HAWKINS WRIGHT

Outlook for Dissolving Pulp

Supply, Demand, Costs and Prices

A multi-client service, available now

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What our Outlook for Dissolving Pulp service offers...

We launched the Outlook service 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. Today, dissolving pulp producers who account for over 80% of supply subscribe to the service, as do a vast array of buyers, international agents and trading houses, state and provincial governments and financial institutions. Our unique analysis looks at the performance of the dissolving pulp sector in conjunction with the paper grade pulp sector.

The Outlook for Dissolving Pulp service comprises 4 reports per year that provide analysis of:

- **Dissolving pulp demand.** Previous- and current- year review, 10-year historical analysis by region/country. 5-year forecast demand by country. End-use market review, including wood based textile fibre capacity listing by mill. Developments in paper grade pulp market and the impact on DWP sector. Specialty cellulose demand by grade.
- **Textile market review.** Overview of supply and demand trends in the cotton and polyester industries and a discussion on the likely impact on the demand for wood based textile fibre and dissolving pulp.
- **Dissolving pulp supply.** Current DWP capacity by mill and an overview of paper grade capacity and analysis of potential conversions to DWP. 5-year capacity forecast summary, by grade and by mill.
- **Supply/demand balance.** Long term annual projections and a discussion about short term fundamentals.
- **Production costs.** Regional supply costs for commodity grade dissolving wood pulp. The Industry's cost curve. Trends in global fibre prices. (The cost data is sourced from Hawkins Wrights unique annual cost survey).
- **Prices.** Macro-economic review. Impact on cost competitiveness of exchange rate fluctuations. Dissolving pulp in the context of other global commodities, including paper grade pulp. Five year price forecast for commodity DWP cif. China. BEKP net price forecast. Outlook for specialty grade dissolving pulp prices.

The following pages include a table of contents and list of figures and tables included in a typical Outlook for Dissolving Pulp report.

About Hawkins Wright

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.

The contents of a typical report

Section One:

Chemical Cellulose Historica Demand

World chemical cellulose demand by region

World dissolving wood pulp demand by region

World cotton linter pulp demand by region

Specialty grade DP demand

Chinese import demand by country of origin

Chemical cellulose demand in the context of paper grade pulp demand

Global paper and board market review

Section Two:

Chemical Cellulose Forecast Demand

End-use markets for chemical cellulose

The global textile industry

Cellulosic fibre production by region/ country

Cotton market summary

Polyester market summary

Viscose market summary

World wood based textile fibre capacity by region

Acetate and Ether grade market review

Chemical cellulose demand forecast by region

Rayon grade demand forecast by region

Specialty grade demand forecast by region

Section Three:

Chemical Cellulose Supply

World chemical cellulose capacity by region and by grade

Project description by region

Capacity table by country

Paper grade pulp capacity review

Section Four:

Chemical Cellulose Supply & Demand

Dissolving wood pulp supply and demand ratio

Commodity grade supply and demand ratio

Specialty grade pulp supply and demand ratio

Paper grade pulp supply and demand ratio

Section Five:

Chemical Cellulose Production Costs

Wood fibre costs by region

Cotton linter pulp cost review

Global weighted average cash cost of production for rayon grade producers

Commodity grade dissolving pulp cost curve

Paper grade cash cost summary

Section Six:

Price Forecast

Macro economic review

Dissolving wood pulp prices vs. other commodities

Dissolving wood pulp price and the US$ index

Dissolving wood pulp price and BEKP prices

Dissolving wood pulp prices in other currencies

Historical trend price in real and nominal terms

Trend price forecast

Baseline forecast (commodity and specialty grade)

Antidumping duties

Risks to the forecast

Appendices:

DWP capacity by region and by mill

Wood based textile fibre capacity by region and by mill

World chemical cellulose demand since 1960

Trend DWP pricing, nominal and real

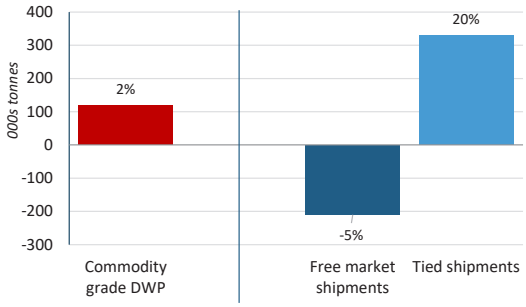
List of Tables and Figures contained in a typical report

