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UPM'S STAKEHOLDER MAGAZINE 2/2014

Biofore

丝依... 美发成分, 新开...
... 奇迹, 耀目见...

UBAKI

ECONOMIC

ENGINE

continues good
performance

NEW 新

DRIVEN BY **BIOFORE**



The Biofore Concept Car challenges conventions in car manufacturing. The majority of the parts traditionally made from plastic are replaced with advanced biomaterials without compromising quality and safety. Created by a new generation of talent from Helsinki Metropolia University of Applied Sciences with next generation biomaterials by UPM – The Biofore Company. This is a car that drives real sustainable change.

www.bioforeconceptcar.upm.com



UPM BioVerno is a wood-based renewable diesel which will reduce greenhouse gas emissions by up to 80% compared to fossil fuels.
upmbiofuels.com



UPM Grada is a thermoformable wood material with unique forming properties.
upmgrada.com



UPM Raflatac's labels have been manufactured using the latest adhesive technology and solvent free production processes.
upmraflatac.com



UPM Formi is a recyclable biocomposite manufactured from cellulose fibre and plastics.
upmformi.com



BIOFORE IS
THE UPM-KYMMENE
CORPORATION'S
GLOBAL STAKEHOLDER
MAGAZINE



UPM – The Biofore Company

UPM combines bio and forest industries. We are building a sustainable future in six business areas.

In 2013, UPM's sales amounted to EUR 10.1 billion. UPM has production plants in 14 countries and a worldwide sales network. UPM employs around 21,000 people. UPM's shares are listed on NASDAQ OMX Helsinki. By the end of 2013, the company had 94,568 shareholders.

China is more than large figures

The sheer size of China is awe-inspiring. The country is an economic powerhouse that has been almost solely responsible for global growth for the best part of the last decade.

China is, however, much more than just impressive figures. If we look at it from the point of view of the modern bio and forest industry, we find many facts that might be even more impressive.

Did you know that China is the only country in the world that has continuous tropical, subtropical, temperate and coniferous forest zones that also accommodate exceptional biodiversity? There are as many as 31,000 different plant species growing in China, and thousands of them are not seen anywhere else in the world. It is no wonder that China is said to be the mother of all gardens.

China has a long and widely acknowledged history in the practical application of life sciences and biotechnology.

We all know that paper was invented in China and only later introduced to the rest of the world through the Silk Road. But did you know that the first printed newspaper was also produced in China?

Today millions of Chinese people are reading a paper printed on environmentally-certified high quality paper produced in the modern UPM Changsu mill. A lot of water has flowed under the bridges on the Yangtze River. Today UPM is more strongly present in the Chinese and Asian markets than ever before.

In this Biofore Magazine, some of the main articles are about China. They discuss the Chinese economy, drivers of its development, and future challenges and possibilities. I hope you enjoy these and all other articles in the Magazine.

I end my editorial with a Chinese proverb that reminds us of the importance of a productive attitude. We call this attitude Biofore.

When the wind of change blows, some build walls while others build windmills.

Elisa Nilsson
Vice President,
Brand and Communications, UPM



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UPM is building the world's first bio-refinery to produce wood-based biofuel – UPM BioVerno – on the Kaukas mill site in Lappeenranta, Finland. The biorefinery will turn crude tall oil into renewable diesel that generates fewer emissions than fossil fuels.

The biorefinery will produce approximately 100,000 tonnes of renewable diesel per year. Biofuel production will provide UPM with the opportunity to use the trees felled for paper and pulp production more efficiently. The refinery will need the crude tall oil from approximately five to six pulp mills.

The quality of UPM BioVerno is as good as that of fossil fuels. It can be used in all diesel vehicles from cars to heavy equipment. There is one big difference between UPM BioVerno and standard diesel though: the biofuel reduces greenhouse gas emissions up to 80%.

The biorefinery will employ 50 people, and transport operations will employ another 150. The first tankers carrying UPM BioVerno will drive off from the Kaukas mill site this year. NEOT will be responsible for the distribution of the biofuel. UPM BioVerno will be sold in Finland by the major petrol station chains ABC and St1.

Fuelled by forest



TEXT PÄIVI LEHTO-TRAPNOWSKI
PHOTOGRAPHY TUOMAS UUSHEIMO

UPM BIOFUELS

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UPM has built the world's first biorefinery to produce wood-based biofuel on the Kaukas mill site in Lappeenranta, Finland. The biorefinery will turn crude tall oil into renewable diesel that generates fewer emissions than fossil fuels.

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Germany is phasing out nuclear power by 2022 and the aim is to make up for the energy deficit using renewable energy sources.

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The profit improvement programme, announced a year ago, is ahead of schedule and was evident in UPM's results.

MORE WITH BIOFORE



UPM leads the integration of bio and forest industries into a sustainable future characterised by innovation, responsibility and resource efficiency. www.upm.com

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UPM

The Biofore
Company



BEAUTIFUL PLYWOOD



Twenty metres of light plywood: as simple as possible, as beautiful as possible. When **Susanna Pettersson**, the director of the Finnish Institute in London, heard the wishes of **Linda Bergroth**, the designer of the Institute's new premises, she did not hesitate. She knew she would ask UPM to provide the plywood.

"I immediately contacted UPM and the answer came back just as quickly as I had contacted them."

The plywood was shipped from Helsinki to London and now a huge wall of plywood

cabinets characterises the newly opened Institute in the trendy King's Cross area of London.

"As an element, wood is a strong statement from Finland. The plywood wall tells passers-by something about the history of Finnish design and architecture."

The Institute was founded in 1989 and the main reason for its existence is very down-to-earth: increasing the wellbeing of people. Everyone is better off when society functions properly and people can draw from a rich cultural heritage.

Promoting sustainability for the South-East Asia label industry

UPM Raflatac's promotional launch of FSC® and PEFC™ certified labelstock has created keen interest among label converters in South-East Asia. Feedback from the region suggests that many label converters will be exploring Chain of Custody certification for their own production, which is now possible due to the availability of a range of UPM Raflatac FSC and PEFC certified paper labelstock.

"Chain of Custody label certification is a powerful tool – it's important for people to recognise that we can go much further with developments in sustainability," commented one of the attendees, **Jo-Joe Meejaroen** from Weber Marking System, Thailand.

"We feel that the Institute is a so-called 'think and do tank' and our activities promote interaction between Finland, the UK and the Republic of Ireland."

There are a total of 17 Finnish Institutes around the world, similar to the one in King's Cross, and the Finnish Institute in London cooperates closely with them in connection with various research projects and events.

The new premises of the Finnish Institute in London can be admired at Unit 1, 3 York Way, King's Cross, London.



UPM Biofore innovations win international awards

New product innovations based on UPM Biofore strategy have again gained international recognition.

In June, UPM Biofuels received the European Union's Sustainable Energy Europe Award 2014 for its renewable crude tall oil based UPM BioVerno diesel in Brussels, Belgium. The award was rewarded in the "Travelling" category. The Sustainable Energy Europe Awards reward and promote Europe's best sustainable energy projects in the fields of energy efficiency, renewables and clean transport.

The success story of the innovative Biofore Concept Car continued this spring when the video presenting the car's journey won gold at the Golden Hammer International Advertising Festival in Riga, Latvia. Furthermore, ProCom, the Finnish Association of Communications Professionals, recognised the Biofore Concept Car project as the Communications Campaign of the year.



A steep drop in work-related accidents



Occupational safety has improved significantly in all UPM business areas – 12 production facilities have not had any lost time accidents in over a year.

The results are due to the company-wide "Step Change in Safety 2012–2014" initiative that called on all UPM employees to improve workplace safety. Key success factors are management commitment, active employee participation, shared goals and operating models and encouragement.



