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Letter to the Editor

I enjoy reading the newsletter and I find the “Statistics Corner” very useful. However, I’d like to clarify the data provided in the last issue regarding the recycling rate for old corrugated containers (OCC). As the editor of a recycling trade magazine for more than 30 years, I know the U.S. has a very commendable OCC recovery system. The paperboard industry deserves to brag about this accomplishment. That said, AF&PA and others often make a statistical mistake when they report the OCC recycling rate. The mistake is that they include non-OCC recovered fiber in their calculations. The manufacture of a corrugated container always results in industrial scrap, such as double-lined kraft clippings and roll ends. This industrial material has always been recycled and never goes to a landfill. But this fiber is not OCC and should not be included in the OCC rate, as it is now. A back-of-the-envelope estimate of true OCC recovery might be about 70 to 75 percent.

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A Tale of Two Perspectives

By Pat McCarthy, Director

During the past five years, interest and research in biofuels and biorefineries have both significantly increased. As of the third quarter 2012, according to Biofuels Digest (www.biofuelsdigest.com), there were 279 active projects worldwide focused on advanced biofuels and biobased materials. Those related to the pulp and paper industry are few and, within this group, the Europeans continue to outpace the US. In September 2008, the US Department of Energy approved 2 demonstration projects at existing pulp and paper mills, a 25% scale biomass to Fischer-Tropsch green diesel project at Flambeau River (Park Falls,

WI) and a 15% scale renewable biofuels project with NewPage (Wisconsin Rapids, WI), both for \$30 million. In mid-year 2012, DOE terminated both projects, indicating that economics did not justify continued participation. Also, in response to a proposed demonstration-size integrated biorefinery in Old Town, Maine, the DOE in 2012 issued a finding of no significant impact, effectively deciding not to fund the project.

European companies have fared better. In 2011, Chemrec opened a pilot biofuel plant at the Kappa Smurfit paper mill in Pitea, Sweden, producing more than a half-million gallons per year. And recently, the EU approved a 500 million SEK R&D grant to Chemrec for an industrial scale biofuels demonstration plant in Ornskoldsvik, Sweden. Based on Chemrec’s black liquor gasification technology, the project is expected to cost 1 billion SEK with a production capacity of 100,000 tons of biofuels per year. In 2009, UPM Kymenne, Metso, Fortum, and VTT created a joint venture to develop biofuels. Unique to this consortium and biasing towards success was the specific expertise and knowledge that each member brought to the venture – forest products (UPM), energy (Fortum), technology (Metso), and R&D and patents (VTT). In February 2012, UPM announced its decision to build a biorefinery at its Kaukas mill in Lapeenranta (Finland) – with no public investment grants – for a total cost of \$200 million USD. The plant is expected to be operational in 2014 with an annual production capacity of 100,000 tons of renewable diesel fuel. And recognizing UPM’s developing innovation and leadership in this area, the EU Commission in January 2013 awarded a 170 million euros grant to build a biorefinery project in Strasbourg, France.

Why is it that the traditional pulp and paper industry in Europe is not only outpacing the US in developing biofuels but could well be the market leader in this area? Recent research on the business opportunities for

forest biorefineries sheds light on this. Hamalainen et al (2011) reports the results of a survey of forest and biorefinery experts in NA (US, Canada), SA (Argentina, Brazil, Chile, Uruguay), and Scandinavia (Finland and Sweden) and from various industries including chemical, energy, forest products, and oil. The survey focused on biorefinery drivers, production, barriers to technology diffusion, and business models. Overall, the experts see the price of oil as the most important factor in forest biorefinery development. And relative to Scandinavia, the US is more short-sighted, risk averse, less collaborative, and operates in a more uncertain policy environment.

Specifically, Scandinavia reported climate change and the environment as drivers of biorefinery development whereas the US identified competitiveness. The US sees the role of forest biorefineries to be most important in the near term, in contrast to Scandinavia (and South America) which sees their importance in the medium (20 year) term. The US sees insufficient R&D as a greater barrier to development, along with energy and environmental policies that are neither long run nor predictable, and a political environment that favors agricultural-based biofuels. The US identifies an aversion to risk as its greatest weakness. And there are significant differences on issues related to collaborations, Scandinavia having the most positive attitudes and the US having the most negative attitudes.

An increasing thread of research focuses on the regulatory environment and how best to support the development and commercialization of biorefineries. The results of a recent study (Kangas et al, 2011) indicate that biofuel production investments can be profitable with modest policy support (consistent with UPM's investment in Lapeenranta). Technology used depends on resources available. In the US, for example, with wood resources and chemical pulp production capacity, the analysis suggests that pulp production would use wood fiber and biofuel production would employ black liquor. The study concludes that optimal public policy will depend upon the policy objective. If the objective is to minimize direct costs to the public, then production subsidies are optimal; alternatively, if the objective is to increase forest residue use, then an input subsidy is optimal.

