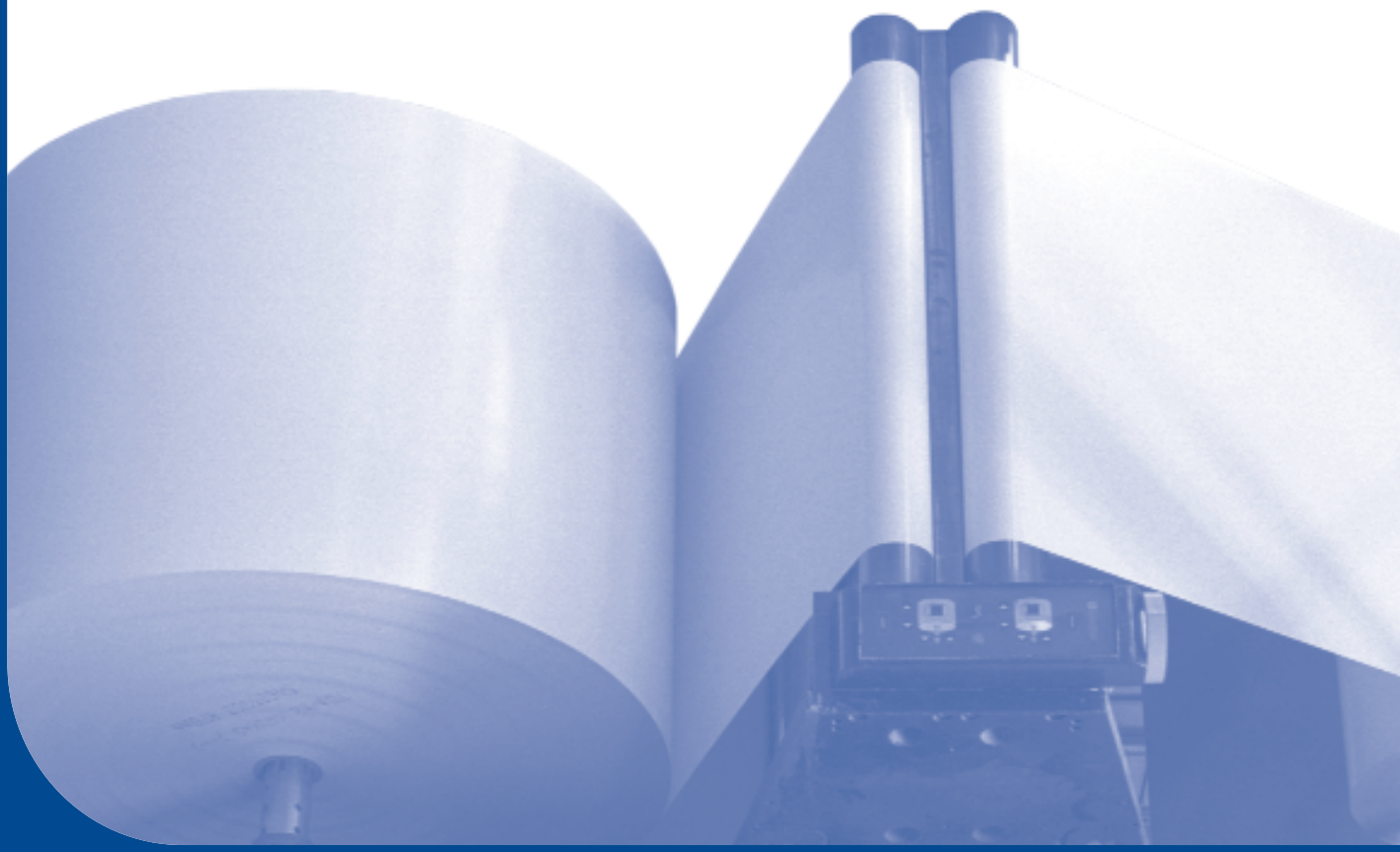
EMGE
Paper Industry Consultants

WORLD GRAPHIC PAPERS

MARCH 2012



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Sources and Acknowledgement

The EMGE WORLD GRAPHIC PAPER report contains data and 5-year forecasts for paper demand, supply and price around the world.

To compile these reports we have used an extensive range of sources, including all published information available to EMGE & Co. Ltd. In addition to published data, we have made reference to much industry data, which companies have been willing to share with us non-confidentially.

Furthermore, we have applied our own market research resources to gather additional information, and included information from other co-operating companies.

The EMGE databases are updated daily. We publish these forecast reports twice a year (March/April and September/October), with new data and revised 5-year forecasts.

The forecast timescale is 2011 to 2016.

Definitions

Paper activity data are based on Volumes as sold, measured in metric tonnes (data have been converted from short tons to metric tonnes where appropriate).

The grades referred to in this study encompass Printing/Writing Paper grades as described below in their respective definitions *(some regional differences in definition do exist).* A separate study on "World Newsprint Markets" is also available.

Uncoated Mechanical (UM) - includes offset and gravure uncoated woodcontaining printing & writing papers, generally in the basis weight range >54gsm (e.g. SC Magazine), but including Directory, Improved Newsprint and other lightweight grades.

Coated Mechanical (CM) - includes offset and gravure coated woodcontaining printing & writing papers (>10% mechanical pulp), generally in the basis weight range 54-80gsm; but also includes ultra-lightweight coateds & heavyweight coated woodcontaining (as well as LWC & MWC) in sheets & reels.

Coated Woodfree (CWF) - includes coated Woodfree printing & writing papers (<10% mechanical pulp), generally in the basis weight range 80-300gsm; both 1 & 2-side coated free in sheets & reels are included.

Uncoated Woodfree (UWF) - includes uncoated Woodfree printing & writing papers (<10% mechanical pulp), generally in the basis weight range 60-150gsm; in folio sheets, reels and cut-size, covering both bulk grades and uncoated specialities.

Coated =	Coated Mechanical + Coated Woodfree
Woodfree =	Uncoated Woodfree + Coated Woodfree
Printing & Writing (P&W) =	Uncoated Mechanical + Coated Mechanical + Coated Woodfree + Uncoated Woodfree
Graphic Paper =	Printing & Writing + Newsprint

Demand / Consumption - calculated as Production + Imports - Exports

Production / Output - paper mill saleable production

Trade - Net Exports, i.e. Production - Consumption

Capacity - Annual Machine Capacity, based on technical, not market, conditions

Operating Rate - Theoretical Ratio of Production to Capacity

M/c – Machine

Details of Country groupings in the Regional Tables are shown in the Country Data World-wide section (see page 49).

Report Contents

EMGE's WORLD GRAPHIC PAPER report (WGP), provides a unique and comprehensive database of world markets, assessing the current situation and the market outlook for the complete range of products in all world regions.

World Graphic Papers - a unique, global and fundamental perspective on the prospects for this important and dynamic industry.

The aim is to provide an objective update of the prospects for world paper markets – i.e. Coated Woodfree, Uncoated Woodfree, Coated Mechanical and Uncoated Mechanical (including Improved Newsprint).

The WGP report provides revised and updated forecasts of Demand, Trade, Output, Capacity and Operating Rates. The report covers the future global and regional demand-supply balance, by paper grade. The forecast timescale is 2011 to 2016.

New forecasts for Demand-Supply from 2011 to 2016.

In order to assess the impact of consolidation and changing industry structure, the report provides detailed rankings of Leading Suppliers, by grade, region and total. At the request of our clients, these tables include regional summaries.

Detailed rankings of Leading Suppliers, by grade and region.

Furthermore, we have incorporated special research into the Herfindahl-Hirschman Index, which is an index based on market shares which is used by the Authorities to gauge the levels of concentration in an industry. We have applied this index to the Paper Industry and coined the term the Pi-HHi (pronounced "pie-high").

EMGE's Pi-HHi – Herfindahl Hirschman Index.

We also provide country-by-country data for 2011. In addition, the report incorporates the latest information regarding capacity changes and investments, including M&A activity.

Incorporating the latest announcements for capacity changes and investments.

As well as a comprehensive collection of market data, great care has been taken to assess machine capacity in detail. The capacity data used are mainly based on announced, financed and confirmed plans, as well as some assumptions and forecasts made by EMGE (e.g. unspecified closures). The report provides additional information on all announced plans, whether decided or not (see tables of Machine Investment Listings on page 73, which compare "decided" and "undecided" machines).

EMGE & Co. Ltd.
March 2012

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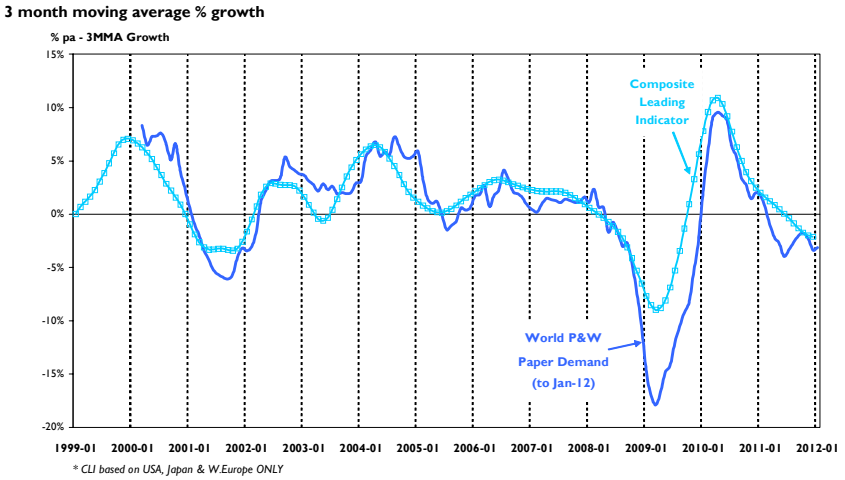
Introduction

FIGURE 1. WORLD P&W PAPER DEMAND vs. OECD LEADING INDICATORS



* *The OECD Composite Leading Indicator is based on a various financial and business factors, which are calculated statistically to provide a few months' advance notice of economic activity – in this instance we have combined the OECD, USA, Japan and W.European series as a proxy for the world index.*

The **EMGE WORLD GRAPHIC PAPER FORECAST** report is a comprehensive, unique and independent assessment of the future for the paper industry. The latest report ("WORLD GRAPHIC PAPER - *MARCH 2012*") is an update in the **EMGE** series WORLD GRAPHIC PAPER, covering fundamental global market issues.

The above chart shows that global paper demand has been on weakening since the first half of 2010, again broadly in line with the OECD leading indicators of economic growth. Having turned negative during 2011, Pr/Wr paper demand for the full year fell by -2.2%, with publication papers (CWF -3.4%, CM -3.3%, UM -3.9%) suffering worse than UWF (-0.5%).

Looking forward, economic pointers around the world are currently quite mixed. Falling inflation in many markets (notably China and India) has given rise to hopes that these countries will now be able to ease fiscal conditions to promote stronger growth. In addition, recent signs from the USA, suggest that a modest economic recovery is underway. In Europe, however, government spending cuts have led to predictions of a brief recession in Europe this year, while worries about sovereign debt in the Eurozone persist.

Based on all the data available and combining the latest developments in the markets, we review past and current market conditions and examine the drivers and prospects for future change, to provide subscribers with an updated outlook for demand, trade, investment, capacity, operating rates for the world Printing and Writing paper markets.

The following table shows the summary global forecast for each paper grade **(MARCH 2012)**

The table summarises the capacity and world paper demand forecast by grade which are shown in more detail throughout the report and discussed in the following Commentary pages.

FIGURE 2: GLOBAL PAPER MARKET SUMMARY

'000 tonnes, % pa and % output to capacity

	2011	2012	2013	2014	2015	2016	2011-16
COATED WOODFREE							
World Demand	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Demand Growth	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
World Capacity	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Capacity Growth	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Operating Rate	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
UNCOATED WOODFREE							
World Demand	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Demand Growth	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
World Capacity	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Capacity Growth	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Operating Rate	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
COATED MECHANICAL							
World Demand	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Demand Growth	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
World Capacity	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Capacity Growth	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Operating Rate	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
UNCOATED MECHANICAL							
World Demand	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Demand Growth	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
World Capacity	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Capacity Growth	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Operating Rate	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
TOTAL PRINTING&WRITING							
World Demand	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Demand Growth	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
World Capacity	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Capacity Growth	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Operating Rate	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	

[illegible]

Summary

Demand	2011	2012	2013	2014	2015	2016	[illegible]
'000 tonnes							
W.Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
N.America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Latin America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Japan	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Europe Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Asia Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Demand	2011	2012	2013	2014	2015	2016
growth % pa						
W.Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
N.America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Latin America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Japan	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
China	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Europe Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Asia Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

This forecast includes:

- **A marginal (-0.4% pa) average global paper demand decline from 2011-2016.**
- The current decline in demand to fizzle out now that the panic over Greece has eased for the moment, also with Japan recovering step by step from last year's earthquake/tsunami, and boosts expected from the Olympic Games and the Euro 2012 football championship this summer, as well as the US Presidential Election later this year. The current fall in paper demand is predicted to slow and reverse, turning to growth during 2012.
- However, after 2012, we forecast a very weak 2013, with the USA making new budget spending cuts following the Presidential Election. This is expected to slow the US economy and so impact the rest of the world in 2013, and this will negatively affect paper demand.
- Once the market has adjusted to the US spending cutbacks, we expect China's government to respond by spending more to stimulate economic growth. This is expected to help to improve consumer and business confidence, thus driving a recovery and a return to growth (including paper demand) during 2014, strengthening further in 2015. For global paper demand, there will be no lasting fundamental strength to this recovery, however, and a new decline in demand is predicted for 2016.
- Regionally, demand growth in emerging markets and declines in mature markets are predicted to add up to a marginal (-0.4%) overall decline in global Printing/Writing demand for the 2011-2016 period.
- With demand poised to edge downwards, capacity management will again be the most important issue during the forecast period, as the industry is already suffering from overcapacity. Based on current confirmed plans, **Base Capacity** would rise slightly (by an average of +0.9% pa) during the forecast period, or a total of 2.4 million tonnes, with closures in mature markets being outweighed by investments, mainly in Asia. With declining global demand, this would worsen the oversupply situation.
- However, we are predicting that there will be even more capacity closures in mature and Asian markets, that have not yet been announced. These "Unspecified" closures are also forecast to be accompanied by not-yet-announced investments in Asia. All of these forecast **Unspecified Capacity** closures and investments are expected to add up to 4 million tonnes of additional capacity being taken out of the market.
- Combining the Base Capacity and these Unspecified Capacity developments, our EMCG **Forecast Capacity** shows a marginal drop in global P+W paper capacity (averaging -0.3% pa for 2011-2016).
- With demand and capacity both predicted to fall only slightly, we are forecasting that the global paper market will be generally oversupplied for most of the forecast period, although we do expect temporary periods of balanced supply and demand.
- Western Europe is forecast to remain the main paper exporting region, particularly in Mechanical grades, while China will continue to grow as an exporter, adding UWF to the CWF that is already exports.

Major events since last forecast

Almost 3 million tpa of new closures announced; inflationary economic cycle appears to be ending/ending

In this section, we provide a brief overview of the most important new developments that have taken place since our last report, and which have affected our new forecast.

- We warned in our last report that far more closures would be necessary to prevent huge overcapacity, but the industry has taken first action and announced new closures, which will remove 1.9 million more tpa of P/W/I paper capacity from the market than had been announced by the time we published our last World Graphic Papers report. Almost half of this will result from closures in North America this year (2012).

- Greece has, for now, avoided default, having at the last minute qualified to receive its latest slice/slice of bailout funding. This has eased short-term worries about stability in the Eurozone, although some analysts are saying the problem of Greece's finances is merely being delayed, not resolved. So, this is less of an influence on confidence in the short term, but it could well rear its head again during the forecast period.

- The US economy, meanwhile, has strengthened again, with GDP growth accelerating from just +1% in the second quarter of 2011 to +1.8% in the third quarter and +3% in the fourth quarter. Unemployment has also now fallen to a three-year low of 8.3%. This is expected to help slow the decline in paper demand, as well as giving the government breathing space to delay big spending cuts until after the Presidential Election in November this year.

- Although the prices of oil and many other commodities remain high, the year-on-year percentage increases have slowed considerably since our last World Graphic Papers report. This has reduced inflationary pressures around the world, which has encouraged several major economies to stop and/or reverse fiscal tightening programmes, which we expect to promote growth in the short term, at least.

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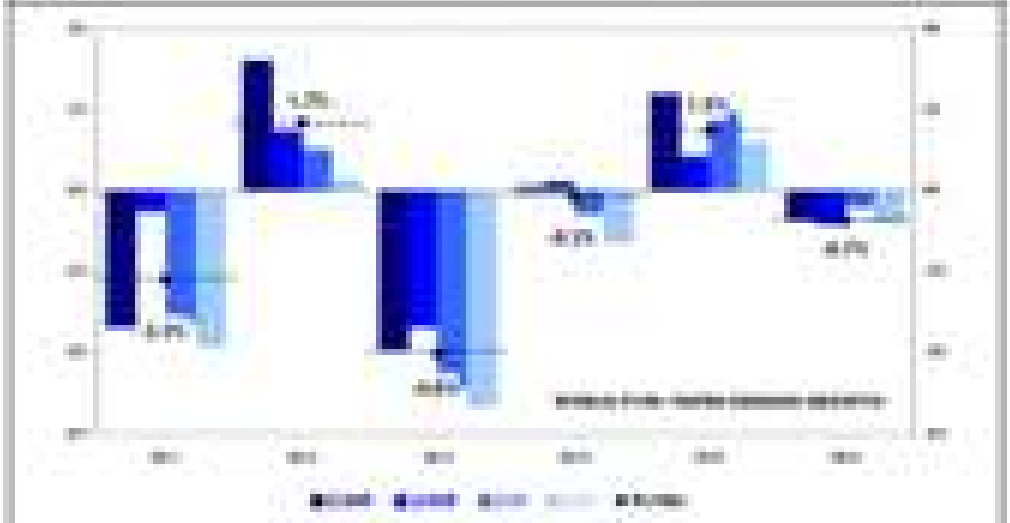
A. Demand

A.1 Demand: Overview

FIGURE 4: PAPER DEMAND FORECAST, BY YEAR

World Demand Growth, PW Papers



In our view, the outlook for world paper demand remains negative in the long term, which is reflected in our forecast for the period 2013-2018 (-0.4%). This is a balance of a negative outlook in mature markets, with more positive prospects in emerging markets.

The negative outlook in mature markets is mainly due to competition from New Media, which are winning users and advertising spend from other media, including print. The few remaining sources of growth in mature markets are outweighed by the negatives.

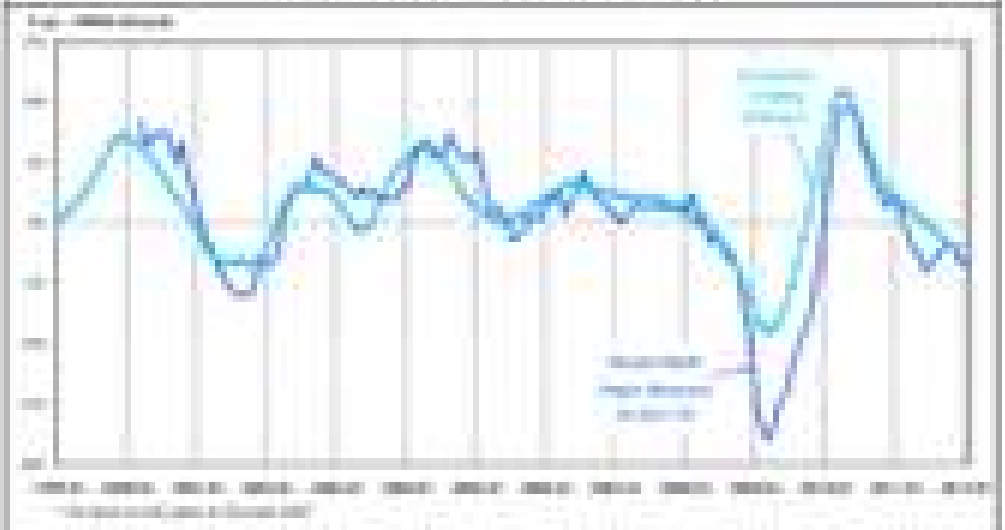
New Media are also growing rapidly in emerging markets, but despite this, printed media remain strongly in growth too, with print advertising growing by double figures in China and India, and also strongly in other major developing markets, like Brazil. Access to growing middle classes with disposable incomes. Developing countries are also seeing growth in service/office-based businesses which is driving consumption of printpaper.

Nevertheless, New Media are growing even more strongly than printed media, and we expect the negative influences seen in mature markets to become more of an issue in emerging markets in the longer-term future.

A.2 Demand: Short-term global developments

FIGURE 1: ECONOMIC INDICATOR

OECD Composite Leading Indicators



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OECD, [e.g.] [n.d., [n.d.]]

We examine the long-term, structural influences on demand later in this report, but first we outline how we believe the economic and paper market cycles will affect this paper market forecast.

The *Demand* section will look at the latest global (section A.2) and regional (A.3) developments and how they are influencing the short-term outlook, and this will be followed by our long-term outlook (A.4), including underlying structural influences on paper demand.

In the short term, declining apparent paper demand since early-2011 has been accompanied by a steady worsening of the short-term global economic outlook (see chart). However, there are some signs that this could be about as bad as it will get, we believe.

- Inflationary phase ending: Many countries, especially in developing regions, choked off money supply to combat inflation in the second half of 2011. However, inflation has now been falling for several months in many cases and governments/central banks are turning towards measures that will promote economic growth, rather than measures that will curb inflation.

- The US economy, which has struggled ever since the declining housing market popped the sub-prime loans bubble, has been improving in recent months, with growth strengthening to +3% in Q4 2012 and unemployment falling to a 3-year low.

- The short-term worry/panic over the stability of the Eurozone and a potential Greek default appears to have calmed for now, as Greece managed to avoid default for the moment and has re-negotiated some of its debts. This is a potential upside for Consumer Confidence.

- Slightly further ahead (by perhaps three months), the Olympic Games and the Euro 2012 football championships are expected to boost spending and the "feel-good" factor, which we expect to keep the business cycle on an upward trend until the latter part of this year. In addition, the US Presidential Elections in November 2012 are expected to provide a modest short-term boost to advertising and economic activity generally this year.

This chart shows our forecast for key Graphic Paper demand growth for 2012, by region:

There are still negative risks, of course.

- Oil prices have risen considerably (although they are currently falling again), and further rises could kick-start a new inflationary phase. That would almost certainly dampen economic growth.

- Many governments are still cutting spending, which may prevent economic growth and falls in unemployment. Several big markets appear so far managing the balancing act quite well, but this remains a risk.

However, we previously said that fears (about a Greek default and potentially the break-up of the Eurozone) were either not serious or not serious enough. If the feared thing happens, then consumers and businesses were not afraid enough. But for now, it has not happened, so perhaps they were more afraid than they needed to be.

Our belief that people's fears were exaggerated was one of the assumptions behind our previous short-term forecast and that remains the case for this forecast.

On this basis, and taking into account the positive factors mentioned previously, we are predicting global paper demand growth of +1.3% this year, led by developing markets, but even helped by growth in some mature markets (see chart).

FIGURE 7: EXPECTED GROWTH BY REGION AND GRADE - 2012					
% pa growth (2012 over 2011)					
2011	Coated Whites	Uncs. Whites	Coated Mech.	Uncs. Mech.	Printing/ Writing
W.Europe	2.5%	-1.1%	-0.5%	-2.5%	-1.4%
Cent. Europe	4.0%	2.0%	2.5%	2.5%	4.0%
N.America	-2.5%	-2.5%	-3.0%	-4.5%	-4.0%
Latin America	2.5%	2.0%	2.5%	1.5%	3.0%
Japan	1.0%	0.0%	0.5%	0.0%	0.5%
China	11.0%	2.0%	9.0%	7.0%	9.0%
Cent. Asia ex. Russia	3.5%	2.5%	4.0%	2.5%	3.5%
Africa/ME	2.0%	1.0%	1.5%	1.5%	2.0%
Total	3.2%	-1.0%	1.0%	0.0%	1.2%
Europe Total	2.0%	1.0%	0.5%	1.5%	2.0%
Asia Total	3.0%	2.5%	3.0%	2.0%	4.0%

Source: RISI, EMGE, PPI, APIPAC

It is also early yet to say whether slowest declines in global paper demand in late 2011/early 2012 already mark the start of the mini-recovery that we are forecasting for this year. However, with China expected to ease financial conditions further, with India predicting stronger growth, with the US economy already improving, plus further boosts expected from several seasonal factors (Olympics, etc.), we believe just such a mini-recovery will begin soon (it indeed, it hasn't already).

This is also predicated on both the current weakness in paper prices, helped by pulp prices which are already mostly up since the start of the year (especially hardwood pulp). This could even cause some replenishment of inventories in the first half of 2012, although we would expect actual rising paper prices to face a subsequent backlash in the form of falling order volumes before the end of the year.

To summarise, then, there has been no new financial crisis so far, so we maintain our existing forecast that the current decline in demand will bottom out very soon, with demand breaking back through to growth, during the course of 2012. Rising prices could keep the mini-recovery short-lived, however, although we do not expect the recovery to last into 2013 in any case.

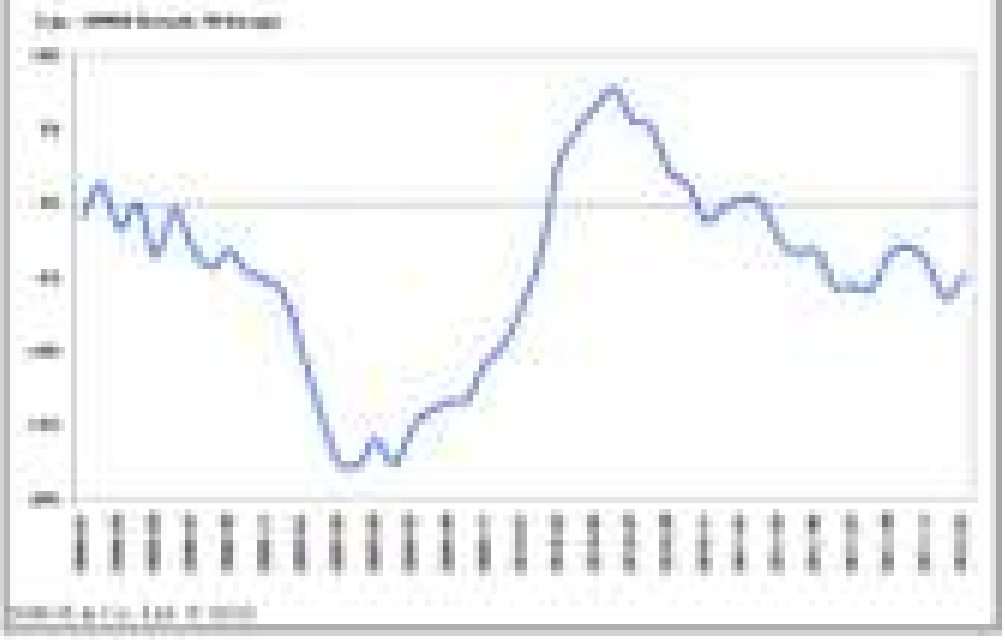
The following pages look in some short-term paper market developments by region.

1.3 Demand: Short-term developments in regional markets

1.3.1 Western Europe

FIGURE 8: NEW PAPER DEMAND GROWTH (3MMA)

W Europe



After a temporary mini-recovery in the early and middle parts of 2010, apparent paper demand growth in Western Europe fell back into decline and has now been falling since early 2011 (see chart). The 3 month moving average (3mma) growth rate weakened fairly consistently for a year or so until June 2011, but since then, it has rather flattened out at around -6%.

In our view, the real demand for paper is unlikely to get much weaker than this, because the demand drivers suggest the average declines are not worse than this. The worst of the demand drivers is arguably consumption of printed books, which is seeing declines of roughly -10%, while mail/letter volumes are falling by up to -6% in some cases (although less in Germany), and other sectors are suffering considerably smaller declines, too (e.g. German magazines are seeing only a moderate drop in circulation and roughly stable advertising, as of the second half of 2011).

We believe an aggregate of the major sources of paper consumption would suggest that real demand may even be falling by less than -6%. That would, in turn, suggest there has been some reduction in inventory volumes, and as prices were under downward pressure in 2011, inventory reductions would fit into phase of the business cycle.

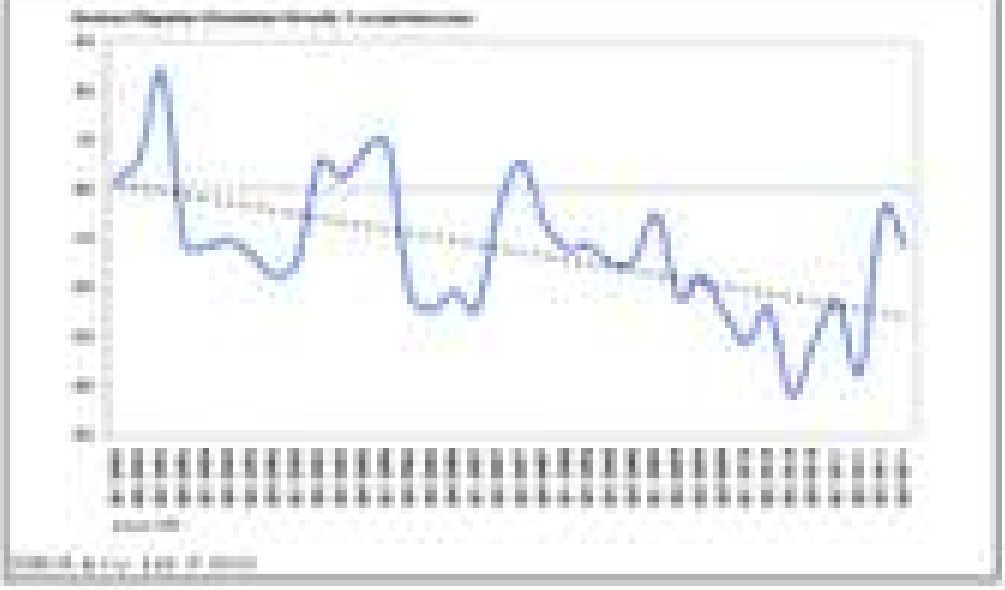
As the indicators from various end-use sectors have been mixed, so there were also mixed signs in the printing sector.

The UK printing industry was no exception. The January 2012 Printing Outlook Survey by the British Print Industries Federation showed a rise in demand and output at British printing firms, although the increase was less than had been forecast. Exports in particular weakened, amid concerns over the Eurozone. The Survey also showed that virtually no British printing firms are running at capacity.

Until February 2012, business had been weakening in the German printing sector, with industry sentiment in negative territory for four months in a row for the first time since mid-2010, amid the current business and very pessimistic future expectations, both for domestic and export sales. However, the picture changed quite radically in February, as sentiment improved back to neutral. However, this was not due to improved business conditions, as these actually worsened in February. It was future expectations which improved dramatically, despite the downturn in actual, current business.

FIGURE 10: MAGAZINE CIRCULATION

Germany



We mentioned earlier that indicators from end-use sectors have been mixed. In the magazine sector, however, recent pointers have been generally negative, although not as negative as in other sectors, e.g. books and mail.

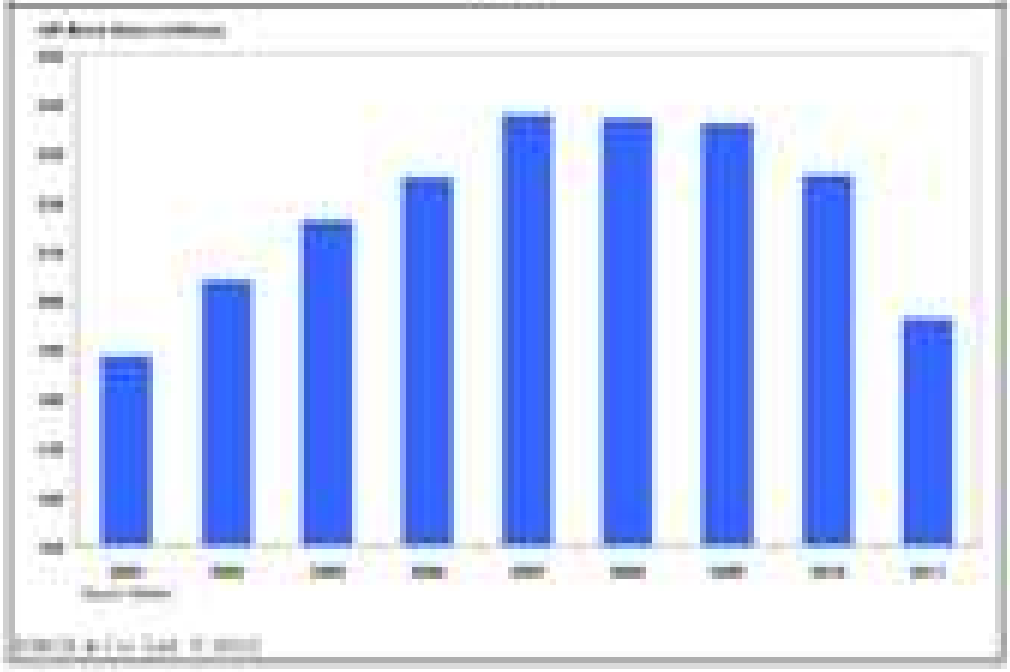
In the UK magazine sector, circulation has weakened from moderate growth in early 2011 to a decline in the second half of last year. The ABC figures showed a -1.4% drop in Total Average Issue Paid Circulation, although this was believed to be on a like-for-like basis, not including magazines which have stopped publishing. As such, we believe it is probable that total (not like-for-like) printed UK magazine circulation in H2 2011 fell further than -1.4%.

In Germany, magazine circulation has been falling by around -1.5% to -3%, with no clear sign in the past year that the trend is becoming significantly worse (although the long-term trend suggests that is set). In terms of magazine advertising, Germany has seen a slowdown during the past year, although 2011 did end up being a year of growth (+1.5%). However, this comprised growth of more than +3% in the first half of 2011, slowing to roughly zero in the second half of the year, followed by a decline in January 2012.

According to our forecasts, for much of this year, women nurses in Europe, as well as activity centred around the Euro 2012 football championships and the Olympic Games, will help to energise consumption, boosting intra-European visits and encouraging more marketing/advertising spend. This should help Uncoated and Coated Mechanical Papers and to a lesser extent, Coated Woodfree, and we are predicting that the current decline could turn around enough to produce a short period of growth, before a return to falling demand before the end of 2012.

FIGURE 11: UK BOOK SALES

2003-11



Quite in contrast to magazines, which are far from collapsing, printed books are far more under threat (mainly from e-readers/tablets, which we will examine in the *Living Lives Digitized* section of this report). There have already been double-digit losses in printed book circulation in some markets in 2011 and more expected, but all these developments are already recognised and built into our existing forecasts.

In the printed book sector, sales of printed books fell last year in at least the UK, Spain and Ireland (according to Nielsen BookScan), but we believe this was also the case in many other European markets, too. In the UK specifically, the number of print books bought in 2011 fell by -11%, according to Nielsen BookScan data, and this continued in January, with a further drop of -12% in the first four weeks of the year. Nielsen BookScan commented that much of the decline is being widely interpreted as the impact of sales moving over to e-books, especially in the Adult Fiction segment. Separately, it has also just been announced that the renowned Encyclopaedia Britannica (a 32-book hardback set of combined knowledge) will no longer be printed.

In the mail sector, meanwhile, fortunes vary from country to country although the sector remains clearly in decline. If two of Europe's largest markets are any guide, in Germany, for example, Deutsche Post DHL reports that "letter volumes continue to gradually decline", whereas the downturn is rather steeper in the UK, where the country's leading mail carrier, Royal Mail, reported a -4% drop in letter volumes in the half year to September 2011. Further falls are also expected as result from a new scheme between the UK

governance and the direct marketing industry, to set up a website this year that will enable households to opt out of receiving all advertising mail. This is not a sector where we expect much cyclical improvement in the short term.

Although up-to-date published data are not available for all sectors, we believe most other end uses in Western Europe are also contributing to real drops in paper consumption, with areas of growth (such as total German magazine advertising last year) few and far between.

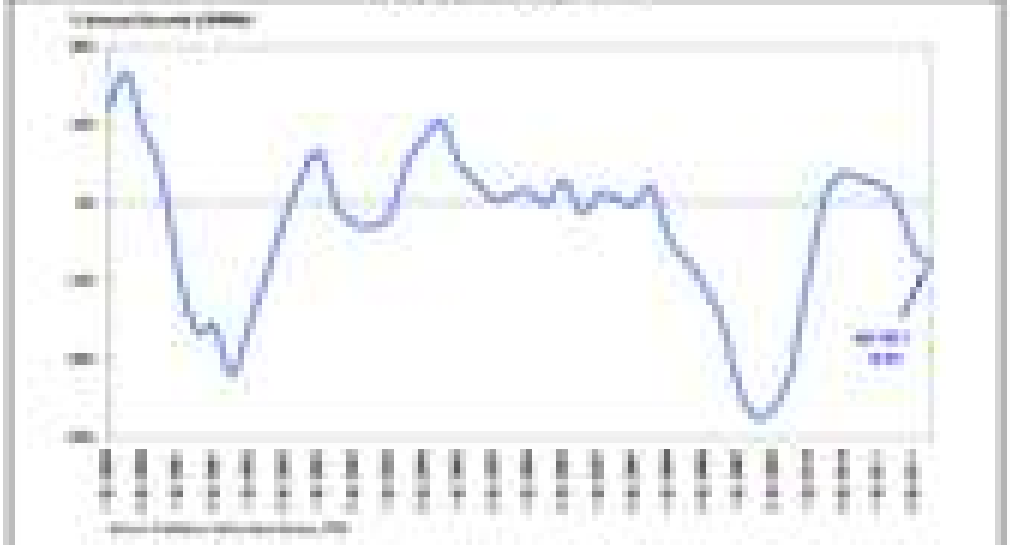
The printing sector, meanwhile, is rather more difficult to analyse, but there is just a hint that the industry believes better times may be just around the corner.

However, it is fair to say that if we are correct in our short-term forecast, and that an improvement is about to begin in the coming weeks, then there is little sign of it in the available data so far. Nevertheless, we believe there is good reason to expect that to happen, and we expect the data to begin reflecting it by the second quarter at the latest, and probably sooner.

4.1.2 North America

FIGURE 12: MAGAZINE ADVERTISING PAGES – USA

US Magazine Pagination



In North America, demand from the USA accounts for around 90% of the total (as of 2011), with Canada making up the rest.