WWF AND UPM COOPERATE FOR POLISH RIVERS

WWF Poland and UPM Raflatac have decided to continue cooperation to protect Polish rivers. Since January 2012, UPM Raflatac has been supporting WWF Poland's valuable work on the Rivers for Life project that aims at protecting river wildlife and improving safety of the people living in the valley.

One key element is UPM Raflatac Poland supporting knowledge exchange related to the fish ladders and passes.

Another activity would be WWF Poland's information brochure on good practices for the restoration of rivers, streams continuity and the proper maintenance of rivers with wild salmon populations. The joint initiative also includes monitoring of water investments – new and modernised hydrotechnical structures – on the Odra and its tributaries in terms of ensuring passability for water organisms.





TEXT MATTI REMES PHOTOGRAPHY QILAI SHEN, UPM

ECONOMIC ENGINE CONTINUES GOOD PERFORMANCE

The best years of China's economic growth are history, but the country's economy is still growing at an impressive pace.

Last year, China's GDP grew by 7.7%. The forecast for this year is slightly over 7%. Meanwhile, the euro area is expected to barely reach a growth rate of 1%.

China already accounts for 15% of the global economy.

"China is about to overtake the United States and become the world's biggest economy. This will affect the global economy in numerous ways during the coming decades," says **Ali Malassu**, Head of Strategy, UPM Paper Asia.

China is now focusing on more sustainable growth rather than just aiming at big growth rates. Until now, the export industry and large infrastructure projects have spurred the economy on. Now China wants to provide more services.

"Urbanisation increases the demand for services and balances the economic structure," Malassu says.

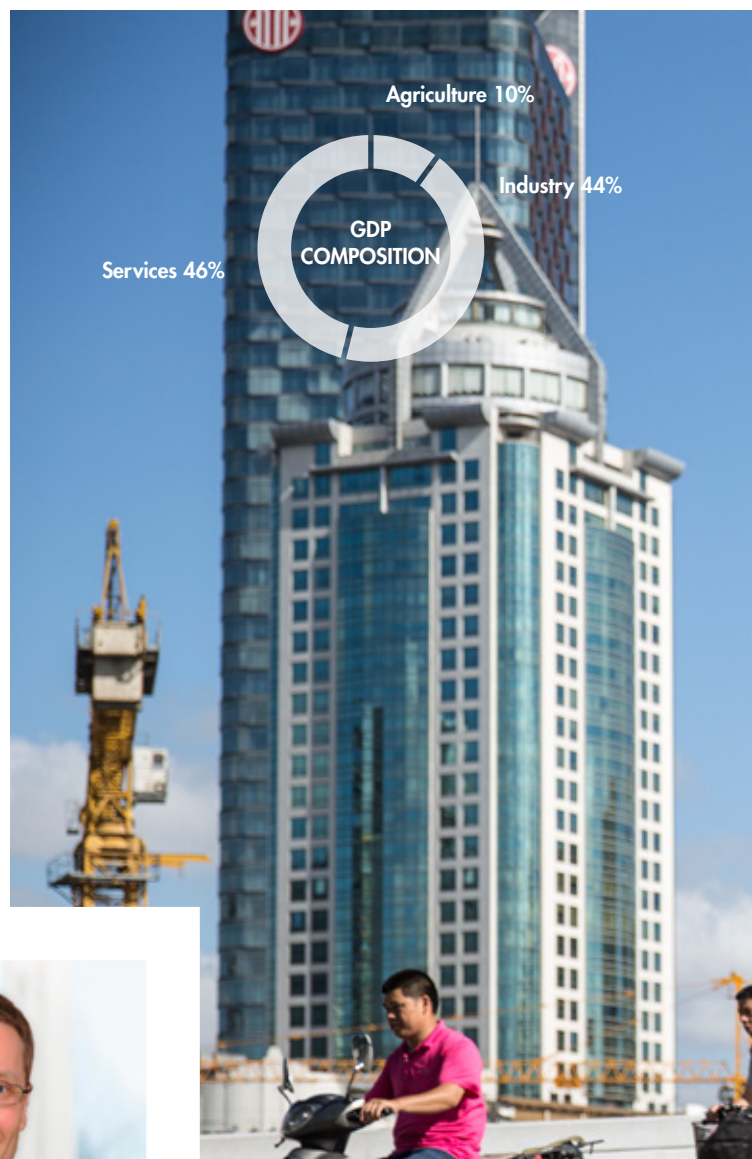
New focus

Large state-owned enterprises have traditionally formed the backbone of the Chinese economy. Now the aim is to rationalise the operations of these businesses. Improvements to the operating conditions of small and medium-sized enterprises are also being planned to diversify the economy.

"Constant investments in infrastructure are also needed so that infrastructure does not become a bottleneck hindering growth like we can see in India. The construction of the road network, railway network and metro systems will continue long into the future.

"Increasing household consumption is also an important objective," Ali Malassu adds.

China has a high savings ratio compared to the western



Ali Malassu

world. Chinese people are often used to saving money for a rainy day since the country has not had an extensive social security system as in many western countries.

The Chinese household registration system – hukou – is slowly being modernised. This modernisation would guarantee migrant workers who have moved to cities the right to various services, such as health care and education for their children.

"The slowly improving social security system will probably have a positive impact on consumer spending."

China must become more competitive

Year by year, salaries have grown in China. As a result, some companies have moved their production to cheaper countries such as Vietnam, Myanmar and Indonesia. Higher labour costs increase pressure to improve produc-

7.7%

ECONOMIC GROWTH IN 2013

1,355,692,600

ESTIMATED POPULATION, JULY 2014

797,600,000

SIZE OF THE WORKFORCE AT THE END OF 2012



tivity. China's goal is to increase the production of higher added value products by investing in new technology and R&D.

Industrial production also has its challenges. Improving resource efficiency and decreasing plant emissions have become top priorities.

"Demographic change will also require increased efficiency in the future. An ageing population is as big a challenge in China as it is in Europe," Malassu points out.

Other areas requiring investments include the construction of more efficient power plants and better transmission networks.

China will continue to be dependent on coal-fuelled energy in the future, but the country is also increasing its production capacity of nuclear, wind, solar and hydro power.

Concerns over incurring debt

According to Malassu, the liberalisation of the banking and financial sector and the full convertibility of the yuan are major challenges to the growth of the national economy.

So is China's internal debt. As a result of its excellent export income, the country has managed to collect unprecedented foreign exchange reserves, but local governments have incurred debts to fund huge infrastructure projects. As the economic situation in the building industry has deteriorated, the income local governments receive from selling building land has declined.

Many inefficient state-owned enterprises also have heavy debts.

The debt of households has also increased as a result of purchasing apartments, cars and consumer goods.

The rapid growth of property prices in growth centres has long been one of the main concerns of the Chinese >>



Source: The Economist Intelligence Unit

Italy

Japan

Germany

Mexico

Indonesia

Thailand

South Korea

economy. A violent drop in prices would shake the economy since a significant proportion of consumer funds is tied up in property.

However, Ali Malassu doesn't believe that the real estate bubble will burst.

"The situation has remained under control. The government has taken various measures to limit increases in prices. It has also supported the sector when necessary."

Good prospects

As a whole, Ali Malassu believes that the situation for the Chinese economy is rather good – as are its future prospects.

Urbanisation, the growth of domestic consumption, the gradual rebound of the world economy and the continued Asian economic integration create a strong foundation for continued economic growth.

"A slightly slower growth rate will probably contribute

to better allocation of resources and the modifying of economic structures in the medium term."

Malassu says that economic growth, the increased purchasing power of consumers and urbanisation are also significant to the development of the paper product market.

"The demand for paper products will continue to grow, although the growth rate has slowed down. There are major differences in demand depending on the paper product, customer segment and region in China. The digitalisation of the media industry will also have its own impacts on the market for graphic papers."

Fragmented paper market?

