

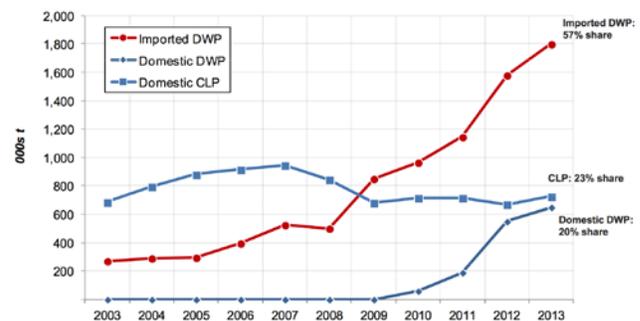
Dissolving Pulp Update

Dissolving wood pulp is a highly purified bleached wood pulp having a high (>90%) cellulose content and a very low content of hemicelluloses (lower molecular weight sugar polymers). Its principal use is as the raw material for production of the synthetic textile fiber, viscose, also known as rayon. In this application it is chemically transformed into a soluble form and dissolved. The solution is then forced through small holes into an acid bath, where the cellulose is regenerated in the form of long strands of viscose fiber. Other, lower volume, uses include the production of cellulose derivatives, such as cellulose acetate, for which a purer, higher-priced grade is required. Cotton linters pulp may also be used as a raw material for producing viscose and cellulose derivatives.

The last few years have seen strong growth in demand for dissolving pulp, driven mainly by correspondingly strong growth in Chinese viscose rayon production. China's production of viscose grew from 1.8 million tons/year in early 2010 to 3.6 million in late 2013. Since rayon can be a substitute for cotton, the price of dissolving pulp is tied to that of cotton. Cotton prices peaked in 2011, making viscose production attractive. Correspondingly, dissolving pulp prices also increased, making dissolving pulp production an attractive alternative to paper pulp production, especially in view of declining markets for some paper grades. Not surprisingly, the following months saw a rash of announcements of pulp mill conversion projects. (See McDonough, T.J., "The Industry Adapts: Fluff and Dissolving Pulps," Paper Age, Nov./Dec. 2012, p. 21). World dissolving pulp capacity grew from 4 million tonnes in 2010 to 6.3 million in 2013.

China's growing appetite for dissolving pulp resulted in a sharp increase in imports, and a more modest increase in domestic production (Figure 1). In view of

this, Chinese producers petitioned their government to conduct an antidumping investigation, which was begun in early 2013. Over the objections of the affected offshore producers, who cited flawed assumptions used in the determination, this resulted in the imposition of tariffs on imports. The tariffs were specific to individual producers, but rates of 17%, 13% and 6.8% have been cited for pulp produced in the United States, Canada, and Brazil, respectively. In Canada, for example, Fortress Specialty Cellulose has been charged with 13%. However the schedule of rates includes much higher rates for new production facilities (23.7% in Canada), seriously impacting the profitability of any proposed projects. The Canadian government recently filed a claim with the World Trade Organization regarding the duties. According to the WTO, Canada's position is that "the preliminary and final duty measures announced in November 2013 and April 2014 appear to be inconsistent with China's obligations under various provisions of the Anti-Dumping Agreement and the General Agreement on Tariffs and Trade."



Source: Hawkins Wright Estimates

HAWKINS WRIGHT

Figure 1. Dissolving pulp consumption in China (DWP = dissolving wood pulp; CLP = cotton linters pulp) Source: Hawkins Wright, via shanghaiipulweek.com

An October 29 corporate update from Fortress Paper, parent company of Canadian dissolving pulp producer Fortress Specialty Cellulose, provides a glimpse into the state of this rapidly evolving industry. The report states, “The viscose staple fibre and rayon filament markets, which are key drivers in dissolving pulp demand, reached a bottom in the second quarter of 2014, according to Fortress, and since then capacity utilization has improved. The third quarter of 2014 saw dissolving pulp reach its lowest prices since May 2009. Company management believes dissolving pulp prices will improve in 2015 because a large proportion of dissolving pulp producers are currently operating at a loss. Fortress forecasts capacity utilization in the dissolving pulp industry will reach 94% in 2015 and continue to increase in subsequent years as global growth in demand for dissolving pulp outpaces growth in supply.”

In a November 10 statement, SAPPI CEO Steve Binnie said, “Markets will remain challenging ... for dissolving wood pulp due to current pricing pressures. In the dissolving wood pulp market, demand remains robust. US Dollar prices have weakened post the financial year due to pressure from lower cotton prices and the continued oversupply of dissolving wood pulp and viscose staple fibre production capacity. Cloquet [Minnesota] Mill will likely take advantage of its ability to swing between dissolving pulp and hardwood paper pulp production to optimise margins for the US business.”