In the downmost US market, some of the major drivers of paper demand have continued to weaken, and there are virtually no plus points on the horizon.

The slowing trend in magazine advertising, for example, continued in the second half of 2011, with year-on-year growth weakening from +1.1% in the first half of the year to -1.2% for the first three quarters of 2011, and then -3.2% for the full year, due to a slump of -8% in the final quarter of 2011. This followed broadly stable (+0.1%) magazine advertising in 2010.

The trend in mail volumes has also been weakening. The United States Postal Service has reported a decline of -8% in total mail volumes in the fourth quarter of 2011. This compared with a -1.7% fall for the full 2010-2011 financial year, with first-class mail and marked periodicals (the more paper-intensive pieces of mail) falling more steeply than other forms of mail (e.g. packages, etc.)

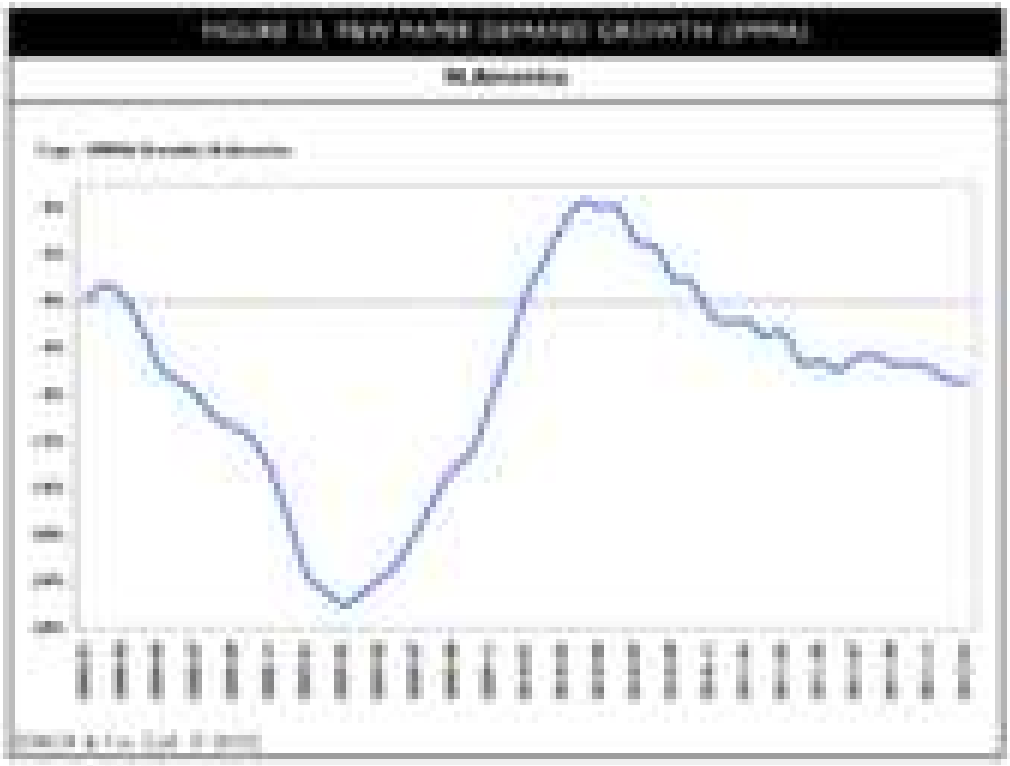
The story of weakening trends is similar in the printed book sector. According to Nielsen BookScan, sales of printed books in the USA fell by -4.3% in 2011, following a drop of -4.4% in 2010.

Overall, however, the weaker trends in several end-use sectors have not been showing up in the print sector. Although turnover in this sector is generally in decline, there is no obvious worsening trend and indeed, there are still occasional pockets of year-on-year growth in individual months (such as August and September 2011), which is very much in contrast with paper demand. True, print turnover has been in decline following the boost August and September, but at no worse rates than for most of the rest of 2011. In total, US printing companies' turnover fell by around -3% in both 2010 and 2011, and this trend broadly continues, with a drop of -2.4% in January 2012.

Separately, US unemployment has eased slightly in recent months, and economic prospects in the USA have generally been improving. This should mean, for example, less downward pressure on office paper consumption.

Looking to the short-term outlook, several forecasting firms predict that US advertising expenditure will rise by around +4% this year, helped by spending on the Olympic Games and the US Presidential election. However, media and advertising forecaster, PlogneGlobal, is predicting that print will not share in this growth, forecasting a drop of -5.2% in magazine advertising. This would mean a continuation of the currently worsening trend in that sector. Considering the short-term upside factors we have mentioned, we expect PlogneGlobal's predictions to turn out to be slightly pessimistic for this year.

FIGURE 13: NEW PAPER DEMAND GROWTH (3MMA)



North American paper demand, meanwhile, has been on a downward trend since the mini-recovery of 2010, and has been in decline since late-2010 (see chart). And while Western Europe, the fall in apparent demand for paper has been broadly in line with the known end-use pointers (recent declines in US book sales, mail volumes and magazine advertising, for example, would roughly average out at -4%).

As mentioned in our last World Graphic Papers report, however, the current downward trend in North American paper demand has slowed, although it has not yet bottomed out. There has been some economic improvement, as we previously forecast, although the influence of that on paper demand has not yet become apparent.

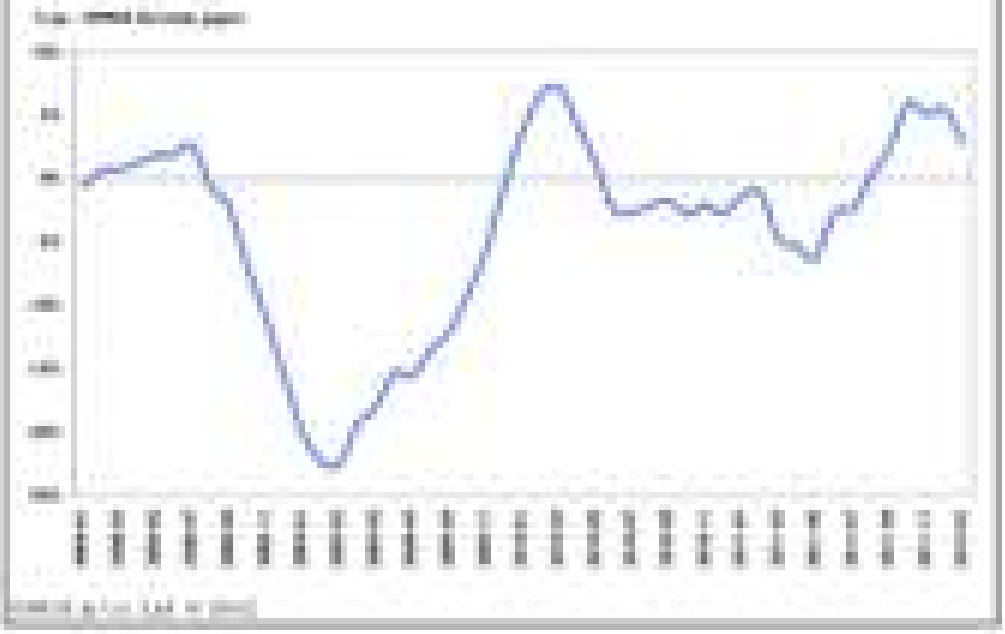
Still, with added impetus from the Olympic Games and US Presidential Elections this year, we expect continued improvement in the business cycle and some of this is predicted to feed through to paper demand very soon, i.e. the start of an improving demand trend should become visible in reported data by around March.

We are forecasting that the decline in paper demand will ease this year, to -3.3%.

4.1.3 Japan – growth for now, but with risks

FIGURE 14: NEW PAPER DEMAND GROWTH (PPPM)

Japan



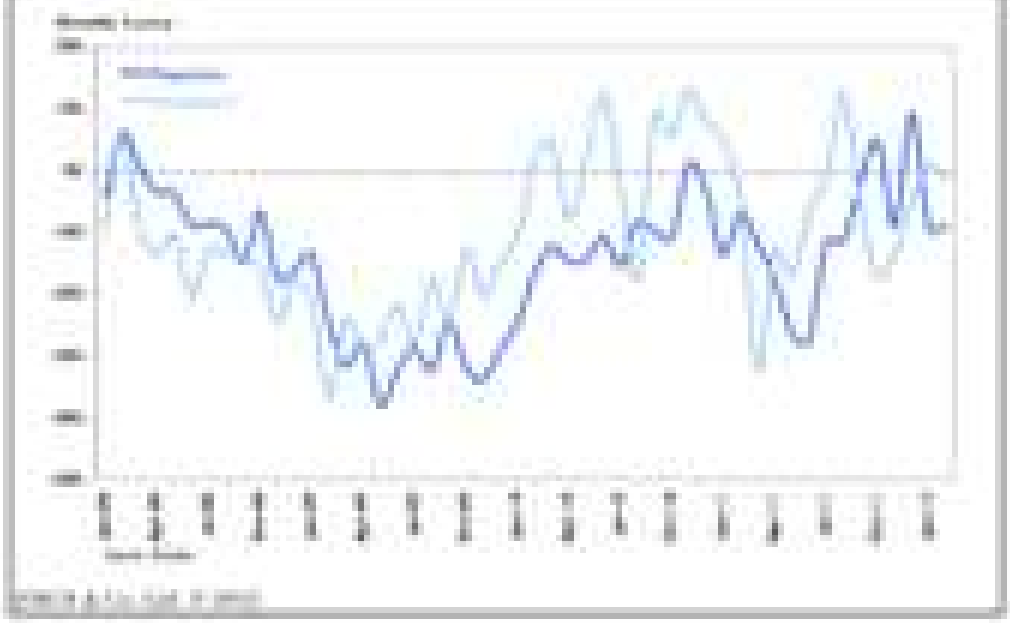
We said in our last World Graphic Papers report that we believed there were reasons to expect a short-term improvement in the economy and paper demand trend in Japan. This was mainly related to expected government spending to repair damage from the earthquake/tsunami back in March 2011.

The government spending and the short-term improvement in paper demand did indeed take place (see chart for paper demand), with paper demand growth apparently in around +5% to +6% in late 2011, while still remaining clearly in positive territory.

Interestingly, paper demand has actually been rather stronger than the relevant end-use indicators might suggest in recent months. For example, demand growth in the 6 months to January 2012 has been strongest in the Coated Mechanical sector, which we associate to a large extent with the magazine sector. However, growth has not been especially evident in the magazine sector. Although there have been some individual months of growth, the magazine sector in Japan has actually seen its income fall more often than grew since the tsunami in March 2011. And Japan's advertising giant, Dentsu, further reported declines of -9% in magazine advertising in both January and February 2012.

FIGURE 11: ADVERTISING TRENDS (APRIL)

Dentsu's monthly advertising revenues



Losing any sustained growth in magazine advertising (see chart) during the current phase of paper demand growth, then whilst magazine pagination was boosted by expanded editorial as circulation has been growing. We actually consider both of these to be possible, as coverage of the earthquake/tsunami disaster and its aftermath will have been interesting than both editors and consumers wanted, we believe.

However, in our view, there is also more to the story of recent paper demand growth than just consumption of magazine papers: even though Coated Mechanical paper demand has been growing more strongly than other Printing & Writing grades, there has been in growth in other sectors, too.

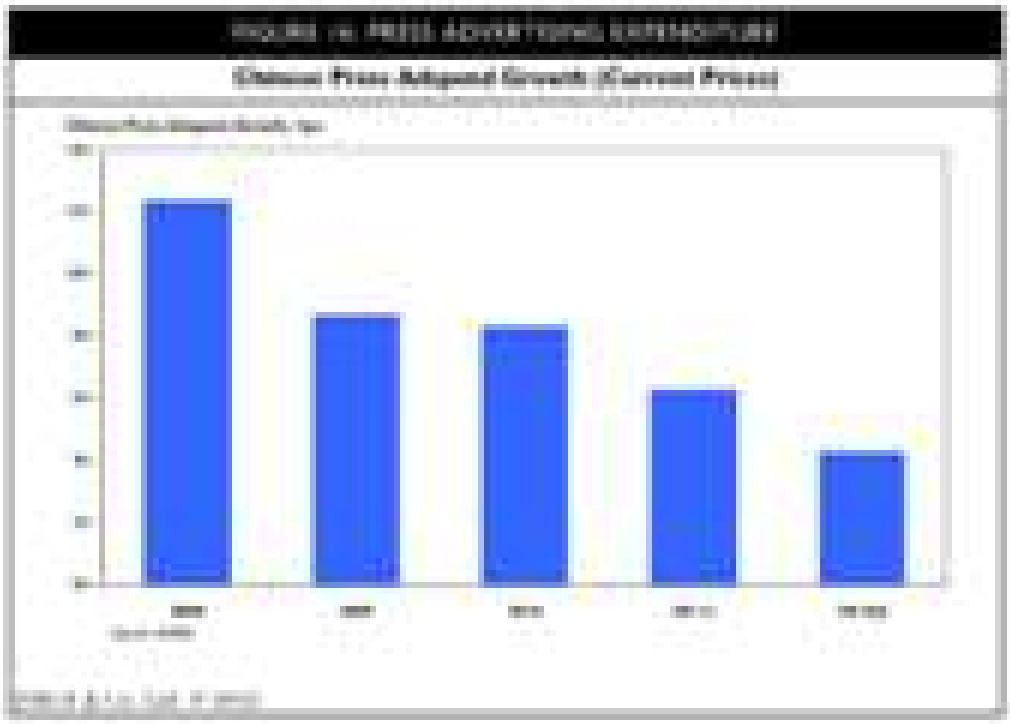
In Dentsu's annual advertising review for the full year 2011, total Japanese advertising expenditure is reported to have fallen by -2.3%, marking the 4th consecutive year of declines. However, this consisted of a poor start to the year, with an understandably very weak March. However, once the initial turbulence of the tsunami had been braved, Japan's advertisers actually generally became more active in their spending generally. This included growth in most months in categories such as "Marketing/Promotion" and "Classified" advertising, which we believe will include a proportion of printed newsprint, as well as other media.

The overall expenditure on advertising and marketing grew strongly last summer, weakened in October/November, and after a strong finish to the year, has eased to be roughly stagnant in the past couple of months.

However, in the very short term, we expect strong growth compared with the immediate months aftermath of a year ago, and government spending will continue, which should support employment levels. A major downside risk, however, is power shortages affecting production, as Japan is now producing virtually no nuclear power any more, and there are serious questions about whether there will be enough power available at peak times.

Against the background of all these factors, and considering the shape of our forecast economic/market cycle, we are forecasting continued, although slower (+2.1%) paper demand growth in 2013.

4.1 # China & India



There have been concerns in recent months that counter-inflationary efforts in both India and China could slow economic growth. And indeed, in the fourth quarter of 2011, both countries did see a modest slowdown, although this is relative to their previously very rapid growth.

China's economic growth slowed from +9.1% to +9.1% in the third quarter of 2011 and further to +8.9% in the fourth quarter, resulting in full-year growth of +9.2%. None of these rates are what anyone might call slow. In addition, the Chinese government has reduced its official target rate of economic growth for 2012 to +7.5%. However, China regularly beats its target growth rates, and has recently been easing fiscal conditions, suggesting that it is now targeting growth ahead of controlling inflation. Many analysts expect growth to beat targets again this year, with several recently upgrading their forecasts for Chinese growth in 2012.

Raising specifically on paper demand drivers, CTR Market Research reports that the average growth for advertising in all traditional media in China last year was +10%, although the rate decelerated in the fourth quarter of 2011. CTR forecasts that 2012 will see advertising growth of +11%, and WARC made a similar prediction of +11.5%, while MagnaGlobal was more optimistic, with a +16.1% forecast. WARC predicts that print (see chart) will perform below the market average, however, forecasting growth of +4.3% growth in advertising in 2012 for newspapers and magazines combined.

Others are more upbeat, however. Group M, for example, earlier forecast that Chinese magazine advertising would grow by +12% in 2012. And CTR reports that advertising expenditure in print media last year was broadly in line with the average for all traditional media, with magazines in China seeing +14% growth. Magazines gained some market share from newspapers, particularly in the transportation sector, CTR said. Magazines were also credited with having success in targeting high-end consumer groups, with a leading share of magazine advertising being for personal care products. This is a good sign for magazines, as growth in advertising for high-end products and services has been very strong, as the Chinese population's standard of living and financial situation improves.

In our view, the rise in advertising and marketing expenditure will contribute to paper demand growth, although at less than a 1:1 ratio. This is partly because we expect that magazine publishers will be looking to improve profit margins, following a period of strong cost inflation, and will thus likely increase their prices for advertising, as well as not matching every new advertising page with a page of editorial.

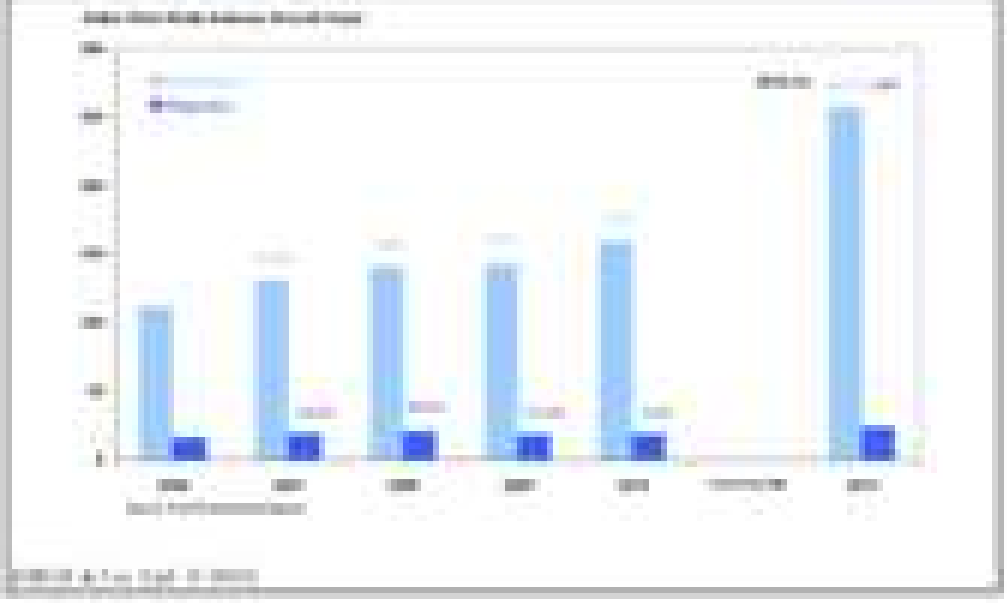
Other forms of printed marketing materials may benefit more directly, being viewed as a cost, rather than a source of direct profit creation.

Furthermore, with economic growth expected to continue at a very healthy pace, with a rising share of middle class jobs being created, office paper consumption is expected to be boosted, as well.

Thus, we are forecasting healthy growth in demand for most paper grades for much of this year.

FIGURE 17: INDIAN PRINT MEDIA IN GROWTH

PricewaterhouseCoopers



In India, meanwhile, economic growth slowed from +7.7% to +6.9% in the third quarter of 2011, but the slowdown appears to have been short-lived, with growth strengthening considerably in the fourth quarter of 2011, according to the International Monetary Fund. And the Indian government recently predicted that growth would accelerate further again, to the +8% to +9% range.

In terms of paper demand drivers, according to Aditya Inoka, exec at TAM Media Research, print advertising in India grew by +16% in the first half of 2011, accelerating slightly to +17% for the year to September of 2011. For this year, WARC and PageGlobal expect a moderate slowdown, but still very rapid growth, even then, at around +13% or +14%. PricewaterhouseCoopers earlier forecast that India's print advertising would grow by an average of almost +12% to 2015. PricewaterhouseCoopers also earlier predicted that circulation income in print media will grow by +5%pa or faster to 2015.

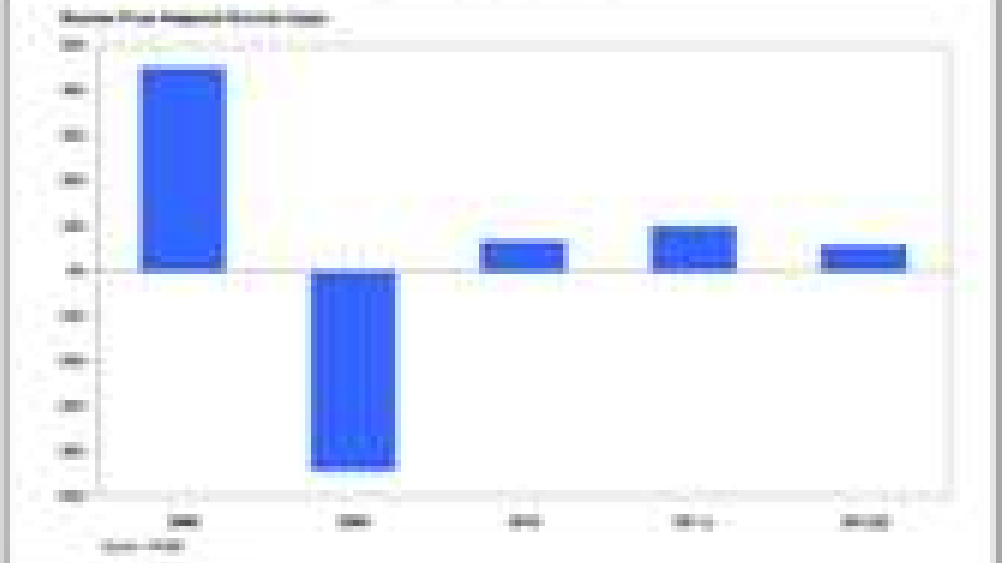
Outside of publishing, Office Paper demand is also growing at double-digit rates, due to rapid growth of India's service sector, which is no doubt one of the factors that enticed International Paper to enter the Indian market last year, with the purchase of Andhra Pradesh Paper Mills. Separately, investment in the Indian education system is also creating healthy demand for school-related printed materials.

In our view, partly due to government economic and partly due to expansion and enrichment of the countries' middle classes, we see China and India as two of the classic out-sources of paper demand growth in the short-term (and further ahead, too).

4.1.3 Eastern Europe

FIGURE 18: RUSSIAN PRESS ADSPEND GROWTH

2008-13 (Constant Prices)



The Consensus Economic Forecasts for 2012 GDP growth in Eastern Europe have been steadily downgraded every month over the past 6 months, from +4.0% back in September 2011 to just +2.8% in February 2012. While growth there will be is expected to be counterbalanced by an expected sharp decline in Greece this year (see chart above), thus reducing the overall average growth (in this report, Greece is included in "Other Europe").

Despite the slowing expectations, economic growth is nonetheless expected to be moderately healthy. This is predicted to lead through to marketing and advertising, with price performing far better than in more mature markets. In addition, the economic growth is also expected to help reduce unemployment, boosting consumption of office papers.

Looking at advertising specifically, we expect a boost in the middle of the year from the Euro 2012 football championships in Poland and The Ukraine. And both the economy and especially advertising are expected to grow strongly in Russia this year, and we expect some spill-over into other markets in Eastern Europe.

Media investment company, PhaseGlobal, is forecasting that advertising revenues in 2012 will grow by +7.7% in Central and Eastern Europe this year. Group M is predicting slightly slower, but still very healthy, growth of +5% this year, after inflation.

Against this economic and media background, our short-term paper demand forecast is for growth of +4.9% in 2012.

4.1.6 Latin America

FIGURE 19 FIXED ADVERTISING GROWTH

Brazil (Current Prices)

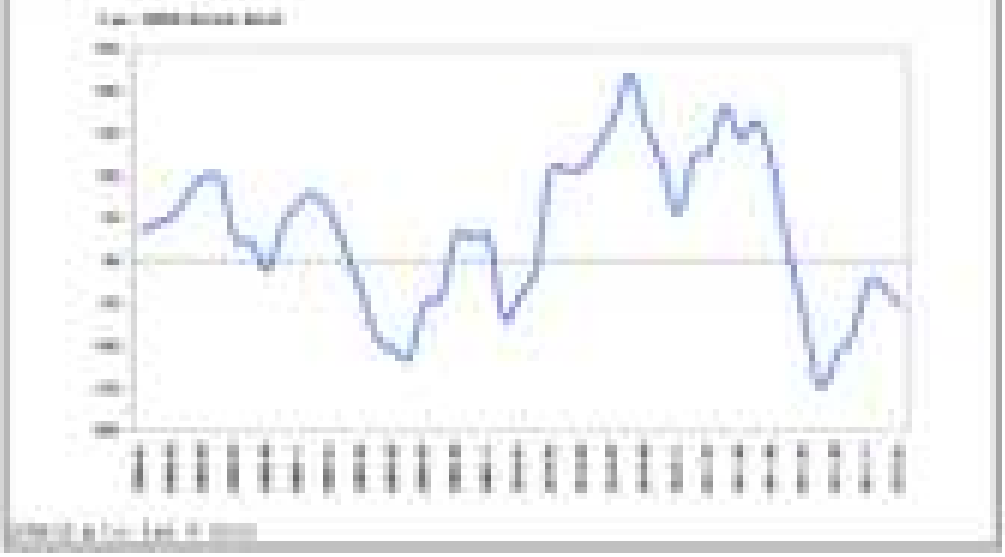
In the Latin America region, following strong economic growth in 2010 and for most of 2011, the economic outlook eased slightly in the latter part of 2011, although is now appears to have stabilised. The Consensus Economic Forecast for 2012 slipped down each month from +4.1% in September 2011 to +3.5% in January 2012, before edging up to +3.6% in February.

However, advertising is one segment of the economy that is outperforming the general economy, with companies keen to access a growing middle class and its growing disposable income. MagnaGlobal, for example, is predicting +13% growth in advertising expenditure in Latin America this year, led by Argentina (+26.4%) and Brazil (+12.8%). And for print media specifically, WARC earlier forecast for 2012 an acceleration from strong single-digit growth in 2011.

This is in line with our own forecast of stronger growth in 2012, due to the shape of the forecast cycle explained earlier in this report.

FIGURE 10: NEW PAPER DEMAND GROWTH (PPPM)

Brazil



In Brazil, meanwhile, by far the largest market in the region, the Instituto Verificador de Circulação (Circulation Verification Institute) has reported a slowdown in magazine circulation in the second half of 2011, leaving the growth for the full year as only +0.3%.

Advertising fared rather better, in contrast, growing by +9% in 2011, in real terms. For this year, Group M and WARC are forecasting growth of around +8% or so, in real terms. Also this year, print media are expected to underperform the average growth, while still performing fairly well. This also appeared to be the case in 2011. For example, according to the Inter-Media Project, a regular study by PricewaterhouseCoopers for Brazilian magazine 'Meio & Mensagem' (rough translation: "Media & Communication"), Brazilian magazines achieved advertising growth of +13.6% in the first three quarters of 2011, i.e. around half of the average growth for all media.

To a large extent species from the paper grades influenced by marketing and advertising. Uncoated Woodfree demand makes up a big part of the Latin American market. In this sense, we expect demand to track economic activity reasonably closely, relating to business investment and office employment numbers. As mentioned on the previous page, economic expectations have softened recently, but we still expect moderately healthy activity in 2012 (although nothing like as strong as the growth in advertising).

Despite generally upbeat indicators, Brazil (which accounts for more than 40% of Latin American paper consumption) has actually reported falling paper demand in each of the last 6 months (see chart above). Much of this was due to paper buyers reducing inventory following massive inventory building during 2010 (apparent demand surged by more than

+20% in recent months during 2010, pushing full-year growth above +10%. Thus, we believe the declines in recent months are largely unrelated to real paper consumption.

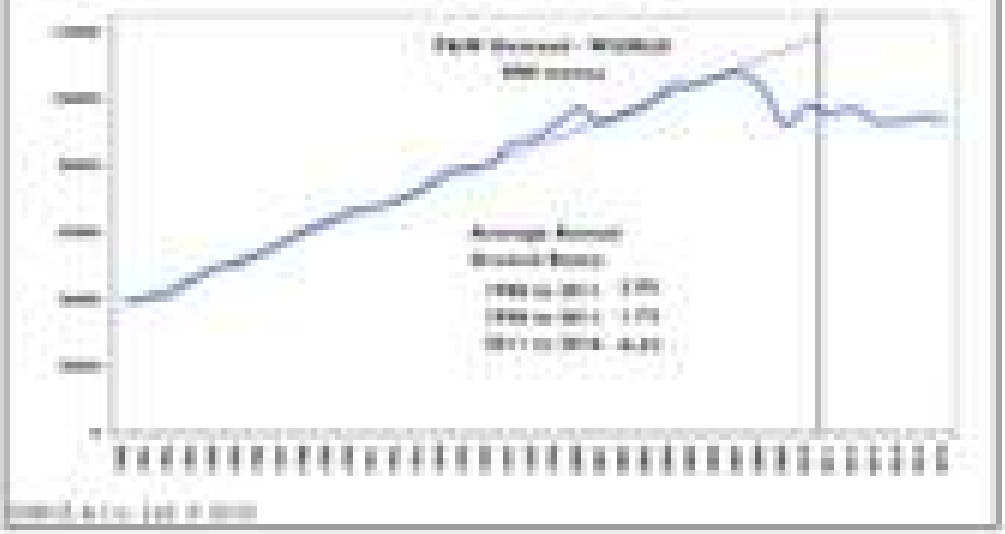
In fact, we expect the inventory reduction phase to end very soon, and for apparent demand to grow again in Brazil, and by extension, boosting the Latin America total, too. Our forecast for 2013 is for Latin American paper demand to grow by +3.3%.

A.4 Demand: Long-term outlook

A.4.1 The market cycle to 2016

In this period between 1998 and 2007, Global Paper Demand followed a positive trend, but following the GFC in 2008, demand collapsed as did its decline between 2011 and 2012. It'll take another

FIGURE 11 : GLOBAL PAPER DEMAND TREND FROM 1980



The previous section of this report examined the short-term outlook for global and regional paper demand, focusing on 2012.

After 2012, our forecasts are then based on a very weak year in 2013.

Just the absence of 2012's "enhanced" factors (Olympics, Euro 2012 football, US Presidency) Elections) would be a negative driver, but much more importantly, we are also expecting the USA to make big spending cuts in 2013, subsequently impacting the rest of the world in 2013 (see next page for more detail).

FIGURE 12: US BUDGET DEFICIT – CUTBACKS NEEDED URGENTLY

One of the major reasons behind our forecast of a very poor 2012 is that the USA urgently needs to cut its public spending to reduce its budget deficit. The US deficit entered deep into previously uncharted territory during the financial crisis in 2009, and has been hovering around US$ 1.3-1.5 trillion since (see chart).

Economic growth alone will not, in our view, be anything like enough to rebalance the US government's income and spending, so spending will have to be cut, and we expect it to be cut fairly drastically. However, we do not expect the President to make the biggest – and most unpopular – cutbacks before the election in November this year, although we do expect them to begin shortly afterwards (whichever candidate gets elected).

So we expect the larger cuts to take place in 2013, which will slow the US economy in 2013, with the consequences being felt by the US's trading partners around the world. Slowdowns in those countries will then affect a second tier of trading partners, and so on.

Once the market has adjusted to the post-election spending cutbacks in the USA, we expect China to lead the recovery out of this slowdown, by loosening its fiscal policy in response to the slower US growth, helping to prevent the slowdown from becoming a global crisis, as it did in 2009. In addition, as most major economies outside of the USA will already have made some progress on reducing their own deficits by this point, we expect more resilience in these economies, giving them the potential for quicker recovery.

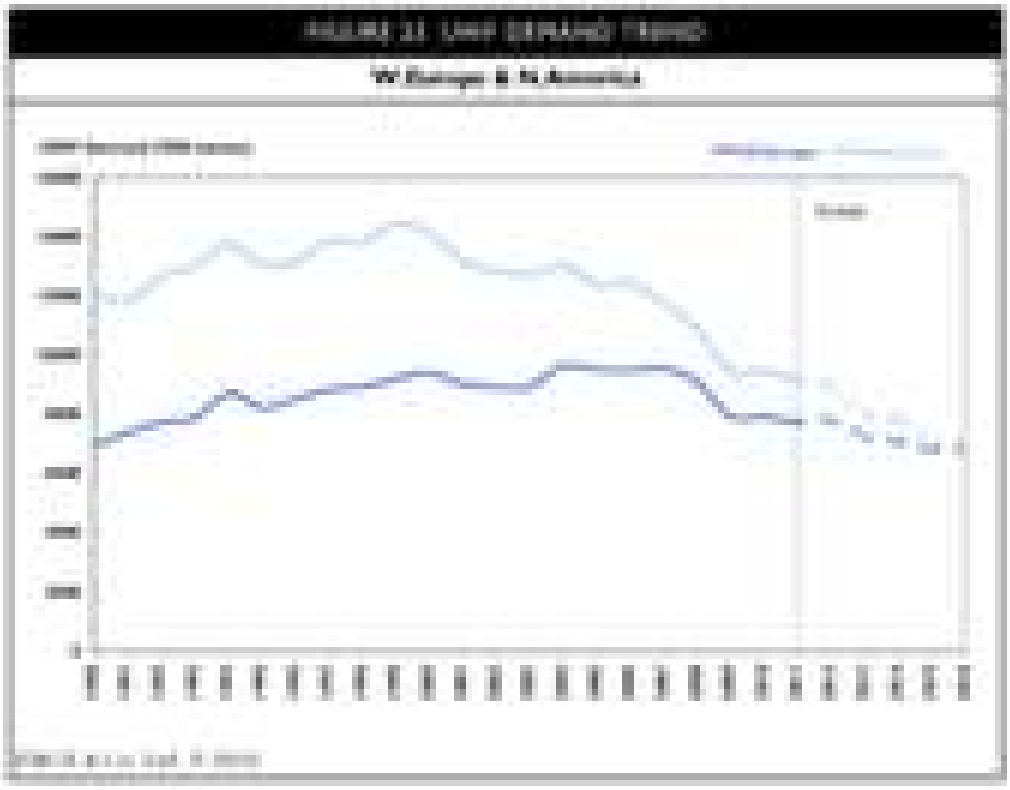
In terms of paper demand, we expect the weaker period to last through 2013 and bottom out in 2014, returning to growth later that year and strengthening into 2015. However,

we are forecasting a recovery from weakness, rather than any real strength, and the upturn is not expected to be sustained. Due to this, and also because we believe global demand will be slightly negative in the long term, we are then predicting a modest drop in paper demand in 2016.

Separate from the cyclical shape of our forecast from year to year, the major long-term structural influences on paper demand (e.g. competition with electronic media, environmental/budget-related consumption cutbacks, etc.) during the forecast period are negative in the mature markets. Because the mature markets are (for now) generally larger than the emerging markets, we expect this negative influence to outweigh growth in the emerging markets, most of the time.

We take a look at some of the long-term demand factors on the following pages.

8.4.2 Loss Of Users progression



One of the regions structural impacts on paper demand is deliberate consumption cutbacks aimed at cutting spending, while both businesses and administrations claim the lower consumption means better sustainability. We call this the "Lean & Green" effect.

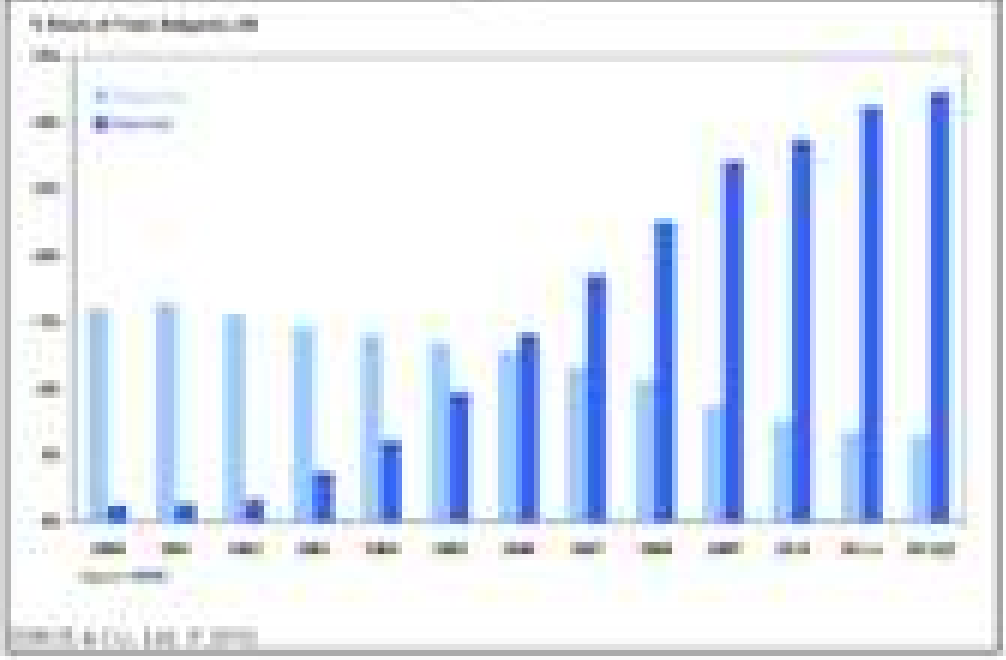
This is mainly an issue in developed markets, and is mainly affects office papers and mail volumes, so especially Uncoated Woodfree Reels and Cut-Size, as well as some Coated Woodfrees (in mailings). The technological developments that have made such cutbacks easy include new-sided printing being the widespread default setting on modern copiers and printers, while marketing and billing mailings can easily be replaced by email bills or PDF downloads from emails and Cloud-based sources.

Our research suggests that this process will has the potential for significant further reductions in corporate/institutional paper demand, and we expect this to be a continued major concern for demand in mature/developed regions in the long term.

4.4.3 Competition with electronic (or New) media

FIGURE 24: MAGAZINE vs. INTERNET: SHARE OF TOTAL ADSPEND

UK



Our forecasts in this World Graphic Paper report also factor in negative effects of competition with electronic media. We have frequently discussed the effect of electronic storage of documents on computer hard drives instead of printed files, transmission of emails to billing instead of letters/faxes, advertising on and consumption of news/ entertainment, etc, on the Internet instead of magazines, as well the use of advertising on console and computer games and mobile phones – trends which are now well established.

This is especially the case in mature markets, but in the longer term, we expect to see these influences becoming gradually more important in developing markets also, in line with more widespread high-speed internet access.