The Chinese paper market is highly fragmented. According to estimates, there are 3000 companies producing paper products in China. The 10 largest companies account for approximately one third of the production capacity of paper and cardboard.



Singapore India Vietnam China

The Chinese print paper market mainly focuses on fine papers. There is currently overcapacity in the production of fine papers and, according to Malassu, this will affect the Chinese market for several years.

The Chinese government's aim to close polluting paper mills that use outdated technology will also have an effect on the market.

"Closing down outdated mills will not have a major effect on the overcapacity situation since new investments in paper production are also being made. Furthermore, most of the outdated mills have already been closed."

According to Malassu, the demand for label materials is growing rapidly in China. The growth is a result of the trends already mentioned, the development of retail trade and distribution networks, the increased use of automated product labelling and the growing industrial use of adhesive tapes.

"UPM label materials also have other potential end uses." >>

New big cities

Urbanisation is the driver of China's economic growth. It has been estimated that more than 220 Chinese cities will have more than 1 million people by 2025. These cities will then account for approximately 90% of China's GDP.

Beijing, Shanghai and Guangzhou are currently well-known metropolises, but new megacities including Chengdu, Zhengzhou and Wuhan will emerge particularly in central China.

Income level growing rapidly

China's continued economic growth has had an immense effect on the Chinese income level. Last year, the GDP per capita was almost USD 10,000 while 30 years ago the same figure was approximately USD 400.

Nevertheless, there are major differences in income levels depending on the region. Wealth is concentrated in large growth centres and development in rural areas has been slower until recent years.

The purchasing power of Chinese consumers has rapidly strengthened in the last few years, but instead of spending, Chinese consumers have traditionally been keen on saving. Household consumption accounts for less than 40% of GDP in China when countries in the west typically reach 60%.

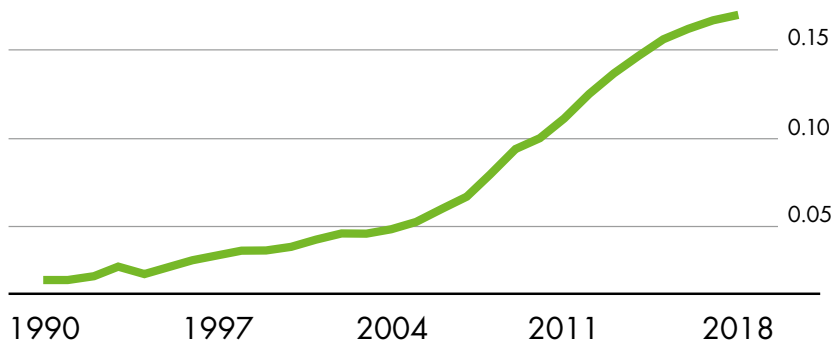
World's second largest trading nation

China is the second largest trading nation after the United States. The export industry of the country has suffered from the downturn of the global economy, but recently the improved situation in the United States, in particular, has improved trade prospects. The rise of China is changing the structures of world trade. One of the most significant changes is the rapid growth of trade with emerging economies. China exports consumer goods, machinery and equipment to Asia, Latin America and Africa, and imports raw materials, such as agricultural products, minerals and oil from the same areas.



CHINA'S SHARE OF GLOBAL GDP

GDP adjusted by purchasing power parity in US dollars



Source: The Economist Intelligence Unit

GDP USD

13,390 billion (2013)

12,430 billion (2012)

11,540 billion (2011)



Close cooperation with customers

According to Ali Malassu, a company that selects the right products, market areas and customer segments will prosper in the current market situation. However, further measures will also be required as the competition gets tougher.

“We must get as close to our strategic customers as possible and get them to commit to our business by providing better service than our competitors and developing our cooperation. The importance of distribution channels will increase in the fine paper business,” Malassu says.

UPM is one of China’s leading office paper manufacturers. In coated fine paper, the company focuses on light-weight, high quality paper grades that printers use in magazines, catalogues and advertising leaflets. A number of magazines, including the Chinese version of Elle, are printed on fine paper manufactured by UPM.

UPM is currently investing in label material production in China.

“Once the new production line at the Changshu mill is complete, we will be able to deliver products to our Asian

customers more rapidly and perform product development based on the needs of the local markets.”

The demand for environmentally friendly and certified products will increase in Asia in the future. This will improve the competitiveness of companies like UPM.

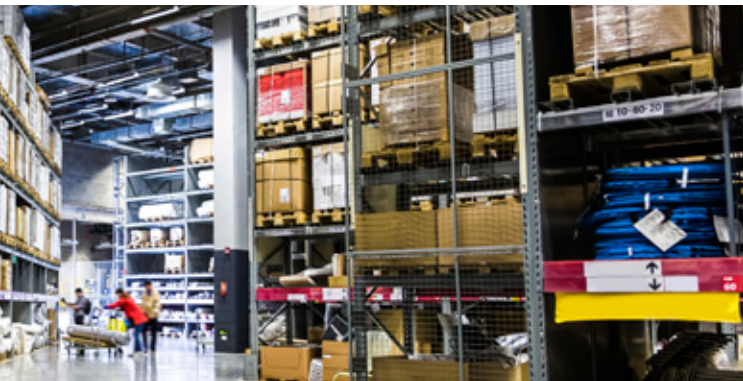
Malassu says that environmental matters are important to specific customer groups. These include global copy machine manufacturers and international publishers printing magazines or books in China.

“We have been able to show them that UPM’s environmental investments in China have been at the same level as in Europe from the very beginning. This is a big competitive advantage for us compared to Chinese paper manufacturers,” Ali Malassu says.

Concern for the environment grows

Malassu believes that environmental awareness will gradually increase everywhere in China. The smog threatening the health of city dwellers, factories polluting waterways and agricultural land, and toxic substances found in food have also alerted the authorities.

The demand for environmentally friendly and certified products will increase in Asia in the future. This will improve the competitiveness of companies like UPM.



“People want environmental performance to improve, but China is very large. Not all the decisions made in Beijing are implemented elsewhere in the country.”

China has made changes to its environmental legislation and tightened the limits for production plant emissions. Nevertheless, there is still a lot of room for improvement in the local implementation and supervision of regulations.

According to Malassu, an increasing number of people in China now understand the result of maximising economic benefit at the cost of the environment. However, this is not currently reflected in consumer choices.

“Few individuals or companies are ready to pay extra for an environmentally friendly product, so in this aspect the Chinese market is still significantly behind Europe.”

China does not currently have a major demand for advanced products, such as biofuels and biochemicals. However, it is highly likely that the situation will have changed in a couple of years’ time.

“Some Chinese companies have already tested biofuels. One of these companies is China Eastern Airlines that has used biofuels on its commercial flights,” Ali Malassu says. ○

UPM TO STRENGTHEN ITS POSITION IN ASIA

UPM Paper Asia produces and delivers fine papers to the Asian emerging markets and labelling materials to the global market. In fine papers, the focus is on high quality office papers and specific coated and uncoated graphic papers. UPM has a strong market position in high quality office papers.

The demand for office papers is expected to grow by 3–5% per year in the Asia-Pacific region and by double that amount in China. In label materials, UPM focuses on high quality release liner and face materials that are suitable for various end uses.

Investments support growth

UPM’s growth in Asia is being supported by investments in production plants. A completely new production unit for manufacturing wood-free speciality papers and label materials is being built at the Changshu mill.

UPM Raflatac is also planning to increase its production capacity in the Asia-Pacific region by investing EUR 14 million in its factories in China and Malaysia. It has been estimated that these investments together with other updates will increase UPM Raflatac’s production capacity in the region by over 50%.

Fivefold pulp sales

Over the past three years, UPM has increased its pulp sales more than fivefold in China and the rest of the Asia-Pacific region. The number of customers has also grown and is now nine times greater than three years ago.

