENERGY

Recovery boiler optimization control was a recent addition at Zellstoff Rosenthal. With the new controls liquor burning capacity was pushed up by 2.8% to 2030.7 metric tons of dry solids per day. Consequently, the steam generation of the boiler jumped by 2.2%. The variation of the superheated steam temperature dropped by 55.7%, thereby improving the turbine efficiency and increasing gross energy production by 1.57 MW. The energy produced by the recovery boiler is regarded as “green energy”, providing an extra bonus when sold to the national grid.

USING STEAM EFFICIENTLY

Metso’s intelligent sootblowing optimization application was installed at a Nordic pulp mill to improve the availability of the recovery boiler. Sootblowing optimization is based on boiler tube fouling indicators, which are calculated for different boiler sections. As a result, tube cleaning is done only in boiler sections where it is needed using the most effective sootblowers. The fouling management of the boiler was enhanced and the steam consumption was reduced by over 9%. This reduction in steam consumption contributed to the mill’s sustainability program, as they are actively working to cut green house gas emissions.

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liquor burning capacity</td>
<td>+2.7 %</td>
</tr>
<tr>
<td>Steam production</td>
<td>+2.2 %</td>
</tr>
<tr>
<td>Superheated steam temperature</td>
<td>+5 °C</td>
</tr>
<tr>
<td>Variation (1-sigma)</td>
<td>-55.7 %</td>
</tr>
<tr>
<td>Total power generation</td>
<td>+2.4 %</td>
</tr>
<tr>
<td>Flue gas NOx</td>
<td>-17.9 %</td>
</tr>
<tr>
<td>Flue gas TRS</td>
<td>-68.4 %</td>
</tr>
</tbody>
</table>

The multiple benefits of recovery boiler APC included increased “green” energy generation and lower emission levels.
**REducing CARbon FOOTprint**

In yet another APC application, Cenibra in Brazil realized a 90% reduction in vented steam after Metso’s Steam Network Manager APC was installed. Fuel costs are down and the carbon footprint of the power boilers has been slashed by the equivalent of 2,200 tons per month of CO2 emissions.

The fundamental objective of Steam Network Manager is to guarantee both steam quality and steam availability — not too little for the pulp mill processes and not so much that it has to be vented. Steam availability is ensured by regulating steam balance of the steam network by ensuring that steam production of the boilers matches to steam consumption of the turbine-generators and the mill processes demanding process steam at any time instant. The APC controls many different unit operation and valves in order to balance supply and demand.

**CONCLUSION**

For well over 20 years now Metso has been providing Advanced Process Controls to pulp mills all over the world. These stabilizing controls, many based on Metso process and pulp quality analyzers, have helped mills to find the ideal operating point, thereby improving product quality and saving raw materials and energy. The raw material and energy savings can generate a considerable return on investment and reduce the carbon footprint at the same time, thus providing a more profitable and sustainable operation.

Mark Williamson is a Journalist Engineer in Thornhill, Ontario, Canada. For further information about Metso’s advanced process controls contact: Jukka Puhakka, Manager, Pulp and Paper Applications, Metso, Tampere, Finland. jukka.puhakka@metso.com

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**Benefits:**

<table>
<thead>
<tr>
<th>Benefits:</th>
<th>Results:</th>
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<tbody>
<tr>
<td>Decreased sootblowing steam consumption</td>
<td>9.15% decrease</td>
</tr>
<tr>
<td>Decreased emissions during winter months</td>
<td>2,400 tonnes lower CO2 emissions</td>
</tr>
<tr>
<td>Decreased natural gas consumption during winter months</td>
<td>26.8 TJ energy savings</td>
</tr>
<tr>
<td>Sootblowing condition monitoring</td>
<td>Continuous data collection for enhanced maintenance</td>
</tr>
</tbody>
</table>

Recovery boiler sootblowing advanced control demonstrated convincing results.
The hallmarks of modern Voith designs for paper mills are integrated and environmentally compatible processes with a high level of economic efficiency. The latest approach in this area is CTC technology (Controlled Thermal Conversion): a process for converting paper sludge to valuable mineral products and thermal energy. This has allowed both high-cost waste disposal and energy consumption to be minimized.

Recovered paper processing currently produces more than 25 million metric tons of paper sludge waste worldwide. This is an increasing trend, as recycled fibers are being used more and more and for increasingly high-quality papers. This puts stringent demands on fiber quality that can only be achieved by means of a higher reject rate in the treatment process. The result: more paper sludge. Whereas previously large volumes of sludge ended up in landfill or were even used as mineral fertilizers in agriculture, nowadays it is mainly combusted in power plants with fluidized bed technology and therefore produces steam and/or electricity. However, the resulting calorific value is very low. In addition, about 25% of the sludge used occurs as ash, which in turn results in disposal costs.

