



HAWKINS WRIGHT LTD

COMPANY PROSPECTUS - 2014

**Consultants to the International Forest Products
Industries – Pulp, Paper and Bioenergy**



**Serving the global forest
products industries**

For more information visit

www.hawkinswright.com



About us

Hawkins Wright is an independent consultancy providing a range of strategic, forecasting, market intelligence and business information services to the international forest products and bioenergy industries.

Since 1982 Hawkins Wright has provided authoritative and cost-effective services based on in-depth research of the global forest, pulp & paper and bioenergy industries. These services include private consultancy assignments covering a full range of marketing and strategic subjects as well as regular multi-client reports and newsletters.

Our consultancy services build on our global perspective of the macro- and micro-economic trends driving the international forest industry and downstream product markets. Assignments can range from advice on a client's business development or feedstock sourcing strategies to highly detailed market feasibility assessments of prospective projects.

Our client list includes leading pulp and paper manufacturers from around the world, energy companies, forest owners, pulp, paper and biomass agents and traders, financial institutions, equipment and raw material suppliers, and national, state and provincial governments and agencies.

Pulp and paper



- Pulpwatch a monthly analysis of developments in the global market pulp industry
- The Outlook for Market Pulp, demand, supply, costs and prices
- Defining the China Market for Pulp, Paper and Board
- The Outlook for Dissolving Pulp, demand, supply, costs and prices

Bio-energy



- Forest Energy Monitor, a monthly analysis of developments in the global biomass industry
- The Outlook for wood pellets, demand, supply, costs and prices

Consultancy



- Tailor-made and confidential market research and consultancy services to clients in the global forest products industry and in allied businesses.

Conferences



- Organiser of the annual London Pulpweek Symposium
- Organiser of the annual Shanghai Pulpweek Symposium

(In addition to our regular multi-client reports, we also offer publish a range of 'one time' studies. For more information, please see page 15-17)

About us - management

Hawkins Wright staff possess specialist knowledge of the pulp, paper, biomass and bioenergy industries and are equipped to respond creatively to complex assignments. We are also able to call upon a network of associates able to provide expertise in, for example, corporate strategic development, resource valuation, and forest investment.

ROGER WRIGHT

- Roger founded Hawkins Wright in 1982 following a career in the paper industry and latterly in management consultancy and market research. He has built Hawkins Wright into one of the world's leading authorities on the global forest industries and markets.

- He travels widely and is involved in all private consultancy assignments undertaken by the company. Over the past thirty years Roger has lead over 1000 research and consultancy assignments in over fifty countries. He has made contributions to numerous industry publications and he frequently addresses audiences at international forest industry conferences.

TOM WRIGHT

- After training as an accountant, Tom joined Hawkins Wright in 1998. He undertakes most of the private client consultancy assignments on a wide range of topics related to the pulp and paper sector. He is the co-author of the "Outlook for Market Pulp" and makes regular contributions to "Pulpwatch". He is the principal author of the Asian multi-client studies. The "Defining the China Market for Pulp Paper & Board" enjoys industry wide recognition and is now in its eighth year of publication.

- Tom travels widely; both in the course of market research and also as a frequent speaker to private meetings and industry conferences

JOHN BINGHAM

- John Bingham is an agricultural economist with over twenty-five years' experience as an analyst and consultant in the natural resource industries, initially in agricultural markets and subsequently in metals, chemicals, pulp and paper and most recently in bioenergy markets. He joined Hawkins Wright in 1994.

- He has been responsible for developing the firm's bioenergy practice and remains the principal author of the Forest Energy Monitor report and of many private- and multi-client studies. He has undertaken consultancy assignments for individual clients in more than thirty countries.

OLIVER LANSDELL

- Oliver is an industry analyst and consultant with more than 12 years experience in the international pulp and paper industry. He has been with Hawkins Wright since 2007, working as one of the editors of 'Pulpwatch', Hawkins Wright's monthly newsletter, the co-author of the 'Outlook for Market Pulp' service, and the principal author of the 'Outlook for Dissolving Pulp' service. Prior to joining the company, Oliver worked as an analyst with the Canadian Pulp Association in Montreal, Canada.

- Oliver has lead multiple consultancy projects including feasibility studies for pulp mills in Latin America, Russia and South East Asia. He presents frequently at industry gatherings. firm's bioenergy practice.

FIONA MCDERMOT

- Fiona joined Hawkins Wright in June 2013 and has worked in the bioenergy sector for five years. Her experience of the sector covers energy conversion technologies, biomass markets, sustainability, and policy/regulatory regimes. As Research Manager at Hawkins Wright her role includes the Deputy Editorship of Forest Energy Monitor. She is also responsible for delivering private- and multi-client studies relating to bioenergy.

- She has a degree in Physics from the University of York and is an APMP qualified Project Manager.



- 12 issues per year

Pulpwatch is a monthly newsletter and dedicated web-site covering developments in the international pulp and paper markets.

The pulp market is dynamic and complex and the factors driving the market are often obscured by a lack of price transparency. The Pulpwatch market commentary interprets and puts into context the constantly changing balances in the pulp market, essential to an understanding of the market's likely future direction. Aside from the main commentary, other regular sections of the newsletter include an analysis of pulp derivative markets (swaps and futures), the impact of exchange rates and developments in printing and writing paper and tissue markets.

In an Industry focus section each month, Pulpwatch focuses on developments that are changing the shape of the industry. The coverage includes, for example, in-depth analysis of important pulp producing or consuming markets; the impact of investment plans on regional and world pulp and paper supply/demand balances; and the influence of changing raw material costs and exchange rates on producers' competitive advantages.