There are new forms of electronic competition that we will take a closer look at here, however, as they are on the verge of new breakthroughs – one in terms of penetration (e-readers/tablets) and one in terms of how it is used (B2C transaction on social networking websites). We will consider e-readers/tablets in this section, while we felt that the potential explosion of B2C social networking merits its own [Continued]

E-readers/tablets

We have already discussed the effect of e-readers/tablets, such as the Amazon Kindle, Apple iPad, etc. on Magazines in previous reports. However, with the 3rd-generation iPad just launching as we go to press and the Kindle Fire having launched last last year, this is a sector that looks set to expand on its already rapid growth.

First, some context of where we are today. Despite the rapid growth to date, global sales of e-readers/tablets are not yet anywhere near as widespread as other screen-based media, such as PCs and laptops. Globally, Apple sales of the iPad reached 55 million by the end of 2011, and the device is believed to have a share of somewhat more than half of the tablets market. If we roughly estimate total global penetration of e-readers/tablets at 100 million devices or so, it is clear that tablets/e-readers still have a long way to go to rival other media (e.g. print media are used by billions of people worldwide, as is television, both of which dwarf the current reach of tablets/e-readers).

This may be one reason why the current evidence suggests these devices are not (yet) having a massive impact their print counterparts, even in mature markets. The German market is a prime example. German magazine advertising grew last year, on the whole. And although German magazine circulation has been falling by around -1.5% to -2% for the last two or three years, this is actually little more than a continuation of a trend that began many years before e-readers and tablets arrived.

Apart from the comparably limited spread of e-readers/tablets so far, there is another possible explanation for this – surveys suggest that users generally do not like the e-reader/tablet versions of magazines in their current forms. However, the more widespread these devices become, the more we would expect publishers/technology firms to develop versions that consumers increasingly do like. And in the 3rd iPad/Kindle Fire phase, further strong sales growth is expected for tablets in the short-term. Longer-term, we expect their use will indeed become truly widespread, especially when the cost of e-readers/tablets falls far enough.

As we have said in previous World Graphic Papers reports, we have no doubt that e-readers/tablets will take market share away from printed media, although we do expect the down to remain a relevant medium for some years. We include a moderate negative impact from e-readers and tablets during the forecast period, rather than a collapse, affecting Uncoated and Coated Mechanical Papers and to a lesser extent, Coated Woodfrees. This will especially be the case in those markets where e-readers/tablets are most popular (e.g. North America in particular, but increasingly in Western Europe).

When it comes to the impact of e-readers and tablets on printed media, it is actually printed **books** that **are far more under threat**. There have already been double-digit

losses in printed book circulation in some markets in 2011 and more expected, but all these developments are already recognised and built into our existing forecasts.

In the printed book sector, sales of printed books fell last year in at least the UK, Spain and Ireland (according to Nielsen BookScan), but we believe this was also the case in many other European markets, too. In the UK specifically, the number of print books bought in 2011 fell by 13%, according to Nielsen BookScan data, and that continued in January with a further drop of -12% in the first four weeks of the year. Nielsen BookScan commented that much of the decline is being widely interpreted as the impact of sales moving over to e-books, especially in the Adult Fiction segment.

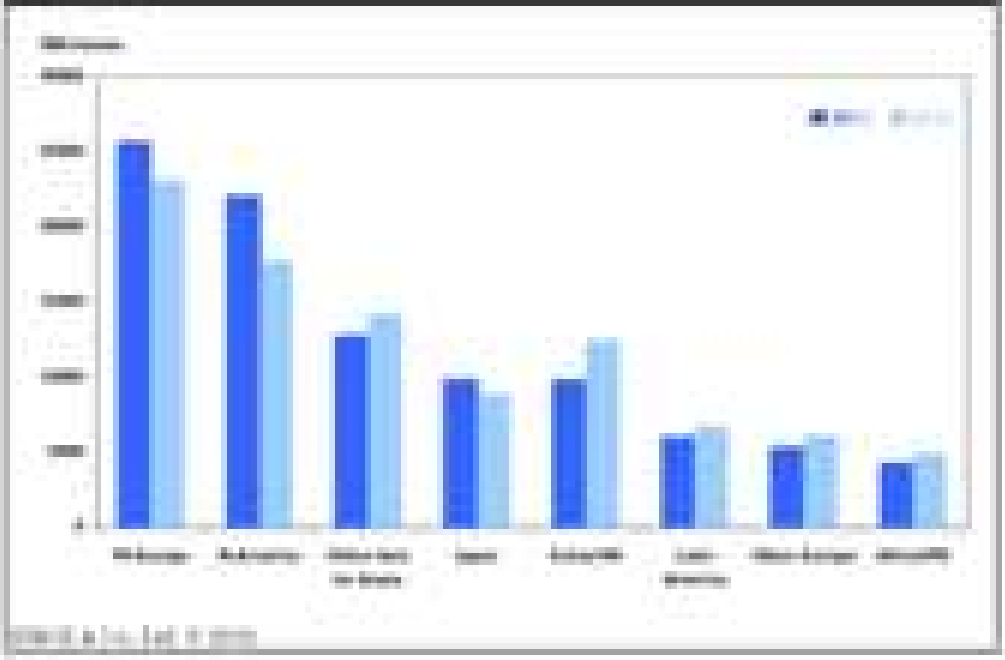
However, although the printed book sector is suffering badly, other areas of print are proving more resilient, as mentioned, and there are even some areas of growth or potential growth (e.g. colour printing, mobile printing, multi-media channel marketing). Our long-term view is that print's share of the media market will erode fairly gradually, rather than collapse suddenly.

Emerging Markets

A further upside a print media growth in several emerging markets, as we detailed in the earlier section on China and India, for example. This is despite very strong growth in New Media uptake, with countries like Korea seeing an phasing out printed school books in favour of cheap electronic tablets, towards the end of our forecast period.

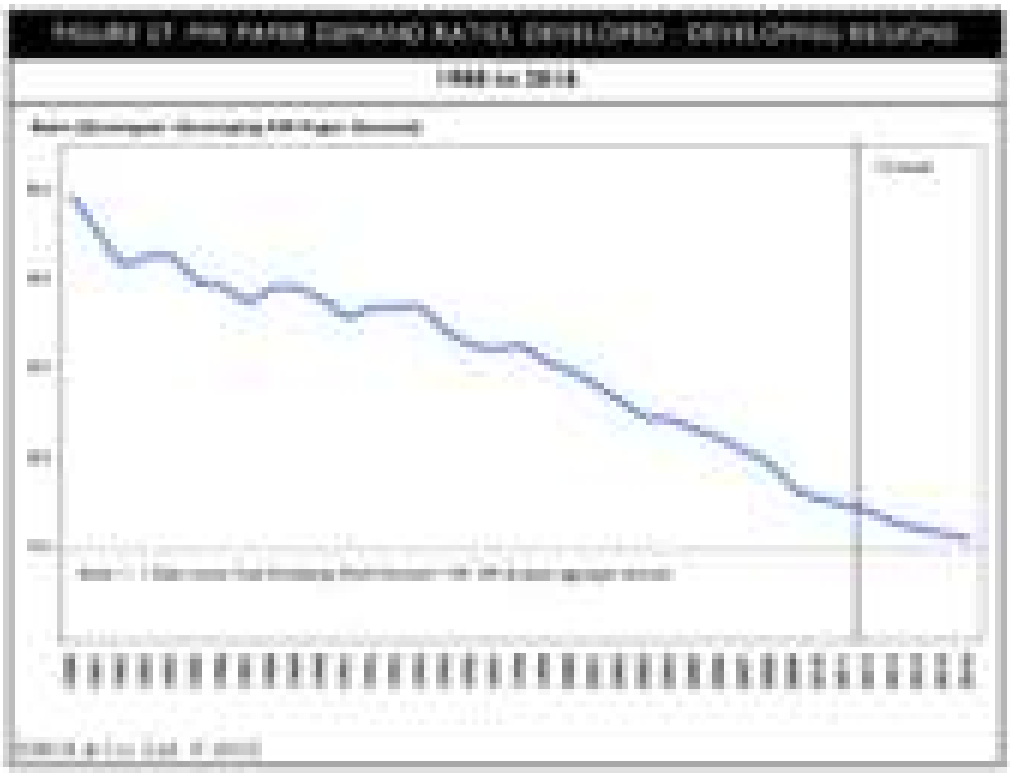
Competition with New Media is expected to impact consumption of printed media in emerging markets, but with price currently enjoying double-digit growth in several markets with increasingly narrow middle classes with rising disposable income, emerging markets are still predicted to be a source of paper demand growth throughout the forecast period (see charts).

FIGURE 34: GLOBAL PAPER DEMAND BY REGION – 2011 vs. 2014



Paper demand growth in emerging markets is, however, forecast to be outweighed by declines in mature markets (which accounted for 60% of global paper demand in 2011) in the long term.

Hence our forecast that the downturn in mature markets will slightly outweigh growth in emerging markets, adding up to a slight downturn in global long-term paper demand (-0.4%pa for 2011-2014e).



Looking at the inter-regional impact of these developments, our forecast of demand growing in emerging markets but declining in mature regions is expected to accelerate the West-to-East shift in the power base of the global paper industry.

Since the year 2000, for example, the combined mature market bloc of North America, Western Europe and Japan have seen their share of global paper demand fall from 75% to the current 60% (down from 67% a year earlier), while their share of global paper capacity has declined from 75% to 63% (down from 66% a year earlier).

According to our current forecasts, these shares will fall further to 53% of world demand and 57% of global capacity by 2016.

Looking at the West-to-East shift over the last 3 decades, the dominance of mature markets has seen their share of demand fall from a 3:1 ratio (developed vs. developing markets) to well below 2:1 now. And this is forecast to fall almost to parity (1:1) by 2016.

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4.5 Demand: Current

How far will social networking expand past mere advertising?

In past World Graphic Paper reports, we have examined in detail the effect of exploding on-line advertising expenditure, and the consequent losses of adspend on traditional media, including print media. We have long expected print to continue losing advertising market share, and such future losses have already been included in our forecasts for paper demand for some years now.

However, there are new potential threats to traditional media, apart from simply on-line advertising. We would like to examine two of what we currently perceive to be potentially major future challenges for both advertising income and reader numbers:

1) Consumer/company interaction on Social Network Media. By this we mean companies engaging with self-declared customers/fans directly, and in some cases even entering into direct dialogues with them on social network sites, especially on Facebook.

2) User-generated endorsements/recommendations of products/services on Social Networks, especially sites like Pinterest, as well as Facebook, Twitter, etc.

The current clearest threat in terms of advertising appears to be #1, i.e. Facebook. In the longer-term, #2, i.e. user-generated endorsements/recommendations also have the potential to be a major influence on marketing spend.

1) Consumer/company interaction on Social Network Media

According to Comscore, a company that monitors and measures Internet activity and audiences, the reach of Social Networks like Facebook, Twitter, Google+, LinkedIn, Pinterest, Baidu, etc. has been growing dramatically in recent months and is now around 90% of Internet users in most European countries, and even higher in some, with the estimated average for Europe being above 90%.

And Facebook is the clear leader of the pack, with over 800 million active users worldwide, including an estimated 250 million unique visitors in Europe alone. And although penetration is lower in other countries and regions (Facebook so far reaches only 20-30% of Internet users in India and Brazil, for example), the numbers of users in those two example countries doubled and tripled in 2011, as the penetration is expanding rapidly. (China is an exception, because Facebook access is restricted in that country). And Facebook is succeeding in turning its reach into revenue - according to eMarketer, Facebook's global advertising revenue is expected to double to US$3.8 billion this year alone.

It is not the growth of user numbers that we consider a potential threat, however – after all, if most of the population is already on-line and the reach amongst these people averages more than 90% already, then there is limited scope for further growth. Having said this, we do assume some continued loss of time spent consuming print media by each user, and these losses are already part of our existing forecasts.

Quite apart from this, though, we believe the potential new threat is in how Facebook itself is developing. In 2011, there was a dramatic rise in the amount of interaction between companies and consumers on Facebook. This resulted from consumers volunteering to receive communication from companies, either by clicking "Like" on the company/product/service page on Facebook or simply by the consumer listing the company/product/service as something they like on their general profile. Already, the brand Coca-Cola has around 40 million Fans of its Facebook page, growing by around 10 million in just the past 3 months.

The preferences of these fans are then communicated to the people in the user's network ("Friends"), which encourages more users to click "Like". Some companies have also now chosen to use their Facebook page to accept direct communication from consumers, often setting up a two-way dialogue between consumer and company (although such companies remain a small minority, so far).

Despite Coca-Cola's millions of fans, this is actually still in the embryonic stage, and we do not doubt that there will be a considerable upsurge in this type of B2C communication/marketing/advertising via Facebook in particular (and possibly other social networking websites, if they can develop similarly-attractive functionality). There is a clear benefit for businesses in creating a positive image, as well as giving valuable direct access to consumers, for communication of whatever messages a company wants to pass on (e.g. marketing, advertising).

However, while all the successes sound great, we caution against getting caught up in the hype immediately. There are actually many reasons why this might not have a massive impact, but perhaps only a moderate influence, on advertising in other media. There is a great deal of research, for example, showing that many companies are not using this opportunity very well, and are actually annoying consumers, rather than engaging them positively. In addition, not all companies have the opportunities that a company like Coca-Cola has, to use of this as a communication opportunity. For example, many companies/products/services are what is known in the advertising world as "low excitement" (i.e. boring) brands, which will often find it difficult to gain, e.g. Facebook fans.

Another reason why we are not immediately assuming this will be a huge revolution is the type of consumers who make up Facebook's core user base. True, the overall membership is very broad, but there is a difference between the types of people who use

a regularly – and follow all of the news and updates from all of their "friends" and "Liked" companies – and the type of people who only log in occasionally to check their messages and who rarely look at news or updates. As such, it is not at all clear whether the consumers that companies want to access are actually on Facebook often enough for it to be a very effective marketing medium.

Despite these challenges, the potential upsides for companies using Facebook (and potential downsides for print advertising) cannot be ignored.

Even if B2C interactive marketing/communication on social networks turns out only to be useful for some types of companies to reach a limited audience effectively, this will still require manpower and therefore budget to be allocated to this activity. Which means that spending might need to be cut from other marketing/advertising activities at times when budgets are tight. And if a Social Media marketing turns out to be extremely successful, then businesses might even switch money from other marketing/advertising efforts to support their social networking marketing even at times of healthy profits when budgets are more generous.

We mentioned earlier that Facebook's massive success with users in the developed world means that it is less of a future threat to print in terms of losing readers/users, as it has already achieved a far-reaching audience penetration. In emerging markets, there is perhaps greater potential, but there is actually no convincing evidence that the growing middle classes in countries like China, India and Brazil, etc. are "leapfrogging" print media to go straight on-line, while ignoring print. Indeed, print media in all of those named examples are seeing advertising growth rates in double-digit percentages, which suggests a strong future on the short to medium term, at the very least.

A Uber-perceived collaborative recommendations of products/services on Social Networks

Back in the mature markets, though, there is another type of potential new threat to print. In the case of printed magazines, we see a potential major threat from Social Networks which revolve around content/link sharing, such as Pinterest. The theory being that if people can find a Social Network which gives them much of what they currently get from print media (or something just as good), then the print version would be at risk. This applies both to editorial content and to advertising – users are not only providing/linking to content that interests and entertains (i.e. competing with editorial content of magazines and other media), but they are also recommending products and services (competing with advertising in magazines and other media). **Effectively, the power of communication is increasingly moving towards the user.**

A prime example is the Pinterest website, which, as mentioned earlier is a content/link sharing site and which is growing fast. And there is a risk that this and other social

research websites could potentially be a major threat to consumption of both editorial and advertising in print, as well as other media. The threat is that such sites would result in peer generated content emerging as consumers' prime source of information/entertainment.

This would not only impact consumption of magazines (and other traditional media), but even more fundamentally, it could reduce the effectiveness of advertising, as consumers react less and less to non-peer communication (e.g. adverts), increasingly focusing on the communication they from their peers. Currently, businesses can orchestrate an advertising campaign to get their messages out, but if consumers increasingly use each other (e.g. personal endorsements and viral messages on Pinterest etc), rather than adverts, to find out what new things are exciting, interesting, valuable or good, then traditional advertising could potentially become less powerful.

Interestingly, although this is obviously a potentially big threat, it is also potentially an opportunity. Because if advertising becomes less powerful, we could imagine companies reacting in two different ways. On the one hand, they could decide it is not worth wasting money on traditional advertising, if consumers are listening more to each other than to advertisements. On the other hand, advertisers may feel there are no obvious alternatives (we have already discussed the potential limitations of marketing/communication via social media), and react by advertising more, probably with multi-channel campaigns, just to have the same effect as before. This could well benefit printed direct marketing.

To summarise, social networking media could be about to start a new expansion phase, in terms of engaging businesses, although it is too early yet to know whether this will actually happen in a big way. At this early stage, it is difficult to distinguish between hype and reality. It has yet to be established how effective and valuable Social Networks marketing will be as the advertisers/marketers, how much companies are likely to spend on it and how this might affect other parts of their media spending mix. We hope these developments will soon become clearer. For now, though, it is impossible to distinguish whether this is just part of the established trend of Internet and Online Advertising (already factored into the EMGE paper demand forecasts), whether it will add further downward pressure to the existing negative demand trends, or even indirectly contribute somewhat to paper consumption.

To analyse the impact effectively, we will also need to observe the real impact on spending on other media, too. For example, despite all the hype about Social Networks in developed markets, Germany still reported growth in print magazine advertising last year, so we will need to see some clearer evidence of how much print is likely to lose out.

And as mentioned above, there is just a chance that this could just be an opportunity for print, too.

B.1. Supply – Base Capacity

Without additional closures, capacity will rise as demand falls, worsening overcapacity

FIGURE [illegible]: BASE CAPACITY BY REGION

'000 tonnes	2011	2012	2013	2014	2015	2016	2011-16
		Capacity : '000 tonnes					
Printing/Writing Papers							
W.Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
N.America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Latin America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Japan	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
China/HK	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Asia ex. Japan	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Africa/ME	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Europe Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Asia Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

Based on known plans and projects both for capacity increases and closures (i.e. what we call **Base Capacity**), global Printing/Writing paper capacity is projected to be broadly stable or increasing throughout our forecast, with expansions mainly in Asia counter-balancing or outweighing closures in mature markets.

Over the whole forecast period to 2016, global Printing/Writing paper capacity is projected to grow by a net total of almost 2.4 million tpa, i.e. an average annual rise of 0.4%.

This is considerably lower than our last forecast, due to more new capacity closures announced particularly in mature markets. Nevertheless, the net effect is 2.4 million tpa of capacity increases planned in a paper industry that already suffers from overcapacity and can no longer rely on long-term demand growth. This highlights the challenge facing the industry to close even more capacity still. Otherwise, global Printing/Writing Operating Rates could fall to 83% (see page [illegible]). As painful as even more closures will be, the huge volume of cutbacks announced recently suggests that the industry is committed to tackling the issue.

FIGURE 27: CAPACITY GROWTH TRENDS – BASE CAPACITY

Based on currently known plans, global P/W/I paper capacity is mostly projected to fall marginally this year. However, less capacity is expected to grow again in 2015 and by smaller amounts in the subsequent years.

Of the total 3.4 million tpa base capacity increase to 2016, regional differences are shown below, which make it clear why the vast majority of the world's capacity increases will take place in China.

FIGURE 28: CAPACITY INCREASE BY REGION – BASE CAPACITY

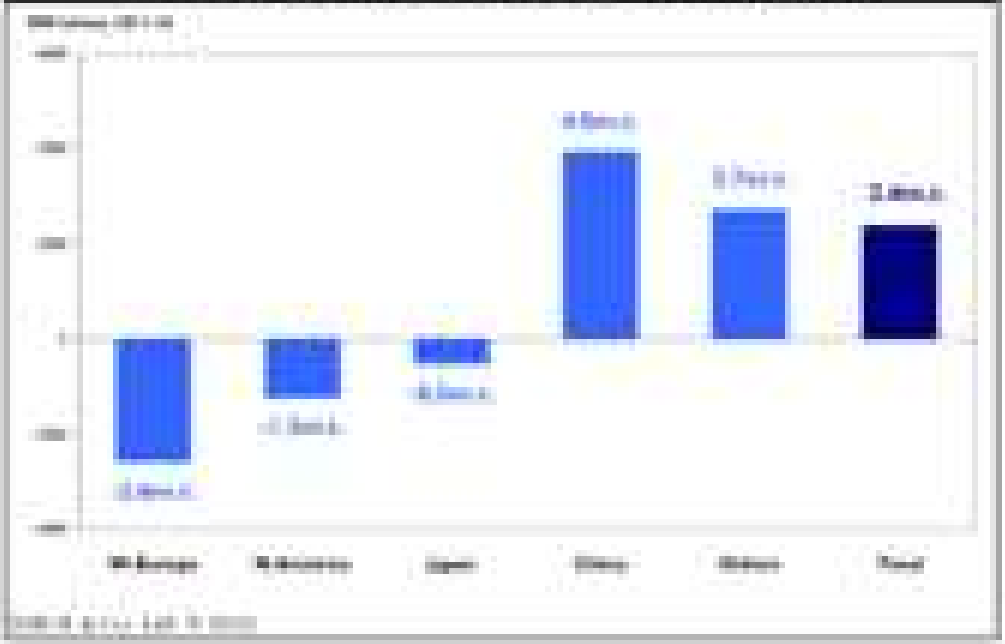
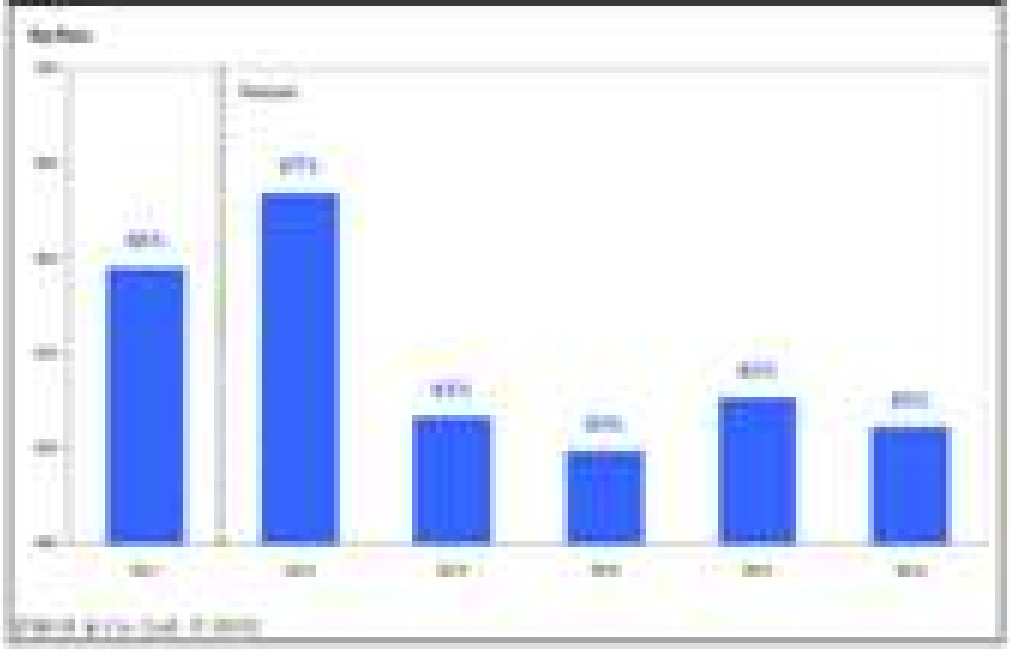


FIGURE 11: GLOBAL MAJOR PAPER OPERATING RATES – BASE CAPACITY



With one drop in global demand forecast to slow this year, while capacity will fall, world Printing/Writing Operating Rates are forecast to average 87%, up from 86% last year. However, worse is forecast to follow, unless there are more big capacity closures. This is especially the case in 2013 with global paper demand forecast to fall by -4%, while base capacity is closed to rise by +1.4%.

Combining our demand forecasts with the **Base Capacity** projections outlined on the previous pages, the result would be **global** (and at times, severe) **overcapacity throughout the forecast period.** In fact, according to our Base Capacity projections, Operating Rates would average below 84% in every single forecast year after 2012.

Having said this, with almost 3 million tpa of new closures announced (up in the space of time since our last report (which follows 3 million tpa of closures announced in the previous 6 months), we are forecasting that the industry will continue to succeed in coming up with further major capacity cutbacks during the forecast period. Counter-balancing this, we also predict some more investments, too, over and above those that have been confirmed to date, especially in Asia. Our forecasts for these additional investments and closures are added to the Base Capacity to produce our *Forecast Capacity* (see following section).

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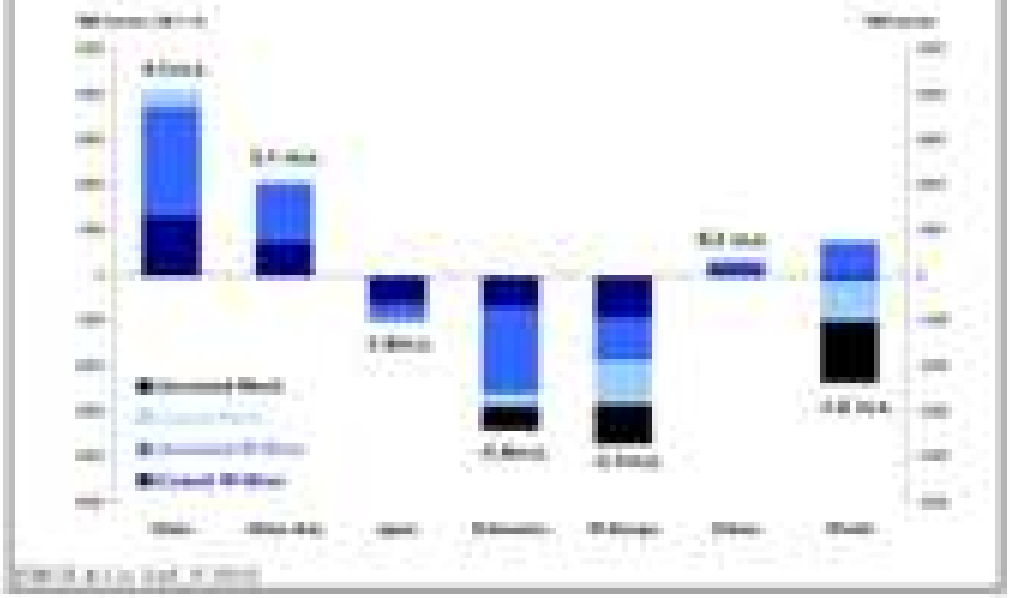
B.2. Supply – Forecast Capacity

Additional closures to the West likely to build more and close more

FIGURE XX. CAPACITY ADDITIONS BY REGION

Regional Capacity Increases, 2014 over 2011



The Base Capacity projections do not include any additional Unspecified Capacity closures the papermakers may implement to reduce overcapacity. The section of our Supply analysis assesses both **Base** and **Unspecified Capacity** together, to result in EMGE's **Forecast Capacity**.

Unlike the Base Capacity projections, which are based only on what is currently known, our Forecast Capacity makes certain assumptions using our analysis and understanding of the paper industry.

Combining both known and predicted investment/closures, our Forecast Capacity shows large capacity growth in Asia being outweighed by closures in mature markets. This adds up to a global Forecast Capacity decline of -1.6 million tpa by 2016.

The net reductions in Printing/Writing Paper capacity over the forecast period amount to -2.7 million tpa in W. Europe, -3.4 million tpa in N. America and -1 million tpa in Japan, alongside net growth of 4.1 million tpa forecast in China, focused on Woodfree.

This involves several assumptions by EMGE about Unspecified investments and closures, which are summarised on the following page.

FIGURE 11: CAPACITY – UNDERLYING CHANGE (PE/WE PAPER)

(Capacity – '000 tonnes)

'000 tonnes	2011	2012	2013	2014	2015	2016	2011-16
Pe/We Papers							
W.Europe		0	-190	-700	-350		-1,120
Other Europe			0	0	0	0	0
N America		0	-700	-1,000	-500		-2,200
Latin America			0	0	0	0	0
Japan		0	-200	-300	0	0	-500
China (Kraft)		0	0	0	0	500	500
China (Coated)		-600	-700	-600	-200	0	-2,100
China (Misc)		-600	-700	0	0	500	100
Other Asia (Kraft)		0	0	-100	-100	-200	-400
Other Asia (Coated)		0	-200	-200	-200	0	-600
Other Asia (Misc)		0	-200	-100	-50	-200	-550
Anywhere							
Total		-600	-3,000	-3,100	-1,900	-1,000	-9,600

Source: RISI, Inc. | Jan. 27, 2012

For this forecast, the main assumptions (over and above what is currently known) are:

- The markets with the weakest forecast demand will see significant additional capacity closures (see table).
- We are also predicting considerable capacity closures in Asia, where we expect some new machine investments to replace older (relatively) uncompetitive capacity, as growing capacity outstrips demand.
- However, we are also predicting additional ("Unspecified") investments in Asia. These are broadly expected to balance out the predicted additional closures in the region.
- These, plus the investments already confirmed, will hugely outweigh the predicted Unspecified closures globally, so our forecast is for substantial net capacity growth on a worldwide basis.

The combination of our predicted Unspecified investments and closures add up to a net 4 million tpa of capacity closures over the next 5 years, over and above the reductions that have already been announced. We realise that this sounds ambitious, but the industry has

announced around 5 million tpa of closures in just the past year, as papermakers have already demonstrated that they are firmly committed to this process.

Regarding timing of the closures, we expect a ramping transition to the predicted peak reached in 2013, with large-scale capacity closures predicted in both 2013 and 2014.

All of the confirmed and Unspecified investment/closures add up to our Forecast Capacity (Base plus Unspecified) change (see below).

FIGURE 24: FORECAST CAPACITY CHANGES BY REGION (2011 -14)

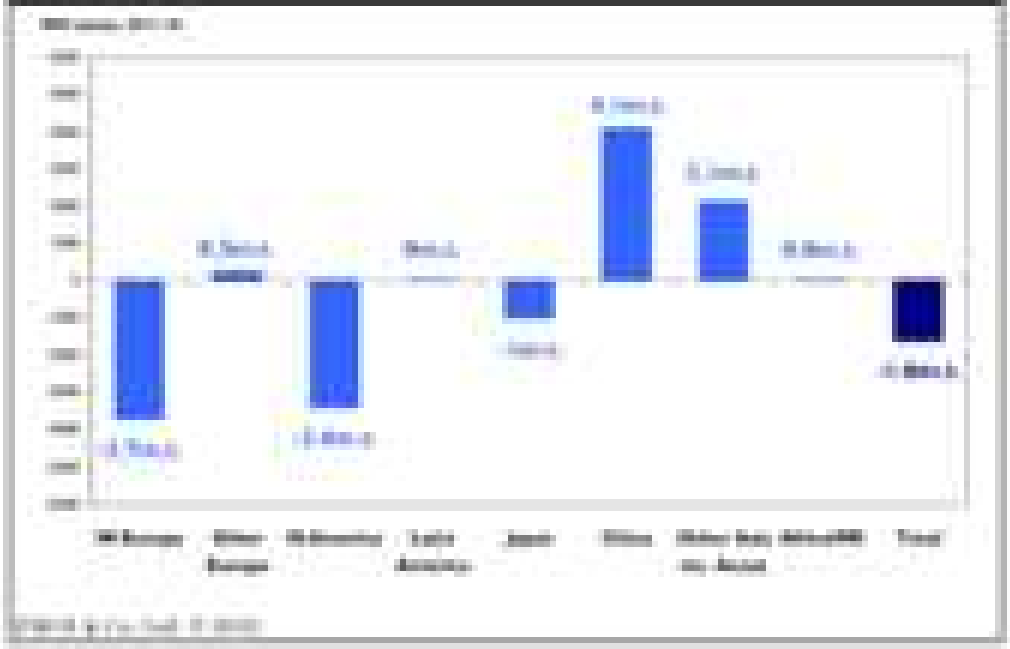


FIGURE 25: FORECAST CAPACITY GROWTH TYPICAL

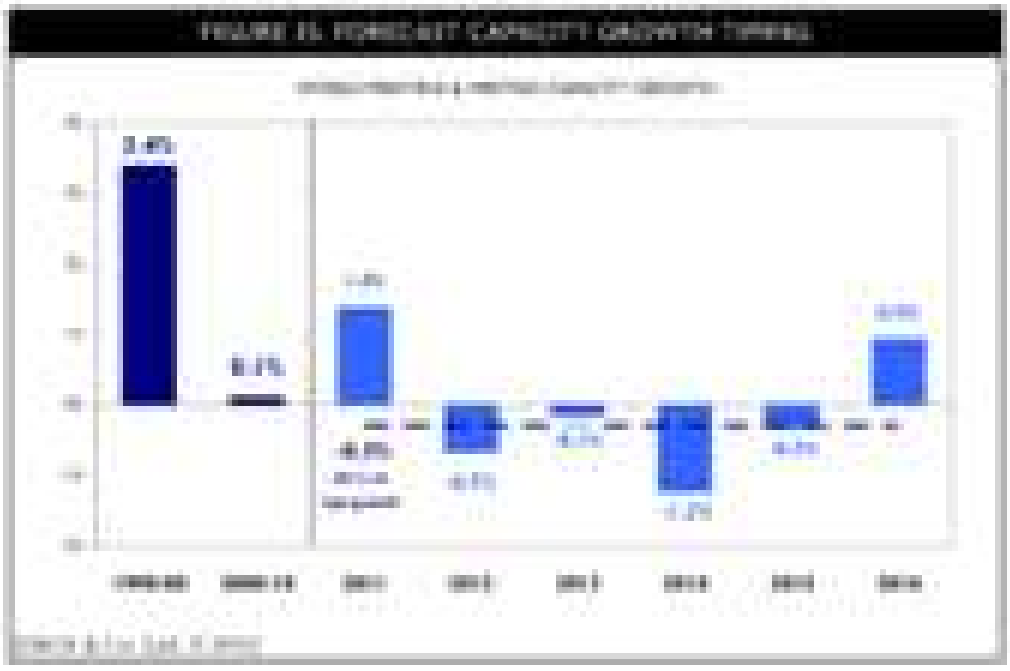
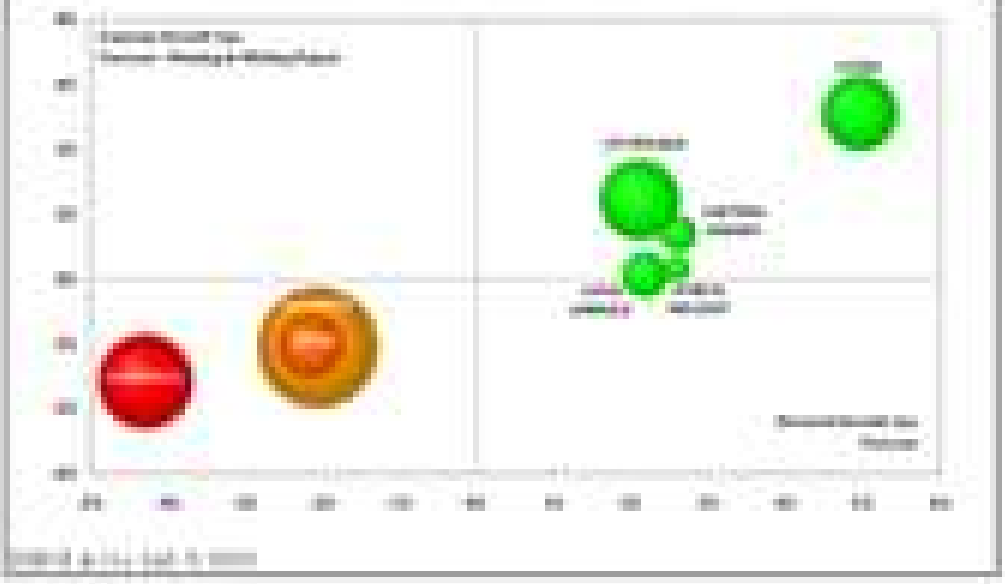


FIGURE 5a: DEMAND VS CAPACITY GROWTH (2011 – 16)



We are forecasting this capacity will fall in the regions where demand is also predicted to fall, i.e. North America, Western Europe and Japan (see chart).

Because previous closures have reduced the number of remaining, small, older paper machines in Western Europe and North America, the future closures that we are predicting in those regions will be especially painful for papermakers. To keep the remaining capacity competitive enough to withstand competition from overseas, papermakers in these regions may be driven to further consolidation, in sectors where that is not yet prevalent (see page two).

Meanwhile, on top of the many confirmed capacity investments in Asia, there is also a long list of unconfirmed expansion projects, especially in China and India (see following pages). We are predicting that a portion of those will switch from unconfirmed to confirmed during the course of the forecast period, further adding to the forecast capacity additions. These additions are expected to cause heavy oversupply in some cases, prompting the closure of a considerable volume of older, inefficient capacity.

C.2 China

FIGURE 27: NEW PAPER MACHINES – CHINA

New Machines – China

Company	Mill	Start-up	Grade	Capacity
Yuehong Paper	Henan	(2012)	(WP)	200
Shandong Hexie	Rizhao	(2012)	(WP)	120
APP(C)	Zhanjiang	(2012)	(WP)	650
Rizhaojiang	Hubeigang	(2012)	(WP)	12
Nan Paper	Sichuan	(2012)	(WP)	120
Hi-Q (Anli Paper	Zhongxin	(2012)	(CB)	140
Yuehua Paper	Shaoxing	(2012)	(CB)	22
Guangxi Sheng	Guangxi	(2012)	(CB)	120
Fujian Nanping	Nanping	(2012)	(UM)	200
Major Chinese Activity				**1.9 m t**
UNKNOWN				
Guangxi Jiantaiang	Nanning	(2012)	(WP)	600
Qi Paper	Nanning	(2012)	(WP)	600
APP(C)	Suzhou	(2012)	(WP)	500
APP(C)	Chongqing	(2012)	(WP)	180
APP	Qingying	(2012)	(WP)	180
Guangxi Jiantaiang	Nanning	(2012)	(WP)	600
Guangzhou Paper	Nanxian	(2012)	(WP)	200
Yunghui Paper	Nanning	(2012)	(WP)	200
APP(C)	Suzhou	(2012)	(WP)	600
APP(C)	Jiangmen	(2012)	(WP)	600
Double A Paper	Jiangxi	(2012)	(WP)	200
UPM	Changmen	(2012)	(WP)	600
Yunghui Paper	Henan	(2012)	(WP)	200
APP(C)	Chongqing	(2012)	(WP)	200
APP	Qingying	(2012)	(WP)	180
Other Potential CHINA PAPER investment				**1.2 m t**

(CBP, B & C by Jul-12 2012)

Major investments in China (both firm and unconfirmed projects) are shown in the table. Combined projects reveal expansions mainly in Ghuangxi Province resulting in forecast net export capacity of around 3 million tpa of UWF by 2016.