Waste Not, Want Not

CTC technology allows for the conversion of paper sludge to valuable minerals and energy, while substantially reducing the amount of overall waste material that heads to a landfill.

By Markus Oechsle
CTC ADDS MORE VALUE TO SLUDGE

Using CTC technology it is now possible to convert the paper sludge into reactive minerals and thermal energy. The minerals produced under controlled conditions have a large reactive surface and are ideal, for example, as hydraulic binders in various industries, e.g. for producing cement-like substances. CTC technology therefore produces a saleable product from the sludge occurring. It also yields electricity and steam, which can be used in the paper mill. The amount of waste material to be disposed of, and thus the disposal costs, are substantially reduced.

CTC technology is another key component of Voith Paper’s Integrated EcoMill (IEM), a cost-efficient and environmentally compatible paper mill (Fig. 1). The technology was developed by experts from the Dutch MinPlus-CDEM Group, which specializes in sludge recycling. In January 2011 Voith Paper acquired the technology including patents. Using a “full scale” pilot plant with a capacity of up to 200,000 tons per year (tpy), the process was refined and developed to industrial maturity. Since 2007 sludge from several paper mills has been processed in the pilot plant. The CTC process has proven effective and has been extremely stable.

THE MINERALS EXTRACTED ARE SUBSTANTIALLY MORE REACTIVE

In the CTC process, combustion in the fluidized bed takes place under controlled conditions at exactly the predefined combustion temperature. In the process the minerals contained in the sludge are dehydrated. Kaolin is converted to metakaolin, which is much more reactive. Part of the carbonate is extracted from the calcium carbonate. This corresponds to the process of lime or cement burning (calcining).

Recovered paper processing currently produces more than 25 million metric tons of paper sludge waste worldwide.

The minerals produced in this way have high pozzolanic characteristics, i.e. inclined to react with water and calcium to form a solid structure. They are therefore suitable for adding to cement as they improve the binding and strength properties of conventional cement. Other fields of application are adsorption processes in the liquid and gaseous phase, for example in the binding of heavy metals, where the minerals, with their large reactive surfaces, function as...
sorbents. This covers just two of the known areas of application for these reactive minerals to date. There is the potential for further fields of application.

Thanks to the low combustion temperature, a major portion of the carbonate is retained and the emissions of the greenhouse gas carbon dioxide are thus reduced. The low calorific value of the paper sludge is also sufficient to operate the CTC process without additional fuel input.

TEMPERATURE CONTROL IS ESSENTIAL

According to one of the developers of CTC technology, the key element in the CTC process is temperature control.

“...the most important factor is controlling the temperature,” states Dr. Joep Biermann. “That is to say that a high level of temperature control is necessary to improve the value of the minerals contained in the sludge, as this is the starting material for the CTC process. This is why we also opted for fluidized bed firing, as this method has the great advantage of allowing the process conditions to be controlled in a targeted manner.”

“Only if the sludge is treated properly, i.e. thermally converted under the proper controlled process conditions, will a highly reactive mineral product result,” Dr Biermann explains. “We therefore clearly defined and patented the spectrum for the optimum operating conditions. In addition, the thermal process produces energy in the form of steam and/or electricity.”

CTC technology produces a saleable product from the sludge occurring. It also yields electricity and steam, which can be used in the paper mill.

SEVERAL YEARS EXPERIENCE IN PILOT PLANT

Since 2007 the pilot plant in the Netherlands has been processing around 200,000 tpy sludge from several paper mills to produce over 50,000 tons of reactive minerals. As this is an exothermic process more than 6 MW of electricity are produced at the same time using a steam turbine. The specific electricity generation is 120 kWh per ton of sludge.

For optimum operation of a CTC process the sludge composition must be known. Over the years a lot of know-how and experience has been gathered about the effect of sludge composition on combustion conditions. The basis of this is a database containing data on more than 200 types of sludge from all over the world and a specially developed measuring procedure for analyzing sludge composition and combustion properties.

Interested paper mills can have their paper sludge treated at the Voith Paper pilot plant and have the recovered minerals analyzed in respect of their product qualities. In addition, the energy obtainable in the process can be established.