Trend Indicators from Industry Intelligence Inc.

[Industry Intelligence Inc.](http://www.industryintel.com) has provided market intelligence to more than 600 companies worldwide since it began as Forestweb in 1999. Industry Intelligence delivers a daily report featuring news of the paper and forest products industries. For your subscription visit: <http://www.industryintel.com>

Below is a small sampling of recent Industry Intelligence headlines, chosen to mirror significant trends in and around the paper and forest products industries.

Renewables expected to account for nearly half of global increase in power generation to 2040 and overtake coal as the leading source of electricity; world primary energy demand expected to be 37% higher in 2040 under central forecast scenario: IEA

According to the International Energy Agency’s (IEA) World Energy Outlook 2014, world demand for coal and oil reaches a plateau by 2040.

Finnish forest industry's future success will be helped by shortage of better packaging globally, with paperboard demand expected to grow in long term, strengthened by need to move to renewable materials, says consultant, noting pulp demand also will rise

This according to Finnish forest sector consultant Rainer Häggblom.

Total of 21% of food, personal care companies increase use of corrugated packaging worldwide since 2008, driven by advent of e-commerce, need for rigid and protective qualities in secondary packaging, increased applications in retail, promotional displays

A challenge still facing corrugated packaging is cost, which is predicted to rise about 3 percent per year through 2017. However, producers of corrugated packaging have been making gains in sustainability by using recycled materials and reducing weight.

Expera to buy Old Town Fuel & Fiber pulp mill in Maine from its senior secured lender, says it will increase company's vertical integration into pulp, reduce mill's commercial risk; bankruptcy code to guide sale process, financial terms not disclosed

Old Town has the capacity to produce more than 200,000 tons annually of bleached kraft pulp. It has been idle since August.

Study by Holmen Paper of 24 top European book publishers and printing companies reveals their consumption of mechanical paper is up from prior study four years ago, at cost of woodfree grades; hardcover book sales are down, paperbacks should remain stable

Commentators believe that e-books have the potential to take a 20–30 per cent share of the total book market, compared with today’s 3–5 per cent; the rise of the e-book is not happening at the cost of printed books, whose numbers are not declining at the same rate as e-book growth.

US wood pellet exports to Europe could rise 5%-15% (sic) by 2020 compared with 2012, with global demand for US pellets likely to reach 25 million to 70 million tonnes, International Trade Administration estimates; US South a magnet for biomass investment

By 2020, the U.S. International Trade Administration projected this year, pellet exports to Europe could be between five and 15 times what they were in 2012. Emissions rules used in Europe treat biomass as "carbon neutral."

Construction starts on 450,000 tonnes/year paperboard mill in Guangxi, China, that is part of 19.13B yuan forest integration project, a JV of Stora Enso and Guangxi Forestry Group; project designed to have 900,000 tonnes/year each of paperboard and pulp

The project will be built in two phases. Phase 1 includes board machines with an annual output of 450,000 tons.

Study finds 21% of organizations increasing use of paper

While 56% of respondents said there was an environmental policy that includes reducing paper usage, less than one-quarter actively promote such a campaign. Workers are continuing to bring printouts into meetings, mark up hard copies and obtain physical signatures, according to research conducted by AIIM.

UPM launches Valor paper, which it states has same feel as 15% heavier grades and smaller environmental footprint because volume of raw materials used is less; Valor allows publications to save on mailing and delivery costs, says UPM product manager

The article reports that Finnair has reduced fuel costs by using this lighter paper grade for its in-flight magazine.

Shuttered Old Town Fuel & Fibre pulp mill being purchased by company that will send output to Wisconsin, and closed Great Northern Paper mill in East Millinocket has three bidders, with results expected soon, Maine Gov. LePage says

The governor said the company looking to buy the Old Town mill has signed the purchase papers and wants to restart the mill as early as December. The mill produced bleached hardwood kraft pulp; it was idled on Aug. 13. LePage said each of the would-be buyers of the Great Northern mill have separate intentions, one to "keep it active and moving forward," another that seems interested in liquidating it, and a third "looking at changing."

Catalyst Paper's planned purchase of two NewPage coated paper mills in Rumford, Maine, and Biron,

Wisconsin, will likely expedite merger of NewPage with Verso, says industry pundit; merger has been held up mostly by long DOJ antitrust review

The Biron mill has an annual capacity of 355,000 tons for lightweight coated and ultra-lightweight coated paper. The Rumford, Maine mill has 510,000 tons of paper capacity for coated specialty, coated freesheet and coated groundwood paper, as well as 130,000 tons of other grades of paper.