C.S. Enviro

FIGURE 38: NEW TWIN PAPER MACHINES – INDIA				
New Machines – India				
Company	**Mill**	**Start-up**	**Grade**	**Capacity**
[illegible]	[illegible]	[illegible]	UWF	[illegible]
JK Paper	[illegible]	[illegible]	UWF	[illegible]
Ponni Bharat	[illegible]	[illegible]	UWF	[illegible]
Ballarpur Paper	[illegible]	[illegible]	UWF	[illegible]
Emami Paper	[illegible]	[illegible]	UWF	[illegible]
BILT	[illegible]	[illegible]	UWF	[illegible]
Paper INDIA PVM1 commissioned				**[illegible] m.t.**
[illegible]	[illegible]	[illegible]	UWF	[illegible]
WBC Paper	[illegible]	[illegible]	UWF	[illegible]
Star Paper Mills	[illegible]	[illegible]	UWF	[illegible]
ITC Bhadrachalam	[illegible]	[illegible]	UWF	[illegible]
Ahlcon Paper	[illegible]	[illegible]	UWF	[illegible]
[illegible]	[illegible]	[illegible]	UWF	[illegible]
Other Potential INDIA PVM1 commissions				**[illegible] m.t.**

SOURCE: [illegible]

India has been investing rapidly in new capacity and we are forecasting that the country's need to import paper will fall, especially in the Uncoated Woodfree sector.

There are firm projects to add almost 4 million tonnes of new capacity in India. In addition to those, the list of planned but unconfirmed projects in India totals another million tonnes, over and above those included in our forecasts (see table). International Paper's entry into the Indian market is expected to push that process forward in the medium term (although the company has not announced any major investments so far).

However, we do not expect India to become a major exporter of paper in the short to medium term, because the producers are focused mainly on serving domestic demand (e.g. Indian demand for Cut-Size papers is growing by double-digit% percentage rates).

FIGURE 2A WORLD P&W/P&W CAPACITY GROWTH

Capacity Growth, P&W Papers (% pa)

Global P&W capacity growth has already slowed from 1.4%pa during the 1990s to virtually zero in the new millennium. Our Forecast Capacity actually sees global capacity decline slightly (-0.2%pa on average) over the 2011-2014 period, with capacity growth in Asia being marginally outweighed by closures in mature markets.

The combination of net capacity growth in non-Japan Asia and declines in mature regions will accelerate the migration of papermaking capacity from "West" to "East", and our forecasts is for the large mature markets (North America, Western Europe and Japan) to see their share of global capacity fall from 43% in 2011 to 37% by 2014.

These developments will also have a direct effect on the balance of inter-regional trade – see "Trends" section, which follows on Page 11.

Our global capacity forecasts by paper grade are shown in the table below. These indicate broadly stable Woodfree capacity, while Mechanical Paper capacity is expected to fall slightly. This is largely due to Asia investing mainly in Woodfree capacity, while closures will be focused on Western Europe, which dominates Mechanical globally.

FIGURE 4A ANNUAL CAPACITY GROWTH, WORLD, BY GRADE

	2012	2013	2014	2015	2016	2011-16
UWF	0.1%	0.1%	-0.3%	-0.3%	-0.3%	-0.1%
UWF	-1.8%	-0.1%	-1.1%	-0.5%	-1.1%	-0.9%
CW	-3.6%	-0.9%	-1.0%	-0.9%	-0.9%	-1.7%
LWC	-0.9%	-1.9%	-1.7%	-0.9%	-0.9%	-1.9%
Asia	**-0.3%**	**-0.3%**	**-1.0%**	**-0.8%**	**0.9%**	**-0.6%**

Capacity Projections – by Year and region

FIGURE 41: CAPACITY FORECAST CHANGES BY REGION - CWF

COATED WOODFREE

'000s, CWF	2011 Engs	2012 Ests	2013 Ests	2014 Ests	2015 Ests	2016 Ests	11-16 Ests	2016 Engs
W Europe	9,900	(362)	0	(200)	(100)	0	-662	9,450
Other Europe	100	0	50	50	0	0	50	250
N America	4,800	(400)	(250)	(250)	(100)	0	-1,000	3,800
Latin America	350	0	0	0	0	0	0	350
Japan	2,900	(50)	(250)	(200)	0	0	-500	2,400
China	6,200	900	500	300	100	300	2,100	8,300
Other Asia inc. Aus	2,700	300	400	300	200	0	1,200	3,900
Africa/ME	100	0	0	0	0	0	0	100
Total	29,050	388	450	-850	-100	300	-1,012	28,038
Europe Total	9,900	(362)	50	(150)	(100)	0	-562	9,338
Asia Total	11,900	750	650	(450)	100	300	1,550	13,450

Source: R.I.S.I. Ltd. © 2015

FIGURE 42: CAPACITY FORECAST CHANGES BY REGION - UWF

UNCOATED WOODFREE

'000s, UWF	2011 Engs	2012 Ests	2013 Ests	2014 Ests	2015 Ests	2016 Ests	11-16 Ests	2016 Engs
W Europe	9,600	-450	-1,000	-800	-600	0	-2,850	6,800
Other Europe	1,800	150	100	0	0	0	250	2,150
N America	13,000	-800	-1,200	-1,400	-1,000	0	-5,400	7,600
Latin America	4,400	0	0	0	0	0	0	4,400
Japan	2,100	-200	-200	-250	0	0	-650	1,450
China	6,200	1,250	2,100	1,100	250	1,200	5,900	12,100
Other Asia inc. Aus	1,100	1,200	1,250	1,300	600	1,000	5,350	6,450
Africa/ME	1,800	0	200	0	0	0	200	2,000
Total	39,000	150	-50	-1,050	-750	2,200	550	39,550
Europe Total	11,400	-300	-900	-1,200	-600	0	-3,000	8,400
Asia Total	11,400	2,250	3,250	2,150	850	2,200	10,850	22,250

Source: R.I.S.I. Ltd. © 2015

FIGURE 43: CAPACITY FORECAST CHANGES BY REGION – CPI								
COATED MECHANICAL								
'000s CPI	2011 Cap.	2012 Inc.	2013 Inc.	2014 Inc.	2015 Inc.	2016 Inc.	11-16 Inc.	2016 Cap.
W Europe	9500	-550	-270	0	0	0	-1900	8050
Other Europe	50	0	0	0	0	0	0	50
N America	7910	-110	0	-200	0	0	-1010	6900
Latin America	200	0	0	0	0	0	0	200
Japan	1800	-60	-10	0	0	0	-70	1610
China	1170	310	130	50	0	0	1090	2260
Other Asia inc. Korea	10	70	20	0	0	0	100	110
Africa/ME	0	0	0	0	0	0	0	0
Total	21630	-340	-140	-150	0	0	-790	20840
Europe Total	9550	-550	-270	0	0	0	-1900	8050
Asia Total	3180	320	130	50	0	0	1090	4270
CAGR % p.a. (Cpt. 11-16)								

FIGURE 44: CAPACITY FORECAST CHANGES BY REGION – UPI								
UNCOATED MECHANICAL								
'000s UPI	2011 Cap.	2012 Inc.	2013 Inc.	2014 Inc.	2015 Inc.	2016 Inc.	11-16 Inc.	2016 Cap.
W Europe	12100	-1100	-270	0	0	0	-3850	10250
Other Europe	1150	0	0	0	0	0	0	1150
N America	16510	-1000	0	0	0	0	-4000	12510
Latin America	1800	-10	-10	-10	0	0	-30	1770
Japan	7600	-220	0	0	0	0	-420	7180
China	6450	0	0	0	0	0	0	6450
Other Asia inc. Korea	3700	0	0	0	0	0	0	3700
Africa/ME	700	0	0	0	0	0	0	700
Total	107210	-4330	-2480	-1000	0	0	-11430	95780
Europe Total	39150	-2150	-1350	0	0	0	-8850	30300
Asia Total	19450	-220	0	0	0	0	-420	19030
CAGR % p.a. (Cpt. 11-16)								

FIGURE 41: CAPACITY FORECAST CHANGES, BY REGION – COATED

COATED PAPERS

'000s, Current Figures	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
W Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
N America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Latin America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Japan	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
China	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Asia-Pac. Region	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Africa/ME	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Europe Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Non-Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

FIGURE 42: CAPACITY FORECAST CHANGES, BY REGION – PW PAPERS

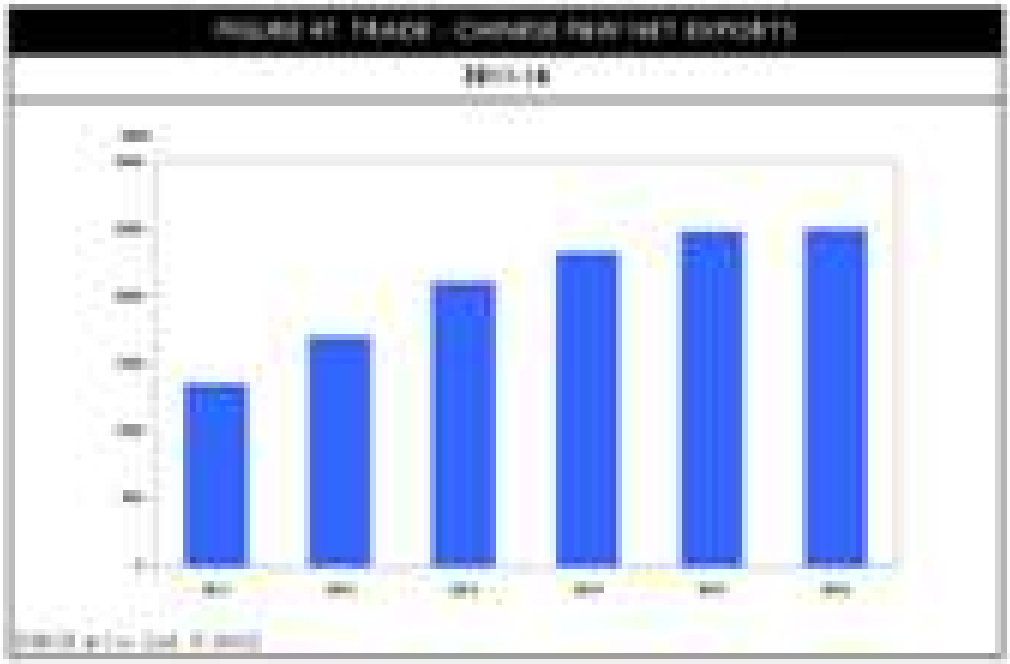
PRINTING & WRITINGS

'000s, PW Figures	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
W Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
N America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Latin America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Japan	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
China	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Asia-Pac. Region	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Africa/ME	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Europe Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Non-Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

C. World Trade

China to become net exporter of UWF, as well as CWF



We mentioned in the previous Chapter that mature regions are expected to close capacity in line with declining demand, but that Asian capacity would rise more rapidly than demand. This is especially true for China, where heavy overcapacity is expected to develop.

China has already transformed itself from an importer to a large-scale exporter of particularly Coated Woodfrees in recent years, although it has not yet become a net exporter of UWF. Increasingly, however, the capacity investments in China are favouring on Uncoated Woodfrees rolls now. Considering the country's track record as a developing paper exporter, as well as the predicted oversupply of Uncoated Woodfrees on the domestic market when new capacity comes on stream, we predict that China will be exporting well over 600,000 tpa of Uncoated Woodfrees by 2016, mainly to growing emerging markets. This will be alongside more than half a million tonnes of forecast growth in net exports of CWF, over the same period, pushing the country's total net exports of thWFs papers from 1.4 million to 2.5 million tpa by 2016 (see above chart).

There is also a potential upside risk to China's UWF export outlook, as there will be ample spare capacity for exports a lot more than we are forecasting. However, we expect it will take some time to develop its Uncoated Woodfree export business.

C.1 World Trade – by Region

Net trade equates to Net Exports (i.e. the balance between Exports and Imports)

China's expected to retain parity in Woodfree paper exports on the growing converging economic symmetry at the expense of Western Europe.

At the same time, Western Europe is expected to start recovering until to the Woodfree paper trade, to come a downward gradient.

FIGURE 44: TRADE – WORLD PRINTING NET EXPORTS BY REGION

2011 vs. 2014

In addition to growing Chinese Woodfree exports, capacity investments in India are also predicted to affect global trade, as India will become less dependent on imports.

These factors will all have an impact on Western Europe, which is forecast to lose out somewhat in global trade of paper, as it misses capacity to minimise overcapacity, and as China exports more (and India imports less) Woodfree Paper. Despite this, Western Europe is predicted to remain by far the world's dominant paper exporting region, especially in Mechanical grades, where it is the clear world leader, with growth prospects in developing markets (as mentioned strong growth in the negative sections of developing markets earlier in this report). Western Europe's net trade balance, then, is expected to fall from 7 million tpa of Printing & Writing papers in 2011 to 6.9 million tpa in 2014.

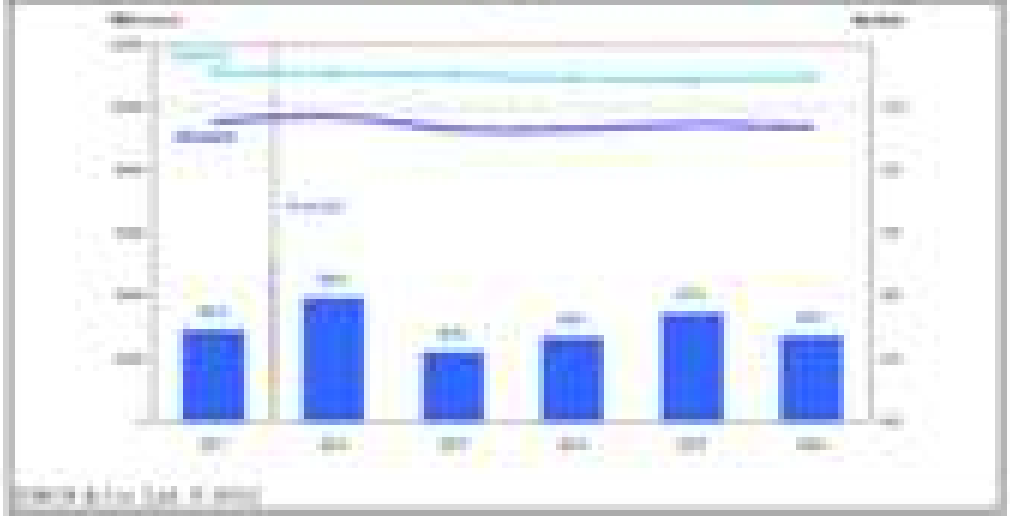
Globally, trade flows are expected to increase between exporters and the growing emerging markets where capacity is not increasing very rapidly. In contrast, we predict that it will become increasingly challenging to export to mature markets, due to forecast falling demand in those regions.

D. World Supply–Demand Balance

Additional capacity closures not expected to prevent oversupply

FIGURE 14: WORLD GRAPHIC SUPPLY, PRINTING & WRITING PAPERS

Demand-Supply Balance



As we explained in the *Forecast Capacity* section earlier, even the massive volume of mill and machine closures that we are forecasting (4 million tpa) over and above those that have already been announced will only result in a marginal drop in global capacity over the forecast period. This is because new capacity in Asia is forecast to balance out future closures, both in Asia itself and in mature markets.

We are forecasting an average drop of -0.3%pa in capacity, while global demand is predicted to decline by -0.4%pa, an average continuing the general trend of paper makers closing capacity in line with falling demand mainly in mature markets. So with capacity and demand forecast to fall by similar volumes, the current overcapacity is expected to persist throughout most of the forecast period, although this does not exclude the possibility of temporary periods of balanced supply and demand. On an annual average basis, operating rates are predicted to vary from 84% to 87% during the forecast period (see above chart).

If the additional capacity cutbacks that we are predicting do not take place, then there is a serious risk of even heavier oversupply on the global level. However, large volumes (almost 3 million tpa) of new closures announced since our last report (and around 5 million tpa sold in the past year) suggest the paper industry is firmly committed to reducing capacity in line with drops in demand.

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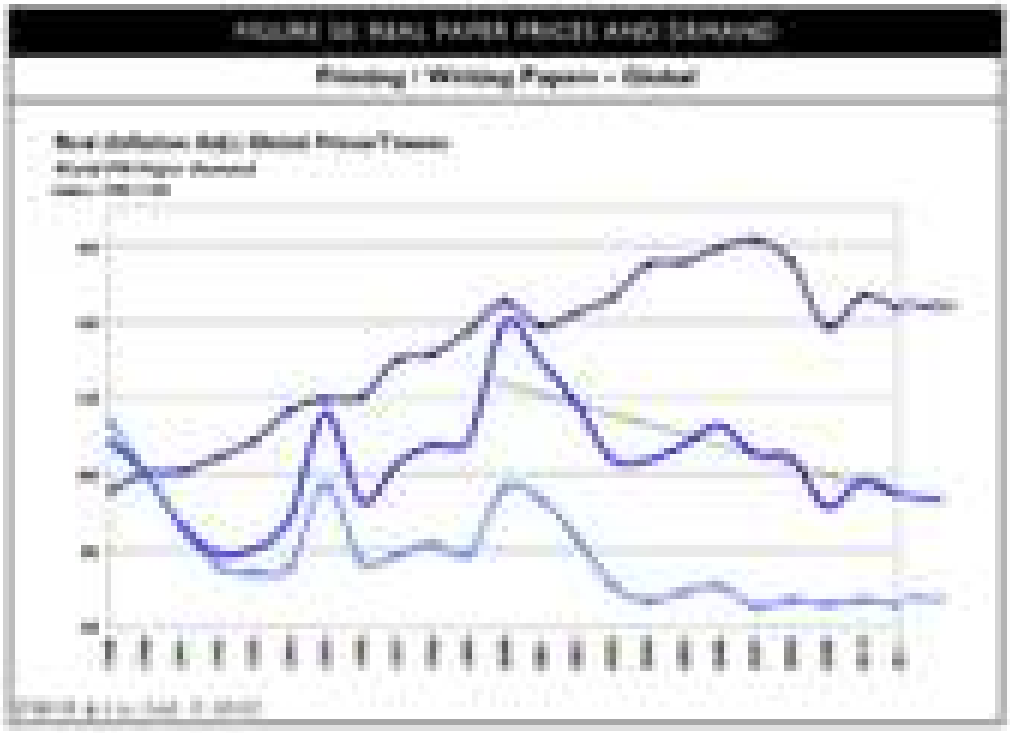
E. Prices & Value

Value is back on long-term trend



The above chart shows the historical development of Demand, real (i.e. inflation-adjusted) Price and Value, all on a global basis. The term "Value" here relates to the sector's apparent Revenue (expressed here as an index, and adjusted for inflation), calculated as Value = Price multiplied by Tonnes.

The "Value" of paper (i.e. the total apparent amount of money spent on paper) has moved from an upward trend in mid-1990's to a declining trend since the start of the new millennium.

We have argued in the past that the declining Value trend showed that the market was no longer willing/able to increase the total budget spent on Paper overall, regardless of how much paper (tonnes) it uses. We also argued that if paper users were no longer prepared to pay more for paper, then there would, in time, be a downward revision in demand when prices rise (i.e. Price/Demand Elasticity). This remains a downside risk for paper demand.

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F. Industry Consolidation

Surviving industry in mature markets is leaner, more consolidated

FIGURE 31: EMGE INDUSTRY CONSOLIDATION SUMMARY				
As at end*	N America	Europe	Rest of World	World
Coated Woodfree	2760	1 060	721	503
Uncoated Woodfree	2830	651	210	233
Coated Mechanical	1 170	1 715	780	770
Uncoated Mechanical	1 622	2565	650	854
Printing & Writing	781	946	563	669
Coated Papers	3 880	1 410	630	672
Woodfree Papers	1 270	709	335	240
Magazine Papers	1 270	1 720	883	740

* figures in bold indicate active or "highly consolidated", as does a NAFA figure over 1800

EMGE & Co Ltd, © 2013

In the mature regions of North America and Western Europe, the level of paper industry consolidation is generally moderate to high. With the exception of Europe's Woodfree sectors, the "Western" paper industry is close to or above the associated N-1800 level of 1800 in all sectors, which would traditionally indicate that they are highly consolidated.

However, we believe mergers and acquisitions are likely to be on the agenda for more and more companies in the coming years. As more machines sit idle, the remaining companies will consist of fewer and fewer production units, meaning that further closures could end a company's existence entirely. We believe that, if any, companies will voluntarily step out of the industry, preferring to be bought out to pursue a merger instead.

In North America, there would appear to be little scope for further consolidation in Coated Woodfrees as that sector is very highly consolidated already. However, earlier mergers in North America have suggested that deals may still be possible in the Uncoated Woodfree and in the Mechanical Paper sectors.

In Europe, meanwhile, we have already argued that Mechanical Paper mills are likely to benefit from growing magazine businesses in export markets which do not produce Mechanical Papers themselves. However, a moderately declining domestic business is still expected to claim more victims. Theoretically, a defensive merger should be unlikely in the highly consolidated Uncoated Mechanical sector, but if the authorities are prepared to

consider all Mechanical / Magazine Papers as a single sector, then there could still be room to manoeuvre.

It is the European Woodfree sector where consolidation seems much riskier, however. For one thing, it is in Woodfrees that export markets are expected to get tougher for European mills, largely due to Asian capacity expansion, as explained earlier. In addition, domestic demand is also under pressure, due to a range of factors, as explained in the Demand section of this report. At least as important as these factors is that Europe's Woodfree Paper industry is fragmented, and there is clearly room for mergers/ acquisitions – especially in Uncoated Woodfrees, which will come under increasing pressure from the upcoming wave of new Asian capacity.

When the new Asian capacity comes on stream, we do not expect it will just be Western machines that will come under pressure, however. Following large-volume capacity closures and strict cost-reductions, the surviving (larger, more modern) machines in the West are more efficient than they have been for years. The same process has begun, e.g. in China, with large numbers of very small mills being closed, but we believe much capacity still remains that will prove to be uncompetitive when the new Asian capacity creates heavy regional overcapacity. The closures of such mills/companies are expected to raise the level of consolidation in those markets, although in comparison with mature markets, the industry in Asia will remain highly fragmented for some time, we expect.

Pricing & Demand

We will briefly repeat here a warning that the increasingly consolidated paper industries in Western markets carry a downside demand risk. More consolidation may help Western papermakers to raise prices when demand is poor and the market oversupplied (usually when costs are rising), but pushing through price rises when paper consumers are suffering falling demand carries **an even greater downside risk in terms of long-term paper demand volumes.**

1. LEADING SUPPLIERS – 2012

Top Five supplier Pr/Wr global market share approaching 50%

1.1 Leading Suppliers – Coated Woodfree Papers

FIGURE 11: LEADING SUPPLIERS – 2012 CAPACITY, COATED WOODFREE PAPERS

Capacity '000t

	Company	Based in	Group Total	North America	Europe	Other Regions	World Share
1	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]
4	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]
5	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]
6	[illegible]	[illegible]	[illegible]		[illegible]		[illegible]
7	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
8	[illegible]	[illegible]	[illegible]		[illegible]		[illegible]
9	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
10	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
11	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
12	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
13	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]
14	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
15	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
World Capacity			**[illegible]**	**[illegible]**	**[illegible]**	**[illegible]**	**[illegible]**
Top 5 Share of Capacity				**[illegible]**	**[illegible]**	**[illegible]**	**[illegible]**
Pr/Wr				**[illegible]**	**[illegible]**	**[illegible]**	**[illegible]**

Pr/Wr = [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

[illegible] [illegible] [illegible]

The following tables show the different regional positions in more detail.

FIGURE 15: LEADING CTD WOODFREE PAPER SUPPLIERS – WORLD AND REGIONS

'000 tonnes

Company	In	2012 Capacity (Pt 000)	Share
WORLD		**([illegible])**	
1 APP	Indonesia	[illegible]	[illegible]
2 SAPPI	South Africa	[illegible]	[illegible]
3 NEWPAGE	USA	[illegible]	[illegible]
4 STORA ENSO	Finland	[illegible]	[illegible]
5 UPM	Finland	[illegible]	[illegible]
Top 5		[illegible]	49%
N.AMERICA		**([illegible])**	
1 NEWPAGE	USA	[illegible]	[illegible]
2 SAPPI	South Africa	[illegible]	[illegible]
3 VERSO PAPER	USA	[illegible]	[illegible]
4 [illegible]	[illegible]	[illegible]	[illegible]
5 [illegible]	USA	[illegible]	[illegible]
Top 5		[illegible]	56%
EUROPE		**([illegible])**	
1 SAPPI	South Africa	[illegible]	[illegible]
2 LECTA (ES)	Europe	[illegible]	[illegible]
3 STORA ENSO	Finland	[illegible]	[illegible]
4 UPM	Finland	[illegible]	[illegible]
5 BURGO	Italy	[illegible]	[illegible]
Top 5		[illegible]	69%
REST OF WORLD		**([illegible])**	
1 APP	Indonesia	[illegible]	[illegible]
2 NIPPON PAPER	Japan	[illegible]	[illegible]
3 [illegible]	China	[illegible]	[illegible]
4 HOKUETSU	Japan	[illegible]	[illegible]
5 HANSOL	Korea	[illegible]	[illegible]
Top 5		[illegible]	49%

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1.2 Leading Suppliers – Uncoated Woodfree Papers

FIGURE 3A: LEADING SUPPLIERS – 2012 CAPACITY (UNC. WOODFREE PAPER)

Capacity '000t

	Company	Based in	Group Total	North America	Europe	Other Regions	World Share
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]
3	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
4	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]
5	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]
6	[illegible]	[illegible]	[illegible]		[illegible]		[illegible]
7	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
8	[illegible]	[illegible]	[illegible]		[illegible]		[illegible]
9	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]
10	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
11	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]
12	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
13	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
14	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
15	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
World Capacity			**[illegible]**	**[illegible]**	**[illegible]**	**[illegible]**	**[illegible]**
Top 3 Share of Capacity				**[illegible]**	**[illegible]**	**[illegible]**	**[illegible]**
PLANS				**[illegible]**	**[illegible]**	**[illegible]**	**[illegible]**

Notes: [illegible] Higher industry moderate Mundesh index – as India can [illegible] moves "Highly Concentrated")

Data as at [illegible]

The following tables show the different regional positions in more detail.

FIGURE [illegible]: LEADING UNC. WOODFREE SUPPLIERS – WORLD AND REGIONS			
'000 tonnes			
Company	In	[illegible] Capacity	Share
WORLD		**([illegible])**	
1 IP	USA	[illegible]	[illegible]
2 DOMTAR	Canada	[illegible]	[illegible]
3 APP	Indonesia	[illegible]	[illegible]
4 UPM	Finland	[illegible]	[illegible]
5 MONDI	[illegible]	[illegible]	[illegible]
Top 5		[illegible]	[illegible]
N.AMERICA		**([illegible])**	
1 DOMTAR	Canada	[illegible]	[illegible]
2 IP	USA	[illegible]	[illegible]
3 BOISE	USA	[illegible]	[illegible]
4 [illegible]	USA	[illegible]	[illegible]
5 [illegible]	USA	[illegible]	[illegible]
Top 5		[illegible]	[illegible]
EUROPE		**([illegible])**	
1 [illegible]	Portugal	[illegible]	[illegible]
2 MONDI	[illegible]	[illegible]	[illegible]
3 STORA ENSO	Finland	[illegible]	[illegible]
4 UPM	[illegible]	[illegible]	[illegible]
5 IP	USA	[illegible]	[illegible]
Top 5		[illegible]	[illegible]
REST OF WORLD		**([illegible])**	
1 APP	Indonesia	[illegible]	[illegible]
2 NIPPON PAPER	Japan	[illegible]	[illegible]
3 IP	USA	[illegible]	[illegible]
4 [illegible]	Indonesia	[illegible]	[illegible]
5 [illegible]	China	[illegible]	[illegible]
Top 5		[illegible]	[illegible]

[illegible]

1.3 Leading Suppliers – Coated Mechanical

FIGURE 3a: LEADING SUPPLIERS – 2012 CAPACITY: COATED PAPER

Capacity '000t

	Company	Based in	Group Total	North America	Europe	Other Regions	World Share
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]
2	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]
5	[illegible]	[illegible]	[illegible]		[illegible]		[illegible]
6	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]
7	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]
8	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]
9	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
10	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
11	[illegible]	[illegible]	[illegible]		[illegible]		[illegible]
12	[illegible]	[illegible]	[illegible]		[illegible]		[illegible]
13	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
14	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
15	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]
World Capacity			**[illegible]**	**[illegible]**	**[illegible]**	**[illegible]**	**[illegible]**
Top 5 Share of Capacity				**[illegible]**	**[illegible]**	**[illegible]**	**[illegible]**
Pulpex				**[illegible]**	**[illegible]**	**[illegible]**	**[illegible]**

[illegible]

The following tables show the different regional positions in more detail.

FIGURE 57: LEADING CTD MECHANICAL SUPPLIERS - WORLD AND REGIONS

'000 tonnes

Company	In	2013 Capacity (Pt [illegible])	Share
WORLD		**([illegible])**	
1 UPM	Finland	[illegible]	[illegible]
2 SAPPI	South Africa	[illegible]	[illegible]
3 STORA ENSO	Finland	[illegible]	[illegible]
4 NEWPAGE	USA	[illegible]	[illegible]
5 BURGO	Italy	[illegible]	[illegible]
Top 5		[illegible]	[illegible]
N.AMERICA		**([illegible])**	
1 NEWPAGE	USA	[illegible]	[illegible]
2 VERSO PAPER	USA	[illegible]	[illegible]
3 AbitibiBowater	Canada	[illegible]	[illegible]
4 UPM	Finland	[illegible]	[illegible]
5 [illegible]	Canada	[illegible]	[illegible]
Top 5		[illegible]	[illegible]
EUROPE		**([illegible])**	
1 UPM	Finland	[illegible]	[illegible]
2 SAPPI	South Africa	[illegible]	[illegible]
3 STORA ENSO	Finland	[illegible]	[illegible]
4 BURGO	Italy	[illegible]	[illegible]
5 NORSKE SKOG	Norway	[illegible]	[illegible]
Top 5		[illegible]	[illegible]
REST OF WORLD		**([illegible])**	
1 OJI PAPER	Japan	[illegible]	[illegible]
2 [illegible]	China	[illegible]	[illegible]
3 NIPPON PAPER	Japan	[illegible]	[illegible]
4 [illegible]	Japan	[illegible]	[illegible]
5 STORA ENSO	Finland	[illegible]	[illegible]
Top 5		[illegible]	[illegible]

[illegible]

1.4 Leading Suppliers – Uncoated Mechanical

FIGURE 58: LEADING SUPPLIERS - 2012 CAPACITY: UNC. MECH

Company		Based in	Group Total	North America	Europe	Other Regions	World Share
			Capacity '000t				
1	UPM	Finland	[illegible]	[illegible]	[illegible]		[illegible]
2	STORA ENSO	Finland	[illegible]		[illegible]	[illegible]	[illegible]
3	[illegible]	Canada	[illegible]	[illegible]			[illegible]
4	NORSKE SKOG	Norway	[illegible]		[illegible]	[illegible]	[illegible]
5	CATALYST PAPER	Canada	[illegible]	[illegible]			[illegible]
6	SCA	Sweden	[illegible]		[illegible]		[illegible]
7	HOLMEN	Sweden	[illegible]		[illegible]		[illegible]
8	IRVING	Canada	[illegible]	[illegible]			[illegible]
9	NIPPON PAPER	Japan	[illegible]	[illegible]		[illegible]	[illegible]
10	[illegible]	Japan	[illegible]			[illegible]	[illegible]
11	[illegible]	USA	[illegible]	[illegible]			[illegible]
12	[illegible]	USA	[illegible]	[illegible]			[illegible]
13	[illegible]	China	[illegible]			[illegible]	[illegible]
14	[illegible]	USA	[illegible]	[illegible]			[illegible]
15	[illegible]	Japan	[illegible]			[illegible]	[illegible]
World Capacity			[illegible]	[illegible]	[illegible]	[illegible]	100%
Top 5 Share of Capacity				[illegible]	[illegible]	[illegible]	[illegible]
[illegible]				[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

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The following tables show the different regional positions in more detail:

FIGURE 24: LEADING LINE PACK SUPPLIERS – WORLD AND REGIONS

'000 tonnes

Company	Ac	2012 Capacity (Pr.Info)	Share
WORLD		**(882)**	
1 LPM	Poland	3300	22.3%
2 STORA ENSO	Poland	1175	12.1%
3 Mondi Business	Canada	1 900	10.1%
4 NORSKE SKOG	Norway	1040	7.0%
5 DOMTAR PAPER	Canada	620	4.2%
Top 5		**8240**	**84%**
N.AMERICA		**(1822)**	
1 Mondi Business	Canada	1 900	34.3%
2 DOMTAR PAPER	Canada	620	11.2%
3 IRVING	Canada	320	5.7%
4 Trade Group	USA	230	4.3%
5 NEWSPRINT	USA	227	4.2%
Top 5		**4640**	**58%**
EUROPE		**(2840)**	
1 LPM	Poland	3040	27.2%
2 STORA ENSO	Poland	1175	10.4%
3 NORSKE SKOG	Norway	760	6.7%
4 SCA	Sweden	430	6.4%
5 HOLMEN	Sweden	410	7.0%
Top 5		**6720**	**68%**
REST OF WORLD		**(440)**	
1 OJI PAPER	Japan	310	11.1%
2 NORSKE SKOG	Norway	340	10.8%
3 NIPPON PAPER	Japan	210	9.4%
4 HOKUETSU	Chile	200	9.0%
5 MARUSUMI	Japan	130	5.8%
Top 5		**1140**	**54%**

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1.5 Leading Suppliers – Coated Papers

FIGURE 6E: LEADING SUPPLIERS – GW & CAPACITY, TOTAL COATED

Capacity '000t

	Company	Based in	Group Total	North America	Europe	Other Regions	World Share
1	[illegible]	South Africa	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	Finland	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	Singapore	[illegible]			[illegible]	[illegible]
4	[illegible]	Finland	[illegible]		[illegible]	[illegible]	[illegible]
5	[illegible]	USA	[illegible]	[illegible]			[illegible]
6	[illegible]	Italy	[illegible]		[illegible]		[illegible]
7	[illegible]	Japan	[illegible]			[illegible]	[illegible]
8	[illegible]	China	[illegible]			[illegible]	[illegible]
9	[illegible]	Japan	[illegible]		[illegible]	[illegible]	[illegible]
10	[illegible]	Korea	[illegible]		[illegible]		[illegible]
11	[illegible]	USA	[illegible]	[illegible]			[illegible]
12	[illegible]	Japan	[illegible]			[illegible]	[illegible]
13	[illegible]	France/UK	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
14	[illegible]	Russia	[illegible]			[illegible]	[illegible]
15	[illegible]	Taiwan	[illegible]			[illegible]	[illegible]
World Capacity			**[illegible]**	**[illegible]**	**[illegible]**	**[illegible]**	**[illegible]**
Top 5 Share of Capacity				**[illegible]**	**[illegible]**	**[illegible]**	**[illegible]**
Pulp				**[illegible]**	**[illegible]**	**[illegible]**	**[illegible]**

[illegible]

The following tables show the different regional positions in more detail:

FIGURE 6 : LEADING COATED PAPER SUPPLIERS – WORLD AND REGIONS

'000 tonnes

Company	ex-	Mill Capacity (Pt Mills)	Share
WORLD		**(470)**	
1 (APP)	South Africa	4107	12.7%
2 (PM)	Poland	4070	12.3%
3 (AP)	Singapore	3160	7.9%
4 (TUSA-3000)	Poland	2000	6.7%
5 (NEWPAC)	USA	2000	6.1%
Top 5		**14440**	**42%**
N.AMERICA		**(1880)**	
1 (NEWPAC)	USA	2000	32.4%
2 (SOLO PAPE)	USA	1300	14.9%
3 (APP)	South Africa	1107	11.8%
4 (Multifibrecom)	Canada	430	5.0%
5 (PM)	Poland	340	4.4%
Top 5		**4230**	**79%**
EUROPE		**(1410)**	
1 (PM)	Poland	4100	23.0%
2 (APP)	South Africa	3230	14.3%
3 (TUSA-3000)	Poland	2000	14.4%
4 (EUPO)	Italy	2141	12.9%
5 (ECTA 212)	Europe	1432	7.8%
Top 5		**1900**	**58%**
REST OF WORLD		**(830)**	
1 (AP)	Singapore	3160	19.4%
2 (MITSU-TAKA)	Japan	1600	8.4%
3 (CHUNG)	China	1140	7.7%
4 (SI YANG)	Japan	1100	7.1%
5 (HOKUETSU)	Japan	1120	6.4%
Top 5		**8200**	**61%**

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1.6 Leading Suppliers – Woodfree Papers

FIGURE 61: LEADING SUPPLIERS - 2012 CAPACITY, WOODFREE PAPERS

Capacity '000t

	Company	Based in	Group Total	North America	Europe	Other Regions	World Share
1	APP	Singapore	6090			6045	7.1%
2	IP	USA	4822	2273	1199	1395	6.0%
3	SAPPI	South Africa	3718	1183	2283	252	4.6%
4	UPM	Finland	3440		2535	905	4.2%
5	DOMTAR	Canada	3353	3353			4.2%
6	STORA ENSO	Finland	2980		2735	245	3.7%
7	NIPPON PAPER	Japan	2820			2820	3.5%
8	SHANDONG CHENMING	China	1915			1915	2.4%
9	NewPage	USA	1773	1773			2.2%
10	MONDI	RSA / Aus	1690		1453	243	2.1%
11	PORTUCEL	Portugal	1665		1665		2.0%
12	OJI PAPER	Japan	1584		48	1536	1.9%
13	LECTA	Europe	1500		1500		1.9%
14	ARJOWIGGINS	France/UK	1478	383	1050	45	1.8%
15	BURGO	Italy	1370		1370		1.7%
	World Capacity		**[illegible]**	**[illegible]**	**[illegible]**	**[illegible]**	**100%**
	Top 5 Share of Capacity			**71%**	**39%**	**31%**	**27%**
	H-HHI			**[illegible]**	**[illegible]**	**[illegible]**	**[illegible]**

[illegible]

The following tables show the different regional positions in more detail.