In pulp, UPM focuses on customers in the soft tissue, speciality paper and cardboard segments. It is expected that the demand for soft papers will grow by 7% over the next 5–10 years.

The best travel companion



BLUE WINGS

- Founded in 1980 and voted Finland's best customer magazine in 2007
- Published 10 times per year, plus four special issues every year
- Printed in English
- Reaches over 9 million travellers per year
- Printed on 61 gram UPM Valor paper
- Published by Sanoma Media Finland Oy

FINNAIR

- The leading air transport company between Northern Europe and Asia
- Founded in 1923
- Serves over 50 international destinations

“Blue Wings is consistent with Finnair’s renewed, sophisticated look and is an important part of the travel experience,” says Jarkko Konttinen, Vice President for Marketing and Product development.



Flying without anything to read is like taking a sauna without the heat. Blue Wings magazine entertains and informs passengers on Finnair flights – and has now freshened up its look with a lighter paper grade.

The familiar feeling after a busy start to a trip. You have finally found your seat and stowed your carry-on luggage. You fasten your seatbelt and watch the people next to you take their seats. You take a breath and glance in front of you. The airline company’s customer magazine peeks out from the seat pocket invitingly. You decide to flip through the magazine and soon you are immersed in your own world.

Before you even have time to notice, the plane is moving and you are on your way. In your imagination, you leave for a motorbike trip in North Vietnam or twirl around on an outdoor dance floor in Finland. You dive into a Japanese hot spring or wander through the Nuuksio National Park in southern Finland. You are travelling around the world before the plane has even taken off.

Finnair’s cabin magazine Blue Wings is part of the travel experience. It has been carefully designed and edited to reinforce the identity and brand of the Finnish airline company: quality, freshness and creativity. Quality emerges from the reading experience, freshness from the carefully selected pictures and content, and creativity from interesting viewpoints and original narratives.

The magazine has found its readership. Every year it welcomes around 9 million travellers on Finnair’s routes between Europe and Asia.

“A printed magazine is an easy interface,” says **Jarkko Konttinen**, Finnair’s Vice President for Marketing and Product development.

According to reader reviews Blue Wings is indeed a commonly read magazine, also digitally, and many travellers slip it in his or her bag and takes it home. This is totally fine, by the way, as the ‘Your personal copy’ text on the magazine cover indicates. >>



Less weight and more quality with UPM Valor

Konttinen takes a hands-on look at the new magazine at Finnair's brand new headquarters right next to Helsinki-

Vantaa Airport. The summer 2014 issue has undergone a remarkable revamp, yet the change is almost unnoticeable to the average reader. The magazine has been printed on a new paper grade, UPM Valor. The new grade is lighter than the previous one but the company's decision to change was not taken lightly. Jarkko Konttinen is happy with the result.

"You can feel the quality of the new paper. The pages are not see-through. The print quality is excellent as well."

That is definitely true – the pictures are of a high quality and fingers do not slip on pages but grip to them firmly.

"It seems to be an even higher quality magazine now," notes the Vice President for Marketing and Product development with delight.

Finnair chose to print its Blue Wings magazine on UPM Valor paper which weighs 61 grams. It replaces the previous 70 gram paper grade. As a result, the magazine

lost 30 grams from its total weight of 230 grams. The weight loss means that the airline company will save tens of thousands of euros per year in fuel costs.

"In an aeroplane every single thing, even paint, must be made from as light a material as possible to reduce weight and save fuel," explains Konttinen.

The new paper grade also conforms with Finnair's business objectives: sustainable and profitable growth in harmony with the surrounding society and the environment. UPM Valor is an environmentally friendly choice because it reduces fuel use and helps Finnair to achieve its own environmental goals.

"We want to make the right choices at each stage of the service chain," says Konttinen.

Along with reduced costs, the 'blue and white' airline company got a surprising bonus – the new paper grade improved the quality too!

This is not an insignificant factor as the readers of Blue Wings have come to expect quality. One third of the passengers are commuters, affluent decision-makers who make choices and form their opinions based on the weight and the feel of the printed magazine.

One hundred pages of new perspectives

Blue Wings tells stories about Finland – about Finnish design, culture, technology and current affairs, to name a few. The need for information is great as two thirds of passengers come from Asia and elsewhere in Europe. Only one third of passengers are from Finland. The magazine covers travel, too, but always from fresh perspectives as there are many passengers on board who already have a lot of travel experience.

During a flight, you might easily read the 100 pages of the magazine from cover to cover. You can immerse yourself in exotic destinations, find out about the thoughts of Finland's current Prime Minister, Alexander Stubb, who has been the magazine's columnist for many years, or explore Finnair's fleet and routes. Every now and then you can close your eyes and take a nap, eat, listen to music or watch a movie. Relaxing is easy with a good travel companion. ◊

Blue Wings
is refreshingly
Scandinavian,
bright and light.

UPM Valor

- High quality printing paper especially designed for magazine publishers and brand owners
- Made as 68, 61 and 50 gram weights in Finland and Germany
- More printing surface per tonne of paper
- Opacity, lightness, colour reproduction ability and smoothness are as good as those of heavier paper grades
- Paper properties are similar to medium heavy coated MWC or lightly coated LWC printing papers, depending on the basis weight

LESS IS MORE

Light UPM Valor feels the same as up to 15% heavier paper grades.

After several years of development, UPM launches a new revolutionary paper grade.

"UPM Valor combines our expertise and high quality materials. We have taken a massive leap forward in the development of our traditional paper products," says Product Portfolio Manager **Antti Pokkinen** in Augsburg, Germany.

The paper producers have always wanted to produce paper from as little material as possible while keeping the paper properties consistent. UPM Valor fulfils this objective.

"UPM Valor was created by market demand. Customers expect cost efficiency from paper deliveries. Printed publications need to compete with other media products," explains Pokkinen.

Paper products can become more competitive by making savings in mailing and delivery costs and by supporting the sustainability of customer operations. UPM Valor enables all this and Finnair, for instance, has reduced fuel costs by using this lighter paper grade for its in-flight magazine.

UPM Valor is ideal for publications and printed products that are expected to be premium quality.

"Although UPM Valor is light, it feels the same in your hands as heavier grades," says Pokkinen.

Since fewer raw materials are needed, UPM Valor has a smaller environmental footprint. Will paper grades be more like UPM Valor in the future?

"The financial and environmental benefits are so obvious that I would say so, yes."

Investment supports welfare

UPM is investing EUR 160 million in the Kymi mill. The investment will include a new pulp drying machine, a new debarking plant and the modernisation of the softwood fibre line. Construction work has already begun and the project will be completed in the autumn of 2015.

Once the new equipment has been fully implemented, the production of the mill will grow from 530,000 to 700,000 tonnes of bleached softwood and birch pulp per year.

Lauri Lamminmäki, the Mayor of Kouvola and **Markku Laaksonen**, the General Manager of the Kymi mill, explain how the investment will benefit the whole of society.

Important source of income

The Kymi mill is located in Kouvola a small city in south-eastern Finland. Currently the UPM Kymi mill and its subcontractors directly employ around 750 people. However, the mill's multiple effects on employment impact on transport, forestry, electricity and water supply, trade and services in the area.

"Each job in industry spawns two more jobs in subcontracting and services," estimates Lauri Lamminmäki.

According to a calculation made by the City of Kouvola, the mill indirectly employs around 1,500 people in addition to those employed directly.

Taxes provide welfare

The Kymi mill is an important contributor to the local economy in the form of income taxes and increased consumer demand. UPM employees pay the City of Kouvola a total of EUR 6.5 million every year in local income tax. The mill pays Kouvola an annual figure of around EUR 5 million in corporation and land tax. If the taxes paid by people indirectly employed by the mill are taken into account, the mill provides Kouvola with annual taxes worth EUR 19–21 million.