The Key statistics section of Pulpwatch is the most timely and comprehensive source of publicly available pulp and paper market data. The monthly data series include:

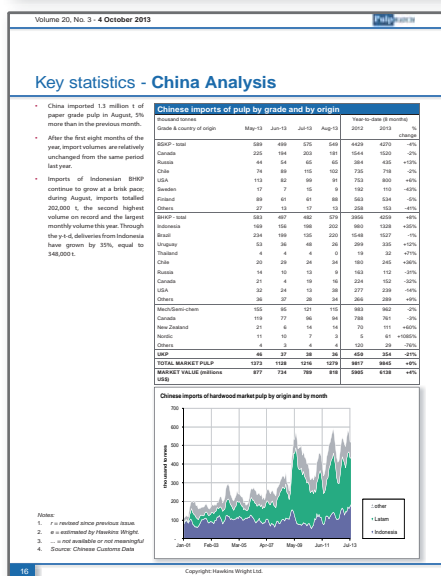
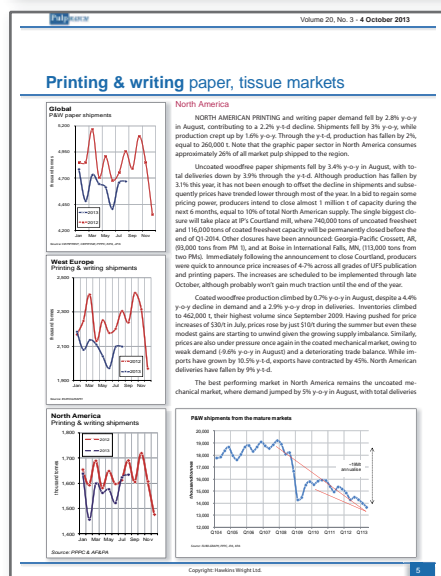
- Paper makers converting margins by region
- Printing and writing paper shipments by region
- Demand for bleached chemical market pulp by grade
- Demand for bleached chemical market pulp by region
- Shipments of bleached chemical market pulp by region of origin
- Production of bleached chemical market pulp by region
- Pulp producers' operating rates
- Producers' inventories of bleached chemical pulp by grade
- Consumers' inventories of purchased pulp by region
- The ratio of pulp shipments to inventories
- Days supply represented by producers' stocks
- China's imports of pulp by grade
- Global average wood fibre price by quarter
- Market pulp price indications (35 pulp price series are updated monthly)

ALL of the data published in Pulpwatch is available to subscribers in excel format. Most is available online at www.pulpwatch.com

Data which is not published online is available on request.

Price: from £1280/yr (single user) or £2500/yr (corporate user)

More information: www.pulpwatch.com





Outlook for market pulp (annual service)



The Outlook for Market Pulp Supply, Demand, Costs and Prices. This multi-client service – to which companies controlling 90% of global market pulp capacity already subscribe – includes an in-depth report published three times a year as well as our telephone/email response to any ad hoc questions throughout the year.

The Outlook for Market Pulp service was launched in 1984. It is now established as a vital planning tool for any company or organisation that requires access to the most authoritative analysis of the market pulp sector. Because this programme of research has continued without interruption for many years, Hawkins Wright has been able to develop an extensive bank of data, experience and contacts.

Over ninety organisations regularly support The Outlook service. These include pulp producers — who together account for 90% of world supply — buyers, international agents and trading houses, state and provincial governments and financial institutions.

The Outlook service comprises:

Three main reports published in March, July and November, containing detailed supply, demand and price analyses and five-year forecasts. (The July report also contains the results of Hawkins Wright's unique pulp production cost survey.) The reports are distributed as electronic and hard copies.

Three interim forecast updates, published in January, May and September. Taken together with the main reports, these updates allow the key forecast data and assumptions – in particular the price forecast – to be updated every two months. Distributed electronically.

A personal presentation: it will usually be possible for a Hawkins Wright consultant to meet with each client at least once a year to make a presentation on market developments.

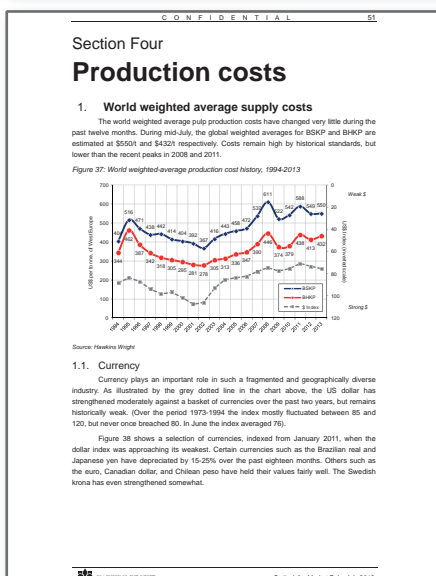
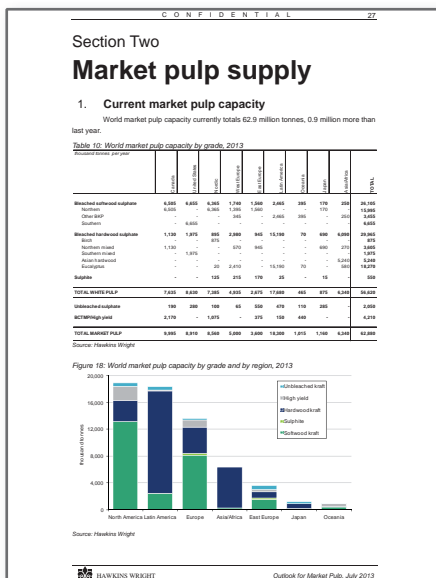
Subscribers also receive Hawkins Wright's response to any questions on pulp & paper markets that may arise during the year.

The data published in the Outlook report is distributed to subscribers in excel format, including any historical data. This data includes:

A PowerPoint presentation containing all of the charts in the report is also made available to subscribers.