List of Tables and Figures contained in a typical report (continued)

Sample pages

Tied/integrated shipments of DWP

DWP (commodity grades), demand growth, tied vs. free market pulp shipments, 2018 vs. 2019 (000s t)



Note that shipment data overstates the volume of "free market" DWP sales. A significant proportion of shipments are internal transfers of pulp between integrated producers of wood based textile fibres. These companies include Lenzing, Birla and Sateri (the latter is affiliated with APRIL, PT Toba and Bracell).

Revised estimates show that tied or "captive" shipments represented approximately 28% of the global DWP market (all grades) last year. Since there are no tied/affiliated shipments of high alpha grades, the proportion of tied/captive sales for commodity grade dissolving pulp was even higher at approximately 34% of total shipments, up twelve percentage points from 2012.

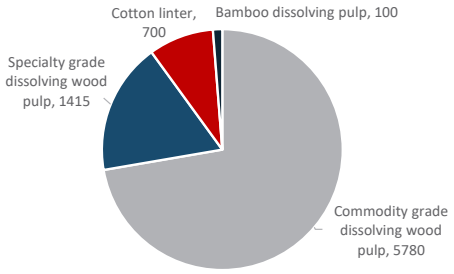
Therefore, of the 5.6Mt commodity grade DWP shipments in 2019, approximately 1.9Mt was tied, implying that 3.7Mt was free market demand for which independent suppliers can realistically hope to compete.

There are important differences in the respective growth rates of captive and free market shipments. Whereby the growth in free market pulp demand has totalled 0.74Mt since 2012 (CAGR 3.3% pa), the growth in tied volumes is quantified at 1.1Mt (CAGR 12.6% pa). Furthermore, last year we estimate that growth in tied shipments of 0.3Mt more than offset a contraction in free market deliveries of 0.2Mt.

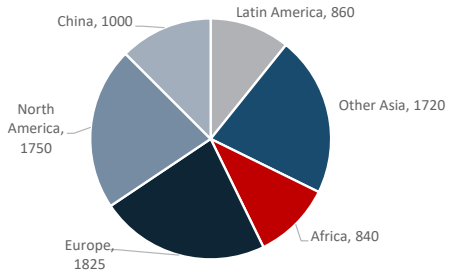
Note that the volume of captive/tied dissolving wood pulp demand is expected to accelerate even further as Sateri and Lenzing increase their DWP pulp capacity at the same time as they expand their wood based textile fibre production (see page 55).

World chemical cellulose capacity, 2020

Chemical cellulose supply by grade, 2020 (000s t)



Chemical cellulose supply by region, 2020 (000s t)

