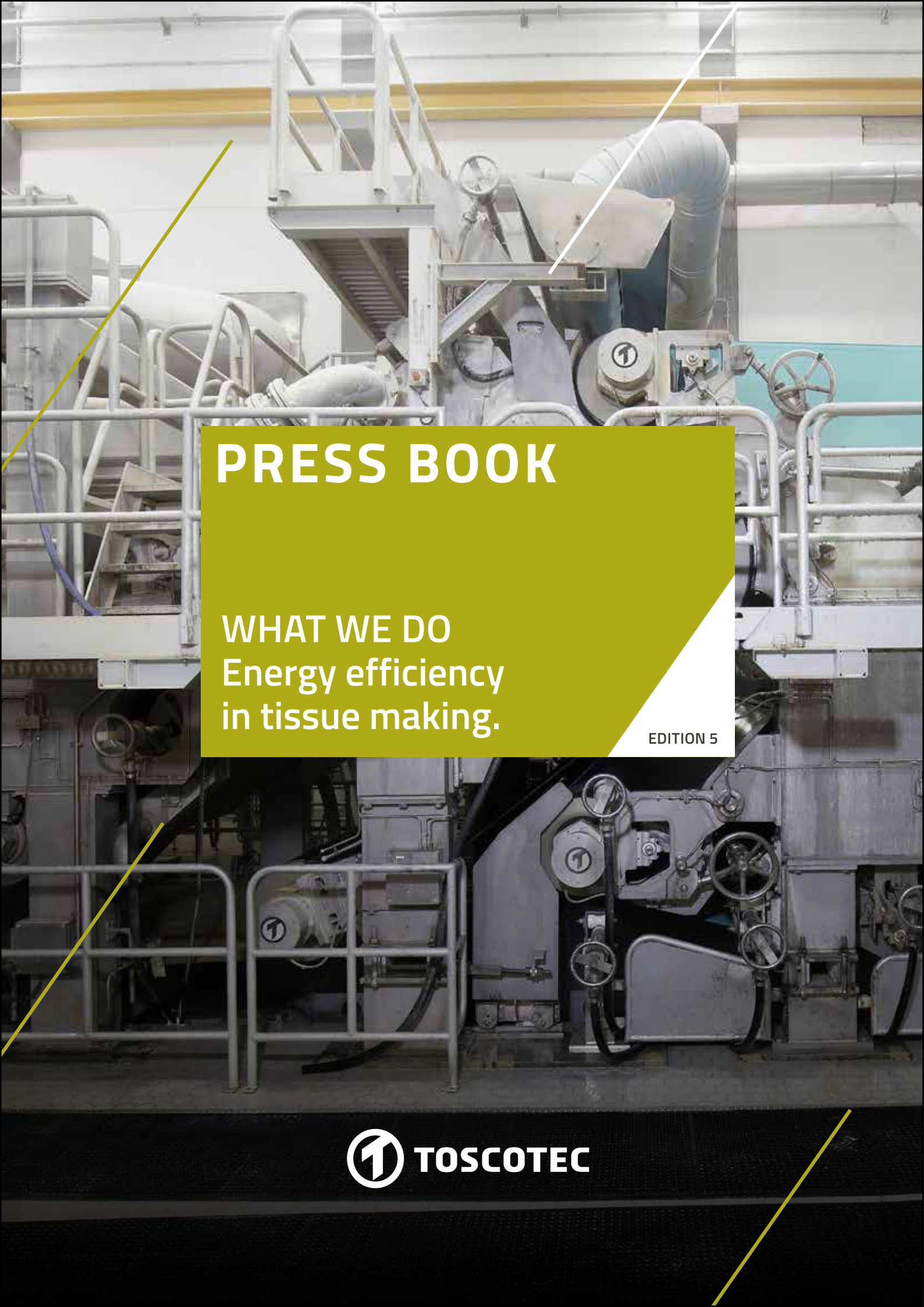


PRESS BOOK

WHAT WE DO
Energy efficiency in tissue making.