Price: £4950/yr

More information: www.hawkinswright.com/Pulp_and_Paper-Outlook_for_Market_Pulp

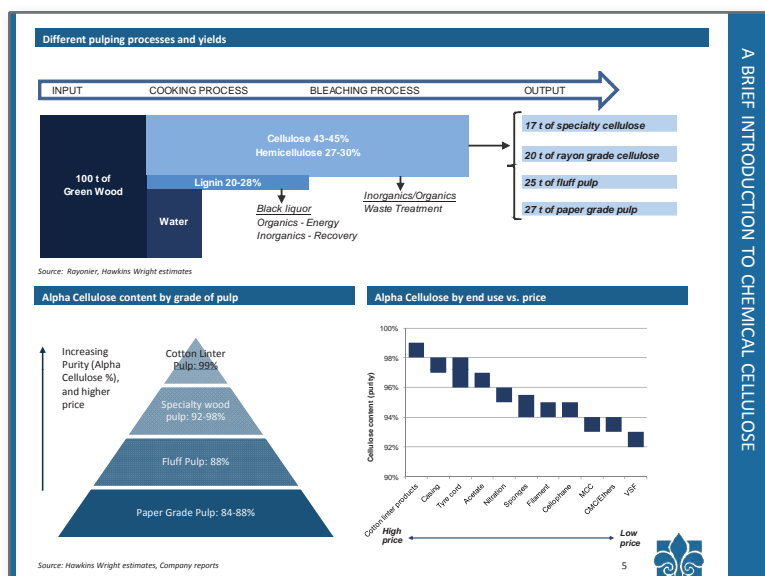




Outlook for dissolving pulp (annual service)



The Outlook for Dissolving Pulp, Supply, Demand, Costs and Prices. This multi-client service – to which companies controlling more than 85% of global dissolving pulp capacity already subscribe – includes an in-depth report published four times a year as well as our telephone/email response to any ad hoc questions throughout the year



As the dissolving pulp market has grown in prominence, our existing customer base has asked that we draw on our expertise of analysing the paper grade pulp market to produce a similar analysis of the dissolving pulp market. After several years of data collection and analysis, we launched the Outlook for Dissolving Pulp Demand, Supply and Prices in March 2013. The service has quickly established itself as one of the most authoritative in the industry, with some of the largest and most knowledgeable companies in the sector commenting on its accuracy and value.

The service in brief...

Hawkins Wright's unique service delivers:

Two main reports published in March and September, containing detailed supply, demand and price analyses and five-year forecasts for dissolving pulp. The reports are distributed as electronic and hard copies.

Two interim price forecast updates, published in June and December. Taken together with the main reports, these short update reports allow the key forecast data and assumptions – in particular the price forecast – to be updated every quarter. Distributed electronically.

Hawkins Wright's response to any questions that the subscriber may have on matters relating to the international dissolving pulp market throughout the year. In this way Hawkins Wright can be used as a virtual extension of the subscriber's own marketing or market research department.

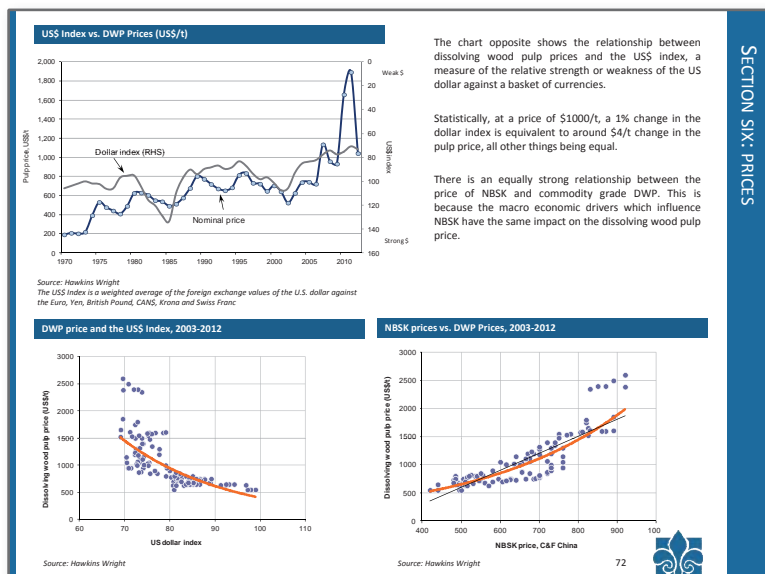
A personal presentation: it will usually be possible for a Hawkins Wright consultant to meet with each client at least once a year to make a presentation on market developments.

For dissolving pulp producers, an annual subscription to the Outlook for Dissolving Pulp service costs **£3,950**.

Existing subscribers to Hawkins Wright's services qualify for a discounted price of **£3,450**.

(Discounted subscriptions are available on request for non-dissolving pulp producers)

More information: http://www.hawkinswright.com/Pulp_and_Paper-Dissolving_Pulp





Defining the China market for pulp, paper and board (annual service)



Defining the China Market for Pulp, Paper and Board. This annual report, first published in 2003, provides a uniquely detailed analysis of the Chinese industry and its prospects.

Market research in China has typically been over-reliant on rudimentary assumptions regarding relationships between GDP per capita and paper consumption. More often than not, no consideration is given to the type of GDP growth (e.g. fixed asset investment rather than domestic consumption), nor to the massive inequalities which exist in China: over 800 million Chinese have incomes so low that they are unlikely ever to consume papers based on expensive primary wood pulp and imported recycled fibre.

The report 'Defining the China Market for Pulp, Paper, and Board' was first published in March 2003. One of our main objectives is to segment the market: to define the production and consumption of the higher quality grades of paper & board separately from the production and consumption of China's traditional grades based largely on non-wood fibres and locally collected wastepaper.

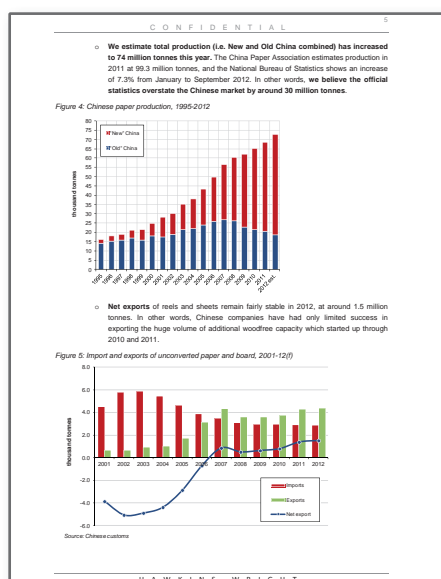
Official statistics of paper production and consumption in China are too general and out of date to be of practical use, and in many cases are contradictory and unreliable. Although the report incorporates all available published information this is augmented by extensive primary research throughout the year.