FIGURE [illegible]: LEADING WOODFREE PAPER SUPPLIERS – WORLD AND REGIONS

'000 tonnes

Company	In	2012 Capacity (P+UWF)	Share
WORLD		**([illegible])**	
1 APP	Singapore	[illegible]	[illegible]
2 IP	USA	[illegible]	[illegible]
3 SAPPI	South Africa	[illegible]	[illegible]
4 UPM	Finland	[illegible]	[illegible]
5 DOMTAR	Canada	[illegible]	[illegible]
Top 5		[illegible]	[illegible]
N.AMERICA		**([illegible])**	
1 DOMTAR	Canada	[illegible]	[illegible]
2 IP	USA	[illegible]	[illegible]
3 NewPage	USA	[illegible]	[illegible]
4 BOISE	USA	[illegible]	[illegible]
5 SAPPI	South Africa	[illegible]	[illegible]
Top 5		[illegible]	[illegible]
EUROPE		**([illegible])**	
1 STORA ENSO	Finland	[illegible]	[illegible]
2 UPM	Finland	[illegible]	[illegible]
3 SAPPI	South Africa	[illegible]	[illegible]
4 PORTUCEL SOP	Portugal	[illegible]	[illegible]
5 LECTA (CVG)	Europe	[illegible]	[illegible]
Top 5		[illegible]	[illegible]
REST OF WORLD		**([illegible])**	
1 APP	Singapore	[illegible]	[illegible]
2 NIPPON PAPER	Japan	[illegible]	[illegible]
3 SHANDONG CHENMING	China	[illegible]	[illegible]
4 Oji PAPER	Japan	[illegible]	[illegible]
5 SUN PAPER	China	[illegible]	[illegible]
Top 5		[illegible]	[illegible]

[illegible]

1.7 Leading Suppliers – Magazine Paper Suppliers

FIGURE 44: LEADING SUPPLIERS – 2012 CAPACITY: MAGAZINE PAPERS

Capacity '000t

	Company	Based in	Group Total	North America	Europe	Other Regions	World Share
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]
2	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]
4	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]
5	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]
6	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]
7	[illegible]	[illegible]	[illegible]		[illegible]		[illegible]
8	[illegible]	[illegible]	[illegible]		[illegible]		[illegible]
9	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
10	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]
11	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]
12	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]
13	[illegible]	[illegible]	[illegible]		[illegible]		[illegible]
14	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
15	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
World Capacity			**[illegible]**	**[illegible]**	**[illegible]**	**[illegible]**	**[illegible]**
Top 5 Share of Capacity				**[illegible]**	**[illegible]**	**[illegible]**	**[illegible]**
Pulp				**[illegible]**	**[illegible]**	**[illegible]**	**[illegible]**

[illegible]

The following tables show the different regional positions in more detail.

FIGURE 43: LEADING MAGAZINE PAPER SUPPLIERS – WORLD AND REGIONS

'000 tonnes

Company	In	2012 Capacity	Share
WORLD		**([illegible])**	
1 UPM	Finland	[illegible]	[illegible]
2 STORA ENSO	Finland	[illegible]	[illegible]
3 AbitibiBowater	Canada	[illegible]	[illegible]
4 NORSKE SKOG	Norway	[illegible]	[illegible]
5 SAPPI	RSA	[illegible]	[illegible]
Top 5		[illegible]	[illegible]
N.AMERICA		**([illegible])**	
1 AbitibiBowater	Canada	[illegible]	[illegible]
2 NewPage	USA	[illegible]	[illegible]
3 [illegible]	Canada	[illegible]	[illegible]
4 VERSO PAPER	USA	[illegible]	[illegible]
5 [illegible]	Canada	[illegible]	[illegible]
Top 5		[illegible]	[illegible]
EUROPE		**([illegible])**	
1 UPM	Finland	[illegible]	[illegible]
2 STORA ENSO	Finland	[illegible]	[illegible]
3 NORSKE SKOG	Norway	[illegible]	[illegible]
4 SAPPI	RSA	[illegible]	[illegible]
5 BURGO	Italy	[illegible]	[illegible]
Top 5		[illegible]	[illegible]
REST OF WORLD		**([illegible])**	
1 OJI PAPER	Japan	[illegible]	[illegible]
2 NIPPON PAPER	Japan	[illegible]	[illegible]
3 SHANDONG CHENMING	China	[illegible]	[illegible]
4 [illegible]	Japan	[illegible]	[illegible]
5 STORA ENSO	Finland	[illegible]	[illegible]
Top 5		[illegible]	[illegible]

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1.8 Leading Suppliers – Printing & Writing

TABLE 04: LEADING SUPPLIERS - 2013 CAPACITY: PRINTING AND WRITING

Capacity '000t

	Company	Based in	Group Total	North America	Europe	Other Regions	World Share
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
6	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]
7	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]
8	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]
9	[illegible]	[illegible]	[illegible]		[illegible]		[illegible]
10	[illegible]	[illegible]	[illegible]			[illegible]	[illegible]
11	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]
12	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]
13	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]
14	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]
15	[illegible]	[illegible]	[illegible]		[illegible]		[illegible]
World Capacity			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Top 5 Share of Capacity				[illegible]	[illegible]	[illegible]	[illegible]
Plants				[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

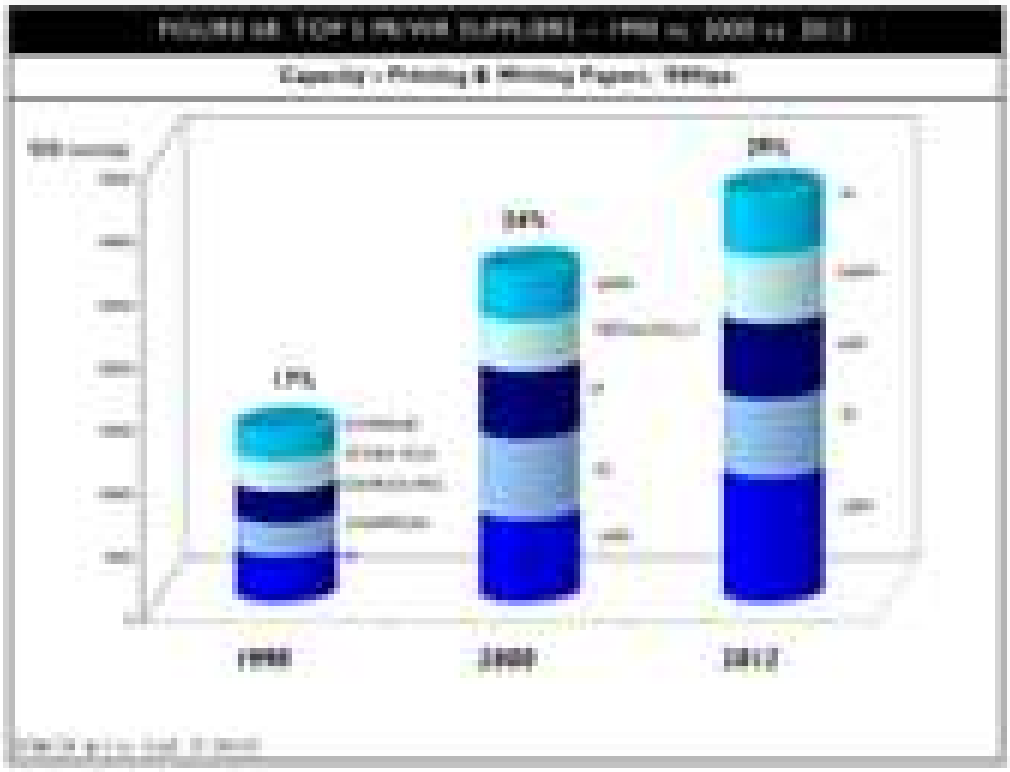
The following tables show the different regional positions in more detail:

FIGURE 07: LEADING PAPER PAPER SUPPLIERS – WORLD AND REGIONS

'000 tonnes

Company	Ac	WW Capacity (Pt.Offs)	Share
WORLD		**(246)**	
1 JPM	Finland	9911	6.1%
2 STORA ENSO	Finland	6230	3.4%
3 APP	Singapore	6040	3.3%
4 MTPI	South Africa	5100	3.0%
5 IP	USA	4620	2.3%
Top 5		32040	28%
N.AMERICA		**(70)**	
1 [redacted]	Canada	3320	11.2%
2 [redacted]	USA	3110	10.1%
3 IP	USA	2370	8.1%
4 [redacted]	Canada	2130	6.5%
5 [redacted]	USA	1360	2.7%
Top 5		12310	39%
EUROPE		**(940)**	
1 JPM	Finland	8320	21.9%
2 STORA ENSO	Finland	6800	14.8%
3 MTPI	South Africa	3700	9.6%
4 BURGO	Italy	3400	6.4%
5 [redacted]	Portugal	1400	4.2%
Top 5		21900	57%
REST OF WORLD		**(350)**	
1 APP	Singapore	4440	11.9%
2 [redacted]	Japan	3190	6.7%
3 [redacted]	China	2460	4.4%
4 [redacted]	Japan	2410	3.6%
5 [redacted]	Japan	1350	2.8%
Top 5		14730	34%

[redacted] & Co. Ltd. © 2012



The above chart shows how the share of the leading 5 companies has increased from 17% in 1998 to a forecast 29% this year.

1.9 Leading Suppliers — N. America

TOURS OF LEADING PAPER SUPPLIERS — N.AMERICA			
Company	Hr	Of Capacity (Ft Hrs)	Share
Coated Woodfree		**(1760)**	
1 [illegible]	[illegible]	[illegible]	[illegible]
2 [illegible]	[illegible]	[illegible]	[illegible]
3 [illegible]	[illegible]	[illegible]	[illegible]
4 [illegible]	[illegible]	[illegible]	[illegible]
5 [illegible]	[illegible]	[illegible]	[illegible]
Top 5		**[illegible]**	**[illegible]**
Uncoated Woodfree		**(3815)**	
1 [illegible]	[illegible]	[illegible]	[illegible]
2 [illegible]	[illegible]	[illegible]	[illegible]
3 [illegible]	[illegible]	[illegible]	[illegible]
4 [illegible]	[illegible]	[illegible]	[illegible]
5 [illegible]	[illegible]	[illegible]	[illegible]
Top 5		**[illegible]**	**[illegible]**
Coated Mechanical		**(1775)**	
1 [illegible]	[illegible]	[illegible]	[illegible]
2 [illegible]	[illegible]	[illegible]	[illegible]
3 [illegible]	[illegible]	[illegible]	[illegible]
4 [illegible]	[illegible]	[illegible]	[illegible]
5 [illegible]	[illegible]	[illegible]	[illegible]
Top 5		**[illegible]**	**[illegible]**
Uncoated Mechanical		**(1625)**	
1 [illegible]	[illegible]	[illegible]	[illegible]
2 [illegible]	[illegible]	[illegible]	[illegible]
3 [illegible]	[illegible]	[illegible]	[illegible]
4 [illegible]	[illegible]	[illegible]	[illegible]
5 [illegible]	[illegible]	[illegible]	[illegible]
Top 5		**[illegible]**	**[illegible]**
Printing / Writing		**(795)**	
1 [illegible]	[illegible]	[illegible]	[illegible]
2 [illegible]	[illegible]	[illegible]	[illegible]
3 [illegible]	[illegible]	[illegible]	[illegible]
4 [illegible]	[illegible]	[illegible]	[illegible]
5 [illegible]	[illegible]	[illegible]	[illegible]
Top 5		**[illegible]**	**[illegible]**

[illegible]

1.10 Leading Suppliers – Europe

FIGURE 15: LEADING PAPER SUPPLIERS – EUROPE			
Company	Hq	Mill Capacity ('000 mtpa)	Share
Coated Woodfree		**(1400)**	
1 [illegible]	South Africa	370	26.4%
2 UPM (FI)	Europe	1420	13.9%
3 [illegible]	France	1270	13.3%
4 [illegible]	France	1140	14.6%
5 BURGO	Italy	1100	12.7%
Top 5		**5400**	**85%**
Uncoated Woodfree		**(440)**	
1 [illegible]	Portugal	1460	13.0%
2 [illegible]	Russia	1420	11.8%
3 [illegible]	France	1360	11.1%
4 UPM	Europe	1230	10.5%
5 IP	USA	1140	9.4%
Top 5		**6790**	**55%**
Coated Mechanical		**(2110)**	
1 UPM	France	1860	21.3%
2 [illegible]	South Africa	1280	15.4%
3 [illegible]	France	1270	14.8%
4 BURGO	Italy	1110	12.2%
5 [illegible]	Norway	760	8.2%
Top 5		**5480**	**82%**
Uncoated Mechanical		**(2660)**	
1 UPM	France	3640	27.3%
2 [illegible]	France	1410	20.8%
3 [illegible]	Norway	780	9.1%
4 SCA	Sweden	630	8.0%
5 HOLMEN	Sweden	570	7.0%
Top 5		**6720**	**68%**
Printing / Writing		**(960)**	
1 UPM	France	1410	21.9%
2 [illegible]	France	1260	14.8%
3 UPM	South Africa	1760	9.8%
4 BURGO	Italy	1060	6.3%
5 [illegible]	Portugal	1460	6.2%
Top 5		**2390**	**59%**

SOURCE: [illegible] © 2013

1.11 Leading Suppliers – Rest of the World

FIGURE 11: LEADING PAPER SUPPLIERS – REST OF THE WORLD

Company	Ex	Mill Capacity (Th MT)	Share
Coated Woodfree		**(710)**	
1 [illegible]	Indonesia	[illegible]	[illegible]
2 [illegible]	Japan	[illegible]	[illegible]
3 [illegible]	China	[illegible]	[illegible]
4 [illegible]	Japan	[illegible]	[illegible]
5 [illegible]	Korea	[illegible]	[illegible]
Top 5		**[illegible]**	**[illegible]**
Uncoated Woodfree		**(310)**	
1 [illegible]	Indonesia	[illegible]	[illegible]
2 [illegible]	Japan	[illegible]	[illegible]
3 [illegible]	US	[illegible]	[illegible]
4 [illegible]	Indonesia	[illegible]	[illegible]
5 [illegible]	China	[illegible]	[illegible]
Top 5		**[illegible]**	**[illegible]**
Coated Mechanical		**(700)**	
1 [illegible]	Japan	[illegible]	[illegible]
2 [illegible]	China	[illegible]	[illegible]
3 [illegible]	Japan	[illegible]	[illegible]
4 [illegible]	Japan	[illegible]	[illegible]
5 [illegible]	Korea	[illegible]	[illegible]
Top 5		**[illegible]**	**[illegible]**
Uncoated Mechanical		**(665)**	
1 [illegible]	Japan	[illegible]	[illegible]
2 [illegible]	Norway	[illegible]	[illegible]
3 [illegible]	Japan	[illegible]	[illegible]
4 [illegible]	China	[illegible]	[illegible]
5 [illegible]	Japan	[illegible]	[illegible]
Top 5		**[illegible]**	**[illegible]**
Printing / Writing		**(385)**	
1 [illegible]	Singapore	[illegible]	[illegible]
2 [illegible]	Japan	[illegible]	[illegible]
3 [illegible]	China	[illegible]	[illegible]
4 [illegible]	Japan	[illegible]	[illegible]
5 [illegible]	Japan	[illegible]	[illegible]
Top 5		**[illegible]**	**[illegible]**

[illegible]

1.12 Leading Suppliers – Global World

FIGURE 12: LEADING PAPER SUPPLIERS – TOTAL			
Company	Ho	Mill Capacity ('000 MT)	Share
Coated Woodfree		**(000)**	
1 BAP	Indonesia	2,000	11.3%
2 SAPPI	South Africa	1,200	11.3%
3 NEWPAGE	USA	1,000	5.7%
4 STORA ENSO	Finland	650	3.6%
5 UPM	Finland	1,860	6.9%
Top 5		**11,860**	**44%**
Uncoated Woodfree		**(000)**	
1 IP	USA	4,810	9.3%
2 SCA	Sweden	3,222	6.6%
3 BAP	Indonesia	2,400	4.8%
4 UPM	Finland	1,900	3.9%
5 Mondi	RSA / Aus	1,600	3.3%
Top 5		**14,000**	**28%**
Coated Mechanical		**(000)**	
1 UPM	Finland	2,210	19.8%
2 SAPPI	South Africa	1,600	9.9%
3 STORA ENSO	Finland	1,070	9.0%
4 NEWPAGE	USA	1,110	6.8%
5 BURGO	Italy	1,110	6.8%
Top 5		**8,640**	**52%**
Uncoated Mechanical		**(000)**	
1 UPM	Finland	2,200	22.2%
2 STORA ENSO	Finland	1,770	12.1%
3 HOLMEN	Sweden	1,400	10.3%
4 NORSKE SKOG	Norway	1,030	7.4%
5 OJI PAPER	Canada	600	4.9%
Top 5		**8,000**	**46%**
Printing / Writing		**(000)**	
1 UPM	Finland	9,910	8.9%
2 STORA ENSO	Finland	6,230	5.6%
3 APP	Singapore	4,040	3.6%
4 SAPPI	South Africa	3,720	3.0%
5 IP	USA	4,620	4.2%
Top 5		**28,560**	**26%**

1.13 Leading Suppliers – Notes on recent M&A activity

FIGURE 13: LEADING SUPPLIERS – NOTES ON M&A ACTIVITY	
Category	Comment
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

[illegible]

[illegible]

2. Coated Woodfree - Forecasts

2.1. Demand - Coated Woodfree

FIGURE 70: DEMAND FORECAST - WORLD BY REGION, COATED WOODFREE							
'000 tonnes							
Demand	2011	2012	2013	2014	2015	2016	2011-16%pa
W Europe	4,595	4,423	4,260	4,105	3,960	3,823	-3.7%
Other Europe	1,098	1,123	1,143	1,159	1,169	1,183	1.5%
N America	8,479	8,062	7,663	7,283	6,919	6,573	-5.0%
Latin America	1,863	1,826	1,771	1,720	1,670	1,621	-2.8%
Japan	4,678	4,528	4,384	4,243	4,106	3,974	-3.2%
China/HK	8,874	9,313	9,662	9,931	10,122	10,243	2.9%
Other Asia inc. Russia	2,571	2,683	2,810	2,949	3,100	3,258	4.8%
Africa/ME	812	1,012	1,141	1,241	1,316	1,374	11.1%
Total	**33,170**	**33,966**	**34,844**	**34,630**	**33,559**	**32,449**	**-0.4%**
Europe Total	5,576	5,546	5,404	5,264	5,129	4,986	-2.1%
Asia Total	16,913	17,525	18,056	18,423	18,713	18,875	2.2%
CMGE & Co. Ltd. © 2012							

growth %pa					
Growth	2012	2013	2014	2015	2016
W Europe	-3.7%	-3.7%	-3.6%	-3.7%	-3.6%
Other Europe	2.3%	1.7%	1.4%	1.0%	1.2%
N America	-5.0%	-5.0%	-5.0%	-5.0%	-5.0%
Latin America	-2.0%	-3.0%	-2.8%	-2.9%	-3.0%
Japan	-3.2%	-3.2%	-3.2%	-3.2%	-3.2%
China/HK	4.9%	3.7%	2.8%	1.9%	1.2%
Other Asia inc. Russia	4.4%	4.8%	4.9%	5.1%	5.1%
Africa/ME	24.6%	12.7%	8.8%	6.0%	4.4%
Total	**2.4%**	**2.6%**	**-0.6%**	**-3.1%**	**-3.3%**
Europe Total	-4.1%	-2.6%	-2.6%	-2.6%	-2.7%
Asia Total	3.6%	3.0%	2.0%	1.4%	0.9%
CMGE & Co. Ltd. © 2012					

2.2. *Trade flows - Coated Woodfree*

FIGURE 75. TRADE FORECAST, WORLD BY REGION, COATED WOODFREE							
'000 tonnes							
Trade	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2011-16**
W.Europe	(450)	(500)	(711)	(1,017)	(1,600)	(1,611)	(861)
Other Europe	810	870	1,164	1,860	2,530	2,530	1,720
N.America	750	762	728	700	640	605	133
Latin America	(612)	(1,020)	(1,311)	(1,533)	(1,662)	(1,999)	(387)
Japan	(30)	(40)	(50)	(200)	(220)	(250)	(220)
China/HK	(550)	(1,000)	(1,550)	(1,928)	(2,400)	(2,500)	(1,950)
Other Asia ex. Russia	720	800	1,120	1,112	1,162	1,162	442
Africa/ME	630	1,800	1,800	1,630	1,800	1,900	1,270
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Europe Total	(1,060)	(1,130)	(1,726)	(2,417)	(3,600)	(3,861)	(2,801)
Asia Total	(1,660)	(2,110)	(2,980)	(3,741)	(4,520)	(5,112)	(3,452)

Source: Author's own estimates

2.3. *Output - Coated Woodfree*

FIGURE 76. OUTPUT FORECAST, WORLD BY REGION, COATED WOODFREE							
'000 tonnes							
Output	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2011-16**
W.Europe	10,000	10,170	10,112	11,000	10,400	10,512	512
Other Europe	1,170	1,800	2,000	2,112	2,200	2,200	1,030
N.America	17,121	16,600	15,800	15,000	14,870	14,500	-2,621
Latin America	4,100	4,170	4,067	4,170	4,800	5,010	910
Japan	13,000	12,500	12,050	12,000	11,500	11,500	-1,500
China	19,000	19,500	20,112	20,870	21,400	22,000	3,000
Other Asia ex. Russia	10,000	11,000	12,000	13,112	14,170	15,112	5,112
Africa/ME	1,000	1,112	1,112	1,000	1,000	1,000	0
Total	**115,170**	**117,000**	**117,812**	**119,000**	**120,000**	**122,000**	**6,830**
Europe Total	11,170	11,970	12,112	13,112	12,600	12,712	1,542
Asia Total	103,000	105,000	105,700	106,000	107,400	109,310	6,310

Source: Author's own estimates

OUTPUT GROWTH, WORLD BY REGION, COATED WOODFREE

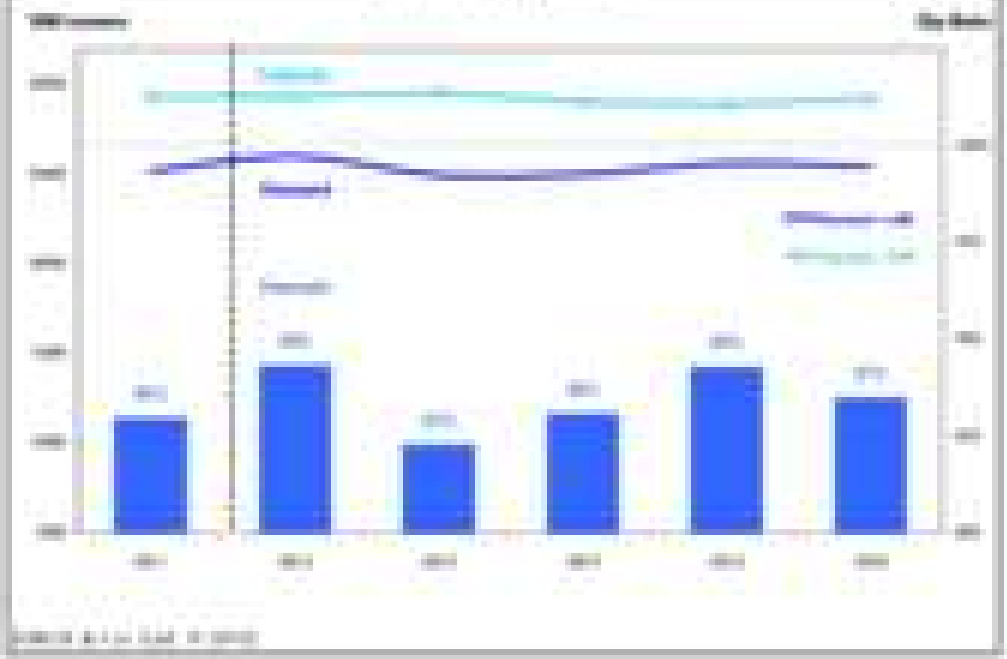
growth % pa

Output Growth	2011	2012	2013	2014	2015
W Europe	-3.9%	-8.0%	-1.4%	-1.1%	-4.0%
Other Europe	-2.0%	-11.1%	-7.0%	-7.0%	-5.0%
N America	-3.0%	-11.0%	-3.0%	-2.1%	-1.7%
Latin America	-4.0%	-3.7%	-2.0%	-3.0%	-4.1%
Japan	-2.0%	-4.0%	-3.0%	-3.0%	-3.1%
China	14.0%	3.0%	4.0%	4.1%	3.0%
Other Asia ex. Russia	-1.1%	-1.0%	-1.1%	-1.0%	-1.0%
ROW/CIS	-4.0%	-3.0%	-4.0%	-4.0%	-3.0%
Total	-0.2%	-0.8%	-0.1%	-0.4%	-0.9%
Europe Total	-1.0%	-3.0%	-1.0%	-1.1%	-2.0%
Asia Total	-4.0%	-3.0%	-1.0%	-1.1%	-1.0%

EMGE & Co Ltd, [illegible] 2015

FIGURE 11 WORLD DEMAND SUPPLY COATED WOODFREE

Demand Supply Balance



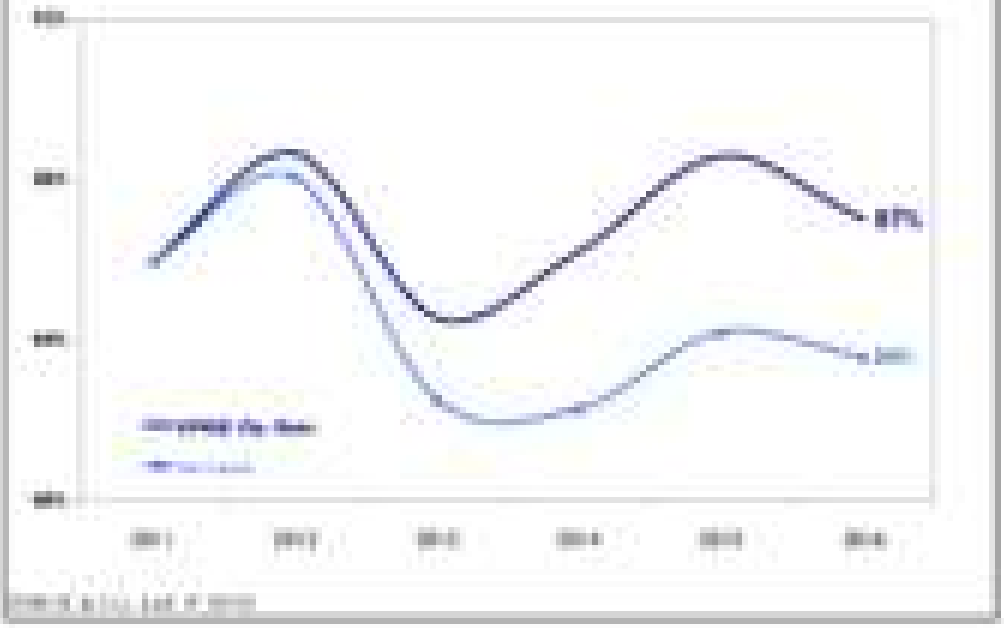
EMGE & Co Ltd, [illegible] 2015

2.4. Capacity Assumptions - Coated Woodfree

[illegible] IN EMGE CAPACITY ASSUMPTIONS, COATED WOODFREE							
[unspecified capacity]							
Capacity '000 m.t.	2011	2012	2013	2014	2015	2016	2011-16
[illegible]				[illegible]	[illegible]		[illegible]
[illegible]							
[illegible]			[illegible]	[illegible]	[illegible]		[illegible]
[illegible]							
[illegible]			[illegible]	[illegible]			[illegible]
[illegible]		[illegible]	[illegible]	[illegible]	[illegible]		[illegible]
[illegible]			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]							
[illegible]							
Total		-200	-414	-400	-129	889	-1,254

[illegible]

[illegible] IN OPERATING RATES, FORECAST vs. BASE, CTD. WOODFREE
Demand Supply Balance



[illegible]

2.5. Capacity and Operating Rates - Coated Woodfree

2.5.1. Base Data

FIGURE 60: BASE CAPACITY, BY REGION, COATED WOODFREE

(Excluding unspecified capacity)

Capacity '000 m.t.	2011	2012	2013	2014	2015	2016	2011-16
W.Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
N.America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Latin America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0
Japan	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
China	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Asia-Pacific	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Africa/ME	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0
Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Asia	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

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FIGURE 61: BASE OPERATING RATES, BY REGION, COATED WOODFREE

% Production of Capacity

Operating Rates	2011	2012	2013	2014	2015	2016
W.Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
N.America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Latin America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Japan	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
China	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Asia-Pacific	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Africa/ME	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Europe Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Asia Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

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2.5.2. Forecast Data

FIGURE 61: FORECAST CAPACITY, BY REGION, CY11-CY16F/E/F/E

(Including unspecified capacity)

Capacity, '000 m.t.	2011	2012	2013	2014	2015	2016	2011-16
W.Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
N.America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Latin America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Japan	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
China	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
China Non-m. Russia	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Accum[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total	**[illegible]**	**[illegible]**	**[illegible]**	**[illegible]**	**[illegible]**	**[illegible]**	**[illegible]**
Energiz Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Asb Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible] m.t.s. [illegible] = [illegible]

FIGURE 62: FORECAST OPERATING RATES, BY REGION, CY11-CY16F/E/F/E

% Production of Capacity

Operating Rates	2011	2012	2013	2014	2015	2016
W.Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
N.America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Latin America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Japan	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
China	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
China Non-m. Russia	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Accum[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total	**[illegible]**	**[illegible]**	**[illegible]**	**[illegible]**	**[illegible]**	**[illegible]**
Energiz Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Asb Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible] m.t.s. [illegible] = [illegible]

5. Uncoated Woodfree – Forecasts

E.E. Demand - Uncoated Woodfree

FIGURE 31: DEMAND FORECAST, WOODFREE BY REGION, UNC. WOODFREE							
'000 tonnes							
Demand	2011	2012	2013	2014	2015	2016	2011-16%pa
W.Europe	5760	5611	5560	5510	5525	5495	-0.9%
Other Europe	2470	2370	2395	2420	2720	2765	2.3%
N.America	6175	6070	6030	5920	5990	5940	-0.7%
Latin America	3020	3150	3275	3390	3510	4030	5.9%
Japan	3260	3200	3100	3010	2980	2960	-1.9%
China/HK	4670	4825	4960	5110	5330	5530	3.4%
Other Asia ex. Japan	7830	8080	8340	8510	8810	9060	2.9%
Africa/ME	2175	2260	2370	2740	2840	2890	5.8%
Total	35360	35975	36830	36620	36950	38640	-0.4%
Europe Total	10320	10180	10640	9720	9650	10190	-1.2%
Asia Total	15760	16210	16220	16440	16860	17550	1.4%
CAGR p.a. (all 5 years)							
growth % pa							
Growth		2012	2013	2014	2015	2016	
W.Europe		-1.1%	-1.0%	-1.9%	2.0%	-0.5%	
Other Europe		-3.9%	1.0%	1.9%	1.3%	1.7%	
N.America		-1.2%	-10.5%	-1.3%	-1.9%	-4.2%	
Latin America		3.3%	3.9%	3.7%	3.5%	3.9%	
Japan		-4.9%	-3.0%	-2.7%	-1.2%	-4.0%	
China		3.2%	3.1%	3.0%	3.4%	3.3%	
Other Asia ex. Japan		3.1%	3.1%	1.9%	3.4%	2.9%	
Africa/ME		3.3%	3.9%	3.7%	3.5%	3.9%	
Total		1.8%	-0.4%	0.5%	0.9%	-0.8%	
Europe Total		-1.5%	-2.2%	-0.9%	2.1%	-1.7%	
Asia Total		2.7%	0.4%	1.3%	2.4%	1.1%	
CAGR p.a. (all 5 years)							

1.2. *Trade flows - Unrevised Headline*

FIGURE 6A: TRADE FORECAST, WORLD BY REGION, UNIT: MYOPIAS							
'000 tonnes							
Trade	2011	2012	2013	2014	2015	2016	2011-16
W.Europe	530	560	515	530	580	570	3285
Other Europe	-30	-15	-15	0	0	5	-55
N.America	-140	-130	-145	-240	-225	-240	-1120
Latin America	120	125	90	80	70	60	545
Japan	-530	-570	-600	-640	-690	-690	-3720
China/HK	90	60	200	420	580	640	1990
Other Asia ex. Russia	-510	-1000	-1030	-1060	-1470	-1470	-7540
Africa/ME	-690	-720	-1240	-1440	-1630	-1660	-7380
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Europe Total	500	545	500	530	580	575	3230
Asia Total	-1060	-1690	-1830	-2110	-2630	-2720	-12040

1.3. *Output - Unrevised Headline*

FIGURE 6A: OUTPUT FORECAST, WORLD BY REGION, UNIT: MYOPIAS							
'000 tonnes							
Output	2011	2012	2013	2014	2015	2016	2011-16
W.Europe	8180	8260	7270	7340	7450	7560	45560
Other Europe	3340	3320	3280	3340	3730	3760	20770
N.America	9830	9840	9865	9810	9760	9830	58715
Latin America	3770	3870	3870	3890	3960	4050	23410
Japan	8930	8920	8700	8540	8370	8370	51830
China	9690	9810	9990	10160	9930	10170	59750
Other Asia ex. Russia	9870	9540	9390	9060	8930	8720	55510
Africa/ME	1880	1930	2110	2180	2300	2320	12720
Total	**61360**	**61910**	**62210**	**62330**	**62900**	**63200**	**372310**
Europe Total	12660	12810	12110	12190	12720	12860	75350
Asia Total	24830	24760	24660	24560	24230	24260	147300

OUTPUT GROWTH: WORLD BY REGION, LONG HISTORIES

growth % pa

Output Growth	2011	2012	2013	2014	2015
W Europe	1.0%	0.5%	0.9%	1.2%	1.1%
Other Europe	4.0%	1.0%	2.0%	3.0%	1.0%
N America	1.2%	0.9%	2.1%	2.9%	2.6%
Latin America	3.7%	3.0%	3.5%	3.8%	3.9%
Japan	2.0%	1.7%	2.0%	2.2%	2.3%
China	8.7%	7.9%	8.4%	8.1%	8.0%
Other Asia ex. Japan	5.9%	5.5%	5.5%	5.7%	5.8%
ROW	4.0%	3.9%	3.9%	3.9%	3.7%
Total	**3.8%**	**3.4%**	**3.7%**	**3.9%**	**3.8%**
Europe Total	1.5%	0.7%	1.1%	1.5%	1.2%
Asia Total	3.7%	3.1%	3.7%	3.7%	3.6%

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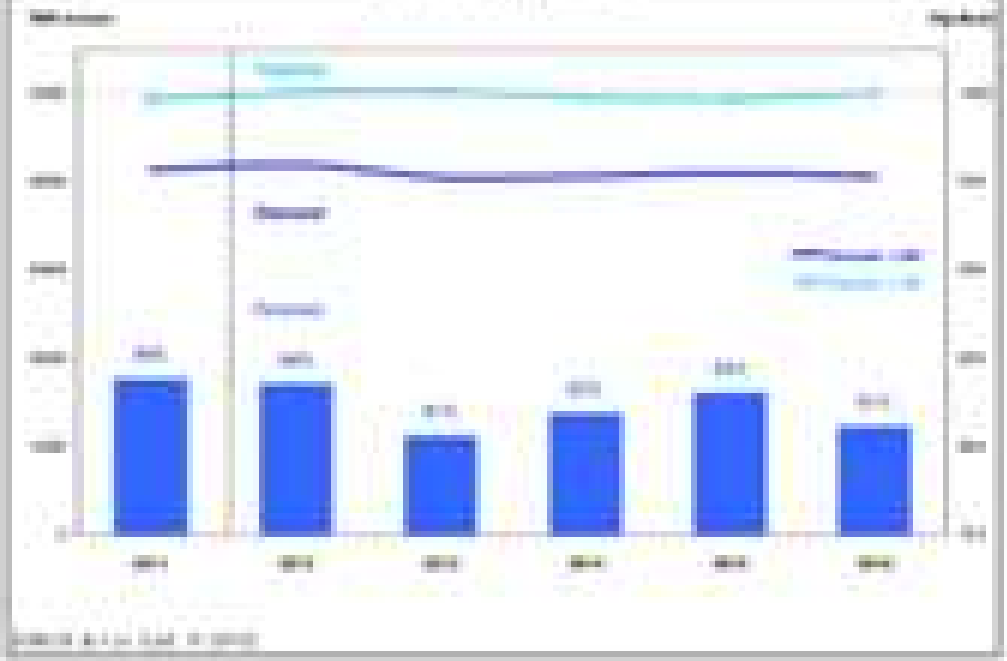
FIGURE 87: WORLD DEMAND SUPPLY, UNCERTAIN WOODFORD

Demand Supply Balance



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5.4. Capacity Assumptions - Uncoated Woodfree

FIGURE 88: EMGE CAPACITY ASSUMPTIONS, UNCOATED WOODFREE

(unspecified capacity)

Capacity, '000 m.t.	2011	2012	2013	2014	2015	2016	2011-16
W.Europe			[illegible]	[illegible]	[illegible]		[illegible]
Other Europe							
N.America			[illegible]	[illegible]	[illegible]		[illegible]
Latin America							
Japan				[illegible]			[illegible]
China		[illegible]	[illegible]	[illegible]	[illegible]		[illegible]
China (Exit)				[illegible]	[illegible]	[illegible]	[illegible]
Other Asia			[illegible]	[illegible]	[illegible]		[illegible]
Other Asia (Exit)				[illegible]	[illegible]	[illegible]	[illegible]
Africa/ME							
Total		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