REFERENCE PLANTS ALLOW CUSTOMIZATION

Voith Paper offers CTC plants worldwide. To this end, reference sizes were developed that can be adapted to the customer’s individual needs. The largest plants process up to 200,000 tons of sludge per year. The smallest is designed for around 50,000 tons and is therefore also ideal for smaller and medium sized mills.
To be able to illustrate the specific economic and ecological advantages of a CTC plant we will use the practical example of a newsprint plant. The paper mill has a production line for 436,000 tpy of newsprint paper from 100% secondary fibers. This requires around 558,000 tpy of recovered paper, which is prepared in the plant’s own deinking facility. As a result the plant produces around 182,000 tpy paper sludge and 25,000 tpy rejects.

There is no power plant on-site. Electricity is bought from the grid and the necessary process steam is produced by steam boilers.

The rejects are sold.

In the CTC plant, screw presses increase the solids content of the sludge to more than 50%. This solid material in turn is composed of 50% organic fines and fibers combined. The other 50% is made up largely of calcium carbonate and kaolin.

As a result of the sludge conversion process in the CTC plant, the 182,000 tons of paper sludge yield annually around 49,000 tons of reactive minerals, 16,000 MWh of electrical energy and 140,000 tons of steam used for paper manufacture and to relieve the load on the steam boiler.

The transport and disposal costs for the sludge are dispensed with in their entirety.

The investment costs for the plant described are in the region of 25-30 million euros, depending on scope of supply. As the CTC plant substantially reduces or even eliminates energy and disposal costs, return on investment times of between four and six years are achieved. This does not take account of possible subsidies or CO₂ credits.

As a module of the Integrated EcoMill, CTC technology helps to sustainably improve the overall ecological balance of a paper mill. However, far more often a CTC plant is suitable for retrofits to existing paper mills. With this in mind, Voith has developed a complete package in which everything is supplied from a single source — from the preliminary phase through plant design and culminating in the complete installation and commissioning.

Although the investment costs are higher than for conventional combustion power plants, the revenue from the minerals makes them economically effective in a very short time. In addition, the ecological balance through the reduction of carbon dioxide emissions is considerably improved.

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A Comprehensive Lubrication Plan... Why Bother?

Is there a need for a comprehensive lubrication management program when two of the objectives for a mill’s operation are “make the place run better” and “better manage the costs”? You bet there is.

By John Yolton

Imagine you work in a paper mill. One of the criteria for success of your mill is how well it runs, e.g., its availability, determined in part by its equipment’s reliability.

Imagine you are the mill’s manager and have responsibility for all of the profit & loss due to operations, sales, and human resources requirements for the facility. You go on holiday for two weeks and no one replaces you during your absence. How does the mill operate during your absence? Worse, About the same, Better?

Suppose you are the lubrication mechanic assigned to perform the lubrication tasks for the paper machines and you take your annual two weeks summer vacation and no one takes over your responsibilities during those two weeks. How well do the paper machines react to your absence?

Imagine now that you are the Purchasing Manager for this same facility. You go on holidays for two weeks and no one else performs the responsibilities of your position. How does the mill run? Worse, About the same, Better?

Imagine instead you are the Maintenance Manager, same scenario, you leave the mill for two weeks to take a well deserved break from the hectic routine and no one takes over your responsibilities during your absence. How well does the mill operate during your absence? Worse, About the same, Better?

Lastly suppose you are the lubrication mechanic assigned to perform the lubrication tasks for the paper machines and you take your annual two weeks summer vacation and no one takes over your responsibilities during those two weeks. How well do the paper machines react to your absence? Worse, About the same, Better?
How much of which lubricant you inject into each point, and at what frequency?
Is he monitoring the amount of lubricants you keep in inventory, making adjustments as required?
Does he recognize that you know you have to:
- top off an oil reservoir, even on an automatic system on some sort of schedule, or
- check the level of grease in the barrel for the system on the wet end of the paper machine, or
- drain the water from the oil reservoir for the dry end lube oil system every week, or
- that the air filter on the tank must be replaced periodically as it plugs with moisture and debris, or
- that the inboard bearing on the output shaft on the gearbox for the 1st press drive has been running a little warm and needs monitoring on a more frequent basis, and
- that the portable dehydrator needs to be connected on the wet end oil circulating system because of water in oil, which you detected?

Has he been informed that last year you reduced the number of types of lubricants used and stored, reducing the overall inventory value because you communicated with your lubrication and bearing suppliers about ‘standardizing’ on a few good lubricants, instead of an unmanageable laundry list of lubricants? And that you keep a running inventory of lubricants so the mill will not run out?