We have been encouraged by our subscribers to review and update the research on an annual basis. The report has become recognised by the industry as the most detailed and comprehensive analysis available. In addition to the report, subscribers benefit from continuous updates on the Chinese market and individual projects on request, throughout the year.

Availability: Available now. A subscription may start at any time of the year.

A subscription to 'Defining the China Market' costs **£5,000** (or the equivalent in euro or US dollars). Subscribers to previous issues of the report qualify for a discounted price of **£2,750**.

More information: www.hawkinswright.com/Pulp_and_Paper-Defining_the_China_Market



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Appendix Three: Mill database

In the following pages we comment on the main companies and expansion plans. Companies with operations across China are listed first. Thereafter companies are listed by province, starting with the key provinces: Shandong, Jiangsu, Zhejiang, and Guangdong. The other provinces follow, listed alphabetically. Maps showing the location of the mills/projects in the four key provinces can be found at the back of the report.

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Forest Energy monitor

- 12 issues per year

Forest Energy Monitor provides an in-depth analysis of international biomass and wood pellet markets, investments and legislation

The market for bioenergy continues to grow extraordinarily quickly. Meeting ambitious targets for renewable energy will require ever larger quantities of forest biomass to be mobilised, potentially matching the volume of wood currently used by some traditional forest based industries. As a result, energy wood, and particularly wood pellets, are becoming internationally traded commodities.

This aspect of the market is sometimes poorly covered by existing publications. Forest Energy Monitor fills this gap by taking an analytical approach to the development of global biomass and pellet markets.

Forest Energy Monitor is now published twelve times a year, with six 'main' reports supplemented by six 'interim' reports. The coverage is global, but the focus is Europe and North America. Each issue addresses three main themes:

Developments in forest biomass and pellet markets. This includes detailed coverage of market prices for energy wood and pellets, as well as biomass cost/price drivers such as forest and sawmill activity, freight rates, currencies, fossil energy markets and competition from non-wood biomass.

The feedstock implications of new investments and technologies. For example, the feedstock requirements of the many biomass power plants planned for the UK, Europe and North America. Other subjects will include wood pellet capacity growth; the status of wood-based biofuel technologies; shipping and logistic infrastructure; plantation investments in Africa, Latin America and Asia; and biorefinery developments at pulp and paper mills, etc.

National and international policies and legislation. The report follows the development of renewable energy policies and changes to incentives and regulations that have an impact on biomass and pellet demand and supply.

Forest Energy Monitor aims to be an essential tool for forest owners, pellet producers and biomass suppliers, sawmills and wood panel producers, pulp and paper companies, energy companies and utilities, shipping companies and port operators; equipment suppliers, financial institutions, policy makers and academics.

A subscription to Forest Energy Monitor includes..

12 issues a year (6 'main' reports and 6 'interim' reports)

a pdf copy sent to as many of your colleagues as you wish

a printed copy of each 'main' report sent by post. ('Interim' reports are only distributed electronically.)

access to this website where you can download back issues and other information

our response to any ad hoc questions on biomass and bioenergy that may arise throughout the year.

We place no restrictions on the distribution of the report within a subscriber's company, so you can share it with as many of your colleagues as you like.

Price on demand

More information: www.hawkinswright.com/Bioenergy-Forest_Energy_Monitor

HAWKINS WRIGHT		Issue 29 - August 2013
Forest Energy monitor		
BIOMASS & PELLETS — MARKETS — INVESTMENTS — LEGISLATION		
SNAPSHOT:	Jul-13	Aug-13
International wood pellets price (EU ETS price)	125.58	120.89
EU ETS price	27.54	27.39
International wood pellets price (EU ETS price - EU ETS price)	29.59	29.59
Wood pellets - Germany (EU ETS price)	269.37	274.10
Wood pellets - Germany (EU ETS price - EU ETS price)	67.07	68.07
Wood pellets - Austria (EU ETS price)	252.00	257.00
Wood pellets - Austria (EU ETS price - EU ETS price)	51.40	52.40
Wood pellets - UK (EU ETS price)	305.05	305.05
Wood pellets - UK (EU ETS price - EU ETS price)	67.81	67.81
EU ETS price	76.59	75.47
EU ETS price	8.44	8.12
EU ETS price	4.25	4.42
EU ETS price	45.12	47.42
EU ETS price	30.05	30.05
EU ETS price	19.12	20.58
EU ETS price	2.39	1.97

HAWKINS WRIGHT		Forest Energy monitor
BIOMASS AND WOOD PELLET MARKET ANALYSIS		
As winter approaches, European buyers of residential and commercial heating pellets are facing prices that are already much higher than at this time last year. In Germany and Austria, the usual softening of prices during the summer was barely noticeable and prices are already rising again. In Germany, the average price quoted by DEPV in August was €274/t, 20% more than in August last year. The August price from producers in Austria was €247/t, 13% more than a year ago.		
As discussed on page 5, the main driver of the increase in the price of heating pellets in Germany – and in Austria too – is a rise in the cost of feedstock. Sawmill prices in Germany are 46% higher year-on-year, a rise caused primarily by a reduced supply of sawlogs and a reduction in sawmill output. Pellet producers are said to be operating at full capacity, building stocks ahead of the heating season and we are not aware that production is being curtailed. The limits on sawdust supply may, however, be constraining growth in German pellet production – as well as increasing the suppliers' costs – and this could set the scene for a tighter demand/supply equation through the winter.		
DEPV/DEPV data show that German pellet production increased by just 2.9% in January-June 2013, but that the installed base of pellet boilers and stoves increased by 20,000 units (~7%) during the same period. The DEPV projection is that 7.9 TWh of heat will be generated from pellets in Germany in 2013, 14% more than last year. If so, the resulting increase in demand for pellets in Germany will most likely cause a reduction in Germany's export availability, tightening the heating pellet markets in countries historically dependent on German supply, e.g. Denmark, Italy and Austria.		
There are already signs that the market is responding by shifting material into the heating pellet market from the currently over-supplied industrial market. Most industrial pellets do not meet the more stringent ENplus quality standards required by residential customers, though industrial mills can certainly be adapted to reach the higher standards required by, say, commercial-scale heating plants. Some suppliers are		
Prices of wood pellets in selected European countries – January 2008 to August 2013		
<p>Note: Where original pellet price data is not available, the average cost of a pellet is assumed to be €4.75/tonne. The UK Pellet Continental index is reported in euros/tonne and assumes a calorific value of 4.5 MWh/t.</p>		