"These taxes are used to fund public welfare services. Employees naturally also buy goods and services in the area



> Production

- Annual pulp production capacity + 170,000 tonnes
- Stronger position on the global pulp market
- More flexible pulp and paper production
- More efficient logistics and staffing
- Improved energy efficiency
- One of Europe's most modern pulp mills

which further contributes to improving the vitality of the city," says Lauri Lamminmäki.

According to an estimate made by the city, purchases made by people directly and indirectly employed by UPM bring EUR 41–46 million to the local economy.

Hope for the future

Since 2000 a total of EUR 900 million has been invested in the UPM Kymi integrated mill site and UPM hydropower plants located in the region.

Lauri Lamminmäki is satisfied with the investments UPM has made.

"New investments create new jobs, but above all they provide hope for the future and confidence in new product

UPM is investing EUR 160 million in the development of the Kymi pulp mill. The investment will impact production, forestry, environment and employment.



> Environment

- More lorry traffic but better guidelines to prevent adverse effects
- Increased energy efficiency and wood sourcing from nearby creating a positive effect on the carbon footprint of products that is already close to zero

> Employment

- + 1,000 person-years of work from construction and installation
- New employment from design work and equipment manufacturing
- Requirements for 25 new harvesting chains
- Increase also in indirect employment

> Forestry

- The mill's annual need for softwood and birch pulpwood and chips +1 million cubic metres
- More wood sourcing from nearby areas
- Increased earnings for forest owners
- New opportunities for thinning sales
- Improved rate of return for forest investments

innovations," Lamminmäki states, saying that the closure of the Voikkaa and Myllykoski mills in the early 2000s caused major losses.

He is also very happy with the fact that environmental values are part of UPM's strategy which translates as good environmental management and better air quality.

"The city could in fact follow the lead of the mill in developing its environmental strategy," Lauri Lamminmäki says.

Cheaper energy for the mill

Markku Laaksonen says that one of the winners due to the production increase of the mill will be the local forest industry.

"The annual need for wood will increase by approxi-

mately 800,000 cubic metres so the investment will create around 50 new jobs in felling, increase the need for transport by around 40 lorries and generate more income for forest owners," he says.

The mill's self-sufficiency rate in energy will also improve as more black liquor will be burned in the soda recovery boiler.

"This will reduce the energy costs of the paper mill," says Laaksonen.

Furthermore, once the new drying machine is in use, it will be possible to run the pulp mill at full steam regardless of the use of the paper machines. This will also increase flexibility at the paper mill and ensure that maintenance shutdowns can take place there when necessary. ◦

TEXT MATTI REMES PHOTOGRAPHY QILAI SHEN, UPM

Resource efficiency

becomes top priority in China





The rapid growth of the Chinese economy and the country's industrial production has made China the world's largest consumer of natural resources.

Last year China's GDP growth rate reached 7.7%. The country consumed a total of 617 billion cubic metres of water and 3.75 billion tonnes of coal to produce the majority of energy consumed in China.

These are figures that **Zhang Ming**, the head of the China National Resources Recycling Association, uses to illustrate the country's huge consumption of natural resources. He believes that the economic growth target set for future years, approxi-

"This requires better implementation of policies and regulations. New research and increasing general awareness of the significance of the matter are also needed," explains Zhang.

In industry the focus is on promoting a circular economy. This means increasing the recycling of production waste and finding new uses for it.

"The aim is that 72% of the solid waste produced in industry will be reused by 2015", says Zhang.

China also intends to reduce its energy consumption by 21% and water consumption by 30% by 2015 compared to the levels of 2010.

IN ORDER FOR CHINA TO ACHIEVE ITS DEMANDING GROWTH OBJECTIVES IT MUST IMPROVE ITS RESOURCE EFFICIENCY AND PREVENTION OF ENVIRONMENTAL DAMAGE. AS A RESULT, THESE ISSUES HAVE BECOME TOP PRIORITIES.

mately 7%, although lower than the growth rate of 2013, will still require resource efficiency improvement for long term development.

"The Chinese government is committed to increasing resource efficiency and reducing the impact economic growth and urbanisation has on the environment and natural resources," Zhang says.

Aiming for significant improvements

According to Zhang, the objective of the current Five-Year Plan (2011–2015) is to increase resource productivity by 15%.

China declares war on pollution

The sustainable use of natural resources is closely connected to the reduction of pollution of the environment. In a work report published this year, China's Premier **Li Keqiang** declared war on pollution.

He compared the prevention of environmental damage to the battle against poverty that has improved the living standards of hundreds of millions of Chinese people.

According to Zhang Ming, China's worst polluters include coal-fuelled power plants, heavy industry, urban wastewaters, large meat production units and traffic.

One of the main ways to reduce pollution is to close down outdated production plants that produce major emissions.

According to Zhang, this year China will close old steel mills with a total production capacity of 27 million tonnes. Cement plants with a total capacity of 35 million tonnes will also be shut down.

"The authorities are also tightening the emission limits of industrial plants and improving the monitoring of air quality in cities."

Investments in new, environmentally friendly technology are also part of the major structural change in Chinese industry, which will result in the improved energy efficiency of production plants, among other things.

In energy production, the focus is moving away from coal and oil towards renewable forms of energy, such as solar and wind power.

"Currently around 70% of energy is produced using coal. Coal is the main source of energy in industry so unit-specific carbon

dioxide emissions are rather high. Reducing emissions is a big challenge and solving it will take time," acknowledges Zhang.

Concerns about air and water pollution

Zhang says that Chinese people have a long tradition of being economical with the use of materials. However, during the time when China adopted the planned economic approach to develop its national economy and industrialisation in the 1950s, the challenges of pollution prevention, recycling of waste and resources efficiency were not so obvious, so that >>

“CHINA MUST FIND A BALANCE BETWEEN GROWTH, CONSUMPTION AND THE SUSTAINABLE USE OF RESOURCES IN THE LONG RUN,” SAYS ZHANG MING.



Zhang Ming is the head of the China National Resources Recycling Association.

The organisation operates under the Chinese Ministry of Commerce and aims to increase the recycling of materials in production and promoting cooperation between various parties.



attention and effort to deal with them was not sufficient.

Improving resource efficiency is a huge, long term project in a country the size of China. The recycling of waste has constantly increased over the years.

However, there are still challenges in improving the way environmental matters are handled. According to Zhang, the exhaustion of water resources and the pollution of groundwater are some of the greatest obstacles.

“Approximately 10% of our groundwater is badly polluted. In some areas, the quality of the water no longer meets the right standards and the water cannot be used as drinking water.”

The contamination of agricultural land and air pollution are also a major concern. This winter, there were

exceptionally large amounts of smog in Beijing and other big cities.

“These environmental problems directly affect the everyday life of people and the stability of society. That is why the Chinese government and the entire society pay special attention to remedying these problems. The government has made huge investments and applied stricter control, measurement and supervision to improve resources efficiency. But it is still far behind in satisfying the public,” Zhang emphasises.

Since economic growth and increased purchasing power will unavoidably lead to an increase in consumption, Zhang believes that finding remedies to these problems is of utmost importance.

“This is why China must find a balance between growth, consumption and the sustainable use of resources in the long run.”

Encouraging feedback

According to Zhang, the paper industry is one of 10 industries in China where special attention is paid to resource efficiency.

Increasing the sustainability of wood use, improving the recycling of paper, promoting the efficiency of production plants and reducing emissions are key issues.

“The Chinese paper industry has been active in improving resource efficiency and environmental performance.”

According to Zhang, the Chinese government has tightened the emission limits set for production plants. This has led to the closure of those equipped with outdated technology.

“When the Finnish forest industry was getting rid of its excess capacity, UPM took measures to promote the



employment of those made redundant and encouraged people to become entrepreneurs. Chinese paper companies could learn a lot from UPM.”

Zhang Ming says that UPM has been a frontrunner in its field in China, and that the company is committed to developing its environmental performance.