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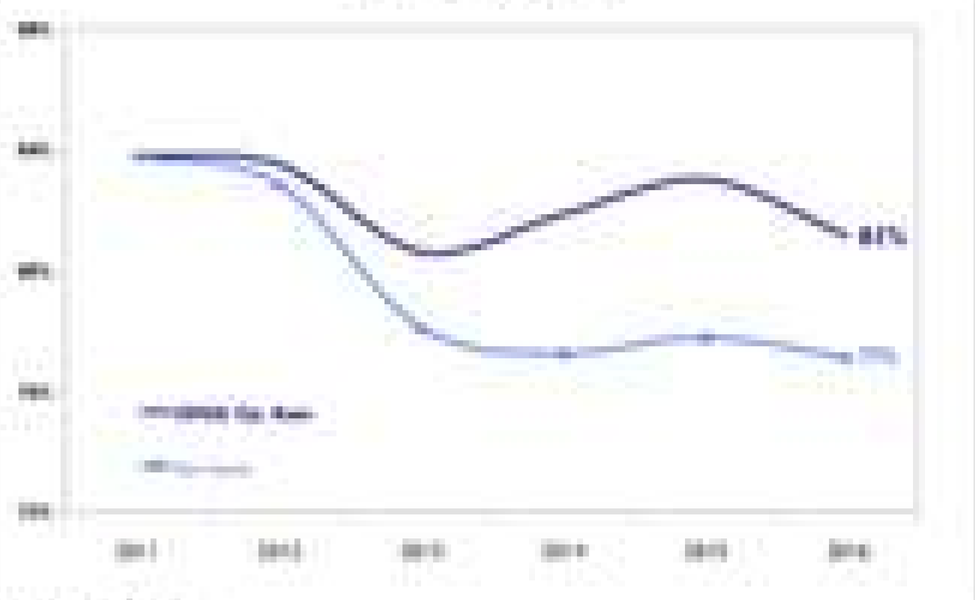
FIGURE 89: OPERATING RATES FORECAST vs. BASE: UNC. W'DFREE

Demand Supply Balance



EMGE & Co., Feb. 2012

EMGE

3.3. *Capacity and Operating Rates - Uncoated Woodfree*

3.3.1. *Base Data*

FIGURE 95: BASE CAPACITY BY REGION (ORIG. '000 MTPY)							
(Excluding unspecified capacity)							
Capacity '000 m.t.	'10 t	'11 t	'12 t	'13 t	'14 t	'15 t	'10 t - '15 t
W.Europe	9 562	9 559	9 550	9 543	9 539	9 535	-27
Other Europe	3 205	3 215	3 219	3 219	3 219	3 219	14
N.America	10 275	9 952	9 913	9 875	9 875	9 875	-400
Latin America	4 189	4 189	4 189	4 189	4 189	4 189	0
Japan	3 313	3 293	3 218	3 218	3 218	3 218	-95
China	8 213	7 990	8 473	8 530	8 530	8 530	317
Other Asia ex Japan	1 1 4 0	1 1 7 0	1 2 0 0	1 2 2 7	1 2 5 3	1 2 7 9	139
Africa/ME	1 8 0 1	1 8 1 3	1 8 2 3	1 8 3 3	1 8 4 3	1 8 5 3	52
Total	**39 099**	**38 869**	**39 019**	**39 078**	**39 079**	**39 099**	**0 0 0**
Europe	12 809	12 823	12 819	12 813	12 811	12 813	13
Asia	21 078	21 170	21 354	21 464	21 542	21 562	0 0 0

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FIGURE 96: BASE OPERATING RATES BY REGION (ORIG. '000 MTPY)						
% Production of Capacity						
Operating Rates	'10 t	'11 t	'12 t	'13 t	'14 t	'15 t
W.Europe	87%	86%	84%	84%	85%	75%
Other Europe	81%	83%	85%	83%	83%	84%
N.America	82%	81%	84%	77%	77%	84%
Latin America	90%	93%	93%	93%	93%	97%
Japan	84%	70%	87%	91%	87%	74%
China	77%	81%	81%	84%	76%	72%
Other Asia ex Japan	81%	81%	77%	73%	76%	77%
Africa/ME	77%	81%	84%	84%	84%	85%
Total	**84%**	**83%**	**86%**	**81%**	**86%**	**77%**
Europe Total	86%	85%	84%	84%	84%	79%
Asia Total	84%	79%	79%	79%	79%	76%

[ENGLISH] [cell_7] [cell_8] [cell_9] [cell_10] [cell_11] [cell_12] [cell_13]

1.5.2. Forecast Data

FIGURE 51: FORECAST CAPACITY BY REGION, UNIT: KTONS							
(Including unspecified capacity)							
Capacity, '000 m.t.	2011	2012	2013	2014	2015	2016	2011-16
W.Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
N.America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Latin America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Japan	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
China	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
China Excl. Taiwan	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Accum[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total	**[illegible]**	**[illegible]**	**[illegible]**	**[illegible]**	**[illegible]**	**[illegible]**	**[illegible]**
Europe Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Asia Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible] & Co. Ltd. © 2012

FIGURE 52: FORECAST OPERATING RATES, BY REGION, UNIT: KTONS						
% Production of Capacity						
Operating Rates	2011	2012	2013	2014	2015	2016
W.Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
N.America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Latin America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Japan	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
China	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
China Excl. Taiwan	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Accum[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total	**[illegible]**	**[illegible]**	**[illegible]**	**[illegible]**	**[illegible]**	**[illegible]**
Europe Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Asia Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible] & Co. Ltd. © 2012

4. Coated Mechanical - Forecasts

4.1. Demand - Coated Mechanical

FIGURE 94: DEMAND FORECAST - WORLD BY REGION, C.TO MECHANICAL							
'000 tonnes							
Demand	2011	2012	2013	2014	2015	2016	2012 / 2016pa
W.Europe	5442	5152	5033	5002	5048	5023	-2.1%
Other Europe	709	863	1003	1132	1200	1320	3.8%
N.America	3099	3203	3263	3180	3095	3053	-1.7%
Latin America	350	375	397	419	439	461	3.4%
Japan	1340	1310	1282	1255	1231	1211	-1.4%
China/HK	936	1023	1093	1160	1211	1243	4.9%
Other Asia inc. Aus/nz	614	653	693	730	763	788	3.9%
Africa/ME	260	268	282	290	310	333	4.7%
Total	**12750**	**13127**	**13445**	**13668**	**14297**	**14632**	**-0.4%**
Europe Total	6871	6911	6743	6633	6580	6443	-1.2%
Asia Total	5240	5606	5844	6035	6307	6511	3.4%
CAGR (2012 to 2016)							

growth % pa					
Growth	2012	2013	2014	2015	2016
W.Europe	-5.3%	-4.1%	-2.4%	-1.7%	-2.2%
Other Europe	1.9%	2.0%	2.0%	2.2%	2.0%
N.America	-3.0%	-0.9%	-2.2%	-2.8%	-1.3%
Latin America	2.7%	2.4%	2.7%	3.0%	3.0%
Japan	-4.1%	-4.0%	-2.4%	-1.9%	-1.6%
China	9.0%	6.8%	6.1%	10.3%	7.3%
Other Asia inc. Aus/nz	4.5%	2.4%	2.9%	3.7%	3.2%
Africa/ME	3.0%	3.4%	3.4%	4.7%	3.5%
Total	**-1.8%**	**-0.8%**	**-0.6%**	**1.8%**	**-0.4%**
Europe Total	-3.2%	-2.1%	-1.6%	-1.1%	-1.1%
Asia Total	3.4%	2.3%	2.3%	3.2%	1.8%
CAGR (2012 to 2016)					

4.2. Trade flows - Control Mechanism1

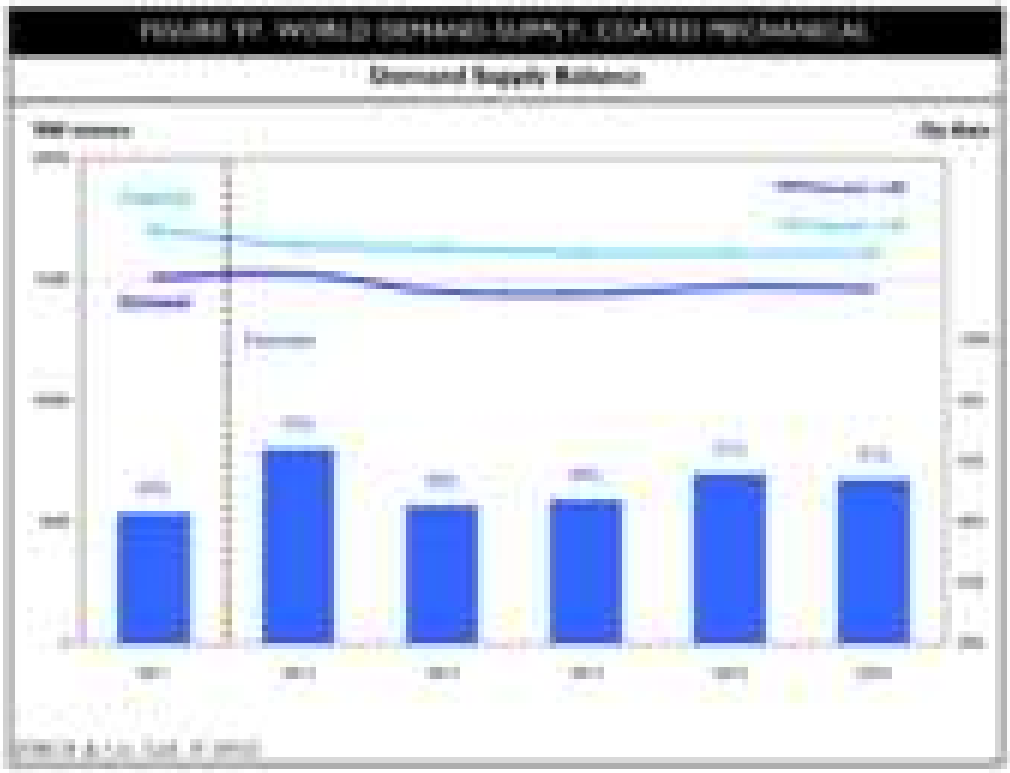
FIGURE 91. TRADE FORECAST: WORLD BY REGION, CTD PROTECTIONISM1							
1000 tonnes							
Trade	2011	2012	2013	2014	2015	2016	2011-16
N Europe	(200)	(200)	(200)	(200)	(150)	(200)	-75
Other Europe	(100)	(90)	(90)	(90)	(100)	(100)	-100
N America	-100	-100	-100	-90	-50	-50	-225
Latin America	(200)	(200)	(200)	(200)	(150)	(200)	-25
Japan	(200)	(150)	(150)	(200)	(200)	(150)	-150
China	50	50	100	150	100	75	0
Other Asia inc. Russia	(200)	(150)	(200)	(200)	(200)	(200)	-75
Africa/ME	(200)	(200)	(200)	(200)	(150)	(200)	-50
Total	0	0	0	0	0	0	0
Europe Total	(300)	(290)	(290)	(290)	(250)	(300)	-100
Asia Total	(150)	(100)	(150)	(150)	(150)	(150)	0

Source: A Cox & Co. N. 03-13

4.3. Output - Control Mechanism1

FIGURE 96. OUTPUT FORECAST: WORLD BY REGION, CTD PROTECTIONISM1							
1000 tonnes							
Region	2011	2012	2013	2014	2015	2016	2011-16
N Europe	8000	8000	8000	8000	8000	8000	-800
Other Europe	80	80	80	80	80	80	0
N America	2500	2400	2300	2200	2100	2000	-500
Latin America	100	170	160	170	180	190	20
Japan	1500	1400	1300	1200	1000	1000	-50
China	1000	1100	1200	1300	1400	1400	400
Other Asia inc. Russia	0	50	60	70	70	80	70
Africa/ME	0	0	0	0	0	0	0
Total	13180	13200	13000	13020	12780	12850	-860
Europe Total	8010	8000	8000	8000	8000	8000	-800
Asia Total	2580	2720	2560	2640	2550	2670	110

Source: A Cox & Co. N. 03-13



OUTPUT GROWTH: WORLD BY REGION, CTD MECHANICAL

growth % pa

Output Growth	2012	2013	2014	2015	2016
W Europe	[illegible]	[illegible]	-1.7%	[illegible]	[illegible]
Other Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
N America	-1.7%	[illegible]	[illegible]	[illegible]	[illegible]
Latin America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Japan	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
China	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Asia ex. Japan/China/Africa/ME	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Europe Total	[illegible]	[illegible]	-1.7%	[illegible]	[illegible]
Asia Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

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FIGURE 97: WORLD DEMAND-SUPPLY, COATED MECHANICAL

Demand Supply Balance

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4.4. Capacity Assumptions - Coated Mechanical

FIGURE 16: EMGE CAPACITY ASSUMPTIONS, COATED MECHANICAL							
(unspecified capacity)							
Capacity '000 m.t.	2011	2012	2013	2014	2015	2016	2011-16
N.America				-250			-250
Total				-250			-250

FIGURE 17: OPERATING RATES, FORECAST vs. BASE, CTD MECH.	
Demand Supply Balance	
2011	91%
2016	

4.5. Capacity and Operating Rates - Coated Mechanical

4.5.1. Base Data

FIGURE 100: BASE CAPACITY, BY REGION, CTD MECHANICAL

(Excluding unspecified capacity)

Capacity '000 m.t.	2011	2012	2013	2014	2015	2016	2011-16
W.Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
N.America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Latin America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
Japan	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
China	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Asia inc Austr	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Africa/ME							
Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Asia	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

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FIGURE 101: BASE OPERATING RATES BY REGION, CTD MECHANICAL

% Production of Capacity

Operating Rates	2011	2012	2013	2014	2015	2016
W.Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
N.America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Latin America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Japan	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
China	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Asia inc Austr	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Africa/ME						
Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Europe Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Asia Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

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4.5.2. Forecast Data

FIGURE 101: FORECAST CAPACITY, BY REGION, CTD PRICE

(Including unspecified capacity)

Capacity, '000 m.t.	2011	2012	2013	2014	2015	2016	2011-16
W.Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
N.America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Latin America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Japan	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
China	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
China Excl. Hunan	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Africa/ME	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Europe Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Asia Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

FIGURE 102: FORECAST OPERATING RATES, BY REGION, CTD PRICE

% Production of Capacity

Operating Rates	2011	2012	2013	2014	2015	2016
W.Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
N.America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Latin America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Japan	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
China	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
China Excl. Hunan	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Africa/ME	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Europe Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Asia Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

5. Unc. Mechanical – Forecasts

5.1. Demand - Unrivaled Mechanical

FIGURE 104 DEMAND FORECAST WORLD BY REGION, UNC PRESS							
'000 tonnes							
Demand	2011	2012	2013	2014	2015	2016	2011-16%pa
W.Europe	4640	4600	4470	4370	4400	4190	-1.9%
Other Europe	850	860	860	880	910	920	1.7%
N.America	4620	4570	4670	4690	4760	4820	0.9%
Latin America	350	370	390	370	380	400	2.7%
Japan	990	1010	920	960	960	930	-1.3%
China[CHI]	280	300	320	340	370	390	6.8%
Other Asia ex. Japan	720	760	780	810	850	890	4.3%
Africa[AFR]	470	480	490	500	510	520	2.0%
Total	12900	13050	13300	13600	13930	14210	1.9%
Europe Total	5470	5450	5330	5240	5310	5110	-1.3%
Asia Total	1990	2070	2170	2300	2430	2510	4.8%
[CHECK: if 1 to 3 yrs, if zero]							
growth %.pa							
Growth	2012	2013	2014	2015	2016		
W.Europe	-0.9%	-2.8%	-2.2%	0.7%	-4.8%		
Other Europe	1.2%	0.0%	2.3%	3.4%	1.1%		
N.America	-1.0%	2.2%	0.4%	1.4%	1.3%		
Latin America	5.7%	-5.1%	5.4%	2.6%	5.3%		
Japan	-3.0%	-8.9%	4.3%	0.0%	-3.1%		
China	7.1%	6.7%	6.3%	9.0%	5.4%		
Other Asia ex. Japan	5.6%	2.6%	3.8%	5.0%	4.7%		
Africa[AFR]	2.1%	2.1%	2.0%	2.0%	1.9%		
Total	0.8%	-0.8%	2.3%	2.4%	2.0%		
Europe Total	-2.2%	-2.2%	-1.7%	-1.3%	-3.7%		
Asia Total	4.0%	4.8%	5.9%	5.6%	3.3%		
[CHECK: if 1 to 3 yrs, if zero]							

5.2. *Trade flows – Unrevised Mechanical*

FIGURE 15: TRADE FORECAST, WORLD BY REGION, UNC. PRICE							
'000 tonnes							
Trade	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2011-16**
N Europe	1 110	-830	1 830	1 680	-720	-760	30
Other Europe	-720	-760	-750	-760	-790	-800	-72
N America	-130	-140	110	-150	-70	-80	70
Latin America	-200	-220	-190	-170	-180	-190	0
Japan	-140	-130	-100	-80	-50	-10	50
China/HK	210	900	950	240	270	320	63
Other Asia inc. Russia	-610	-620	-610	-620	-640	-660	-53
Africa/ME	-320	-420	-420	-340	-330	-360	-40
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Europe Total	390	-1590	1080	920	930	960	23
Asia Total	-240	-270	-310	-1 140	-1 030	-1 220	-13

Source: Emge Ltd, 5 years

5.3. *Output – Unrevised Mechanical*

FIGURE 16a: OUTPUT FORECAST, WORLD BY REGION, UNC. PRICE							
'000 tonnes							
Region	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2011-16**
N Europe	5 540	5 620	5 170	5 610	5 120	4 850	-690
Other Europe	-140	-110	-110	-120	-130	-120	10
N America	4 600	4 210	3 960	3 840	3 820	3 940	-660
Latin America	-120	-150	-170	-140	-200	-210	-90
Japan	870	870	820	830	830	830	-40
China	690	690	620	630	690	640	-50
Other Asia inc. Russia	-210	-220	-210	-220	-230	-240	-30
Africa/ME	50	50	40	40	40	40	-10
Total	**12 900**	**11 960**	**10 330**	**10 860**	**10 120**	**10 110**	**-790**
Europe Total	5 400	5 110	5 060	5 110	4 770	4 610	-790
Asia Total	1 190	1 090	1 160	1 190	1 090	1 010	-180

Source: Emge Ltd, 5 years

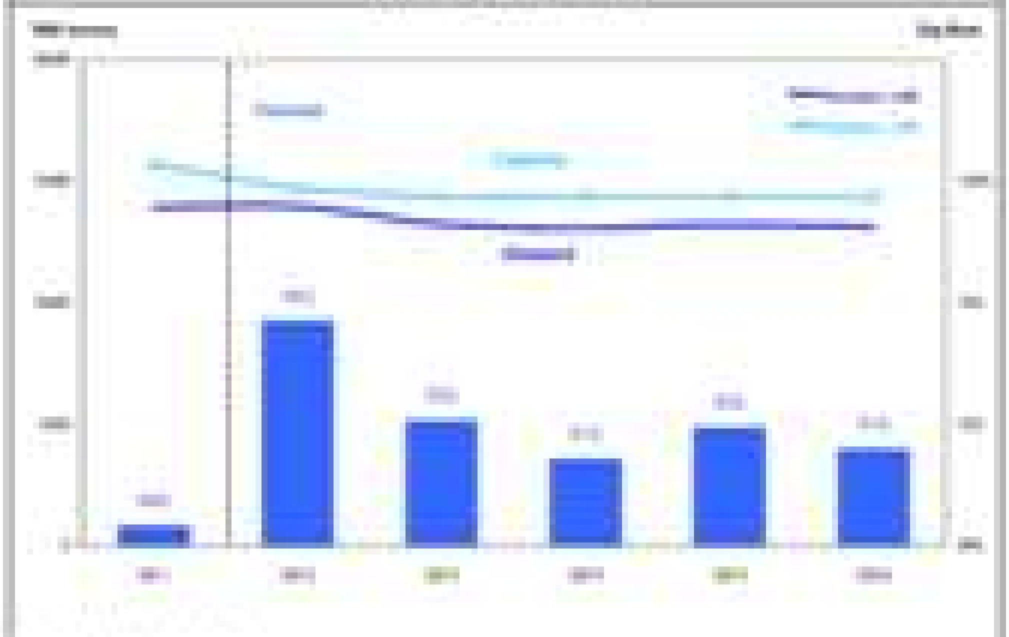
OUTPUT GROWTH, WORLD BY REGION, UNC. MECH

growth % pa

Output Growth	2012	2013	2014	2015	2016
W Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
N America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Latin America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Japan	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
China	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Asia inc. Ocean	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Africa/ME	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Europe Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Asia Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

FIGURE [illegible]: WORLD DEMAND-SUPPLY, UNCOATED MECHANICAL

Demand Supply Balance



5.4. Capacity and Operating Rates - Uncoated Mechanical

5.4.1. Base Data

FIGURE 138: BASE CAPACITY, BY REGION, UNC. MECH.							
(Excluding unspecified capacity)							
Capacity '000 m.t.	2011	2012	2013	2014	2015	2016	2012-16
W.Europe	8140	7960	7660	7460	7260	7060	-900
Other Europe	130	130	130	130	130	130	
N.America	4610	4310	4210	4210	4210	4210	-400
Latin America	190	190	200	210	210	210	20
Japan	760	740	720	700	700	700	-40
China	630	630	630	630	630	630	
Other Asia ex Japan	270	270	270	270	270	270	
Africa/ME	70	70	70	70	70	70	
Total	14700	14300	14060	13880	13880	13680	-1020
Europe	8270	8090	7790	7590	7390	7190	-900
Asia	1060	1040	1040	1040	1060	1060	20

FIGURE 139: BASE OPERATING RATES, BY REGION, UNC. MECH.						
% Production of Capacity						
Operating Rates	2011	2012	2013	2014	2015	2016
W.Europe	86%	86%	91%	91%	91%	95%
Other Europe	83%	89%	89%	92%	92%	96%
N.America	94%	93%	93%	94%	94%	91%
Latin America	83%	87%	91%	91%	93%	90%
Japan	90%	93%	89%	89%	89%	89%
China	93%	93%	93%	96%	96%	93%
Other Asia ex Japan	84%	86%	93%	88%	91%	93%
Africa/ME	47%	73%	89%	89%	87%	87%
Total	88%	88%	90%	91%	92%	90%
Europe Total	86%	86%	91%	91%	91%	95%
Asia Total	90%	93%	90%	91%	91%	91%

3.4.2. Forward Data

FIGURE 10: FORECAST CAPACITY BY REGION, UNIT: MSQ/A							
(Including unspecified capacity)							
Capacity, MM m.s.	2011	2012	2013	2014	2015	2016	2011-16
W.Europe	(150)	(150)	(150)	(150)	(150)	(150)	(0)
Other Europe	(30)	(30)	(30)	(30)	(30)	(30)	0
N.America	(401)	(331)	(331)	(331)	(331)	(331)	(69)
Latin America	(30)	(30)	(30)	(21)	(21)	(21)	(9)
Japan	(94)	(94)	(94)	(94)	(94)	(94)	(21)
China	(29)	(29)	(29)	(29)	(29)	(29)	0
China Asia ex. Japan	(79)	(79)	(79)	(79)	(79)	(79)	0
Africa/ME	(5)	(5)	(5)	(5)	(5)	(5)	0
Total	(1,017)	(1,023)	(1,023)	(1,009)	(1,009)	(1,009)	(1,041)
Europe Total	(417)	(511)	(511)	(511)	(511)	(511)	(411)
Asia Total	(199)	(199)	(199)	(199)	(199)	(199)	(21)

Source: E.J.I.s Ltd. © 2012

FIGURE 11: FORECAST OPERATING RATES BY REGION, UNIT: MSQ/A						
% Production of Capacity						
Operating Rates	2011	2012	2013	2014	2015	2016
W.Europe	82%	94%	91%	91%	91%	94%
Other Europe	82%	94%	84%	91%	82%	94%
N.America	91%	94%	91%	91%	84%	91%
Latin America	83%	87%	83%	91%	91%	94%
Japan	91%	91%	89%	89%	91%	89%
China	91%	89%	91%	99%	99%	99%
China Asia ex. Japan	91%	94%	91%	84%	91%	91%
Africa/ME	47%	71%	89%	89%	47%	21%
Total	89%	96%	95%	91%	92%	96%
Europe Total	82%	91%	91%	91%	91%	91%
Asia Total	91%	91%	89%	91%	91%	91%

Source: E.J.I.s Ltd. © 2012

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6. Newsprint - Forecasts

World Newsprint Markets (WNM) – SPRING 2012

In order to focus more on the specific issues of the important Newsprint market, we are pleased to announce the upcoming publication of an update to our associated report "World Newsprint Markets" (WNM).

The WNM report is published in two parts:

1) Supply-Demand Outlook, 2011 to 2016 (including capacities and leading supplier tables)

2) Price Forecasts – quarterly and 4-year outlook for Newsprint and Publication Paper prices around the world.

In the next issue of WNM, the report will examine the key developments that are likely to impact the future market, including price forecasts, demand-supply, outlook etc.

For more information on the World Newsprint Markets report, please contact:

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Post:
PO Box 200,
Truro, TR1 1FN,
United Kingdom

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7. Country Data World-wide

7.1 Country Data World-wide, Coated Woodfree

FIGURE 7.1.1: GRAPHIC PAPER OUTPUT & CAPACITY BY COUNTRY, CWF					
Example – 2011e					
2011e, '000t	Consumption	Trade	Output	Capacity	Operating Rate, %
Austria	237	192	430	1,030	42%
Belgium	251	86	337	420	80%
Slovenia	91	1	90	90	99%
France	848	3	845	1,911	44%
Germany	1,870	43	1,913	2,124	90%
Italy	1,128	134	1,262	1,610	78%
Netherlands	539	199	740	990	75%
Spain	600	11	589	1,191	50%
Portugal	440	440	0	0	
UK	972	962	21	21	97%
Ireland	20	20	0	0	
Switzerland	127	83	210	210	99%
Finland	74	1,017	1,136	1,810	94%
Norway	27	27	0	0	
Sweden	1,171	1,161	2,332	2,401	97%
Baltics	40	40	0	0	80%
Bulgaria	11	11	0	0	
Croatia	53	53	0	0	
Czech	1,150	1,122	19	19	93%
Greece	61	61	0	0	
Hungary	260	260	0	0	
Poland	2,370	2,370	0	0	
Romania	191	191	0	0	
Russia	2,110	2,111	0	10	99%
Slovakia	191	191	0	0	
Slovenia	184	199	1,111	1,170	91%
Ukraine	209	209	0	0	
Other Europe	47	47	0	0	

DEMAND, TRADE, OUTPUT & CAPACITY FOR WOODFREE PAPERS (CONT'D)

Americas & Asia – '000 t/a

'000 t/a, Mills	Consumption	Trade	Output	Capacity	Op. Rate %
Canada	704	-299	1003	1113	90%
USA	3762	-142	3904	5970	91%
Argentina	130	-104	34	37	92%
Brazil	1110	-210	1317	1561	73%
Chile	81	-81	0	0	
Colombia	94	-29	67	70	96%
Mexico	901	-221	781	1110	70%
Peru	97	-97	0	0	0%
Uruguay	12	-9	22	22	91%
Venezuela	23	-23	0	0	0%
Other Latin Am	67	-67	0	0	
LAtAm	2447	-1141	3227	4140	83%
China	3753	1148	4900	6300	77%
HK	128	-128	0	0	
Australia	536	-536	0	0	
New Zealand	91	-91	0	0	
Indonesia	84	356	440	720	46%
Korea	1129	1154	2313	2383	97%
Malaysia	133	-113	61	81	96%
Philippines	137	-137	0	0	
Singapore	193	-193	0	0	
Taiwan	280	-10	280	363	77%
Thailand	180	-3	133	213	63%
Vietnam	110	-30	80	145	75%
Bangladesh	56	-56	0	0	
India	240	-70	440	513	93%
Pakistan	60	-49	11	15	73%
Other Asia	28	-28	0	0	

DEMAND, TRADE, OUTPUT & CAPACITY BY COUNTRY, CTD. W'GRADE (CONT'D)					
Africa & Middle East – 2011e					
2011e, '000t	Consumption	Trade	Output	Capacity	Op. Rate %
UAE	47	-47	0	0	
Iran	140	-140	0	0	
Israel	28	-28	0	0	
Saudi	60	-60	0	0	
Turkey	133	-73	60	80	75%
Other ME	108	-108	0	0	
Algeria	14	-14	0	0	
Egypt	67	-67	0	0	
Morocco	17	-17	0	0	
Tunisia	8	-8	0	0	
Kenya	8	-8	0	0	
Nigeria	27	-27	0	0	
South Africa	209	-149	60	83	72%
Zimbabwe	3	-3	0	0	
Other Africa	33	-33	0	0	
Total	23176	0	23176	26280	88%
Totals					
W.Europe	6381	1563	8001	9543	85%
Other Europe	1551	-416	136	143	50%
N.America	6665	-761	5798	6692	91%
Latin America	1464	-1013	450	560	80%
Japan	3664	-164	3337	3540	87%
China/HK	2883	1690	4520	6230	77%
Other Asia & Ocean.	2337	729	4040	4370	95%
Africa/ME	953	-833	120	163	52%
Total	23176	0	23176	26280	88%
Europe Total	7372	1463	8376	9540	88%
Asia Total	19910	1690	11322	14960	79%

EXPANSE TRADE OUTPUT & CAPACITY BY COUNTRY, CY25, MYRIAD (CONT'D)

Scale: Tonnes, 2011e

2011e, '000t	Consumption	Trade	Shipped	Capacity	Op. Rate %
Nordic	233	(14)	1,794	2,140	81%
Other W Europe	4,056	319	4,457	5,142	89%
New EU Europe	643	474	148	183	81%
Russia/Other Europe	889	881	8	10	89%
USA	7,761	(14)	7,843	9,970	91%
Canada	954	1,099	155	213	90%
Brazil	272	215	217	258	73%
Latin America	892	1,009	1,901	2,111	90%
Japan	3,669	142	3,811	4,181	91%
China/HK	3,860	1,140	4,902	6,333	77%
Other SE Asia	2,511	1,333	3,745	4,640	81%
Korea	1,881	1,881	0	0	
Other Asia	756	1,222	1,911	2,181	88%
N Africa/M East	1,411	1,411	81	81	73%
Other Africa	1,311	1,311	1,411	1,411	93%
Total					
N Europe	4,281	1,112	5,311	6,141	86%
Other Europe	1,911	1,111	1,114	1,111	89%
N America	8,661	111	7,781	9,881	91%
Latin America	1,164	1,111	1,111	1,111	89%
Japan	3,669	1,141	3,811	4,181	91%
China/HK	3,861	1,141	4,911	6,333	77%
Other Asia ex Korea	3,911	1,111	4,911	6,111	81%
Africa/ME	1,111	1,111	1,111	1,111	91%
Total	**41,111**	**0**	**41,111**	**51,111**	**81%**
Europe Total	7,111	1,111	8,111	11,111	89%
Asia Total	11,111	1,111	11,111	11,111	91%

EMGE Estimates, Q1, CY 2011e

7.2 Country Data World-wide, Uncoated Woodfree

FIGURE [illegible]: DEMAND, TRADE, OUTPUT & CAPACITY, UNC. WOODFREE PAPERS

Europe – 2011e

2011e, '000t	Consumption	Trade	Output	Capacity	Operating Rate %
Austria	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Belgium	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Denmark	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
France	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Germany	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Italy	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Netherlands	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Spain	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Portugal	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
UK	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Ireland	[illegible]	[illegible]	[illegible]	[illegible]	
Switzerland	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Finland	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Norway	[illegible]	[illegible]	[illegible]	[illegible]	
Sweden	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Baltics	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Bulgaria	[illegible]	[illegible]	[illegible]	[illegible]	
Croatia	[illegible]	[illegible]	[illegible]	[illegible]	
Czech	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Greece	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Hungary	[illegible]	[illegible]	[illegible]	[illegible]	
Poland	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Romania	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Russia	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Slovakia	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Slovenia	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Ukraine	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

DEMAND, TRADE, OUTPUT & CAPACITY: UNC. WOODFREE PAPERS (CONT'D)

Americas & Asia – '000 t/a

'000 t/a, WMA	Consumption	Trade	Shipment	Capacity	Op. Rate %
Canada	353	41	395	750	53%
USA	8410	-241	8651	9123	95%
Argentina	191	17	174	310	56%
Brazil	1180	372	1218	1390	91%
Chile	140	-48	188	110	171%
Colombia	229	41	276	353	78%
Mexico	990	-245	1141	1521	75%
Peru	119	-67	86	30	286%
Uruguay	10	3	20	22	79%
Venezuela	304	-137	67	80	84%
Other Latin Am.	283	-272	28	90	31%
Japan	5363	-419	5817	6111	95%
China	4230	30	4800	6413	74%
HK	120	-130	0	0	
Australia	618	-170	723	830	87%
New Zealand	89	-49	0	0	
Indonesia	930	1840	2859	5130	56%
Korea	849	-14	849	921	91%
Malaysia	330	-140	180	230	80%
Philippines	220	-72	143	140	91%
Singapore	113	-113	0	0	
Taiwan	545	-2.0	800	970	81%
Thailand	780	630	1130	1333	92%
Vietnam	270	-33	240	310	77%
Bangladesh	91	19	80	90	89%
India	2900	124	3013	4490	71%
Pakistan	213	83	130	170	76%
Other Asia	153	-113	62	80	70%

DEMAND, TRADE, OUTPUT & CAPACITY, UNC. WOODFREE PAPER (CONT'D)

Africa & Middle East – '000 tn

'000 tn, Mills	Consumption	Trade	Output	Capacity	Op. Rate %
UAE	350	350	0	0	
Iran	2,600	(-)0	(-)0	2,600	61%
Israel	150	-0.5	1.60	1.70	82%
Kuwait	(-)0	(-)0	0	0	
Turkey	2,900	-2,600	1,100	(-)0	75%
Other ME	2,200	-2,0	0	1.8	81%
Algeria	200	-70	1.0	2.0	51%
Egypt	2,100	-2,000	1,000	2,300	48%
Morocco	1,000	-0.5	2.0	4.0	51%
Tunisia	1.0	-0.5	0.5	0.5	91%
Kenya	1,000	0.0	0	1.0	90%
Nigeria	1,000	-1,1	0	1.0	79%
South Africa	2,900	0.0	4,100	4,600	91%
Zimbabwe	1.0	1.0	1.0	1.0	90%
Other Africa	1,700	-1,0	1.0	2.0	58%
Total	**21,000**	**0**	**21,000**	**23,000**	**84%**
Europe					
W Europe	7,100	4.0	6,100	7,600	87%
Other Europe	2,400	0.0	2,400	2,600	91%
N America	9,100	-1.0	9,600	10,100	89%
Latin America	5,600	1.0	5,700	6,000	95%
Japan	3,000	0.0	2,900	3,100	93%
China/HK	4,000	1.0	4,000	4,200	95%
Other Asia & Pacific	7,600	1,000	9,600	11,000	82%
Africa/ME	2,100	1,000	1,100	1,500	71%
Total	**41,000**	**0**	**41,000**	**45,000**	**84%**
Europe Total	13,000	4.0	14,000	15,000	91%
Asia Total	17,000	1,000	18,000	21,000	90%

[illegible] & c.c. (unit: '000 tons)

DEMAND, TRADE, OUTPUT & CAPACITY, UNC. WOODFREE PAPERS (CONT'D)					
Sub-Totals, 2011e					
2011e, '000t	Consumption	Trade	Output	Capacity	Op. Rate %
Nordic	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other W.Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Non-EU Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Russia/Other Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
USA	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Canada	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Brazil	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Latin America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Japan	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
China/HK	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other SE Asia	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Korea	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Asia	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
N.Africa/M.East	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Africa	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Totals					
W.Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
N.America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Latin America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Japan	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
China/HK	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Asia and Ocean.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Africa/ME	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total	[illegible]	**0**	[illegible]	[illegible]	[illegible]
Europe Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Asia Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

7.3 *Country Data World-wide, Central Mediterranean*

FIGURE 11.6 DEMAND, TRADE, OUTPUT & CAPACITY, COATED PAPER					
Europe + 2011e					
2011e, '000t	Consumption	Trade	Output	Capacity	Op. Rate %
Austria	1				
Belgium					
Denmark					
France					
Germany					
Italy					
Netherlands					
Spain					
Portugal					
UK					
Ireland					
Switzerland					
Finland					
Norway					
Sweden					
Baltics					
Bulgaria					
Croatia					
Czech					
Greece					
Hungary					
Poland					
Romania					
Russia					
Slovakia					
Slovenia					
Ukraine					
Other Europe					

DEMAND, TRADE, OUTPUT & CAPACITY CHANGES FROM CONTI'S

Amerrica & Asia – '000 t/a

'000 t/y, NAM=	Consumption	Trade	Output	Capacity	Op. Rate %
Canada	200	110	310	472	66%
USA	1403	202	1145	1424	80%
Argentina	67	-67	0	0	
Brazil	197	-139	138	190	73%
Chile	27	-27	0	0	
Colombia	44	-44	0	0	
Mexico	90	-59	0	0	
Peru	11	-11	0	0	
Uruguay	4	-4	0	0	
Venezuela	19	-19	0	0	
Other Latin Am	23	-23	0	0	
LAm	1440	-390	1214	1661	81%
China	870	122	1000	1170	85%
HK	87	-43	0	0	
Australia	374	-374	0	0	
New Zealand	90	-90	0	0	
Indonesia	10	-10	0	0	
Korea	64	-64	0	91	45%
Malaysia	10	-10	0	0	
Philippines	24	-24	0	0	
Singapore	33	-33	0	0	
Taiwan	33	-33	0	0	
Thailand	10	-10	0	0	
Vietnam	10	-10	0	0	
Bangladesh	3	-3	0	0	
India	140	-140	0	0	
Pakistan	7	-7	0	0	
Other Asia	15	-15	0	0	

DEMAND, TRADE, OUTPUT & CAPACITY, CTE PROM (CONT'D)					
Africa & Middle East – Mtpa					
Mt/a, Mtpa	Consumption	Trade	Output	Capacity	Op. Rate %
UAE	-14	-14	0	0	
Iran	-3	-3	0	0	
Israel	-20	-20	0	0	
Saudi	-23	-23	0	0	
Turkey	-29	-29	0	0	
Other ME	-20	-20	0	0	
Algeria	-1	-1	0	0	
Egypt	-27	-27	0	0	
Morocco	-3	-3	0	0	
Tunisia	-1	-1	0	0	
Kenya	-1	-1	0	0	
Nigeria	-1	-1	0	0	
South Africa	-40	-40	0	0	
Zimbabwe	-1	-1	0	0	
Other Africa	-22	-22	0	0	
Total	**-1090**	**0**	**1090**	**1100**	**99%**
Saudi					
W Europe	-1147	-1201	1636	1864	92%
Other Europe	-530	-600	60	80	80%
N America	-1201	-1151	1249	1310	95%
Latin America	-330	-330	130	200	75%
Japan	-1445	-1284	1124	1621	83%
China/HK	-943	-60	1003	1174	83%
Other Asia ex Korea	-619	-623	3	10	33%
Africa/ME	-230	-230	0	0	
Total	**-10082**	**0**	**10082**	**11304**	**89%**
Europe Total	-2676	-2830	3676	4523	81%
Asia Total	-3449	-3151	3249	3843	85%

Units: B, B t o, b oil, C: mtoc

DEMAND, TRADE, OUTPUT & CAPACITY: COATED WOOD (CONT'D)

Table 7 results, 2015 e

2015e '000t	Consumption	Trade	Shortfall	Capacity	Op. Rate %
Nordic	000	1217	(000)	9143	84%
Other W Europe	5823	277	(551)	5640	93%
New EU Europe	338	-498	40	40	88%
Russia/Other Europe	700	-540	0	0	
USA	5403	-832	(143)	5103	90%
Canada	285	110	396	471	81%
Brazil	297	-139	128	285	79%
Latin America	280	-540	0	0	
Japan	1440	-280	1114	1680	83%
China/HK	940	40	1000	1170	85%
Other SE Asia	218	-212	5	10	49%
India	512	-512	0	0	
Other Asia	184	-184	0	0	
N Africa/ME Exp	190	-190	0	0	
Other Africa	80	-80	0	0	
Totals					
N Europe	7017	1000	8024	9423	85%
Other Europe	938	-940	40	80	85%
N America	5681	192	5494	5910	93%
Latin America	338	-340	148	285	79%
Japan	1440	-280	1114	1680	83%
China/HK	940	40	1000	1170	85%
Other Asia ex Japan	914	-803	3	10	43%
Africa/ME	270	-270	0	0	
Total	**(000)**	**0**	**(000)**	**(000)**	**89%**
Europe Total	8874	1000	8074	9423	85%
Rest Total	5940	1111	7219	8062	90%

* 2015 E & F vs. 2 E, F (2015)

7.4 Country Data Worldwide, Uncoated Mechanical

FIGURE 11.1: DEMAND, TRADE, OUTPUT & CAPACITY: UNCOATED MECH.