HAWKINS WRIGHT		Forest Energy monitor
ELECTRICITY GENERATION ECONOMICS		
Readers will have noticed that we have made some changes to the data and analysis presented on page 2 of the report. The Biomass Costing Index (BCI) – which we have published since FEM was launched in 2009 – has arguably out-lived its usefulness. In the UK the main interests of policy makers and electricity generators has shifted from the closing of biomass towards the full conversion of existing coal-fired plants. Costing still has a role in other jurisdictions, but it is a more limited one than was envisaged a few years ago. We have therefore changed the way we present an analysis of the economics of electricity generation using		
The calculation of Clean Dark, Clean Spark and Wood Pellet Spreads		
United Kingdom - August 2013		
Electricity price (Base load)	€MWh	47.42
Fuel price (input energy)	€MWh	23.54
Fuel efficiency	€MWh	38.26
Fuel price (output energy)	€MWh	48.38
Carbon cost (EU ETS price)	€MWh	-3.80
Carbon cost (UK Carbon Price Support)	€MWh	-4.94
Total carbon cost (net)	€MWh	-8.74
CO2 emissions factor	€MWh	0.97
Total carbon cost (net with output)	€MWh	-8.46
CO2 price (€/tCO2e)	€MWh	43.85
LEC price (€/tCO2e)	€MWh	0.24
Combined value of incentives	€MWh	43.89
CLEAN SPREAD (electricity price minus fuel, minus carbon, plus renewable electricity incentives)	€MWh	39.95
WOOD PELLETS (electricity price minus fuel, minus carbon, plus renewable electricity incentives)	€MWh	20.55
WOOD PELLETS (electricity price minus fuel, minus carbon, plus renewable electricity incentives)	€MWh	-1.37
<p>Note: The calculation of the Wood Pellet Spread is based on a 100% coal-to-biomass conversion and that receives support – in the form of a 100% – under the Renewable Obligation. Source: Hawkins Wright</p>		
Generation economics in the UK: Clean Dark, Clean Spark and Wood Pellet Spreads, 2010-2013		



Outlook for wood pellets (annual service)

Pulpwatch is a monthly newsletter and dedicated web-site covering developments in the international pulp and paper markets.

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Trend price forecast
Baseline forecast
Antidumping duties
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Other multi-client reports

Global Market Pulp Demand by End Use (September 2013)



The price of a subscription

Available now, the report costs **£1450** and is deliverable by Email in PDF format.

Subscribers to Hawkins Wright's Outlook service qualify for a discounted price of **£650**.

A subscription includes: a PDF copy of the report.

This report quantifies the demand for different grades of market pulp according to end use applications and by region. The report is based on a survey of global producers who were asked to split their 2012 sales by destination according to the following sectors:

- Newsprint, Coated and uncoated woodfree(freesheet), Coated and uncoated mechanical, Tissue, Fluff, Specialties, Packaging & other

Suppliers representing 70% of global market pulp supply participated in the survey; the end uses for the remaining 30% of supply were estimated based upon interviews with marketers of pulp with detailed knowledge of specific markets, and based upon our own extensive data-bank and industry knowledge.

The study provides readers with an accurate assessment of the relative importance of each of the major end-use sectors by grade and by region. Comparisons with historical data reveal how the different markets are evolving. This data can be used to better inform demand forecasts and estimates for future global pulp trade.

The grades covered in the report include: NBSK, other BSKP, BEKP, and other BHKP.

The regions covered by the report include: North America, West Europe, Latin America, Japan, China and Other World. For China, end-use estimates for high yield market pulp are also provided.

Defining the Indian market for pulp, paper and board (September 2013)



The price of a subscription

Available now, the report costs **£1650** and is deliverable by Email in PDF format.

Subscribers to Hawkins Wright's Outlook service qualify for a discounted price on demand.

A subscription includes: a PDF copy of the report.

The initial report has been produced from desk research. It comprises two parts; a main report consisting of 34 slides, and an 18 page appendix containing company profiles, maps, capacity expansion plans and a summary of the 20 top-tier paper producers by output and grade. The main report is structured as follows

- Economic summary.
- Paper industry structure, historical growth rates from 1997
- Forecasts of paper production & demand to 2017. Forecasts of fibre consumption and imports, by grade
- A detailed review of each sector; newsprint, printing & writings, packaging grades, tissue & specialties; identifying the major players and degree of import penetration
- Fibre consumption by grade. A review of Indian pulp production and domestic pulp wood resources, by company
- Pulp and recovered fibre imports by grade and region

Other multi-client reports

The Outlook for Fibre Consumption in the Tissue Industry (September 2012)

Historically, as the price of recycled fibre has increased, so too has the price of virgin fibre thereby offsetting any benefit in substituting between the two. However, since January 2010 the relationship has decoupled with SOP (sorted office paper) prices almost doubling compared with only marginal growth in the pulp price. Whereby the ratio of BHKP prices to SOP averaged 7x during the period 2001-2009, the ratio since January 2010 has averaged 5.9. It is this decline in the ratio which has caught the attention of papermakers, in particular certain tissue manufacturers in North America and Europe.