In the absence of a clearer, more certain and supportive US regulatory/policy environment and a US business climate that embraces smart collaborations, takes more risks, and sees forest biorefineries as a

business opportunity rather than a savior, the forest biorefinery technology gap between the US and Europe is expected to widen.

Illustrative of a difference in tone are two recent YouTube videos, one on sustainability from the AF&PA in the US

(http://www.youtube.com/watch?feature=player_embedded&v=EXPiuHce0rk)

and the other on the bioeconomy from the Confederation of Paper Industries (CEPI) in Europe (<http://www.cepi.org/mediacentre/video-galleries>).

References

Hamalainen, S. et al. (2011). "Forest biorefineries – A business opportunity for the Finnish forest cluster". *Journal of Cleaner Production* 19, 1884-91.

Kangas, HL et al. (2011). "Investments into forest biorefineries under different price and policy structures". *Energy Economics* 33, 1165-76.

AF&PA Statistics

Since our last reporting of American Forest and Paper Association statistics releases, the Association has issued reports on printing and writing papers, paperboard, containerboard and kraft paper. Below are the key findings:

Printing and Writing

March: Total shipments were down 6 percent compared to March 2012. Shipments of coated free sheet (CFS) papers decreased less than 1 percent compared to March 2012, with year-to-date CFS shipments essentially flat through the first quarter. Uncoated free sheet papers shipments of 753,000 tons in March were 6 percent below the same period last year, with imports increasing 12 percent year-over-year in February and exports declining 12 percent. March uncoated mechanical paper shipments decreased 13 percent when compared to March 2012, with year-over-year exports through February up 28 percent. Coated mechanical shipments decreased 9 percent compared to March 2012 to 247,800 tons. Imports of coated mechanical increased year-over-year through February were up 12 percent.

February: Total shipments were down 12 percent from February 2012. Shipments of coated free sheet (CFS) decreased 5 percent compared to February 2012, with year-to-date CFS shipments up less than 1 percent relative to 2012. Uncoated free sheet paper shipments of 701,700 tons in February were 10 percent below the same period last year, with imports

increasing 14 percent year-over-year in January. Uncoated mechanical paper shipments decreased 22 percent when compared to February 2012. February shipments of coated mechanical (CM) decreased 20 percent compared to February 2012 to 218,900 tons, the lowest total since before 1995.

Paperboard

April: Total boxboard production increased by 1.7 percent compared to April 2012 and increased 2 percent from March. Unbleached kraft boxboard production decreased over the same month last year but increased compared to March. Total solid bleached boxboard & liner production increased compared to April 2012 and increased compared to March. The production of recycled boxboard increased compared to April 2012 but decreased when compared to March.

March: Total boxboard production decreased by 1.2 percent compared to March 2012 but increased 6 percent from February. Unbleached kraft boxboard production decreased over the same month last year and decreased compared to February. Total solid bleached boxboard & liner production decreased compared to March 2012 but increased compared to February. The production of recycled boxboard increased compared to March 2012 and increased when compared to February

February: Total boxboard production decreased by 1.9 percent compared to February 2012 and decreased 5.6 percent from January. Unbleached kraft boxboard production decreased over the same month last year and decreased compared to January. Total solid bleached boxboard & liner production decreased compared to February 2012 and decreased compared to January. The production of recycled boxboard decreased compared to February 2012 and decreased when compared to January.

Containerboard

April: Containerboard production dropped 1.5 percent over March 2013 but rose 4.2 percent over the same month last year. The month-over-month average daily production increased 1.8 percent. The containerboard operating rate for April 2013 gained 1.5 points from March 2013, from 92.8 percent to 94.3 percent.

March: Containerboard production rose 6.8 percent over February 2013 but fell 2.6 percent over the same month last year. The month-over-month average daily production decreased 3.5 percent. The containerboard

operating rate for March 2013 lost 3.4 points from February 2013, from 96.2 percent to 92.8 percent.

Kraft Paper

April: Total shipments were 133 thousand tons, an increase of less than 1 percent compared to March. Bleached kraft paper shipments increased year-over-year 10.3 percent, but the 3.1 percent year-over-year decline in the larger unbleached was enough to bring overall shipments down 1.2 percent year-over-year. Total month-end inventory decreased 7.1 percent to 66.5 thousand tons this month compared to March 2013 month-end inventories.

