

ENERGY PRODUCTIVITY INDEX FOR COMPANIES

May 2016
Final

PAPER SECTOR SUMMARY



ABOUT THIS SUMMARY

This sector summary is one of a series of six sector fact sheets to be used in conjunction with the guide for investors titled, *Could boosting energy productivity improve your investment performance?* These companion pieces are the result of analysis under

the *Energy Productivity Index for Companies* project, designed to help investors identify key sectors and portfolio companies within those sectors, where improving energy productivity can deliver significant benefits to companies and their value as investments.

RESULTS SNAPSHOT

- > Given low to moderate energy costs and moderate profit margins, companies in this sector are moderately exposed to energy-related risks
- > Svenska Cellulosa Aktiebolaget (SCA) demonstrated the best overall energy performance by delivering the highest weighted average score across all measures
- > Svenska Cellulosa Aktiebolaget (SCA) also generates 4x more revenue per GJ of energy used compared to the least productive company
- > Changes in energy productivity of companies over recent years varied, showing improvements of up to 24% or deteriorations of up to -20% per annum
- > SCA and Mondi achieved the highest energy savings in the sector, equivalent to 3.2% and 2.9% of their annual energy costs per year, respectively
- > Achieving energy savings equivalent to the average of those two companies (top 20%) could deliver up to 32% boost to lower performing paper companies' annual profits
- > US \$88 million annual savings were achieved across the sector through energy efficiency improvements
- > Sector improvements required an estimated US \$145 million in capital investment. When annualised, this is approximately equivalent to 31% of annual cost savings
- > Improvements implemented by reporting companies also achieved significant emissions reductions. For each 1% reduction in energy costs achieved, emissions were reduced by 1.3%.

Summaries available for six sectors



AIRLINES



AUTOMOBILES



CHEMICALS



CONSTRUCTION
MATERIALS



PAPER



STEEL

COMPARING COMPANIES IN THE PAPER SECTOR

The Energy Productivity Index compares companies in each sector based on three measures – **Resilience to energy cost**, **Energy productivity outcome**, and **Energy efficiency performance**.

Paper company scores against key measures

Company	General Rating	Energy cost resilience	Energy productivity outcome	Energy efficiency performance
Svenska Cellulosa Aktiebolaget	89%	83%	79%	100%
Mondi PLC	66%	88%	9%	100%
Smurfit Kappa Group PLC	63%	79%	95%	30%
MeadWestvaco Corp.	48%	78%	33%	47%
Metsä Board	48%	47%	51%	46%
International Paper Company	45%	82%	0%	64%
Klabin S/A	43%	88%	0%	56%
Ahlstrom Corporation	38%	34%	77%	8%
Stora Enso Oyj	36%	57%	47%	17%
Sappi	35%	61%	65%	0%
Holmen	28%	55%	24%	20%
UPM-Kymmene Corporation	17%	38%	28%	0%
13 companies	Incomplete/insufficient data provided to CDP to conduct analysis (FIBRIA Celulose S/A, Adveo, Arkhangelsk Pulp and Paper Mill, Catalyst Paper, Domtar Corporation, Empresas CMPC, Nippon Paper Group Inc, Nippon Paper Industries Co Ltd, Norske Skog, PaperlinX Ltd, Resolute Forest Products Inc., Shenzhen MYS Environmental Protection&Technology Company LTD, Suzano Pulp and Paper S.A.).			
Non reporters	All other companies did not respond to CDP			
1 company	Reviewed but excluded from analysis (Hansol Paper Co., Ltd.).			

Satisfactory data

- Positive results; could discuss potential to optimise
- Request clarification of results and discuss potential to improve

Insufficient data

- Results provisional due to data uncertainty. Request additional data to confirm rating
- Data provided is insufficient to conduct analysis; require more information

Not included in analysis

- Out of scope; different type of activity, or low energy cost making analysis too uncertain

For further details on identifying companies to engage with and how to measure a company's performance against its competitors, refer to section 03 of the [Guide for Investors](#).

A note about project scope and limitations:

Analysis undertaken was limited by the availability and quality of company data. Energy data used in the analysis was primarily sourced from CDP, complemented with other voluntary company reporting where required. This leads to potential limitations as outlined on page 2 of the Guide for Investors.



Guide for Investors and Technical Report available at energyproductivity.net.au



Using data from CDP, companies were scored and ranked based on their performance against seven metrics (presented in the table below) which underpin the measures shown on the previous graph.



Performance against each metric

Data is sourced from 2013-15 CDP responses and financial reports for corresponding years unless otherwise specified.