This report examines how the relationship between recycled and virgin fibre is likely to evolve through until 2020 and the impact this relationship will have on the furnish trends of the tissue industry. The key themes reviewed in this report include: the outlook for global tissue production, fibre consumption trends in the tissue sector, supply/demand outlook for virgin and recovered fibre, and the comparative costs of producing virgin and recycled content tissue paper. The report concludes by quantifying the potential for substitution between recycled fibre and virgin fibre. Aside from the price of fibre, other issues which may dictate the decision making of a fibre procurement manager are also reviewed including the capital considerations (where installing virgin fibre refining capacity or revamping ageing deinking assets) and the ecological benefits of RCF vs. virgin fibre.



The price of a subscription

Available now, the report costs **£2350** and is deliverable by Email in PDF format.

Subscribers to Hawkins Wright's Outlook service qualify for a discounted price of **£1950**.

A subscription includes: a PDF copy of the report.

Defining the Market for Pulp, Paper and Board in the Middle East

The Middle East represents one of the fastest growing markets for pulp, paper and board in the world. Paper and board demand has grown by an average of 5% pa over the past 5 years, whilst production has increased by just 2% pa. As such, imports have satisfied most of the growth in paper demand, averaging over 8% pa. There has also been significant investment in tissue capacity, which has promoted market pulp demand growth of 8% pa since 2002..

The report provides a brief economic and demographic overview of this extremely diverse and complex region. We highlight the main drivers of paper and board demand over the past decade, and discuss the possible impact from the unfolding Arab Spring and eurozone debt crisis.

The report provides historical production and trade data for each grade of paper and for the main markets, and make forecasts to 2020.

The report analyses the fibre requirement of the region, and identify the sources of supply, again making forecasts to 2020 by market and grade.

The report concludes with an appendix profiling every major pulp and paper producer in the Middle East, and identifying planned investment in paper and board capacity.



The price of a subscription

Available now, the report costs **£2350** and is deliverable by Email in PDF format.

Subscribers to Hawkins Wright's Outlook service qualify for a discounted price of **£1950**.

A subscription includes: a PDF copy of the report.

(please note that updates of these reports are available on demand)



Other multi-client reports

The future for biomass power generation in the United Kingdom (February 2013)



The price of a subscription

Available now, the report costs **£3500** and is deliverable by Email in PDF format.

Subscribers to Hawkins Wright's FEM service qualify for a discounted price of **£3200**.

A subscription includes: a PDF copy of the report.

This report examines in detail the changing structure of the UK electricity market. It describes the increasingly important role that will be played by biomass power generation if policymakers fulfil their promises and refrain from erecting new obstacles. The emergence of a potentially serious energy gap in the UK, together with the need to meet carbon and renewable energy commitments, has highlighted the critical importance of biomass as a low-carbon fuel. Biomass can quickly and relatively cheaply replace coal in existing coal-fired plants – many of which would otherwise shut for economic or environmental reasons – and can be used as a source of baseload power, something which other renewable technologies cannot.

The report also...

- Analyses the evolution of energy and climate change policy in the UK and the detailed workings (and the short-comings) of the regulatory instruments that have been devised to deliver the desired policy outcomes. This includes the Renewables Obligation, The Carbon Price Floor, Feedin Tariffs with Contracts for Difference, and biomass sustainability criteria.
- Models the generation economics of different forms of biomass power generation: coal-to-biomass conversion, co-firing, dedicated biomass and CHP.
- Assesses the competitiveness and the wood-paying capability of different groups of biomass power generators and the net present value of different biopower strategies.
- Forecasts UK biopower capacity, generation and feedstock demand, including a risk-adjusted forecast of imported wood pellet demand.

The Supply Chain Economics of Biomass Torrefaction (January 2012)



The price of a subscription

Available now, the report costs **£3500** and is deliverable by Email in PDF format.

Subscribers to Hawkins Wright's FEM service qualify for a discounted price of **£3200**.

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Consulting services

Hawkins Wright is an independent consultancy providing a range of strategic, forecasting, market intelligence and business information services to the international forest products and bioenergy industries.

Hawkins Wright provides tailor-made and confidential market research and consultancy services to clients in the global forest products industry and in allied businesses. Assignments typically include advice preceding a proposed investment project, the development of a business strategy, and detailed research on a particular aspect of a forest product market. We regularly undertake market due diligence assignments on behalf of project developers and financial institutions.

Hawkins Wright staff possess specialist knowledge of the pulp, paper, biomass and bioenergy industries and are equipped to respond creatively to complex assignments. We are also able to call upon a network of associates able to provide expertise in, for example, corporate strategic development, resource valuation, and forest investment.

Our client list includes leading pulp and paper manufacturers from around the world, energy companies, forest owners, pulp, paper and biomass agents and traders, financial institutions, equipment and raw material suppliers, and national, state and provincial governments and agencies.

PULP AND PAPER

In the pulp industry, companies that control over 90 percent of global market wood pulp capacity are subscribers to our services, in some cases since Hawkins Wright was established in 1982. We also have regular dialogue with most of the largest end users of pulp in the world, including printing and writing paper producers, tissue producers and specialty paper makers. This deep penetration of the global forest products markets has allowed us to develop high level contacts throughout the industry and unique insights into the trends that are driving the strategic decisions of forest products companies worldwide.

Our pulp and paper consultancy services include the following:

- Due diligence for proposed investment projects
- Marketing strategy development including end-use market intelligence
- Identifying new business offerings
- Supply/demand analyses and price forecasts
- Business analysis and competitive cost benchmarking



BIOMASS

Hawkins Wright has developed significant international expertise in the bioenergy sector and has working relationships with many of the largest players in the industry. Our biomass analyses are conducted with an understanding of the complete fibre supply chain as well as a critical evaluation of the macroeconomic and policy drivers, by region. We have recently undertaken due diligence assessments and project appraisals for investors and financiers in Europe and North America. These customized services include:

- Due diligence for proposed investment projects
- Review of production process technologies
- Marketing strategy development including end-use market intelligence
- Identifying new business offerings
- Feedstock supply/demand analyses and price forecasts
- Policy evaluation
- Supply chain evaluation
- Business analysis and competitive cost benchmarking





Consulting examples

Examples of projects primarily in the pulp and paper area

The development of a woodchip pricing mechanism for an Asian pulp and paper producer. The client required advice on the creation of transparent mechanism for calculating transfer prices between subsidiaries in different jurisdictions.