March: Total shipments were 132.6 thousand tons, an increase of 11.6 percent compared to the prior month. Bleached kraft paper shipments decreased year-over-year 1.3 percent, and the 7.2 percent year-over-year decline in unbleached shipments was enough to bring overall kraft paper shipments down 6.5 percent year-over-year. Total month-end inventory increased 0.4 percent to 71.6 thousand tons this month compared to February 2013 month-end inventories.

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 selection of recent headlines chosen to mirror significant trends in and around the paper and forest products industries.

Vertical Research: April containerboard data affirm price increase; US inventories drop again

Total inventories in tons are at their second-lowest level for an April since 1980. Linerboard mills this April ran at an operating rate of 92.9% while corrugating medium mills ran at 98.0%.

Assn. of American Publishers' Bookstats 2013 report shows significant growth in trade publishing since 2011 due to year of strong releases, particularly in romance genre; e-books up 45% since 2011, now constitute 20% of Trade market

While eBooks keep growing, hardcover and trade paperback formats continued to hold steady in 2012.

Stora Enso permanently closes 205,000 tonnes/year newsprint PM No. 2 at Hylte, Sweden, and idles

270,000 tonnes/year newsprint PM No. 11 in Kvarnsveden, Sweden, for market reasons, citing weak demand for European newsprint

There are ongoing discussions over the permanent shutdown of the Kvarnsveden line.

PwC annual CEO survey reveals global CEOs targeting opportunities in non-traditional business models, JVs to control costs, develop new markets, foresee continued lag in pulp, paper sector, yet have optimism for solid wood sector

However, CEOs are still watchful of economic volatility, energy costs, access to raw materials, and a shortage of skilled labor.

India's JK Paper in talks with pulp producers in Myanmar, Vietnam about possible tie-in, buyout, with view to further expand its paper output in India, says India's paper demand to grow to 20 million tonnes by 2020 from 11.5 million tonnes now

Scarcity of wood in India prompts the move. Although the country is fast entering into a digital age, growth in the demand for paper is expected to be driven by demands for packaging boards from high growth sectors such as retail and consumer durables. Even the demand for writing and printing paper is expected to remain strong since base consumption levels for paper are quite low in India.

Nine Dragons Paper to add two million tonnes/year of paperboard packaging production capacity over next three years, includes five paper machines in China and one in Vietnam; two paper machines totaling 650,000 tonnes/year to start up in China this year

The company based its decision on favorable prospects for the market after 2015.

US newsprint market moves from stable to unsteady in May, as producers attempt to keep prices from falling amid market conditions that continue to deteriorate due to oversupply; European market also sliding, awaits capacity cuts

March newsprint shipments declined by 12.2% year-over-year in Europe and 9.5% in North America but demand growth in Asia and South America, should partially offset the decline in demand in North America.

Boise to invest US\$111M to convert idled newsprint paper machine at its DeRidder, Louisiana, mill to produce lightweight linerboard, corrugated material; project to be completed by late 2014

The reconfiguration of the former newsprint machine will allow the company to make these key components of packaging.

Ilim Group's new 720,000 tonnes/year bleached softwood pulp line in Bratsk, Russia, produces first quantity of pulp April 24, cost more than US\$800M to build; output expected to exceed 1 million tonnes/year, most of which will be shipped to China
Ramp up to full production will continue over the next 6 months.

PCA's Q1 net income soars to US\$60.6M from US\$17.8M in year-ago period on US\$41M special items, sales rise 12% to US\$755M; results driven by higher containerboard and corrugated products prices and mix, higher sales volume, lower recycled fiber costs

These items were partially offset by higher costs including labor and benefits, workers' compensation, energy and transportation.

Mohawk Fine Papers launches its expanded digital synthetic product line; products are flexible like paper yet durable, tear resistant, weatherproof, can run on variety of digital presses

The products are said to be tough, tear resistant, weatherproof, and durable, yet flexible like paper.

Kellogg's new stand-up cereal bag that eliminates the box, switch from corrugated shipping cases to shrink-wrapped bundles, recycling initiatives for plastic liners among packaging highlights in company's 2012 corporate responsibility report

There was a 13% reduction in packaging weight when the company switched from corrugated shipping cases to shrink-wrapped bundles.

US Dept. of Energy to invest nearly US\$18M in four pilot-scale biorefineries in California, Iowa, Washington to develop advanced drop-in biofuels for cars, trucks, planes that meet military specifications for jet fuel, shipboard diesel

The projects selected will use non-food biomass feedstocks, waste-based materials, and algae to produce biofuels that meet military specifications for jet fuel and diesel.