As an example of the transparency of the company’s performance, Zhang mentions the UPM Changshu reporting system which sends local environmental authorities data about the production plant’s emissions into air and water in real time, comparatively speaking earlier than other local enterprises.

“This shows the Chinese authorities and consumers that UPM is willing to participate and commit to building a society that saves energy and is environmentally friendly. I hope that all companies will learn from UPM and follow its lead.” ○

UPM CHANGSHU LEADS THE WAY IN RESOURCE EFFICIENCY



The UPM Changshu mill has invested in improving resource efficiency in recent years. According to **Pentti Putkinen**, the General Manager of the mill, results have been achieved in all areas.

Putkinen is particularly proud of the improvements in water use. The amount of wastewater produced by paper machine 1 has been reduced from 10 cubic metres to 5 cubic metres per tonne of paper produced.

Paper machine 2 used to produce 20 cubic metres of wastewater, but now only produces 5–6 cubic metres per tonne of paper produced.

“Our water consumption is now world class,” Putkinen says.

A lot of attention has also been paid to the efficient use of pulp, the main raw material, and fine-tuning the production processes.

“The consumption of steam and electricity needed in production has also improved by tens of percents.”

The UPM Changshu mill is the first mill to be awarded the EU Eco-Management and Audit Scheme (EMAS) registration in China. According to Putkinen, certification increases the transparency and credibility of environmental reporting.

“Receiving the EMAS registration didn’t have a major effect on our operations in Changshu, since our reporting has met the requirements of the EMAS standards for several years.”

Putkinen believes that the most important aspects of resource efficiency are having a systematic approach, clear goals and monitoring performance.

“There is no need to take giant leaps at a time. Everything boils down to constant improvement that is based on process optimisation and learning. New investments can also improve resource efficiency.”

According to Putkinen, employee commitment plays an important role.

“Our employees understand that figures are not everything and that resource efficiency and environmental awareness are important to our customers, our business and each individual.”

The good reputation of UPM Changshu is well known in China and local environmental authorities often visit the mill.

“Our customers are also increasingly interested in environmental matters.”



German energy production at a turning point

The impacts of the German energy transition, the so-called Energiewende, have surprised energy companies and markets.

Germany is phasing out nuclear power by 2022 and the aim is to make up for the energy deficit using renewable energy sources. The impacts of the new energy policy have been surprising. Carbon dioxide emissions are growing, it is difficult to anticipate fluctuations in the price of electricity and traditional energy companies are making losses.

The greatest challenge is adapting the energy system to the rapid changes that take place in weather-dependent energy production. How will power supply be secured when the sun does not shine or there is no wind? This uncertainty is the reason why energy production cannot rely on renewable energy sources alone: traditional power plants are needed to secure the availability of basic energy.

Germany originally planned to balance the

natural fluctuations of wind and solar power production using gas but in practice coal is currently being used to produce reserve power. Several new coal-fuelled power plants are currently being built in Germany while the oldest plants are being phased out.

Oliver Klitzke, the Chief Operating Officer of GE Energy Germany, assessed the situation at the POWER-GEN event held in Cologne in June:

“As a result of the renaissance of coal-fuelled plants, Germany’s emissions have increased by almost 9% between 2009 and 2013 so the original plan for increasing the production of clean energy has backfired.”

In 2013, Germany’s use of coal power increased by 44% compared to the previous year and coal accounted for 45.5% of the country’s total power generation. The figure has not been this high in 20 years.



According to Klitzke, gas would be a natural choice for accompanying renewable energy sources because it can be used in large power plants and smaller units, for instance to support wind power. Gas is a flexible form of energy because gas turbines can be rapidly started up or shut down as necessary.

Energy companies making losses

The results of companies producing traditional energy have plummeted as a result of the rapid increase in the supply of renewable energy.

Renewable energy subsidies have lowered the price of electricity and weakened the profitability of other forms of power production. According to *The Economist*, the 20 largest energy companies in Europe have lost EUR 500 billion of their market value in 2008–2013.

As the market situation is favourable for wind and solar power, there is overcapacity on the market and the price of electricity falls. As renewable energy sources are favoured, gas and coal power plants are under-utilised.

The construction of renewable energy plants also affects consumers. The subsidy paid to renewable energy projects costs approximately EUR 1000 per household per year. The subsidy is used to fund the production of renewable energy.

So far, industry has been widely exempted from the surcharge to cover the cost of renewable power in order to secure jobs, innovations and global competitiveness.

However, Germany is currently considering how the costs caused by the energy transition could be divided more evenly and how this would affect industry.

Need for change

Klitzke says that the original goal of Germany's energy transition was to find a suitable balance between

climate targets, reliable energy supply, traditional production methods and the competitiveness of industry.

“Germany is very committed to climate targets and currently our emissions are growing so we must go back to the original goal. I believe that this is a unique learning opportunity. We must forget national benefits and think about the energy market in a European context, at the very least.”

The investment in weather-dependent solar and wind power has increased the volatility of the electricity market. According to Klitzke,

the current system has been created based on an old energy production model that is no longer profitable so the market mechanisms require redesign.

“In my opinion, the flexibility in electricity production capacity must also be given a value which it does not currently have,” states Klitzke.

Germany will have to significantly increase its investments in R&D in order for progress to be made. Research funding is needed to develop areas such as energy storage. ◦

EUROPEAN UNION PUBLISHES NEW CLIMATE AND ENERGY TARGETS

The European Commission published its proposal for the EU's climate and energy targets for the period up to 2030 this spring. The goal is to cut carbon dioxide emissions by 40% compared to the level of 1990. Renewable energy should account for at least 27% of the EU's energy consumption by 2030.

Stefan Sundman, Vice President for Public Affairs at UPM says that the Commission's initiative is clear as the climate target is prioritised. Renewable energy sources, energy efficiency and emissions trading are merely a means to an end.

Sundman points out that, compared to the targets for 2020, the Commission's initiative lacks a proposal concerning the reduction of traffic emissions.

“Traffic emissions account for approximately one quarter of the EU's emissions so the policy aiming to reduce traffic emissions should be consistent in the long run. The EU will not reach its emissions targets without a strong policy and political steering in this direction. Advanced biofuels, such as UPM BioVerno, will have a significant role in reducing traffic emissions in the future,” he emphasises.

Next step with bio- chemicals

TEXT HELEN MOSTER PHOTOGRAPHY UPM

New biochemicals offer great development opportunities for the forest industry. UPM Biochemicals has taken the bull by the horns and already achieved results.

“We implement the UPM Biofore strategy every day,” says **Okko Ringena**, Senior Manager, Lignin Applications, and he isn’t exaggerating. His desk is covered with an array of patent applications, draft agreements and business reports. His job is very challenging and versatile, just like the current business environment in biochemicals.

Ringena works at the Biochemicals Unit in Augsburg, Germany. He is in charge of lignin products or ‘performance chemicals’. In addition to the lignin products, the unit develops biofibrils and wood-based chemical building blocks. The person in charge of the latter is **Christian Hübsch**, Senior Manager, Strategic Marketing and Business Development.


Demand for biochemicals growing

As well as in Germany, UPM Biochemicals also has teams in Finland – in Lappeenranta, Otaniemi and Helsinki.

“The development of technologies and markets for bio-based chemicals is incredibly dynamic, much more dynamic than that of oil-based ones,” says Hübsch.

Which is no wonder in light of the obvious benefits: the production of certain biochemicals can actually be carbon-negative, i.e. more carbon is taken from the atmosphere than emitted, and, on average, the carbon footprint is about 80% less than that of oil-based chemicals, plus they make the industry less dependent on uncertainties concerning the price and supply of oil.

It has been estimated that the volume of biochemicals required will more than double by 2020. For UPM, this trend means an opportunity to grow but also presents



new challenges: to reach the goals of the Biofore strategy, UPM needs to work with the right technologies and partners.