The outlook for the demand and supply of printing and writing papers in Asian markets. The study was commissioned by an international paper merchant as part of its review of strategic development options.

The development of a diversification strategy for an existing European pulp producer, looking at the risks and rewards of entering the fluff and dissolving pulp markets.

A feasibility study regarding the availability of fibre certified by the Forest Stewardship Council. This study was commissioned by Kimberly-Clark in response to a shareholder resolution calling on KCC to phase out its use of non-FSC-certified wood fibre.

The market feasibility of a project to build a bleached acacia kraft market pulp mill in SE Asia. This study was commissioned by the project's financial advisors on behalf of the project consortium.

An assessment of the UK export market for recovered paper. This study, undertaken for a UK government agency in 2005 and updated in 2007, modelled the outlook for the global recovered paper market over the next 15 years and included a risk assessment of the UK recycling industry's exposure to global prices for recovered paper.

The market feasibility of a world scale market pulp mill in Brazil. A ten-year outlook for bleached eucalyptus kraft market pulp demand, supply, and prices, including the recommendations of a marketing strategy. The financial consortium commissioned the study. (This is just one example of several such feasibility studies undertaken for investors in, and lenders to, market pulp mills in Latin America.)

Examples of projects primarily in the pulp and paper area

A due diligence assessment of prospective feedstock suppliers to a UK coal-to-biomass conversion project. The assignment was commissioned by a major shareholder in the project. The work involved visiting and assessing the capabilities of individual wood pellet suppliers in Canada and the Southern USA, modelling their supply chain costs and greenhouse gas emissions and advising our client on the intricacies of UK energy policy.

A due diligence assessment of a torrefied biomass project in the southern USA. The work involved an evaluation of the raw biomass resource, a technical assessment of the project's pilot plant and expansion plans and commercial assessment of its proposed logistic infrastructure. On the demand side, opportunities in the European market and the status and operation of renewable energy incentive schemes in different countries were assessed. The work was commissioned by a European fund contemplating an equity investment.

The future costs of wood pellet supply. This study was commissioned by a European electricity utility which required an interactive model of forward cost curves for wood pellets supplied to north-west Europe. The analysis was used to inform forward contracting decisions and the development of internal risk management procedures.

An analysis of the factors that will drive US wood markets over the next twenty-five years and the development of feedstock supply strategies to prospective wood-based biofuel plants in the southern USA. The study was commissioned by a major international oil company.

The availability of biomass feedstock in potential supply regions. This study, on behalf of a UK investor in a biomass power project, assessed the future availability of woody biomass in target supply regions as part of the development of the plant's feedstock supply strategy.

Other forest industry consultancy projects

A qualitative assessment of senior management in selected forest products companies. This report commissioned by a group representing a prospective investor.

The structure of the market for minerals and fillers - for coating grades of kaolin in particular - examining market size and usage trends, competitive advantages/disadvantages of the principal kaolin suppliers etc. The study was commissioned by a private equity fund as part of the due diligence prior to a proposed acquisition.

The medium term market outlook facing a coated woodfree paper producer planning to expand capacity in East Asia. This study was commissioned by an international lending institution as part of the syndication of the project finance.

The size and structure of the Chinese market for stock preparation equipment (refiner plates and screen cylinders). The study was commissioned by a North American equipment supplier planning an expansion into the Chinese market.



Client list

Pulp and paper

EUROPE Ahlstrom. Altri. Arjo Wiggins. AkzoNobel. Arkema. Bekaert. Billerud. Burgo. CellMark. Cham Tenero. CEPI. Continental Cellulose. De Eendracht Karton. Delfort Group. EBF. Eka Chemicals. Ekman. ENCE. European Commission. Euroports. Federation Francaise. Fedrigoni. FOEX. Frantschach. Gearbulk. Green Resources. Grieg Star. Gusco Handel. Heinzel. Holmen. International Forest Products. Iggesund Paperboard. Ilim Pulp. Imerys. Independent Waste Paper. Inkoop-Combinatie. Ipek Kagit. James Cropper. John Claes. Kimberly Clark. Korsnas. Lecta. Lenzing. LPC Group. Luzenac. Marchi. Mayr-Melnhof. McKinsey. Mercer International. Metsaliitto. Metsa Board. Metsa Fibre. Metso. Miquel y Costas. Mondi Business Papers. Neusiedler. Pap. de la Gorge. Paperlinx. Paperliitto. Ponto Verde. Portucel. Poyry. PwC. Pulp UK. Roland Berger. Saga Forest Carriers. Sappi. SCA. Södra. Star Shipping. Stora Enso. Sulzer. Systems Thinking. Tronchetti. Tullis Russell. UPM-Kymmene. WRAP. WEPA. Westfal Larsen. WWF. Zellstof Pols.

NORTH AND SOUTH AMERICA Alpac. AF&PA. Canfor. Carvajal Pulpa y Papel. Catalyst Paper. CNG. Daicel. Daishowa Marubeni. Domtar. Eldorado Brasil. Ekman. Fibre Source. Georgia Pacific. Global Speciality Papers. Hancock Timber. Harmon. International Fiber Corp. IFP. International Paper. Irving Forest. J&L. Kimberly Clark. KSH. Little Rapids. Millar Western. Meadwestvaco. Neenah Paper. Paccess. Parsons & Whittemore. Procter & Gamble. Resolute Forest Products. Sappi. SGF-Quebec. Tembec. Terra Choice. Thilmany. Trebor. Weyerhaeuser. Woods & Wayside. Arauco. Cathay Brazil. CENIBRA. CMPC. CVRD. Fibria. Grupo CCR. Jari. Klabin. Montes del Plata. Para Pigmentos. Suzano. Tuk Mexico. Veracel.