Fall in foreign exchange rates in recent weeks has had positive effect on profitability of European paperboard exports, says Stora Enso CEO, adding that if trend continues it won't compensate for paper demand decline, which he estimates at about 3%/year

According to Stora Enso's CFO Seppo Parvi, net foreign exchange rates had a positive impact of EUR 15mn on the third quarter 2014 result.

Fibria CEO says company to submit to its board the project to expand its Três Lagoas eucalyptus pulp mill by 1.75 million tonnes/year; new Montes del Plata mill's 2014 output expected to be less than had been predicted, market should be positive

Fibria is confident the international market, traditionally heated in the last quarter of the year, should be positive.

Agenda 2020 Technology Alliance opens registration for Technologies for Advanced Manufacturing of Pulp and Paper Products, which aims to identify technologies to enhance industry's sustainability, competitiveness; sessions set for Nov. 18 and Dec. 10

The Agenda 2020 Technology Alliance is an industry-led consortium that promotes development of advanced technologies for the pulp and paper industry. It is funded by the National Institute of Standards and Technology.

EU sets 27% renewables energy target as part of historic deal to cut GHG by at least 40% domestically by 2030; deal keeps bloc on least cost path for meeting its 2050 goal of reducing emissions by 80%-95%

The target is part of a package of measures to make Europe's energy system more secure, sustainable and competitive.

Domtar receives award for innovation in sustainability from AF&PA for BioChoice Lignin; product is 'a glowing example' of industry's potential

to produce new value streams out of existing resources, says AF&PA President and CEO

Domtar leveraged their Plymouth, N.C. mill's existing infrastructure to start a lignin separation plant – the first of its kind in North America in over 25 years.

IP to invest more than US\$90M over next five years at its lightweight containerboard and fluff pulp mill in Cantonment, Florida, to improve energy efficiency, strengthen competitive position, enhance work environment

Local government is providing approximately \$5 million in grants and infrastructure improvements to support IP's investment.

Fortress Paper's Thurso, Quebec, pulp mill restarts following annual shutdown, will produce paper pulp during ramp-up then change back to dissolving pulp, based on market conditions; 100% production of dissolving pulp targeted for Thurso mill in 2015

Fortress has forecast capacity utilization in the dissolving pulp industry will reach 94% in 2015 and continue to increase in subsequent years as global growth in demand for dissolving pulp outpaces growth in supply.

Scientists disclose new method to convert lignin into simple chemicals, noting that high yields of aromatics from lignin may be obtained by exposing lignin to oxygen followed by treatment with a weak acid under mild conditions

Lignin is the substance that makes trees and cornstalks sturdy, and it accounts for nearly 30 percent of the organic carbon in the biosphere. The innovation is an important step toward replacing petroleum-based fuels and chemicals with biorenewable materials, says Shannon Stahl, an expert in "green chemistry" at the University of Wisconsin-Madison.

Business at the speed of paper will not be tolerated in a few years as customers, employees are increasingly expecting more rapid response time, say 68% of organizations responding to recent study by group advocating reduced paper consumption

More than one in five (21%) organizations are increasing their paper consumption, according to new research by independent information management analysts, AIIM. (to download the full report, go to <http://www.aiim.org/Research/Industry-Watch/Paper-Wars-2014>). This is despite around half of businesses surveyed claiming that the biggest single productivity improvement would be to remove paper. Sixty-eight

percent of respondents in the new study, 'Paper Wars 2014 – an update from the battlefield', said that business-at-the-speed-of-paper will be 'unacceptable in just a few years' time', as the rising expectation among customers and employees is for a much more rapid response. However, only one in five respondents has a board-level endorsed policy to actually reduce paper.

AF&PA Statistics

This week the American Forest and Paper Association issued its October 2014 Paperboard, Kraft Paper and Containerboard Reports.

Paperboard

Total boxboard production decreased 0.8% when compared to October 2013 and decreased 4.6% from September. Unbleached kraft boxboard production increased over the same month last year but decreased compared September. Total solid bleached boxboard & liner production increased when compared to October 2013 but decreased compared to September. The production of recycled boxboard decreased compared to October 2013 but increased when compared to September.

Kraft Paper

Total shipments were 125.2 thousand tons, 1.2% lower than September. Bleached kraft paper shipments decreased from 11.4 thousand tons in September to 8.7 in October, while unbleached kraft paper shipments increased from 115.3 thousand tons to 116.5. Overall, shipments for the first ten months of 2014 were 3.2% lower than the same period last year. Total month-end inventories decreased 15.2% compared to September.