If we do nothing other than improve the lubrication processes within a paper mill, we will have contributed significantly towards the mill’s improvement effort.

Has he been told that according to data inadequate lubrication and contamination contribute to over 50% of all bearing failures? And is he informed that you are concerned because you’ve noticed some iron filings in the oil filters from the main dryer section oil circulating system?

Does he ask you where all of this activity is documented and the equipment’s history kept up to date?

COMPREHENSIVE LUBRICATION PROGRAM

Is there a need for a comprehensive lubrication management program when two of the objectives for a mill’s operation are:
- “make the place run better” and
- “better manage the costs.”

If we do nothing other than improve the lubrication processes within a paper mill, we will have contributed significantly towards the mill’s improvement effort.

Documenting what is currently being done and adjusting and modifying those activities to reflect best lubrication practices is the basis for a comprehensive lubrication program. Incorporating those activities within the CMMS/EAM enables streamlining the processes within the program.

As with any improvement effort the starting point is what you are doing today, your ‘as is’ situation. To facilitate this evaluation SKF has developed a simple assessment of your ‘as is’ compared to industry best practices for lubrication management. This assessment process is called ‘Client Needs Analysis – Lubrication Management’ (CNA-LM).

The basis for the assessment is a framework SKF calls Asset Efficiency Optimization (AEO). The assumption is that every action taken in a pulp and paper mill is aimed at improving or optimizing the efficiency of those assets critical to producing the mill’s product. Certainly lubrication is a key factor for successful optimization.

The four elements of the optimization process include:
1. **Strategy.** What is the strategy for lubrication for the critical assets in your mill?
2. **Identification.** What assets are currently stressed and require remedial or corrective action?
3. **Control.** Who and When are planned and scheduled actions to provide correction?
4. **Execution.** How well were the actions performed?

As always something is to be learned from this process and those ‘learnings’ must be applied in order to achieve the benefits.

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China’s Import of Wood Chips Grows as Pulp Production Expands

Chinese pulp mills increasingly have to rely on imported wood chips for their wood fiber needs. In 2011, record volumes were being imported mainly from hardwood plantations in Vietnam, Thailand and Indonesia. Imported wood chip costs from Vietnam have gone up 40 percent in two years and are closing in on costs for chips shipped to Japan.

With the lack of sufficient quality and quantity of domestic wood fiber supply, new pulp mills in China are looking to expand importation of wood chips from plantation-rich countries in Southeast Asia to meet their growing fiber needs, explains Hakan Ekstrom, publisher of Wood Resource Quarterly (WRQ).

According to the most recent report, in the third quarter of 2011, Vietnam, Thailand and Indonesia were the major suppliers to China, together accounting for about 88 percent of all imports of hardwood chips. Malaysia, Cambodia, Chile and Brazil are few of the recent and still small suppliers of hardwood chips to China. These countries, which all supply wood chips from fast-growing Eucalyptus and Acacia plantations, are likely to expand their shipments in the coming years when Chinese pulp mills continue to diversify their supply sources, Ekstrom said in his report.

The wood chip imports in the first ten months of 2011 already equal more than the total volume of imports to that country in all of 2010. Imports of wood chips in 2011 are expected to reach around seven million tons, or 37 percent higher than in 2010. This upward trend is expected to continue in 2012 and 2013 because the Chinese pulp industry is in an expansion mode.

Pulp mills in China consume practically only hardwood fiber, so imports of softwood chips were negligible up until last year when a few shipments started to enter Chinese ports from Australia, Russia, the U.S. and New Zealand. This year, total softwood imports may reach just above 300,000 tons, or four percent of total chip imports.

The average value for imported wood chips has steadily increased, reaching $180/ton in the third quarter of 2011, or about 22 percent higher than the same quarter last year, as reported in WRQ. Vietnam is the lowest-cost supplier, while the cost for Eucalyptus chips from Australia were at the high-end in the third quarter.

The cost of chips imported from the major supplying country Vietnam, have gone up almost 40 percent over the past two years. Vietnam is also shipping large chip volumes to Japanese pulp mills and it is interesting to note how the price discrepancy between chips exported to Japan and China has declined from almost $60/ton premium for Japanese-bound chips in 2009 to only $14/ton in the third quarter of 2011.

Wood Resource Quarterly is published by Wood Resources International LLC, an internationally recognized forest industry consulting firm based in Bothell, Washington. For further information, please visit: www.wri-ltd.com.
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