ASIA/AUSTRALIA/AFRICA Abu Dhabi N.P. Acacell. Advance Agro. APRIL. Asia Pulp & Paper. Ballarpur. Carter Holt Harvey. Cheng Loong. CNPPC. CIFOR. CITTC Beijing. Daishowa. Doosan. Enercell. Eurocell. Forestry Tasmania. Gunns. Hahn. Hansol Corp. IKPP. Indorama. Itochu. JK Papers. Malayala. Moorim. Lee Brothers Marubeni. Mazandaran. Mitsubishi. Mondi. Myanmar Paper. NCT. Office Max. Pachem. Pan Pacific. Paperlinx. Poyry Consulting. Protavia. PT TEL. Pulp United. Rhyovis. Rodamas. Roxcel. Saengfah. Sappi. SCG. Sify. Sinocan. Sojitz. Sumitomo. Sumisho Paper. Temasek. Tradim. Viet Paper. Welbon. Xiamen C&D.

Biomass related industries

Aeternum Capital. Altus Renewables. Alpac. Andritz. APRIL. APX-ENDEX. Arauco. Arbaflame. Arctas Capital. Associated British Ports. Biovoice UAB. BMC Management. Boston Consulting. Brazilian Pellets. Buchanan Renewables. Caima Energia. Canadian High Commission. Canfor. Carbon Trust. Cargill. Carter Holt Harvey. Catalyst Paper. Cellmark. Centrica. CEPI. Ceres Bio Ventures. Choren Industries. Clean Tech. CMPC. CN Railway. Conifex. Dalkia. Dallesprom. Deere & Co. Drax Power. Duke Energy. Earth Care Products. Eggborough Power. Eifer. Ekman Eko Energy. Eneco. Essent. E.ON Climate and Renewables. Equity Research. Euro Fibres. Expertos Forestales. Farines. Fibreco. FIM Services. Fitzpatrick Woods. Flour. FOEX. FPAC. Forestal del Sur. Forisk. Fram Renewable Fuels. Gearbulk. Georgia Biomass. Georgia Pacific. Global Forest Care. Global Forest Partners. Great Northern Timber. Green Circle Bio Energy. Green Energy. Green Resources. Greenfields Consulting. GreenWood Resources. Helius Energy. IFC. IFP. Iggesund. Integro Earth Fuels. International Energy Crops. International Materials. Itochu. J.Muller Breakbulk Terminal. Korsnas. KPMG. Kruger. KSH Solutions. Ledcor CMI. Losan Gestion Integral. C.Mackprang. McKinsey. Metsaliitto. Metso. MGT Power. Millington Advisory. Mitsui OSK Shipping. Mondi. MTK Forestry. Neova. New Zealand Wood Fibre. Norske Skog. NYK. Parsons & Whittemore. Pentarch. Pike & Cia. Pinnacle Pellets. Platou Shipbrokers. Plum Creek Timber. Portucel. Poyry Capital. Pristine Power. Pro Pellets. PwC. Quebec Min. Natural Resources. Renewable Power Systems. RES New Ventures. River Basin Energy. RMK Timberland. RWE. Scottish Woodlands. SFM Environmental Solutions. Shell Global Solutions. Silvicapital. Sojitz. StoraEnso. Sumitomo. Suzano. Sveaskog. Teyma. The Clean Energy Co. Thilmany. TWK Agriculture. Univ.of Tennessee. UPM. USSE. Verdo Renewables. West Coast Energy. Weyerhaeuser. Whispering Pines Energy. Wood Pellet Assoc. of Canada. WRAP. Zilkha Biomass Energy.

Financial Institutions

Adventity. Agression. AIG. ANZ Banking Group. APAX. Atticus Capital. Avenue Asia SSF. BanChile. Banco Espirito Santo. Banco Itau. Banco West LB. Bank of Tokyo-Mitsubishi. Bayerische Landesbank. BBVA. BoA Merrill Lynch. BNDES. Chicago Fundamental Inv. Citi Research. Credit Suisse First Boston. Caixa Banco. Chuo Mitsui Trust & Banking Co. Ltd. Capita Corp. Daewoo Securities. Daishin. Deutsche Bank. Des Jardins Securities. Enskilda Securities. Eugene Investments. Export Development Corp. First Commercial Bank. Fidelity Investments. First Asset Securitization. Fitch Ratings. Goldman Sachs. Handelsbanken Capital. ICRA India. IBS Insurance. IFC World Bank. Impala. Indevco. Kreditanstalt fur Wiederaufbau (KfW). JP Morgan Chase. JP Capital. Kookmin. Larrain Vial. Mizuho. Morgan Stanley. Nordea Bank. Pamplona Funds. Poyry. Rhone Group. RBC. Regions. Salman Partners. Salomon Smith Barney. Sampo Bank. Santander. Schroders. Sequana. Shinhan Bank. Star Capital. Sumitomo Bank. Tell Investments. Thomson Financial Services. Tongyang Securities. Tradition. UBS. Woori. Xylem Global Partners.



Conferences

Hawkins Wright and BWPA London Symposium - every November

The BWPA and Hawkins Wright Symposium has become a key event during the annual London Pulp Week. The events brings together the senior management of the world's leading producers of market pulp, suppliers, logistic companies, financial institutions and their customers for a first-rate informational and networking opportunity.

For more information:

www.pulpweek.co.uk

www.bwpa.org.uk/

For sponsorship opportunities, please contact:

post@hawkinswright.com



Hawkins Wright Shanghai Symposium - every March

The Hawkins Wright symposium is now established as the focal point of Shanghai Pulp Week. Last year the Symposium attracted more than 300 industry participants, representing 130 companies from over 25 countries. The delegates were evenly balanced between pulp suppliers, accounting for 75% of global market pulp supply, and major Chinese buyers.

We are once more assembling a high quality programme for 2015 comprising CEOs from North and South America, Europe, and Asia. Further details will be announced shortly. For more information, including sponsorship, please contact

post@hawkinswright.com

We look forward to seeing you in Shanghai next year!

For more information:

www.shanghaipulpweek.com

For sponsorship opportunities, please contact:

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