Cascades Tissue Group's antibacterial paper towel product receives gold medal in cleaning solutions category at Edison Awards; product launched in US in October 2012

The towel has been confirmed in third-party testing to kill over 99.99 percent of harmful bacteria upon coming into contact with wet hands.

Statistics Corner: EU Paper Imports

The figure below summarizes statistics on imports of paper and paperboard entering the 27 member states of the European Union during the period 2006 - 2010. The US, Switzerland and Norway were the major exporters to the EU, together accounting for 56% of the imports. The only statistically significant time

trend during the period was a decline in imports from Norway. ■

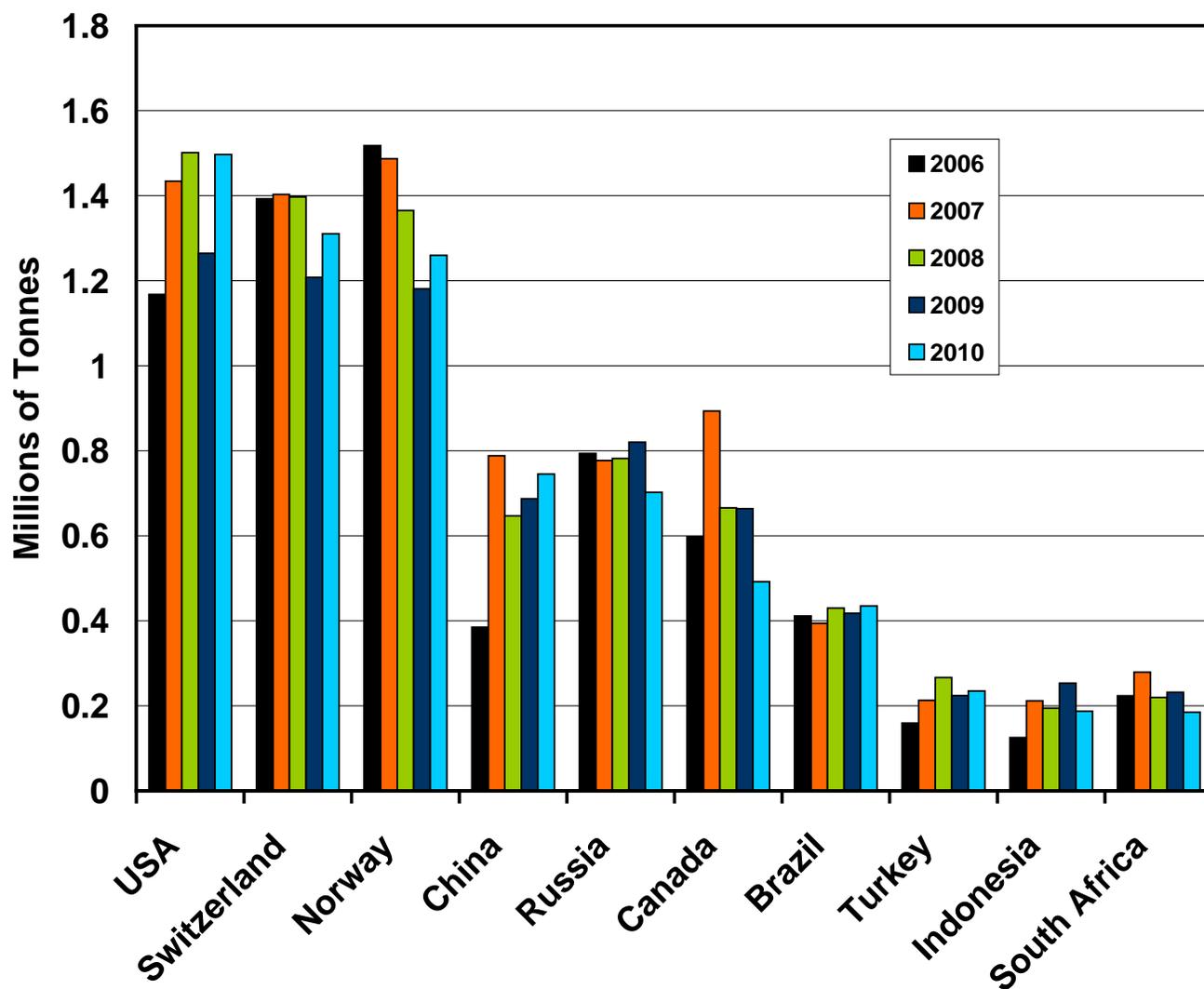


Figure 1. European Union imports of paper and board. (European Commission)