Europe – 2011e

2011e, '000t:	Consumption	Trade	Output	Capacity	Op. Rate %
Austria	110	(50)	620	690	90%
Belgium	220	(140)	80	170	47%
Denmark	80	80	0	0	
France	700	(662)	62	130	48%
Germany	2,170	(70)	1,900	2,210	86%
Italy	580	(490)	91	90	101%
Netherlands	600	(71)	51	60	85%
Spain	640	(200)	440	490	77%
Portugal	90	(90)	0	0	
UK	810	(670)	1	2	83%
Ireland	50	(50)	0	0	
Switzerland	150	150	150	220	68%
Poland	1,110	(163)	1,967	2,010	98%
Hungary	130	(32)	622	880	71%
Sweden	150	(110)	1,821	1,640	97%
Baltics	30	(2)	3	3	69%
Bulgaria	4	(4)	0	0	
Croatia	8	(4)	4	5	80%
Czech	53	(51)	2	2	
Greece	62	(8)	4	5	80%
Hungaria	29	(29)	0	0	
Poland	251	(251)	1	2	61%
Romania	11	(1)	0	2	0%
Russia	1,100	(18)	981	901	109%
Slovakia	49	(49)	0	0	
Slovenia	27	(13)	13	13	90%
Ukraine	0	(0)	0	0	
Other Europe	50	(47)	2	2	82%

DEMAND, TRADE, OUTPUT & CAPACITY: UNCOATED MECH. (CONT'D)

America & Asia – 2011e

2011e '000t	Consumption	Trade	Output	Capacity	Op. Rate %
Canada	861	+607	1768	1910	93%
USA	2775	-2564	211	1900	93%
Argentina	58	-11	47	51	92%
Brazil	1141	-82	98	91	93%
Chile	23	-2	21	23	91%
Colombia	31	-31	0	0	
Mexico	113	-58	55	60	92%
Peru	4	-4	0	0	
Uruguay	10	-10	0	0	
Venezuela	1	-1	0	0	
Other Latin Am.	9	-8	1	1	91%
Japan	962	-119	813	862	94%
China	273	323	600	640	94%
HK	10	-10	0	0	
Australia	183	-113	69	61	109%
New Zealand	37	-1	36	72	91%
Indonesia	31	-13	18	33	91%
Korea	148	-2	144	172	91%
Malaysia	13	-13	0	0	
Philippines	23	-18	48	51	94%
Singapore	9	-9	0	0	
Taiwan	81	-73	8	9	90%
Thailand	4	-4	0	0	
Vietnam	5	-5	0	0	
Bangladesh	3	-3	0	0	
India	283	-283	0	0	
Pakistan	13	-2	11	20	77%
Other Asia	6	-6	0	0	

DEMAND, TRADE, OUTPUT & CAPACITY, UNDERLYING PROFIL (CONT'D)

Africa & Middle East – Mtpa

Mill by, Mtpa	Consumption	Trade	Output	Capacity	Op. Rate %
UAE	[illegible]	[illegible]	[illegible]	[illegible]	
Iran	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Israel	[illegible]	[illegible]	[illegible]	[illegible]	
Kuwait	[illegible]	[illegible]	[illegible]	[illegible]	
Turkey	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other ME	[illegible]	[illegible]	[illegible]	[illegible]	
Algeria	[illegible]	[illegible]	[illegible]	[illegible]	
Egypt	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Morocco	[illegible]	[illegible]	[illegible]	[illegible]	
Tunisia	[illegible]	[illegible]	[illegible]	[illegible]	
Kenya	[illegible]	[illegible]	[illegible]	[illegible]	
Nigeria	[illegible]	[illegible]	[illegible]	[illegible]	
South Africa	[illegible]	[illegible]	[illegible]	[illegible]	
Zimbabwe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Africa	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total	**[illegible]**	**[illegible]**	**[illegible]**	**[illegible]**	**[illegible]**
Trends					
W Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
N America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Latin America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Japan	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
China/HK	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Asia ex Japan	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Africa/ME	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total	**[illegible]**	**[illegible]**	**[illegible]**	**[illegible]**	**[illegible]**
Europe Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Asia Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

DEMAND, TRADE, OUTPUT & CAPACITY UTILISATION INDEX (EQUITY)					
Scale: Tonnes, 2011=x					
2011= 100=	Consumption	Trade	Output	Capacity	Op. Rate %
World	312	(45)	1272	1700	69%
Other W Europe	1329	1337	1879	1761	81%
New EU Europe	560	541	19	22	79%
Russia/Other Europe	231	148	84	140	89%
USA	2772	2264	1511	1660	91%
Canada	881	1807	2788	2900	96%
Brazil	110	42	68	81	84%
Latin America	242	119	123	130	82%
Japan	962	110	872	962	90%
China/HK	283	313	600	640	93%
Other SE Asia	333	99	137	181	81%
Korea	290	150	140	162	91%
Other Asia	330	311	19	20	70%
N Africa/ME Exp	211	232	39	51	71%
Other Africa	97	69	19	20	67%
Total:					
N Europe	1640	1768	7648	8140	94%
Other Europe	833	720	109	130	84%
N America	4653	4171	4694	4810	98%
Latin America	352	261	121	130	93%
Japan	962	110	872	962	91%
China/HK	283	313	600	640	94%
Other Asia ex Japan	753	612	111	170	65%
Africa/ME	308	474	53	71	74%
Total:	19963	0	19963	14710	89%
Europe Total	2473	982	7767	8270	94%
Asia Total	1992	268	1784	1982	90%

8. Supply Outlook

Detailed information on our capacity calculations

This report includes detailed capacity information, to enable our clients to understand exactly how we arrive at the figures in our overall capacity forecasts.

Base capacity. This section shows the capacity figures we use that are based on known projects, including new machines and major upgrades that have been approved, ordered and financed, as well as firm closure plans.

The following tables show the base capacity changes by country worldwide.

8.1.1 Coated Woodfree

FIGURE 1.1a CAPACITY CHANGES BY COUNTRY, COATED WOODFREE PAPERS

N.America, W.Europe & Asia

'000s	2011	2012	2013	2014	2015	2016	2011-16
Austria	(530)	(530)	(530)	(530)	(530)	(530)	0
Belgium	420	420	420	420	420	420	0
Denmark	90	90	90	90	90	90	0
France	(450)	(450)	(450)	(450)	(450)	(450)	0
Germany	(1,150)	(950)	(950)	(950)	(950)	(950)	(200)
Italy	1,200	1,200	1,200	1,200	1,200	1,200	0
Netherlands	600	600	600	600	600	600	0
Spain	230	230	230	230	230	230	0
UK	70	70	70	70	70	70	0
Switzerland	220	110	110	110	110	110	(110)
Finland	(810)	(660)	(660)	(660)	(660)	(660)	150
Sweden	660	600	600	530	530	660	0
Belgium	0	0	0	0	0	0	0
Czech	(4)	(4)	(4)	(4)	(4)	(4)	0
Russia	0	(4)	0	(90)	(90)	(90)	(90)
Sweden	0	0	0	0	0	0	0
Slovenia	(78)	(78)	(78)	(78)	(78)	(78)	0
Canada	(110)	(110)	(110)	(110)	(110)	(110)	0
US	(830)	(662)	(370)	(370)	(370)	(370)	460

Source: A.T.Kearney, Jan. 31, 2012

CAPACITY CHANGES BY COUNTRY, CTD WOODFREE PAPERS (CONT'D)

Others

'000t	2011	2012	2013	2014	2015	2016	2011-16
Argentina	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0
Brazil	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0
Colombia	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0
Mexico	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0
Peru	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Uruguay	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0
Venezuela	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0
Australia	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0
Japan	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
China	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Indonesia	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0
Korea	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Malaysia	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0
Taiwan	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0
Thailand	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Vietnam	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
India	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Pakistan	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0
Turkey	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0
South Africa	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0

8.1.2 Annotated Workflow

FIGURE 11 P. CAPACITY CHANGES BY COUNTRY, UNC. W (GRAPHIC PAPERS)							
N.America, W.Europe & Asia							
'000s	08 t	09 E	10 t	10 A	11 E	12 E	10 t / 12 E
Austria	630	630	630	630	630	630	0
Belgium	850	850	850	850	850	850	0
Denmark	0	0	0	0	0	0	0
France	2,500	2,500	2,500	2,500	2,500	2,500	0
Germany	8,900	7,700	7,700	7,700	7,700	7,700	-1,200
Italy	1,700	1,700	1,700	1,700	1,700	1,700	0
Netherlands	1,100	1,100	1,100	1,100	1,100	1,100	0
Spain	1,200	1,200	1,200	1,200	1,200	1,200	0
Portugal	1,600	1,600	1,600	1,600	1,600	1,600	0
UK	2,300	2,300	2,300	2,300	2,300	2,300	0
Switzerland	1,000	1,000	1,000	1,000	1,000	1,000	0
Finland	1,900	1,900	1,900	1,900	1,900	1,900	0
Sweden	3,100	3,100	3,100	3,100	3,100	3,100	0
Baltics	70	70	70	70	70	70	0
Croatia	0	0	0	0	0	0	0
Czech	1,200	1,200	1,200	1,200	1,200	1,200	0
Greece	200	200	200	200	200	200	0
Hungary	0	0	0	0	0	0	0
Poland	2,900	2,900	2,900	2,900	2,900	3,200	0
Romania	500	500	500	450	500	450	0
Russia	1,900	1,900	1,900	1,850	1,900	1,900	-50
Slovakia	1,100	1,100	1,100	1,100	1,100	1,100	0
Slovenia	700	700	700	700	700	650	-50
Ukraine	300	300	300	300	300	300	0
Other Europe	300	300	300	300	300	300	0
Canada	7,100	7,100	7,100	7,100	7,100	7,100	+0
US	41,200	39,900	39,900	39,900	39,900	39,900	-400
Argentina	1,100	1,100	1,100	1,100	1,100	1,100	0
Brazil	2,900	2,900	2,850	2,850	2,850	2,850	-50
Chile	1,100	1,100	1,100	1,100	1,100	1,100	0
Colombia	300	300	300	300	300	300	-0
Mexico	900	900	900	900	900	900	0
Peru	50	50	50	50	50	50	0
Uruguay	20	20	20	20	20	20	0
Venezuela	300	300	300	300	300	300	0
Other	50	50	50	50	50	50	0
CAGR % (14, 15 & 16)							

CAPACITY CHANGES BY COUNTRY, UNC WOODFREE PAPERS (CONT'D)

'OOOtons

1000s	2011	2012	2013	2014	2015	2016	2011-16
Australia	1,350	1,350	1,350	1,350	1,350	1,350	0
Japan	10,115	10,065	10,115	10,115	10,115	10,115	-550
China	10,115	19,665	19,915	20,165	20,165	20,165	10,115
Indonesia	3,500	3,500	3,500	3,915	4,030	4,030	530
Korea	920	940	940	940	940	940	15
Malaysia	1,300	1,290	1,290	1,290	1,290	1,290	0
Philippines	160	160	160	160	160	160	0
Taiwan	670	670	670	670	670	670	0
Thailand	1,115	1,015	1,015	1,015	1,015	1,015	230
Vietnam	0.10	200	200	200	200	200	21
Bangladesh	80	100	110	110	110	110	30
India	4,190	4,515	4,665	4,815	4,815	4,815	625
Pakistan	170	170	170	170	170	170	0
Other	140	130	115	115	115	115	-15
UAE	0	0	0	0	0	0	0
Iran	200	200	200	200	200	200	0
Israel	170	170	170	170	170	170	0
Turkey	0.15	0.15	0.15	0.15	0.15	0.15	0
Other ME	10	10	10	10	10	10	0
Algeria	25	25	25	25	25	25	0
Egypt	170	190	205	205	205	205	35
Morocco	60	60	60	60	60	60	0
Tunisia	90	90	85	85	85	85	0
Kenya	10	10	10	10	10	20	0
Nigeria	10	10	10	10	10	10	0
South Africa	970	970	970	970	970	970	-20
Tanzania	10	10	10	10	10	20	0
Other Africa	10	10	10	10	10	10	0
CONTD. (Col. 7)							

8.1.1 Coated Mechanical

FIGURE 118: CAPACITY CHANGES BY COUNTRY, COATED MECH

Wkstn/tonnes

Years	2011	2012	2013	2014e	2015f	2016p	2011-16
Austria	470	470	470	470	470	470	
Belgium	660	660	660	660	660	660	
France	630	530	530	530	530	530	(100)
Germany	2,610	2,590	2,590	2,590	2,590	2,590	(20)
Italy	1,120	1,120	1,050	1,050	920	920	(70)
Spain	80	10	10	10	10	10	(70)
UK	200	200	200	200	200	200	
Switzerland	170	170	170	170	170	170	
Finland	2,210	2,060	2,060	2,060	2,060	2,060	(150)
Norway	140	140	140	140	140	140	
Sweden	910	910	910	910	910	910	
Russia	30	30	30	30	30	30	
Canada	870	870	870	870	870	870	
US	5,650	5,500	5,500	5,500	5,500	5,500	(150)
Brazil	200	200	200	200	200	200	
Chile							
Australia							
Japan	1,860	1,830	1,810	1,810	1,810	1,810	(50)
China	1,170	1,080	1,020	1,040	1,040	1,040	(130)
Indonesia							
Korea	60	60	60	60	60	60	
Taiwan							
Thailand							
India		90	90	90	90	90	90
Philippines							

4.2.4.1 Annexed Worksheet

FIGURE I / 9: CAPACITY CHANGES BY COUNTRY, UNIT: MSQ M.							
N.America, W.Europe & Asia							
Units	2011	2012	2013	2014	2015	2016	2011-16
Austria	250	250	250	250	250	250	
Belgium	150	150	150	150	150	150	
France	180	180	180	180	180	180	
Germany	2240	2240	2240	2240	2240	2240	
Italy	90	70	70	70	70	70	-20
Netherlands	90	70	-150	-150	-150	-150	-240
Spain	80						-80
Swiss	220	200	200	200	200	200	
UK	0	0	0	0	0	0	
Poland	1200	1000	1000	1000	1000	1000	-200
Norway	880	770	740	740	740	740	-140
Sweden	1040	1040	1040	1040	1040	1040	
Baltics	0	0	0	0	0	0	
Croatia	0	0	0	0	0	0	
Czech							
Hungary							
Poland	0	0	0	0	0	0	
Romania	0	0	0	0	0	0	
Russia	80	80	80	80	80	80	
Slovenia	10	10	10	10	10	10	
Other Europe	0	0	0	0	0	0	
Canada	2400	2040	2040	2040	2040	2040	-410
US	1860	1770	1770	1770	1770	1770	-90

CAPACITY CHANGES BY COUNTRY AND MACHINE (CONTD)

(Dollars)

Area	2011	2012	2013	2014e	2015f	2016f	2011-16
Argentina	12	13	12	12	12	12	
Brazil	30	30	30	30	30	30	
Chile	30	30	30	30	30	30	
Mexico	60	60	60	60	60	60	
Other	5	5	5	5	5	5	
Australia	90	90	90	90	90	90	
New Zealand	75	75	75	75	75	75	
Japan	960	960	960	960	960	960	0.0
China	600	600	600	600	600	600	
Indonesia	10	10	10	10	10	10	
Korea	120	120	120	140	130	120	
Pakistan	20	20	20	20	20	20	
Philippines	40	40	40	40	40	40	
Iran	20	20	20	20	20	20	
Turkey	15	15	15	15	15	15	
Egypt	10	10	10	10	10	10	
Kenya							
South Africa							
Tanzania	10	10	10	10	10	10	
Other Africa	5	5	5	5	5	5	

Exhibit 16, p. 1 of 1, Exh. 16 (2015)

9. Investments & New Machines

9.1 Machine Closures

FIGURE 10: GLOBAL RWW PAPER MACHINES CLOSURES	
Machines closing down 2011-	
GRADE	Tonnes
COATED WOODFREE	[illegible]
UNCOATED WOODFREE	[illegible]
COATED MECHANICAL	[illegible]
UNCOATED MECHANICAL	[illegible]
TOTAL RWW PAPER CLOSURES	[illegible]
(Including DMGE Unspecified Capacity Closures)	
EMGE & Co Ltd, © 2015	

9.2 Machine Investments

FIGURE 11: GLOBAL RWW PAPER MACHINES INVESTMENTS	
Announced & Planned Machine Investments	
GRADE	Tonnes
COATED WOODFREE	[illegible]
UNCOATED WOODFREE	[illegible]
COATED MECHANICAL	[illegible]
UNCOATED MECHANICAL	[illegible]
NEW RWW MACHINE INVESTMENTS	[illegible]
EMGE & Co Ltd, © 2015	

9.3 Individual Machine Investment Plans

Detailed, individual investment plan listings

In this section we provide detailed investment plan listings. In these tables we show all announced capacity plans, including those not classified as definite, decided and financed.

Individual machine details are shown in the tables following – where a ✓ indicates the item is included as decided, while a ✗ indicates that the item is undecided and hence excluded from our capacity analysis.

The complete listings follow.

9.1.1 Machine Investment Plans, Coated Woodfree Papers

FIGURE 111: INVESTMENT LISTING – COATED WOODFREE, EUROPE & AMERICA

Europe & America				
Company	HQ	Date	Comment	Cap (kt/Dec)
Finland				
Rhodi	Rovaniemi	Q1-Q4	Announced closure of the sole CWF machine on the mill	190
France				
Nolpeca	Nolpeca	Q1-Q3	Passed into ownership also as part of wholesale M/A group	
Germany				
Schreiber	Oberkreuzigen		Q1-Q3 MM taken over by Paper Excellence, an affiliate of APP	
Sand Sina	Unknown	Q1-1-11	Production in CWF output as firm puts focus on specialties	140
Rhodi	Ostermünster	Q1-Q3	Closure of CWF/specialty paper production on the mill	70
Sweden				
Rhodi	Hasslo	Q1-3	Old paper production remains following closure of Aspenbruk 03	
Switzerland				
Sappi	Biberist	Q1-Q3	Closure of the papermill after selling to Arctic Paper	220
EAST EUROPE				
Russia				
Ilim Group	Koryazhma	Q4-Q4	Planning to start up coated paper production on the mill	70
Arkhangelsk	Solvyt	Q1-1-11	Plans to build new coated paper machine on the mill	300
Slovenia				
Graf & Krug	Vevce	Q1-Q2	Mill put on for takeover by ROVESO Group	70
NORTH AMERICA				
USA				
Grand Rapids	Hamilton	Q1-Q4	Closure of the mill, but as looked for new buyer	40
Appleton	White Cornell	Q1-3	Closure of PM1, Domtar to supply base for thermal coating	100

Source: A.J. Le Lait & Sons

ISSUE 12: INVESTMENT LISTING — CTO W'DWIDE, AUSTRALASIA

Excluding Japan, China & Other Asia

Company	PRR	Date	Comment	Exp. Ac/Dec
Japan				
Nippon Paper	Yoshishima	2011-12	Closure of old PRN at Yoshishima and conversion to biom.	215 ✓
China				
APP	Hainan	2011-12	Revamp ex- of high quality no-line 950,000t coating PM2	130 ✓
Oji Paper	Nantong	2011-12	Revamp ex 450,000t line paper PM1	120 ✓
Shandong Chenming	Dongying	2011-12	Revamp ex 750,000t coated line paper PM8	190 ✓
Chenming	Shouguang	2011-13	Revamp ex 850,000t coated line PM	160 ✓
Sun Paper	Taoshan	2011-13	Revamp ex new 400,000t coated papers PM24 to the mill	✓
Guangxi Jinmeng	Nanning	2011-13	Plans ex mach 1 million tonnes of PRM capacity at the mill	430 ✗
Oji Paper	Nantong	2012-	Possible closure of second coated line papers PM1 at the mill	✗
APRIL	Kuiken	12-13-14	Closure of new 750,000t CWF machine at the mill	720 ✗
APRIL	Guangxi	NR	Possible plans for new vector at the greenfield mill	✗
APP	Jiujiang	NR	Possible plans for 2nd new PRM machine at the mill	760 ✗
India				
JK-T	Kalkarandhura	2011-14	WP capacity upgrade +3 370,000 tonnes at the new mills	140 ✓
Korea				
Moorim Paper	Ulsan	2011-Q2	Revamp ex 400,000t line paper machine at the mill	171 ✓
Hansol Paper	Jeju	2011-Q3	Closure of coated line papers PM at the mill	-80 ✓
Vietnam				
An Hoa Paper	Tuyen Quang	2012	Closure of coated paper machine at the mill	-180 ✓
Tan Mai	Quang Ngai	2012-13	Closure of coated line papers PM at the site	-200 ✗

9.3.2 Machine Investment Plans, Discounted Workflow

FIGURE 12A: INVESTMENT LISTING – UNCOATED WOODFREE, EUROPE

Company	Mill	Date	Comment	Cap. (kt/Dec)	
Denmark					
Grace Pulp	Galten	2013Q1	Closure of 1MP PM4 at the mill	180	✓
France					
Arctura	Hoogkin	2015Q2	PM4 restarted after thirteen project briefing approved	70	✓
Hexcelsior	Dorchet	2014	Capacity increase on the mill following investment	130	✓
Kyoraglen	Pont du Bas	2012Q3	Sale of mill to office supplies manufacturer Groupe Hexcelle		✓
Lisandro	Rue Magre	2013Q2	Two pilot lines recommissioning line continues to operate		✓
Arctura	Hoogkin	2011Q3	… four line now three pilotnd into ownership	70	✓
Kyoraglen	Blanc	2011	Closure of the remaining machine PM2 at the mill	45	✓
Alvarol	Alsop	2010	Decommissioning of mill following announced takeover talks 2.5		✓
Germany					
JSPP	Hamburg	2012Q1	Pump closure of (450,000) 1MP PM2 at the mill and further notice		
Alvarol	Rudau	2013	Divestment of Pomeran Papers business to Hainsworden Rudau GmbH		
Alvarol	Gutenmühl	2012Q2	Closedown of 1MPPapiccadly project production on the mill	130	✓
Italy					
Sorrentino	Gemagnano	2011Q2	Cessation of output to Italia exhibition due to high input costs 14		✓
Verde Riverside	Pesaro	2010 11	Closure of the mill and further notice	0	✗
Spain					
Arbeno	Lagunes	2012Q1	Five line filed for insolvency due to unprofitability		
Bruge	Tombego	2011Q1	Mill closure after coal collapse, has since closed down for good		
Arbeno	Lagunes	2011 12	… four on to restart following the Aug Five German tenders 80		✓
Switzerland					
Sappi	Bienne	2011Q2	Closure of the graphic paperwell after failing to find a buyer 40		✓
UK					
EJ Cook	Higbin Kings	2011Q1	Divestment of mill to Rotopaper office commerce supplier		✓
EAST EUROPE					
RUSSIA					
Alvarol	Syngatka	2011Q2	Modernisation on mill including announced line upgrade PM 4	0	✓
Nix Group	Rostpolitsk	2012Q4	Closure of one 1MPPublic paper machine at the mill	220	✓
SLOVENIA					
Radeco Paper	Radeco	2011Q4	Permanent closure of the mill as Brie glass bankrupt	120	✓

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FIGURE 1 (I). INVESTMENT LISTING – USA, W.EUROPE, AMERICA & OCEANIA

N. & L.America & Oceania

Company	Web	Share	Comment	Cap	In/Dev
USA					
Sinclair	Anderson	(01:1)(2)	Permanent closure of 1 (1,000) UWF machine at the mill	-11	✓
Wheeler Paper	Anderson	(01:1-12)	Rebuild of paper mill to make Bag paper and white tiger	-19	✓
Grupo Pardos	Hampton	(01:1)(2)	Permanent closure of mill due to deteriorating assets	(-19)	✓
Vinson Papers	Jackson	(01:1)(2)	Takeover/merger of our Papers mill to Big Rock and Partners	-30	✓
Redwood	Bartlett	(01:1)(2)	Closure of the mill; production transfer to NH mills	-400	✓
Wheeler Paper	Andrew	(01:1)(2)	Closure of the mill; Manufacture of PM Business to Wilmette	(-30)	✓
Canada					
Grupo Papier	Edmonton	(01:)	Closing of one cogfired (1,000) cogfuel Arden mill	-10	✓
Argentina					
(c) Argentina	Zarate	mill	Plant to increase capacity on Arden Mills	-10	✗
Bolivia					
Papelbol		mill	Planned closing of greenfield P&P mill w.r (1,000s) ons	-20	✗
Brazil					
Carpenol	Loreiro	(01:1)(2)	Tender bid to acquire remaining shares (50%) in mill from Fibria		
Fibria	Rosenzalez	(01:1)(2)	Divestiture of mill to Cg Paper as (bro-vale paper production		✓
AR Papel	Vella Grande	(01:1-12)	Buildup of the mill to produce 100% recycled UWF papers	-10	✓
AB) Papier	Cabanas	(01:1)(2)	Permanent closure of two PM mill due to weak (fluorine market dem	-60	✓
IP	Tres Lagoas	(01:1-12)	Plans for a second recycled (paper mill on mill	(30)	✗
Rio Capacol	Alvez Grupo	mill	Possible plans for new mill in the country on (cogpfiffluvium) fall		✗
Chile					
(MP)	Lop	mill	Possible investment of mill's P.PM. expect to work build papers	-30	✗
Colombia					
Papel	Guerrero(Jumbo)(01:1-12)		Emerging rich investment in the rec PM mills	-10	✓
Cuba					
papcub	Ivan E. Benitez (01:1)		Possible closing of mill incl. investment/UWF	-30	✗
Mexico					
Cipramex	Rodriguez	(01:1)(2)	Cap increase as the mill following installation of one other primed	-10	✓
Peru					
Papelera Nilo	Lima	(01:1)	Plans to double PPM capacity on the mill	-30	✗

FIGURE 12A: INVESTMENT LISTING — UNCOATED WOODFREE, CHINA

China					
Company	Mill	Date	Comment	Cap. m tpa	
China					
Huacheng Paper	Guangxi	2011-12	Running at over 500,000 t/mth tonnes	80	✓
Sun Paper	Yuanhua	2011-12	Running at 300,000t secured the papers 000 t at the mill	30	✓
Nie Paper	Henan	2011-12	Running at over 100,000t the papers tonnes	80	✓
Guangxi Hengwei	Nanning	2011-12	Running at over 200,000 t/mth tonnes at the mill	150	✓
Zhuozhuan Anpeng	Zhuozhuan	2011Q2	Running at 210,000t secured PM machine at the mill	150	✓
Nine Dragons	Tianjing	2011Q2	Commence all remaining Beilog PM2.7 at coupled Hubei	80	✓
Nine Dragons	Dongguan	2011Q2	...k stabilise at making all at plant PM papers mill, 700,00	140	✓
Yongtai Paper	Anyang	2011Q3	Running at 250,000t t/mth capacity	90	✓
Guangxi Jinhetang	Nanning	2011Q3	Running at 250,000 secondment as 02, mill - phase I	80	✓
Guangzhou Paper	Huadu	2011Q3	Relocation, rebuild and invest at nano PM1 on Jiahuan Park	40	✓
Nine Paper	Wenan	2011Q3	Permanent closure of existing mill	120	✓
Brent Zhou	Zhenjiang	2011Q3	Startup of groundbill set to - new 1PM/qty papers mill	180	✓
Huacheng Paper	Lubei	2011-12	Running at plus new 400k t/mth machines	160	✓
Taisheng Paper	Henan	2012	Startup at this papers machine on the mill	200	✓
Shandong Huatai	Binzhq	2012Q2	Startup at northfield Sulphate machine at the mill	150	✓
APRIL	Jiangmen	2012Q2	Startup of new 400,000t t/mth machine on the mill	400	✓
Wuchuang	Heilongjiang	2012Q2	Startup of new 13,000t gas-only graphic paper mill on mill	70	✓
Nine Paper	Sichuan	2013	Startup of new 4mtn machine on the greenfield mill	180	✓
Guangxi Jinhetang	Nanning	2013-15	Plans to mould 1 million tonnes of PM4 capacity - phase II	800	✗
Guangzhou Paper	Huadu	2013...	Possible plans for new PM4 machine PM2 at the mill	200	✗
Yongtai Paper	Weifang	2013	Possible closing and conversion of turnmore Mengyin mill	200	✗
APRIL	Rizhao	2013-15	Possible closing of two 450,000t t/mth machine at the mill	450	✗
APRIL	Jiangsuan	2013	...dilement by possible plans for second identical machine	450	✗
Crucial A Paper	Jiangsu	2013	Startup of integrated pulp and paper mill but timing unknown	300	✗
CR4	Changzhou	NA	Possible closing of one line paper line at the mill	400	✗
Yongtai Paper	Linyi	NA	Plans for new secondary PM1 mill at the site (MM2.5) by	150	✗
APRIL	Chongqing	NA	Possible plans for new PM machine on the greenfield mill	150	✗
APP	Yuqing	NA	Possible plans for five new three machines at the mill	180	✗

Source: A.J. Liu, Ltd. © 2015

FIGURE 1[illegible]: INVESTMENT LISTING – UNCOATED WOODFREE INDIA

India					
Company	Mill	Date	Comment	Cap	In/Out
[illegible]	[illegible]	2011-12	Ramping up [illegible] 150,000 t/a [illegible]	[illegible]	✓
West Coast Paper	Dandeli	2010Q3	Ramping up 160,000 t/a [illegible]	[illegible]	✓
[illegible]	[illegible]	2011	Running in 120,000 [illegible] PM [illegible]	[illegible]	✓
[illegible]	[illegible]	2011	Running in new 33,000 t/a [illegible]	[illegible]	✓
[illegible]	[illegible]	2011-12	Rebuild and conversion of PM [illegible] to 100% UWF	[illegible]	✓
[illegible]	[illegible]	2011Q1	Takeover of the mill by [illegible]		
[illegible]	[illegible]	2011Q2	Startup of [illegible] PM at the mill	[illegible]	✓
APPM	Andhra Pradesh	2011Q4	IP acquisition of 75% stake in APPM		
[illegible]	[illegible]	2011Q4	[illegible] PM [illegible]	[illegible]	✓
NR Agarwal	Vapi	2011-12	Startup of [illegible] 90,000 t recycled graphic papers unit	[illegible]	✓
JK Paper	Jaykaypur	2013Q4	Startup of new UWF PM to replace PMs 2, 4 & 5	[illegible]	✓
[illegible]	[illegible]	2012-13	Startup of new 50,000 graphic machine at the mill	[illegible]	✓
[illegible]	[illegible]	2013	Startup of [illegible]	[illegible]	✓
[illegible]	[illegible]	2013Q4	Planned construction of new [illegible] mill	[illegible]	✓
BILT	[illegible]	2012-13	[illegible] capacity upgrade of 275,000 tonnes at the [illegible] mill	[illegible]	✓
Hindustan Paper	[illegible]	2013	Startup of [illegible]	[illegible]	✗
[illegible]	[illegible]	2013	Plans to build a new [illegible] plant	[illegible]	✗
[illegible]	[illegible]	NA	Plans to install a new PM at the mill	[illegible]	✗
ITC	Andhra Pradesh	NA	Plans for a new [illegible] mill but details yet to be confirmed	[illegible]	✗
[illegible]	[illegible]	NA	Startup of new PM [illegible]	[illegible]	✗
Hindustan Paper	[illegible]	NA	Major investment for [illegible] paper mill	[illegible]	✗

[illegible]

FIGURE 138. INVESTMENT OUTPUT – UNCOATED WOODFREE, OTHER ASIA

Other Asia

Company	Mill	Base	Comment	Cap. (kt/yr)	
Bangladesh					
North Bengal PM	Bogra	Q3'3	Rebuild of the mill which has been closed since 2001	30	✓
TR Group	Chittagong	Q1'3	Startup of two refurbished PM machines at the mill		✗
Duralia A	Chittagong	Q2'3	Parallel glass line on Papermill Series PM1 at mill	90	✗
Indonesia					
pt#	Purwasing	Q3'25	Startup of the fourth(+) paper machine (1 and 3 at the mill)		
pt#	Purwasing	Q4'3–1	…followed by startup of an overhauled line (paper) PM4	600	✓
KSM	Sura Jaya	Q1'3–1	Startup of a 4,000 Kg/yr PM1 at the mill	180	✓
Japan					
Hirano	Fujishiro/Tsuki	Q1'1–1'2	Closing one or big (B&N) notes, mill 3, and Tsuki (Kn)	420	✓
Korea					
Woorim Paper	Daeso	Q4'1–Q'2	Running at over 4 kt/1,000 line paper machine at the mill	10	✓
Nepal					
Bindaca PM1	Ganeshpur	Q3'1–	Permanent closure of the mill	12	✓
Sri Lanka					
Eswaripiya	Kotmapura	Q3'1–1'2	Takeover and revamp of mill by Perth Engineering	15	✓
Thailand					
Crystal A	Prachaibun	Q3'Q'2	Startup of copy-papers PM2 at the mill	230	✓
Vietnam					
Bai Bang DV	Vy Xuo	Q4'1–Q'7	Running on re-rebuilt(+)plant projects among paper mill	30	✓
Hoalpeno	Thanh Hoa	Q3'1–	Startup of 1,450,000 tonnes of papers capacity at mill	50	✗
Tuo Mau	Kontum	Q2'1–1'3	Startup of graphic papers PM at the mill	200	✗

(*) Q3'25: A (+) 1 of 3 (Q3'25 – 3' 2025)

INVESTMENT LISTING – UNDERLYING WORLDWIDE OTHER EQUITY (CONTINUED)

Other Asia/Middle East/Africa

Company	MSCI	Share	Comments	Exp.	In/Out
MIDDLE EAST					
Israel					
Plural	Israel	10.0	Sell all 10.1 % stake in Israel Equity down to 10%	Nil	✓
AFRICA					
Egypt					
Qalaa Mar	Cairo	20.1[2]	Revamp and revamp of an Egypt Hold (PH) for regulated Hotel (6)		✓
Ethiopia					
Sabin Endeavours Ashton		Nil	Possible place (to a approved) for the stock grow		✗
Mozambique					
Pemprok Explorer	Mamo[2] Emerging[2] 2.0		Possibly place (to new PMI roll in the country	Nil	✗
Sunrise	Nil	Nil	Possible place (to a new pulp and paper mill	Nil	✗
South Africa					
Sappi	Alternat	24.1[2]	Chosen of sell out to market conditions/investment case	-20	✓
Tanzania					
Reduced Nil		10.1	Reason of NAV (Maturity reserves by Angel Home Industries)	Nil	✗

[1] Nil % at 1 Jan. 2 Jan. 3 Jan.