Containerboard

Containerboard production was 2.6% higher than in September 2014, 3.2% higher than in October of last year, and 0.9% higher year-to-date. The month-over-month average daily production was 0.7% lower. The containerboard operating rate for October dropped to 96.9% from September's 97.8%.

The full reports can be purchased by contacting Caroline Nealon, Statistics_Publications@afandpa.org or 202-463-2448.

Paper Quotes

"We're pleased that USDA has formally issued its proposed rule, as paper and wood products deserve to be recognized for their inherent biobased qualities.." –

AF&PA CEO Donna Harman, referring to the U.S. Department of Agriculture's release of its proposed rule indicating the inclusion of many paper and wood products for federal procurement and voluntary product labeling.

"The paper/packaging business is mundane and generally overlooked. However, IP management is anything but mundane. Over the past 10 years, senior leadership has re-imagined the business: selling off legacy timberland and other non-core assets, streamlining operations, sopping up industry over-capacity via peer acquisition, and running for cash." – Ray Merola, investor and contributor to *seekingalpha.com*

"... we're accessing the broader development of the market which is growing and we continue to project about a 5% global growth rate for the adult hygiene categories as well as our specialty wipes. And we're

also participating in the growing retail section of the adult incontinence markets." – Dante Parrini, Chairman and CEO, P H Glatfelter, during a Nov. 4 earnings call.

Statistics Corner: 2012 European Pulp Production

Figure 2, below, summarizes 2012 pulp production statistics for members of the Confederation of European Paper Industries (CEPI). CEPI member countries are Austria, Belgium, Czech Republic, Finland, France, Germany, Hungary, Italy, Norway, Poland, Portugal, Romania, Slovak Republic, Slovenia, Spain, Sweden, The Netherlands, and United Kingdom. Switzerland is not included. As is apparent from the figure, the Nordic countries dominate European production.■

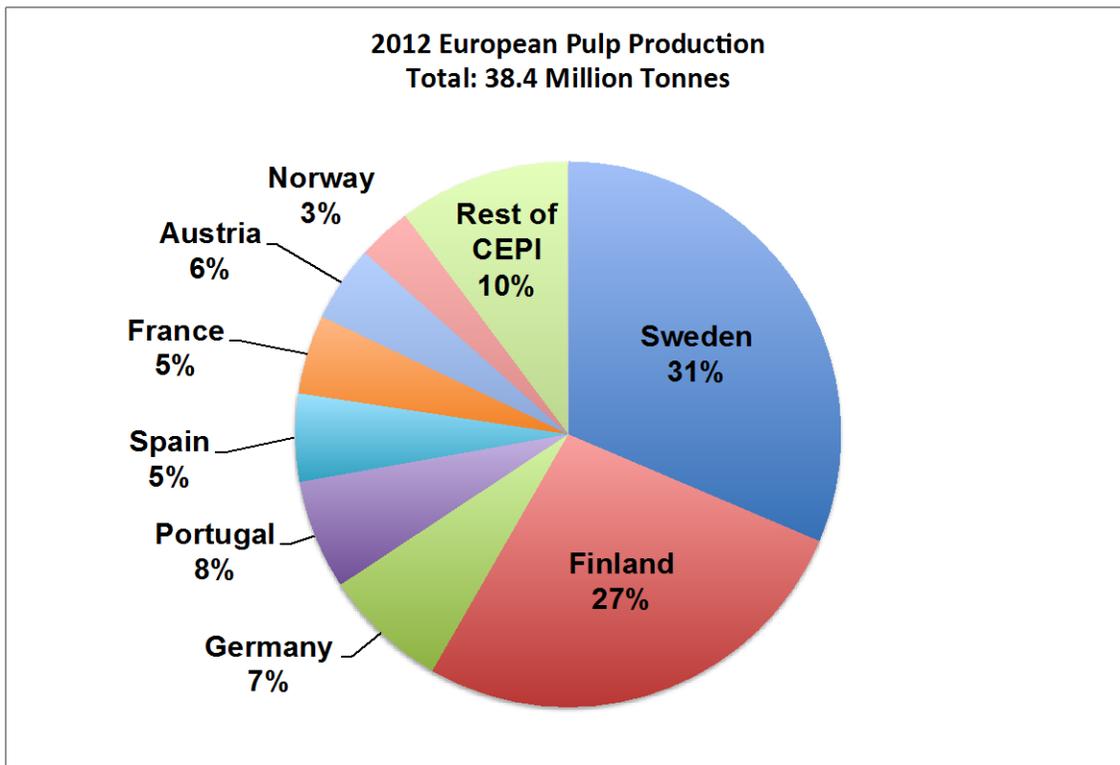


Figure 2. European Pulp Production, 2012 (*Confederation of European Paper Industries*)