New end uses for biochemicals

The average consumer has been using biochemicals for years. For example, citric acid can be found in soft drinks and monosodium glutamate (MSG), a flavour enhancer, in various food products. However, the wood-based chemical building blocks and lignin-based performance chemicals developed by UPM are ‘new biochemicals’, i.e. products which are produced from wood biomass.

“The new biochemicals can be used in countless applications, like packaging materials, detergents, glues, resins and others,” states Hübsch.

Certain bioplastic packaging produced from biochemicals will keep food fresh for longer and, depending on the material, the packaging can also be biodegradable.

“Some day, lignin-based biochemicals may completely replace phenol in certain resin products,” says the hopeful Ringena.

The Biochemicals Unit recently took the next step in the commercialisation of its ideas by signing a partnership agreement with the US company Domtar. The partnership will offer UPM a whole new outlook on the use of lignin-based biochemicals in Europe.

Read more about the job descriptions of Christian Hübsch and Okko Ringena at www.upm.com. ◦

HIGHLY VERSATILE BIOCHEMICALS

PACKAGING MATERIALS

Wood-based chemical building blocks can be used e.g. in the production of biodegradable bin liners or packaging materials. Certain types of bioplastic will stop any oxygen from coming into contact with food, which will lengthen shelf life. Biochemicals may also revolutionise the production of disposable products, such as coffee cups or plates.

DETERGENTS AND COSMETICS

Modern consumers are green-focused and interested in value products that are sustainably produced. This is why more and more ingredients produced from biological raw materials are used, for example, in the detergent and cosmetics industries.

BIOPLASTICS

Many consumer products – such as computers and mobile phone covers – can be manufactured partially from wood-based chemical building blocks.

GLUES, RESINS AND COATINGS

Lignin is a natural polymer that can, after specific treatment, be used in many glues, resins or coatings. For example, a lignin-based phenol-formaldehyde resin has been developed for gluing plywood. The phenol can already be partially replaced with the wood-based lignin without compromising the product’s properties. Completely replacing the phenol with lignin may be possible in the future. Amongst other applications, lignin-based resins can also be used in laminates and insulation materials.



For **kids'** eyes only!

Children and newspapers – an impossible combination? Not at all. Children really appreciate reading and enjoy holding a newspaper in their hands. Danish newspaper Kids' News provides children with a new reading experience – on their own terms.

“All the news stories we see and hear on television, the radio and the internet are written for adults,” says **Jonas Stenbæk Christoffersen**, the Editor-in-Chief of Kids' News.

News often becomes part of children's lives at an early age, but what do they understand about the complex events taking place in Ukraine and Syria?

Copenhagen-based media company Berlingske Media pondered these questions and decided to launch a surprising new product: a newspaper for 6 to 12 year old kids, which received major media attention when it was published in April.

Some of the stories in Kids' News are written by children and the news-

paper is published in Denmark every Friday. It was clear from the very beginning that the newspaper would be published in a printed format. The publisher thought it was important to offer kids an opportunity to concentrate on news in print form without video clips or other distractions constantly interrupting the reading experience.

Interest in print news

The 24-page newspaper has found its audience without major marketing efforts and all feedback has been positive. Feedback about the content of the newspaper is received from children, parents, experts and politicians alike.



“Kids read a lot and appreciate a printed newspaper they can hold in their hands,” says Jonas Stenbæk Christoffersen, the Editor-in-Chief of Kids’ News.

“Kids can be very critical, but they always present their wishes in a constructive manner which is very nice,” Stenbæk Christoffersen says happily.

The Editor-in-Chief had worked at Berlingske Media for a long time and was interested in trying something new. How could world news be portrayed in a way that is enticing to children? Which stories were meaningful to kids and how should they be presented so that children would understand what they were reading?

“Several European countries, including France, Germany, Austria and Norway, publish newspapers for kids that are very popular. We carried out a lot of research and tests and finally decided to establish a new newspaper.”

Kids’ News is aimed at 6 to 12-year-olds and is published in Denmark every Friday.

Interviews and stories by kids

The secret weapon of Kids’ News is kids themselves. Tweenage reporters participate in writing articles and performing interviews with the support of the Editor-in-Chief. This approach makes sure that the articles are not what adults would expect of a news story.

In the first issue of the newspaper, the young reporters asked the Danish Prime Minister whether she was ticklish. **Helle Thorning-Schmidt** said yes and continued to explain where she is the most ticklish.

“Adults would never ask such a question,” Stenbæk Christoffersen laughs.

The editor-in-chief is excited about the challenges related to the newspaper. Although Stenbæk Christoffersen is an experienced journalist, he has learned something new every week. In the near future, the greatest challenge is going to be spicing up the concept. Based on feedback, article types, topics and approaches will be improved to better meet the expectations of the readers.

Kids’ News has its own website and an online newspaper application is also available for iPads. The website includes additional material related to the articles that is suitable for school use.

“Nevertheless, our focus is on the print version. A newspaper delivered to your letter box provides kids with an up-to-date glimpse of the adult world.” ◉

Print for children is thriving

ZEIT LEO. German children’s magazine Zeit Leo is published in German-speaking countries six times a year. The target audience includes girls and boys over the age of eight and their parents. The articles are divided into three categories: experience, understand and do.

Articles in the ‘experience’ category tickle the creativity and imagination of young readers, whereas the ‘understand’ category is a source of information and education. The ‘do’ category encourages kids to take the initiative. The magazine has, for instance, provided its readers with ideas for turning a classroom into a more comfortable space.

The publication was established by Zeitverlag Gerd Bucerius in 2009 and an electronic version is also available. The magazine’s website also provides additional material for school use.

<http://leo.zeitverlag.de>

AFTENPOSTEN JUNIOR. Norwegian newspaper Aftenposten Junior was first published in 2012. The popular children’s newspaper is aimed at children aged eight to 12 and is published once a week. Children enjoy having their very own newspaper delivered to their letter box. There is no online version. Aftenposten Junior publishes news and reports about events taking place in Norway and around the world. The newspaper includes stories about culture, entertainment, sports and many other topics. It is published by Oslo-based parent company Aftenposten and was the first Norwegian newspaper aimed at children.

www.aftenpostenjunior.no

Young scientists meet sustainable forests

What do a 19-year-old bronze medallist in an international chemistry competition from Brazil, the University of Helsinki Department of Chemistry and UPM have in common?



Ramon Goncalves da Silva came to Finland to participate in the Millennium Youth Camp science event after being awarded a medal in the International Science Olympiad.

“I believe in innovation and technology. In 10 years’ time, I see myself back in Brazil working for the welfare of the Brazilian people. I hope that I will be able to combine my expertise in chemistry and economics and work as an entrepreneur whose products will be used to promote sustainability and the efficient use of natural resources,” says da Silva.

The international Millennium Youth Camp is held in Finland every summer, bringing together 16 to 19-year-olds interested in natural sciences, mathematics and technology. During the week-long camp, participants work in groups and complete a scientific project related to sustainability. Each group is mentored by experts. The participants also learn about Finnish innovation and research performed by Finnish companies and universities.

Renewable natural resources

This time companies participated in developing ideas for the projects more actively than in previous years. Cooperating with companies provides participants with an insight into the importance of science and technology to the success of a business.

“Resource efficiency and innovation are the cornerstones of UPM’s strategy, which is why it is natural for us to cooperate with these young people,” says **Pirkko Harrela**, Executive Vice President, Stakeholder Relations.

“The resource efficiency of all UPM products has improved significantly and we have developed innovative renewable materials. These principles are extremely important to young people.”



“I hope that I will be able to combine my expertise in chemistry and economics and work as an entrepreneur whose products will be used to promote sustainability and the efficient use of natural resources.”