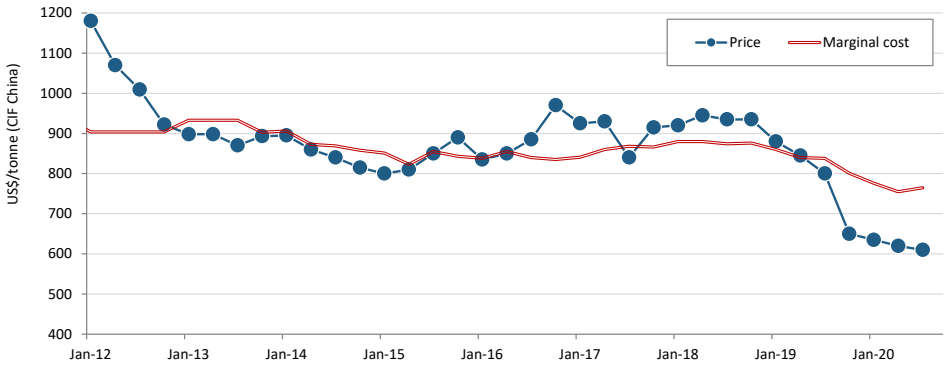


- Global chemical cellulose capacity is currently estimated at 8Mt; commodity grade dissolving wood pulp capacity is quantified at 5.8Mt, specialty grade dissolving wood pulp capacity at 1.4Mt, cotton linter pulp supply at 0.7Mt and bamboo dissolving pulp at 0.1Mt.
- Note that our estimates have been revised significantly lower since the March report as several mills have swung production to paper grade pulp.
- Of the 8Mt of chemical cellulose capacity, Europe is the largest producing region with 1.8Mt of production capacity this year. North America has 1.75Mt of production capacity, closely followed by Other Asia with 1.72Mt of supply. China is the next largest producing region with 1Mt of capacity.
- Note that our estimates exclude fluff pulp and paper grade pulp. Where companies operate swing mills, estimates have been made as to their production mix for this year and beyond. A full breakdown of these assumptions can be viewed in the appendix.

Sample pages

Hardwood DWP price CIF China vs. marginal costs

Average hardwood DWP commodity grade price, CIF China, vs marginal cost of supply, by quarter, 2012-2020

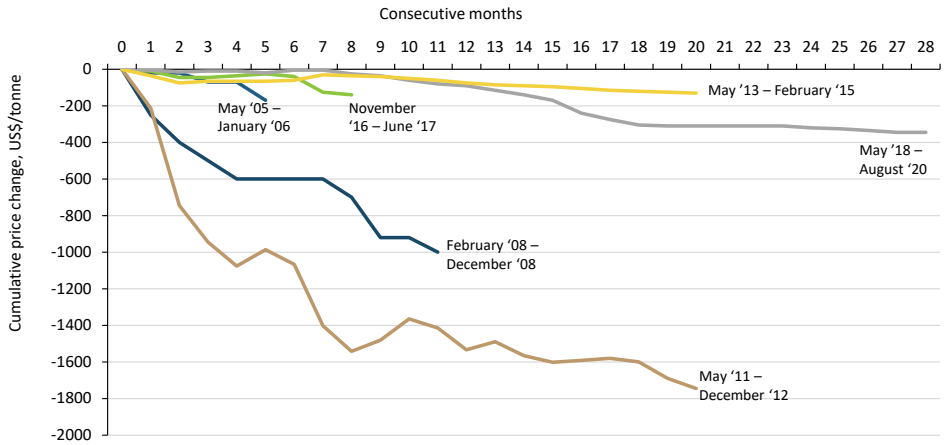


The amount of time that prices can stay below the net equilibrium level depends upon the responsiveness of producers in taking market related downtime. During 2016 and 2017, as prices briefly fell below the equilibrium point this precipitated some swing capacity moving back to paper grades and in each case, balance was quickly restored to the DWP sector. Conversely, during the downturn in 2014/15, prices dropped below the marginal cost level for a sustained period, such was the degree of oversupply in the market.

During this current downturn, prices dropped below the marginal cost level in June 2019 and yet most of the marginal cost producers continued to operate for the 6 months which followed. However, supply has started to contract through 2020 starting with the closures of the Thurso and SNIACE mills but more recently with the temporary idling of some lines in the US. As shown on page 78, additional capacity has also been removed as more mills have swung production to paper grade pulp or have slowed down their lines.

Previous price cycles

DWP hardwood commodity grade CIF China (net), cumulative price change and duration of the downturn (in months)



- During the past 15 years the market has undergone 5 significant pricing corrections (including the current downturn). Excluding the current downturn, the average duration of these corrections has been 13 months and the average price decline from peak to trough -$635/t (net, CIF China). This compares with a decline of -$345/t during the current downcycle, which started 28 months ago making it the longest in modern times.
- In the 5 downturns that have preceded the current market correction, the average floor price has been established at $737/t, CIF China.

Deliverables and order form

An annual corporate subscription to the Outlook for Dissolving Pulp service costs **£4,450** (or the equivalent in US dollars or euros). Existing subscribers to our other services qualify for a discounted price of £4,050. Discounted subscriptions are available on request for non-dissolving pulp producers. The service comprises:

- Two main reports published in March and September, containing detailed supply, demand and price analyses and five-year forecasts for dissolving wood pulp (both commodity and specialty grade). 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 wood 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.

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