9.3.3 Machine-Investment Plays, Coated Mechanical

FIGURE 7 | UK INVESTMENT LISTINGS — COATED MECH., EUROPE

Europe

Company	HQ	Share	Exposure	Cap. (€bn)	Verified
Finland					
Kajaani	Kajaani	(0.6%)	Owners of coated mechanical capacity PM9 at the mill		
Nova Boreal	Kemi	(0.5%)	Operations of the mill as OpenGate Capital		
UPM	Helsinki	(0.1%)	Permanent closure of the ex-Rybäcken mill	13.5	✓
France					
UPM	Grenoble	(0.1–1)	Planned decommission of the mill	(0.5)	✓
Germany					
UPM	Augsburg	(0.1%)	Permanent closure of the ex-Rybäcken mill	(0.5)	✓
Italia					
Burgo	Turbigo	(0.4%)	Owners of €4.6bn mechanical papers PM1 at the mill	(1)	✓
Norway					
Nordic Berg	Follum	(0.1%)	Planned closure of the UPM Shipboard newsprint mill	(<0)	✓
Spain					
Inbisco	Sarabidondo	(0.1%)	Owners of smaller-size, PM9cl, at the mill but to cease profitability	(0)	✓
OTHER EUROPE					
Russia					
InterboxPress	Rybinsk	(0.1%)	Liquidation of core PM7 to UPM; new build 436 kt/yr	1.2	(0)	✗
InterboxPress	Izhevsk	(0.0–0.1)	Plans to install new coated paper machine at the mill		(0)	✗

[illegible] (n = 144; 31 mills)

FIGURE 1 (B): INVESTMENT LISTING – COATED WOOD, OTHERS

North America & Asia

Company	RMI	Rank	Comment	Capacity	Con
NORTH AMERICA					
USA					
Westfuge	Whiting	[2011Q1]	Closure of 320,000 lightweight coated paper mill	-60	✓
Arrow Paper	Burlington	[2011Q4]	Permanent closure of 120 PM3 at the mill	-80	✓
Japan					
Oji Paper	Oji	[2011Q2]	Closure of mothballed PM like to poor market conditions	-90	✓
Hokuto Paper	Oji	[2011-12]	Permanent closure of coated paper PM3 at Oji	-45	✓
China					
WCC Wuli Paper	Zhangzhou	[2011-12]	Closure of one 300,000t LWC machine at the site. #PM3	-90	✓
Tianhua Paper	Shandong	[2011-12]	Closure of oldest mill under the recent Bailey Paper Co	-55	✓
Guangxi Paper	Guangxi	[2012Q1]	Closure of two #fined Kingpin PM3 at the guangxi site	-130	✓
Jilin Chemical	Jilin	[2012-13]	Relocation of mill to new suburban site		

9.3.4 Machine Investment Plans, Elevated Mechanical

FIGURE 11: INVESTMENT LISTING — UNCOATED MECHANICAL

All Regions

Company	Mill	Date	Comment	Cap. (million	
Finland					
UPM	Rauma	2011Q4	Permanent closure of the ex-Myllykoski mill	370	✓
Italy					
Sofidel SpA	Scarperia	2011	Sizing production on Tullis extension line to high-value rolls	15	✓
Netherlands					
Heaton Sing	Delfzijl	2011–12	Planned decommission for refurbished sheeter at 145,000-roll/d	145	✓
Norway					
Heaton Sing	Follum	2010Q1	Planned closure of the UWF/Superpress newsprint mill	440	✓
Spain					
Celtrico	Pontelbrado	2011Q1	Closure of smaller mill (PM6) due to unprofitability	90	✓
Canada					
St. Mungo	Quelle Du Mont	2010–11	Closure of the SC mill pending re-invest	240	✓
Boreham Pt	Mungomie	2011Q4	Permanent closure of SC PM4 at the mill	70	✓
White Birch	Gaspereau	2010Q2	Closure of the mill due to high wage and fibre costs	90	✓
AbitiPulp	Port Hawkes	2011Q3	Closure of the mill	200	✗
Boreham Pt	Dolbeau	2011	Possible restart of conventional printing production at the mill		✗
USA					
Blue Horse Paper	Dingle	2010Q1	Permanent closure of 220,000-ton/annum A paper mill		
Keystone Paper	Iron Mills	2011	Closure of SC mill but retained drifting Cort Smart August		
Nova Paper	Sorell	2010Q4	Permanent closure of SC PM1 (4.2 at the mill	80	✓
Venezuela					
Papiros	Valapuri	2010Q2	Closure of new 150,000t coating over PM at the site	30	✓
Japan					
Nippon Paper	Ishinomaki	2011	Permanent closure of 180,000t mech. pulpers #3 at the mill	45	✓

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Appendices – Grouping Totals

App.1 Coated Printing Papers

The following tables show data for Total Coated (Old Woodfree + Old Mechanical).

A1.1 Demand, Trade, Output and Capacity Forecasts, Total Coated

FIGURE 132: DEMAND FORECAST, WORLD BY REGION, TOTAL COATED							
'000 tonnes							
Demand	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
W.Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-2.0%
Other Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.0%
N.America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-4.0%
Latin America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.0%
Japan	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-1.0%
China/HK	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4.0%
Other Asia-ex. Russia	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2.0%
Africa/ME	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.0%
Total	**[illegible]**	**[illegible]**	**[illegible]**	**[illegible]**	**[illegible]**	**[illegible]**	**-0.1%**
Europe Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-1.0%
Asia Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2.0%
[illegible]							
growth % pa							
Growth	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
W.Europe	-1.0%	-1.0%	-1.0%	-1.0%	-1.0%		
Other Europe	1.0%	1.0%	1.0%	1.0%	1.0%		
N.America	-4.0%	-4.0%	-4.0%	-4.0%	-4.0%		
Latin America	2.0%	2.0%	2.0%	2.0%	2.0%		
Japan	-1.0%	-4.0%	-4.0%	-1.0%	-4.0%		
China	11.0%	3.0%	3.0%	3.0%	3.0%		
Other Asia-ex. Russia	1.0%	1.0%	2.0%	2.0%	1.0%		
Africa/ME	3.0%	4.0%	3.0%	2.0%	2.0%		
Total	**-2.0%**	**-4.0%**	**-4.0%**	**-2.0%**	**-4.0%**		
Europe Total	-1.0%	-4.0%	-1.0%	-1.0%	-2.0%		
Asia Total	2.0%	-2.0%	-1.0%	+2.0%	-2.0%		
[illegible]							

FIGURE 11: TRADE FORECAST: WORLD BY REGION, TOTAL COATED							
'000 tonnes							
Trade	2011	2012	2013	2014	2015	2016	2012-16
W Europe	4610	4 510	4 660	4 810	4 910	4 930	280
Other Europe	1 840	1 920	1 960	1 970	2 040	2 110	190
N America	830	910	820	730	610	570	-340
Latin America	1 610	1 630	1 610	1 610	1 680	1 730	110
Japan	530	490	520	480	490	490	-40
China/HK	1 110	1 190	1 260	1 370	1 530	1 660	470
Other Asia inc. Russia	60	100	70	60	90	110	10
Africa/ME	1 110	1 170	1 180	1 220	1 290	1 310	200
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Europe Total	6 450	6 430	6 620	6 780	6 950	7 040	590
Asia Total	670	690	790	840	910	990	310

FIGURE 12: OUTPUT FORECAST: WORLD BY REGION, TOTAL COATED							
'000 tonnes							
Region	2011	2012	2013	2014	2015	2016	2012-16
W Europe	19 910	19 990	20 010	20 040	19 960	19 870	-120
Other Europe	210	220	230	240	270	270	50
N America	72 10	70 60	6 950	6 830	6 990	6 810	-1 850
Latin America	6 10	6 00	6 20	6 40	6 60	6 90	90
Japan	3 860	3 7 10	3 660	3 7 60	3 820	3 7 50	-110
China	3 830	4 3 40	5 1 20	5 940	7 060	8 120	3 290
Other Asia inc. Russia	2 160	2 230	2 320	2 4 10	2 5 40	2 690	460
Africa/ME	1 80	1 70	1 60	1 80	1 80	1 70	-10
Total	**60 210**	**61 240**	**60 670**	**60 6 10**	**60 290**	**60 660**	**-580**
Europe Total	23 330	23 5 10	23 660	23 830	23 6 30	23 5 30	200
Asia Total	6 0 690	6 6 1 0	6 9 1 0	7 4 6 0	8 2 3 0	9 1 0 0	2 370

FIGURE [illegible]: CAPACITY FORECAST, WORLD BY REGION: TOTAL COATED

'000 tonnes

Capacity	2011	2012	2013	2014	2015	2016	2011-16
W.Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
N.America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Latin America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Japan	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
China	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Asia ex. [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Africa/ME	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Europe Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Asia Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

EMGE & Co. Ltd. © [illegible]

FIGURE [illegible]: OPERATING RATES FORECAST, WORLD BY REGION: TOTAL CTD

% Production of Capacity

Operating Rates	2011	2012	2013	2014	2015	2016
W.Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
N.America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Latin America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Japan	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
China	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Asia ex. [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Africa/ME	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Europe Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Asia Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

EMGE & Co. Ltd. © [illegible]

11.2 Country Data World-wide, Total Coated

FIGURE 137: DEMAND, TRADE, OUTPUT & CAPACITY BY COUNTRY, TOTAL CTD					
Europe - '000 t/a					
'000 t/a, 'MMO	Consumption	Trade	Output	Capacity	Op. Rate %
Austria	000	871	1 199	1 230	97%
Belgium	849	272	844	963	72%
Denmark	191	-111	80	90	89%
France	1 895	-132	1 979	1 983	99%
Germany	3 040	307	10 347	11 721	90%
Italy	1 849	753	2 247	2 500	91%
Netherlands	319	-79	445	500	89%
Spain	839	-383	466	419	83%
Portugal	193	143	0	0	
UK	1 814	-1 543	349	513	68%
Ireland	80	69	0	0	
Switzerland	193	127	370	410	90%
Finland	533	1 079	1 629	1 110	91%
Norway	193	-7	113	140	81%
Sweden	249	429	638	760	76%
Baltics	83	39	4	5	80%
Bulgaria	86	86	0	0	
Croatia	83	-83	0	0	
Czech	239	-229	9	10	91%
Greece	186	-186	0	0	
Hungary	133	-133	0	0	
Poland	349	-333	0	0	
Romania	73	-73	0	0	
Russia	913	-402	0	10	40%
Slovakia	89	-89	0	0	
Slovenia	83	113	196	220	89%
Ukraine	87	87	0	0	
Other Europe	79	79	0	0	

DEMAND, TRADE OUTPUT & CAPACITY BY COUNTRY, TOTAL COATED (Cont.)

America & Asia – 2011e

$M to, MMm	Consumption	Trade	Output	Capacity	Op. Rate %
Canada	900	-800	100	150	67%
USA	7150	-664	6700	7400	91%
Argentina	190	-170	20	22	90%
Brazil	800	-600	410	550	75%
Chile	110	-110	0	0	
Colombia	140	-70	67	70	95%
Mexico	370	-300	70	75	93%
Peru	31	-31	0	0	0%
Uruguay	18	-18	33	33	51%
Venezuela	29	-29	0	0	0%
Other Latin Am.	111	-111	0	0	
Japan	3410	-300	3551	4100	87%
China	6427	-1300	5100	7100	70%
HK	100	-100	0	0	
Australia	700	-700	0	0	
New Zealand	110	-110	0	0	
Indonesia	110	300	400	700	56%
Korea	1300	-1000	2300	2700	97%
Malaysia	130	-120	10	90	90%
Philippines	170	-170	0	0	
Singapore	120	-120	0	0	
Taiwan	320	-40	280	360	77%
Thailand	300	-60	160	310	80%
Vietnam	120	-40	80	100	79%
Bangladesh	80	-80	0	0	
India	700	-210	490	510	95%
Pakistan	60	-47	11	13	73%
Other Asia	60	-60	0	0	

DEMAND, TRADE, OUTPUT & CAPACITY BY COUNTRY, TOTAL COATED (000's t)					
Africa & Middle East – 2011e					
2011e, '000t	Consumption	Trade	Output	Capacity	Op. Rate %
UAE	19	-19	0	0	
Iran	163	-163	0	0	
Israel	36	-36	0	0	
Saudi	93	-93	0	0	
Turkey	183	-116	68	80	85%
Other ME	127	-127	0	0	
Algeria	13	-13	0	0	
Egypt	77	-77	0	0	
Morocco	19	-19	0	0	
Tunisia	10	-10	0	0	
Angola	19	-19	0	0	
Nigeria	98	-98	0	0	
South Africa	297	-253	44	44	100%
Zimbabwe	3	-3	0	0	
Other Africa	81	-81	0	0	
Total	**xxxxx**	**0**	**xxxxx**	**xxxxx**	**89%**

Effect of a 1 hr. Fall in xxxxx

DEMAND, TRADE, OUTPUT & CAPACITY BY COUNTRY, TOTAL COATED [illegible]

Rolls ('Coated), '000 t/a

'000 t/a, Within	Consumption	Trade	Output	Capacity	Op. Rate %
[illegible]	642	4737	5379	6242	86%
[illegible]	11713	-63	11650	13981	83%
[illegible]	1139	833	248	329	68%
[illegible]	733	737	0	10	89%
USA	7135	464	6756	7992	91%
Canada	990	489	501	590	85%
Brazil	849	454	412	550	75%
[illegible]	1133	868	183	213	86%
Japan	5610	248	5861	6161	95%
China PR	8820	1099	9932	11220	79%
[illegible]	2338	1161	3499	3850	91%
Korea	823	823	0	0	
[illegible]	896	299	597	330	94%
[illegible]	829	219	60	80	75%
[illegible]	593	554	40	44	91%
Totals					
[illegible]	13330	6868	19931	23154	87%
[illegible]	2830	1893	516	543	95%
[illegible]	5162	953	7297	8940	82%
[illegible]	2822	1914	908	963	79%
Japan	5610	248	5861	6161	95%
China PR	8820	1099	9932	11220	79%
[illegible]	6179	76	6100	6280	96%
[illegible]	1331	1111	120	143	83%
Total	**49348**	**0**	**49348**	**56314**	**87%**
[illegible]	14649	3054	17532	19340	91%
Asia Total	19847	975	20881	25523	81%

[illegible]

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App.2 Woodfree Pr/Wr Papers

The following tables show data for Woodfree Printing & Writing (CWF + UWF Papers):

A2.1 Demand, Trade, Output & Capacity Forecasts W'dfree Paper

FIGURE 1 DEMAND FORECAST - WORLD BY REGION, W'DFREE PAPERS							
'000 tonnes							
Demand	2011	2012	2013	2014	2015	2016	2011-16%pa
W.Europe	14610	14340	13 830	13910	13 830	13550	-1.5%
Other Europe	3360	3720	3760	3840	3980	4020	3.6%
N.America	13640	13320	12 990	12 620	12 560	12 580	-1.6%
Latin America	3280	3230	3230	3340	3480	3630	2.1%
Japan	6930	7010	6990	6930	6930	6 770	-0.5%
China/HK	8540	9 130	9610	9960	10 320	10 610	4.5%
Other Asia inc. Russia	11 620	11 870	12 080	12 410	12 740	13 040	2.3%
Africa/ME	2230	2270	2310	2360	2390	2 430	1.7%
Total	**66210**	**67960**	**68 810**	**69 810**	**70 470**	**70 880**	**+1.1%**
Europe Total	17970	17960	17 610	17 750	17 810	17 570	-0.2%
Asia Total	24 550	25 540	25 940	26 630	26 970	27 450	1.9%
Source: E-I-U Ltd. © 2015							
growth % pa							
Demand	2012	2013	2014	2015	2016		
W.Europe	-1.9%	-3.7%	-1.9%	-2.1%	-4.0%		
Other Europe	4.2%	2.0%	2.1%	3.6%	1.0%		
N.America	-2.3%	-14.2%	-2.8%	-3.4%	-3.8%		
Latin America	-1.2%	0.0%	-1.4%	-2.8%	3.9%		
Japan	-1.2%	-0.3%	-2.8%	-0.2%	-4.2%		
China	7.1%	5.2%	3.8%	3.5%	3.2%		
Other Asia inc. Russia	2.1%	1.9%	1.9%	2.7%	1.9%		
Africa/ME	1.6%	1.0%	2.2%	1.3%	1.6%		
Total	**2.7%**	**-0.6%**	**0.1%**	**1.4%**	**-0.6%**		
Europe Total	1.2%	-2.1%	-0.1%	2.4%	-1.3%		
Asia Total	3.9%	2.2%	1.3%	2.1%	3.0%		
Source: E-I-U Ltd. © 2015							

FIGURE 139: TRADE FORECAST: WORLD BY REGION, W'OFREE PAPERS

'000 tonnes

Trade	2011	2012	2013	2014	2015	2016	2012-16
W.Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
N.America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Latin America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Japan	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
China/HK	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Asia ex. Russia	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Africa/ME	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total	0	0	0	0	0	0	0
Europe Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Asia Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

FIGURE 140: OUTPUT FORECAST: WORLD BY REGION, W'OFREE PAPERS

'000 tonnes

Region	2011	2012	2013	2014	2015	2016	2012-16
W.Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
N.America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Latin America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Japan	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
China	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Asia ex. Russia	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Africa/ME	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Europe Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Asia Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

FIGURE 141: CAPACITY FORECAST: WORLD BY REGION, WT PAPERS							
'000 tonnes							
Capacity	2011	2012	2013	2014	2015	2016	2011-16
W Europe	12710	11900	11850	11700	11650	11650	-1060
Other Europe	3230	3300	3320	3380	3380	3380	150
N America	14300	14090	13930	13700	13700	13700	-1600
Latin America	4750	4750	4750	4750	4750	4750	0
Japan	5320	5210	5090	4970	4970	4970	-410
China	13260	14060	14990	15950	15470	16290	3130
Other Asia ex. Japan	5810	6290	7110	7940	8730	9530	3820
Australia	1320	1310	1300	1300	1300	1300	-20
Total	59610	60910	62340	63740	64150	65910	4440
Europe Total	21940	21380	21160	20940	20810	20810	-1130
Asia Total	34230	35760	37490	39190	39940	40920	6830
[Table 4.1 to 14.5 if any]							

FIGURE 142: OPERATING RATES FORECAST: WORLD BY REGION, WT PAPERS						
% Production of Capacity						
Operating Rates	2011	2012	2013	2014	2015	2016
W Europe	90%	93%	93%	94%	95%	93%
Other Europe	91%	93%	91%	92%	93%	95%
N America	93%	90%	93%	97%	94%	93%
Latin America	89%	91%	91%	93%	94%	96%
Japan	94%	96%	97%	98%	97%	94%
China	91%	93%	79%	71%	89%	79%
Other Asia ex. Japan	93%	94%	91%	95%	93%	92%
Australia	77%	93%	91%	91%	91%	90%
Total	89%	89%	89%	89%	89%	89%
Europe Total	97%	91%	94%	94%	94%	93%
Asia Total	93%	89%	79%	89%	93%	91%
[Table 4.1 to 14.5 if any]						

12.2 Country Data World-wide, Total Woodfree Papers

FIGURE 145: DEMAND, TRADE, OUTPUT & CAPACITY BY COUNTRY, WF PAPERS					
Europe – 28/1e					
2011e, '000t	Consumption	Trade	Output	Capacity	Op. Rate %
Austria	363	(101)	(264)	(470)	56%
Belgium	571	130	441	640	69%
Denmark	191	41	150	190	79%
France	2889	410	1979	(2053)	97%
Germany	(993)	194	(543)	(947)	58%
Italy	1864	221	1643	1790	91%
Netherlands	475	0	475	790	61%
Spain	1034	110	924	1230	80%
Portugal	221	1079	1344	1460	94%
UK	2238	1994	133	163	80%
Ireland	70	70	0	0	
Switzerland	333	38	294	370	80%
Finland	175	(243)	(2419)	(2791)	82%
Norway	130	130	0	0	
Sweden	662	956	(289)	1460	93%
Baltics	191	80	11	30	44%
Bulgaria	67	67	0	0	
Croatia	75	71	4	0	
Czech	(99)	233	40	190	40%
Greece	162	111	14	30	0 %
Hungary	65	65	0	0	
Poland	645	50	695	820	85%
Romania	190	190	0	40	0%
Russia	1170	127	1098	1400	77%
Slovakia	156	184	340	420	81%
Slovenia	133	140	223	244	92%
Ukraine	198	170	18	20	90%
Other Europe	273	231	42	50	84%
EMGE & Co. Ltd. © 2011					

EMGE WORLD GRAPHIC PAPERS: TOTAL DEMAND, TRADE, OUTPUT & CAPACITY BY COUNTRY

Americas & Asia – 2011e

'000 tn, 2011e	Consumption	Trade	Output	Capacity	Op. Rate %
Canada	1,609	(537)	732	942	78%
USA	13,777	(965)	14,645	19,445	75%
Argentina	570	89	594	770	77%
Brazil	7,938	638	8,693	11,740	74%
Chile	221	(151)	180	310	58%
Colombia	824	13	837	973	86%
Mexico	7,991	(576)	8,113	9,468	86%
Peru	180	(140)	40	53	75%
Uruguay	27	24	51	60	84%
Venezuela	224	(163)	67	80	79%
Other Latin Am.	393	(362)	30	40	75%
Japan	9,924	(280)	9,644	11,511	84%
China	8,662	(218)	10,220	13,667	75%
HK	248	(248)	0	0	
Australia	754	(523)	231	330	70%
New Zealand	134	(134)	0	0	
Indonesia	9,4	(3,414)	13,665	16,70	82%
Korea	23,17	1,143	21,90	23,14	95%
Malaysia	3,03	(2,77)	2,96	3,90	82%
Philippines	2,27	(2,1)	1,91	1,60	11%
Singapore	2,21	(2,21)	0	0	
Taiwan	9,12	(2,4)	6,80	8,31	81%
Thailand	6,90	4,43	11,33	14,70	77%
Vietnam	3,61	(4)	3,20	4,12	77%
Bangladesh	1,30	(4)	86	90	95%
India	23,10	(1)	23,61	28,01	79%
Pakistan	2,73	(1,32)	1,41	1,90	74%
Other Asia	1,60	(1,41)	2,2	2,8	75%

[illegible]					
Africa & Middle East • 2011e					
2011e '000t	Consumption	Trade	Output	Capacity	Op. Rate %
UAE	191	141	0	0	
Iran	600	240	123	160	77%
Israel	227	41	186	190	97%
Saudi	176	176	0	0	
Turkey	223	113	110	190	71%
Other ME	229	151	8	10	82%
Algeria	99	86	14	20	70%
Egypt	847	344	503	533	94%
Morocco	86	41	23	40	57%
Tunisia	64	44	20	30	67%
Angola	77	69	8	10	80%
Nigeria	162	110	0	10	79%
South Africa	781	78	703	840	84%
Zimbabwe	19	7	12	13	92%
Other Africa	240	212	9	13	69%
Total	[illegible]	0	[illegible]	[illegible]	88%

[illegible]

EMPIRE TRADE, OUTPUT & CAPACITY BY COUNTRY, TOTAL WOVEN PAPER

Rolls 'Pharos, 350 lw

$M lw, Wkly	Consumption	Trade	Output	Capacity	Op. Rate %
Nordia	640	(214)	1,967	2,400	82%
Iberia-Mediterranea	(1,514)	(132)	(1,646)	(2,150)	77%
Rhine-Baltic Europe	(301)	44	(257)	(1,796)	14%
Alpine-Pannonian Europe	(983)	(61)	(975)	(1,600)	61%
USA	(2,275)	264	(2,010)	(2,540)	79%
Columbia	(1,207)	227	733	863	85%
Amerind	(1,538)	254	(1,284)	(2,142)	60%
Latin America	3,149	(1,422)	(727)	2,000	36%
Japonia	(1,834)	1,060	(774)	(1,512)	51%
Chrysanthemum	(2,112)	1,116	(1,000)	(1,264)	79%
Silver Silk Asia	(2,224)	(2,224)	(4,448)	(4,944)	90%
Aurora	(800)	(663)	(137)	(2,291)	6%
Other Asia	(1,112)	(277)	(1,388)	(1,481)	94%
N Africa-ME Euro	(1,140)	(1,799)	(2,939)	(4,267)	69%
Sahel Africa	(1,001)	(1,219)	(2,220)	(2,412)	92%
Totals					
W Europe	(1,401)	(2,567)	(3,968)	(4,114)	96%
Slavo-Europa	(2,221)	(1,114)	(3,335)	(3,714)	90%
N America	(2,644)	(1,863)	(4,507)	(4,648)	97%
Latin America	(2,687)	(1,663)	(4,350)	(4,741)	92%
Japonia	(1,511)	(1,001)	(2,512)	(2,512)	100%
Chrysanthemum	(2,112)	(1,116)	(3,228)	(3,264)	99%
Other Asia inc. Aurora	(1,117)	(2,886)	(4,003)	(5,914)	68%
Africa-ME	(2,124)	(2,018)	(4,142)	(4,412)	94%
Total	**44,836**	**0**	**44,836**	**58,614**	**77%**
Europe Total	(1,918)	(1,011)	(2,929)	(3,940)	74%
Asia Total	(2,751)	(2,171)	(4,922)	(5,823)	85%

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App.3 Printing & Writing Papers

The following tables show data for Total Printing & Writing (Coated Woodfree + Coated Mechanical + Uncoated Mechanical + Uncoated Woodfree), i.e. excluding Newsprint.

A3.1 Demand, Trade, Output and Capacity Forecasts, PrW/Wr

FIGURE 144: DEMAND FORECAST, WORLD BY REGION, TOTAL PRINTING & WRITING PAPERS							
'000 tonnes							
Demand	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
W.Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-1.1%
Other Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.4%
N.America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-4.3%
Latin America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.2%
Japan	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-2.1%
China/HK	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	5.4%
Other Asia-inc. Russia	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.1%
Africa/ME	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3.4%
Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-0.4%
Europe Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-1.2%
Asia Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.8%
Source: [illegible]							
growth % pa							
Demand	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
W.Europe	-0.7%	1.0%	-0.9%	-1.0%	1.7%	-0.2%	
Other Europe	1.0%	4.4%	0.7%	2.5%	3.0%	1.4%	
N.America	-2.2%	-1.2%	-4.0%	-4.4%	-1.9%	-2.6%	
Latin America	1.2%	2.3%	-0.4%	1.9%	2.8%	3.2%	
Japan	-2.1%	-1.7%	-4.4%	-4.4%	-1.1%	-2.9%	
China	4.4%	7.3%	3.3%	4.3%	6.2%	5.9%	
Other Asia-inc. Russia	0.9%	2.1%	1.0%	2.3%	3.3%	1.3%	
Africa/ME	2.1%	3.9%	1.1%	2.1%	4.0%	1.9%	
Total	-0.2%	1.3%	-0.8%	-0.2%	1.3%	-0.3%	
Europe Total	-0.7%	1.0%	-0.9%	-1.1%	1.7%	-0.2%	
Asia Total	4.0%	4.1%	-0.6%	1.3%	3.4%	0.9%	
Source: [illegible]							

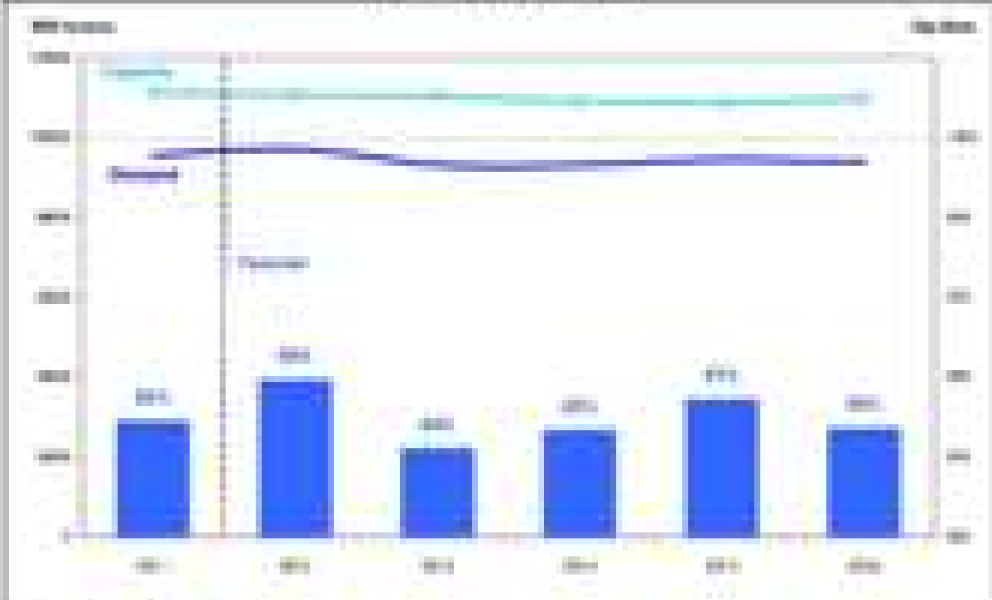
FIGURE 14G: TRADE FORECAST, WORLD BY REGION, TOTAL PAPER							
'000 tonnes							
Trade	2011	2012	2013	2014	2015	2016	2012-16
W.Europe	4,970	5,020	5,080	5,130	5,170	5,190	+170
Other Europe	2,540	2,590	2,650	2,710	2,810	2,890	+300
N America	1,140	1,220	1,270	1,330	1,410	1,490	+270
Latin America	1,960	1,910	1,860	1,840	1,820	1,720	-190
Japan	1,660	1,610	1,560	1,490	1,430	1,380	-230
China/HK	1,810	1,780	1,710	1,630	1,560	1,500	-280
Other Asia ex. Russia	1,010	930	860	790	730	680	-250
Africa/ME	1,030	1,120	1,210	1,320	1,370	1,440	+320
Total	0	0	0	0	0	0	0
Europe Total	7,510	7,610	7,730	7,840	7,980	8,080	+470
Asia Total	1,240	1,210	1,240	1,280	1,340	1,370	+160

FIGURE 14H: OUTPUT FORECAST, WORLD BY REGION, TOTAL PAPER							
'000 tonnes							
Grades	2011	2012	2013	2014	2015	2016	2012-16
W.Europe	23,010	23,180	23,360	23,540	23,720	23,910	+730
Other Europe	3,770	3,830	3,900	3,970	4,120	4,190	+360
N America	22,110	22,000	21,910	21,840	21,710	21,770	-230
Latin America	4,220	4,400	4,560	4,720	4,870	4,940	+540
Japan	8,770	8,710	8,700	8,670	8,610	8,540	-170
China	11,420	11,600	11,810	12,020	12,170	12,340	+740
Other Asia ex. Russia	1,280.0	1,420.0	1,420.0	1,420.0	1,420.0	1,420.0	+140
Africa/ME	1,530	1,620	1,690	1,770	1,850	1,920	+390
Total	86,630	87,190	88,160	89,130	89,890	90,990	+3,800
Europe Total	30,520	30,870	31,090	31,460	31,810	32,090	+1,570
Asia Total	23,710	24,110	24,410	24,880	25,130	25,420	+1,710

OUTPUT GROWTH: WORLD BY REGION; TOTAL P&WP					
growth % pa					
Output Growth	2012	2013	2014	2015	2016
W.Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
N.America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Latin America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Japan	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
China	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Asia ex. Japan	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Africa/ME	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Europe Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Asia Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

FIGURE [illegible]: WORLD DEMAND-SUPPLY: PRINTING & WRITING PAPERS

Demand Supply Balance



Capacity Assumptions – PWH Papers

FIGURE 146: EMCG CAPACITY ASSUMPTIONS, PWH PAPERS

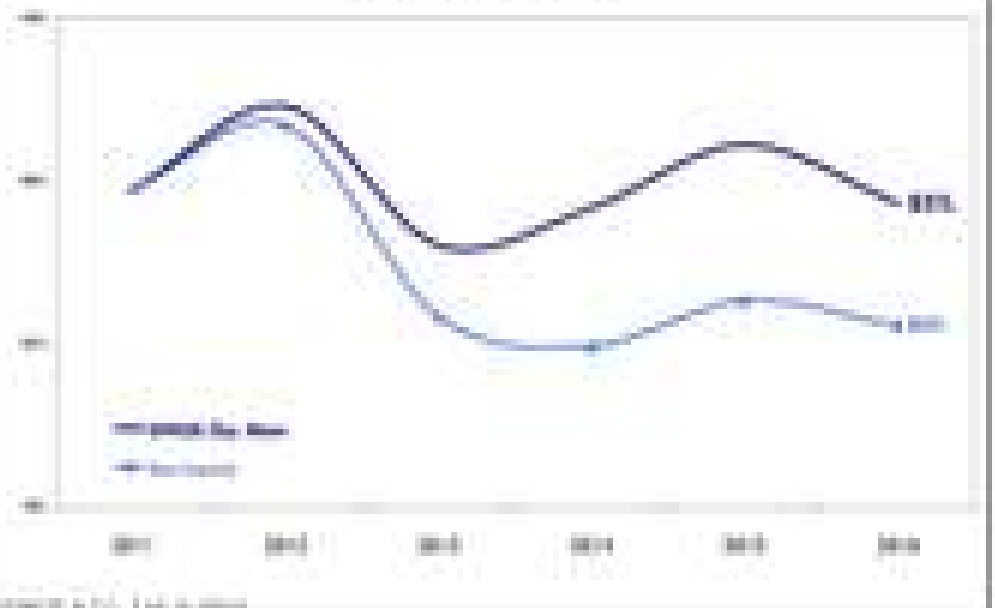
('000 metric tonnes)

Capacity '000 m.t.	2011	2012	2013	2014	2015	2016	2011-16
W.Europe			-100	-700	-100		-1,100
Other Europe							
N.America			-700	-1,000	-300		-2,000
Latin America							
Japan			-200	-300			-500
China		400	-700	-400	-200		-1,900
China (Fuji)				1-1	0-1	500	2,000
Other Asia			-300	-200	-200		-800
Other Asia (Indo)				-100	-100	-200	-500
ROW							
Total		-400	-2,000	-1,900	-400	-1,000	-6,800

Source: E & Co., Ltd. © 2010

FIGURE 149: OPERATING RATES FORECAST vs. BASE, PWH PAPERS

Stonewall Supply Balance



Source: E & Co., Ltd. © 2010

Capacity and Operating Rates - Printing & Writing Papers

Base Data

FIGURE 130: BASE CAPACITY, BY REGION, PR & WR PAPERS

(Excluding unspecified capacity)

Capacity '000 m.t.	2011	2012	2013	2014	2015	2016	2011-16
W.Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
N.America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Latin America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Japan	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
China/HK	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Asia ex. Assoc	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Africa/ME	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Europe Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Asia Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

EMGE & Co. Ltd. © 2012

FIGURE 131: BASE OPERATING RATES, BY REGION, PR & WR PAPERS

% Production of Capacity

Operating Rates	2011	2012	2013	2014	2015	2016
W.Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
N.America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Latin America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Japan	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
China	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Asia ex. Assoc	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Africa/ME	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Europe Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Asia Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

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Forecast Data

FIGURE 111: FORECAST CAPACITY, BY REGION, PRIME PAPERS

(Including integrated capacity)

Capacity, '000 m.t.	2011	2012	2013	2014	2015	2016	2011-16
W.Europe	(1950)	(1940)	(1930)	(1920)	(1910)	(1910)	(1930)
Other Europe	810	1,800	1,620	1,640	1,660	1,660	1,630
N.America	22,860	22,830	22,210	22,150	21,960	21,960	22,160
Latin America	2,120	2,120	2,150	2,140	2,140	2,140	2,140
Japan	10,420	9,970	9,640	9,590	9,540	9,540	9,710
China	11,900	14,620	17,150	17,550	17,940	18,350	16,420
Other Asia ex. Japan	4,230	4,740	5,090	5,130	5,230	5,330	5,130
Africa/ME	1,410	1,430	1,440	1,440	1,470	1,470	1,460
Total	**55,870**	**59,650**	**61,630**	**61,960**	**62,050**	**62,350**	**60,410**
Europe Total	22,860	24,120	24,150	24,130	24,030	24,030	24,070
Asia Total	26,560	29,330	31,920	32,270	32,710	33,270	30,840

Source: W. & I.C., July '11 Issue

FIGURE 112: FORECAST OPERATING RATES, BY REGION, PRIME PAPERS

% Production of Capacity

Operating Rates	2011	2012	2013	2014	2015	2016
W.Europe	93%	94%	95%	95%	91%	93%
Other Europe	91%	93%	91%	93%	93%	93%
N.America	88%	91%	92%	93%	97%	93%
Latin America	88%	91%	91%	93%	94%	92%
Japan	94%	95%	97%	97%	98%	96%
China	77%	79%	79%	79%	82%	81%
Other Asia ex. Japan	82%	84%	91%	92%	93%	92%
Africa/ME	77%	81%	81%	82%	83%	84%
Total	**86%**	**88%**	**86%**	**88%**	**87%**	**88%**
Europe Total	93%	93%	94%	95%	91%	93%
Asia Total	82%	84%	89%	91%	92%	92%

Source: W. & I.C., July '11 Issue

13.2 Country Data Workbook, Total Pulp

FIGURE 1 DK DEMAND, TRADE, OUTPUT & CAPACITY, TOTAL PAPER					
Europe + DK'ks					
DK'ks, '000t	Consumption	Trade	Output	Capacity	Op. Rate %
Austria	640	(156)	2,241	2,410	93%
Belgium	1,883	(6)	944	1,140	83%
Denmark	371	(22)	130	140	93%
France	2,233	(997)	2,236	2,910	77%
Germany	7,508	(9)	7,641	8,860	86%
Italy	2,119	(27)	2,853	3,020	72%
Netherlands	1,113	(141)	700	800	88%
Spain	1,769	(783)	984	1,190	83%
Portugal	324	1,256	1,580	1,640	96%
UK	3,883	(1,113)	770	900	86%
Ireland	113	(113)	0	0	
Switzerland	322	91	419	740	57%
Poland	879	(919)	1,772	2,110	84%
Norway	327	433	760	1,020	75%
Sweden	984	(834)	3,620	3,814	95%
Baltics	184	(183)	33	37	87%
Bulgaria	81	(81)	0	0	
Croatia	114	(108)	6	7	81%
Czech	880	(659)	83	140	60%
Greece	248	(234)	14	23	58%
Hungary	299	(299)	0	0	
Poland	1,211	(1,112)	699	833	84%
Romania	143	(143)	0	30	4%
Russia	1,984	(454)	1,530	1,950	78%
Slovakia	324	276	548	533	91%
Slovenia	148	148	277	310	89%
Ukraine	227	(184)	43	51	84%
Other Europe	519	(240)	81	93	86%

[illegible] TRADE, OUTPUT & CAPACITY, TOTAL PAPER (Cont.)

Americas & Asia – [illegible]

[illegible]	Consumption	Trade	Output	Capacity	Op. Rate %
Canada	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
USA	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Argentina	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Brazil	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Chile	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Colombia	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Mexico	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Peru	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Uruguay	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Venezuela	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Latin Am.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Japan	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
China	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
HK	[illegible]	[illegible]	[illegible]	[illegible]	
Australia	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
New Zealand	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Indonesia	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Korea	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Malaysia	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Philippines	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Singapore	[illegible]	[illegible]	[illegible]	[illegible]	
Taiwan	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Thailand	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Vietnam	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Bangladesh	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
India	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Pakistan	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Asia	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

DEMAND, TRADE, OUTPUT & CAPACITY BY COUNTRY, TOTAL PAPER (Cont.)

Africa & Middle East, 2011e

$M to, MBH	Consumption	Trade	Output	Capacity	Op. Rate %
UAE	221	-221	0	0	
Iran	693	-244	149	220	68%
Israel	299	-139	140	170	82%
Saudi	276	-276	0	0	
Turkey	644	-444	220	310	71%
Other ME	665	-413	8	10	80%
Algeria	122	-82	14	21	64%
Egypt	243	-178	115	170	68%
Morocco	81	-54	22	40	57%
Tunisia	62	-43	20	40	49%
Kenya	33	-23	9	10	90%
Nigeria	163	-147	8	10	79%
South Africa	708	-193	513	640	82%
Zimbabwe	37	3	33	55	73%
Other Africa	699	-278	12	20	58%
Total	99431	0	99831	111111	84%

DEMAND, TRADE, OUTPUT & CAPACITY BY COUNTRY, TOTAL P&B [illegible] (cont.)					
Sub-Totals, 2011e					
2011e, '000t	Consumption	Trade	Output	Capacity	Op. Rate %
Nordic	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other W Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Non EU Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Russia/Other Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
USA	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Canada	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Brazil	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Latin America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Japan	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
China/HK	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other SE Asia	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Asia	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
N Africa/M East	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Africa	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Totals					
W Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Europe	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
N America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Latin America	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Japan	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
China/HK	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other Asia [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Africa/ME	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Europe Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Asia Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]