– Ramon Goncalves da Silva



“The trees here are completely different to the trees back home. It’s great that we had the opportunity to learn about forest biodiversity and how this important natural resource is taken care of here. Not all countries manage their forests like this.”

– Bokyong Mun

Designing a biorefinery concept

UPM’s science project included designing a biorefinery concept while making use of processes and end products suitable for lignocellulose. All the projects were presented at a gala organised at the end of the week. The young talents in UPM’s group received support for their project from UPM Biofuels’ R&D specialists and the University of Helsinki Department of Chemistry.

Members of the UPM project group came from Brazil, Belgium, New Zealand, Nigeria, Romania and Slovenia.

Unforgettable moments in a Finnish forest

The science camp was not all work: participants were also introduced to many traditionally Finnish experiences, such as cooking sausages over a campfire. UPM also presented the sustainable use of natural resources on a forest excursion where the group got to discuss the use of forests and plant some spruce seedlings.

Seventeen-year-old **Bokyong Mun** from New Zealand admired the quiet of Finnish forests.

“The trees here are completely different to the trees back home. It is great that we had the opportunity to learn about forest biodiversity and how this important natural resource is taken care of here. Not all countries manage their forests like this,” said Mun.

“It is important for companies to create various connections between science and business life. Young people want to combine the benefits of science and economic development and make progress through scientific means. This event provides an excellent opportunity for doing so. It also improves our understanding of how the new generation thinks,” sums up Pirkko Harrela. ◦



Strong first half for UPM

The company visibly stepped up its performance between January and June.

UPM's performance in the first half was significantly better compared to the same period last year.

Operating profit excluding special items increased to EUR 382 million from EUR 282 million in the first half of last year. Operating profit percentage rose up from 5.6% to 7.8%.

UPM President and CEO **Jussi Pesonen** presented the Interim Report and stated that the strong performance was the result of the ongoing and successful profit improvement programme in particular. The programme was launched a year ago and has proceeded faster than expected.

"With the improved profit, the cash flow was strong and the balance sheet grew stronger still. This also helps us to pay a good dividend," says Pesonen.

Among UPM's business areas, UPM Paper ENA (Europe and North America), UPM Paper Asia and UPM Plywood succeeded in improving their profitability. UPM Energy's profit remained steady. UPM Biorefining and

UPM Raftatac, on the other hand, did not achieve their targets completely.

UPM Biorefining's profit decreased due to lower hardwood pulp prices in the global market, maintenance shut-downs at plants and a prolonged start-up at the UPM Kaukas pulp mill.

According to Jussi Pesonen, the strategic projects that are designed to enable UPM's growth are progressing as planned. UPM's biorefinery that manufactures biofuels in Lappeenranta has proceeded to its testing and commissioning stage. In addition, the projects to improve the production capacity of the pulp business as well as the new investments into the UPM Changshu mill in China are proceeding on schedule.

According to Pesonen, UPM's business outlook is steady. The budding rebound of the European economy might ease the declining demand for paper and wood products that has continued for two years. In emerging markets, on the other hand, a strong growth is anticipated – especially in Asia. ◦

Follow UPM's performance on iPad

UPM's financial development and key figures can be conveniently followed through a downloadable iPad application. The new analysis tool is particularly designed for investors and analysts.

The application provides UPM's key financial figures, share prices, press releases, presentations and reports in a compact and easy-to-use format. It also provides links to the organisation's investor webcasts, social media channels and the UPM Viewpoint blog.

The application is called UPM IR APP and it is available for download on the Apple App Store free of charge.

A BRAND NEW LIGHTNESS

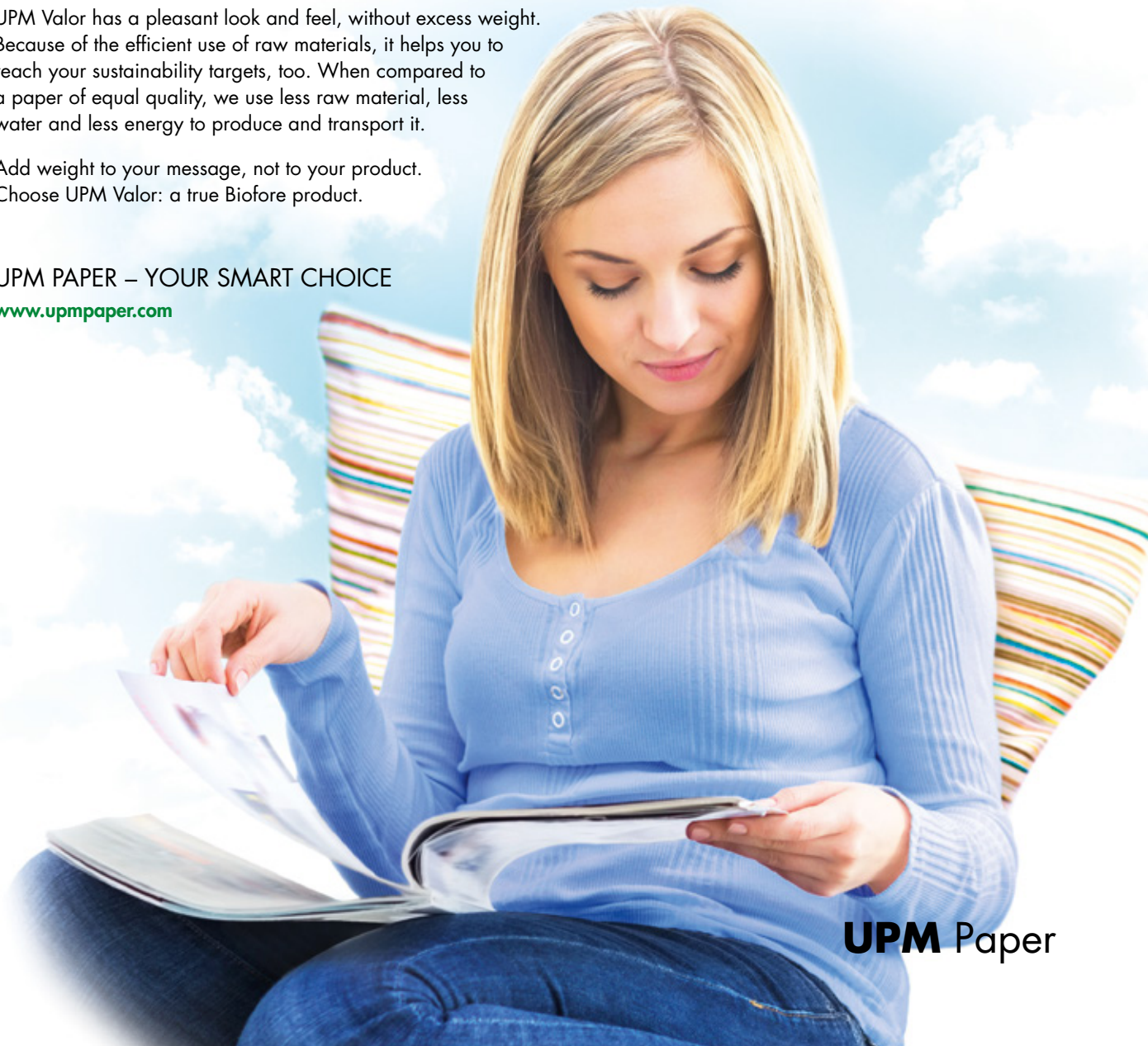
If you want to show the value of your print product while simultaneously being smart with your costs, then our latest paper innovation, UPM Valor, is the right choice.

UPM Valor has a pleasant look and feel, without excess weight. Because of the efficient use of raw materials, it helps you to reach your sustainability targets, too. When compared to a paper of equal quality, we use less raw material, less water and less energy to produce and transport it.

Add weight to your message, not to your product. Choose UPM Valor: a true Biofore product.

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