Company	General Rating	Energy cost resilience		Energy productivity outcome		Energy efficiency performance			Additional information	
		10%	10%	20%	15%	15%	15%	15%		
		Energy cost estimate, % opex (latest)	Profitability, EBIT / Revenue	Energy productivity, \$'000 Revenue / GJ	Energy productivity, Average annual % change (earliest to latest)	Savings per year, % est. energy cost	Potential financial uplift (% EBIT) if reach top quintile	Potential financial uplift (% EBIT) if reach second quintile	Emissions reduction from energy efficiency activities, % gross scope 1 & 2 emissions	Emissions reduction from energy efficiency activities (including bioenergy utilization), % gross scope 1 & 2 emissions
Svenska Cellulosa Aktiebolaget	89%	5-10%	9.1%	0.18	0.1%	3.23%	0.0%	0.0%	0.5%	0.7%
\$& Mondi PLC	66%	5-10%	10.0%	0.04	-3.0%	2.88%	0.1%	0.0%	1.0%	3.7%
Smurfit Kappa Group PLC	63%	5-10%	8.3%	0.12	3.8%	NR	2.5%	0.7%		
MeadWestvaco Corp.	48%	5-10%	8.0%	0.05	2.7%	0.48%	2.2%	0.3%	0.2%	5.9%
Metsä Board	48%	10-15%	3.5%	0.09	-0.6%	0.93%	7.4%	0.0%	1.5%	1.5%
International Paper Company	45%	5-10%	8.9%	0.04	-9.5%	0.74%	1.8%	0.1%	0.8%	0.8%
Klabin S/A	43%	5-10%	26.1%	0.05	-11.7%	NR	0.8%	0.2%		
Ahlstrom Corporation	38%	10-15%	0.9%	0.13	-0.3%	0.75%	26.8%	1.1%	3.0%	3.0%
Stora Enso Oyj	36%	5-10%	3.9%	0.07	1.4%	0.46%	4.9%	0.7%	0.4%	0.4%
Sappi	35%	5-10%	4.6%	0.07	24.0%	0.22%	6.3%	1.4%	0.4%	0.4%
Holmen	28%	10-15%	5.2%	0.08	-20.5%	NQ	5.5%	5.5%	39.6%	92.5%
UPM-Kymmene Corporation	17%	5-10%	-0.6%	0.07	-1.8%	0.41%	-32.0%	-5.3%	0.5%	0.5%

Performance legend

Cells colour-coded based on 0-100% scores attributed to companies for each metric*

	High > 75%	> 50%	> 25%	Low < 25%
Energy cost resilience	Dark Blue	Medium Blue	Light Blue	Very Light Blue
Energy productivity outcome	Dark Blue	Medium Blue	Light Blue	Very Light Blue
Energy efficiency performance	Dark Blue	Medium Blue	Light Blue	Very Light Blue

Due to the prevalence of bioenergy opportunities in the paper sector, the magnitude of emissions reductions potential has been expressed both with and without bioenergy.

Low quality/uncertain data

Uncertain data **0.74%**

Not reported **NR**

Not Quantified **NQ**

\$ Excluded from quintile analysis (outlier)

& Low energy cost range (0-5%) in some years, assumed to be 5%

* Detailed translation of metrics into scores is presented in the Technical Report (energyproductivity.net.au/resources)

PAPER COMPANY UNCOVERS COST-EFFECTIVE OPPORTUNITIES

Through a “Key 19 esave” energy saving program that strongly focuses on continuous improvement, Svenska Cellulosa Aktiebolaget has implemented more than 600 projects in its German plants, delivering a total energy usage reduction of 220 GWh per year, since 2003.

Two thirds of these savings were achieved through energy efficiency measures that require little or zero capital expenditure. These measures include elimination of plant leaks, use of waste heat, and process optimisation, such as operating without a

pretreatment stage and optimisation of equipment settings.

The company also conducts comprehensive economic assessments of energy efficiency projects, considering the plant lifecycle costs and benefits. This means attractive opportunities with longer payback periods have been successfully identified and implemented.

Reference: www.dena.de/fileadmin/user_upload/Publikationen/Stromnutzung/Dokumente/

ENGAGING WITH COMPANIES

1. Seek clarification on a company's performance

Start with metrics that are incomplete or appear to indicate lower performance. As an indication of a company's current efforts, energy efficiency activities that have been implemented by others in this sector are presented below to help identify whether a company is considering all areas worth investigating.

2. What to ask of companies where low performance is identified

Once a company's performance has been confirmed (or re-assessed after additional information), investors can suggest a range of internal energy management practices which could improve that company's performance.

3. Ways to engage with underperforming companies

Where further engagement with companies is required, refer to section 04 of the [Guide for Investors](#) which suggests questions that companies could be asked and internal energy management practices they might consider.

In this sector, a number of companies did not report any activities at all. Of the companies in the paper sector that did disclose information, more than 80% of energy efficiency opportunities implemented have a less than 3 year payback, or an equivalent of about a 50% internal rate of return.

Energy savings shown as percentage of energy cost, coloured by payback period

Energy efficiency improvements detailed in callout boxes