EDITION 5

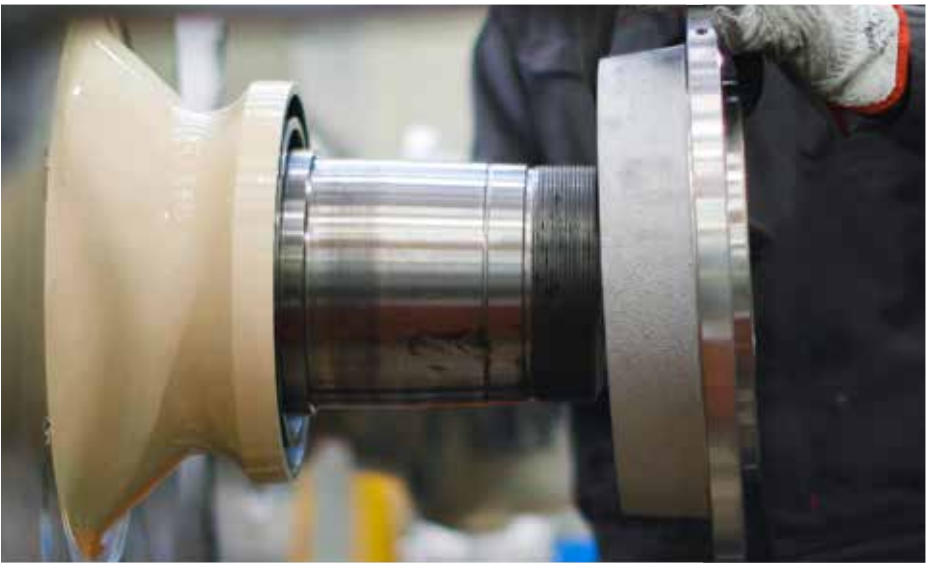
TOSCOTEC

PRESS BOOK

EDITION 5

CONTENT

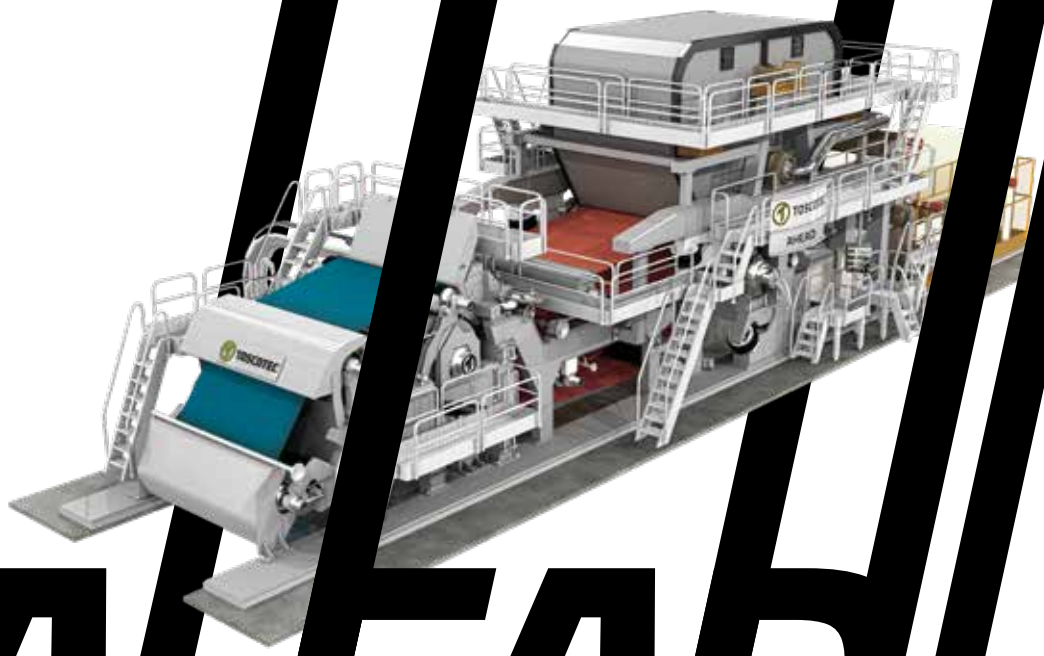







YOUR NEEDS, OUR SOLUTIONS.

SPEED?



AHEAD!

TOSCOTEC
AHEAD LINE
PERFORMANCE BY TOSCOTEC

Speed is not an option and when joined by leading-edge technology, evolved engineering and the highest levels of performance, it becomes a must.

Toscotec allows you to reach this goal with its **AHEAD Line:** the high-speed tissue machine range capable of attaining 2200 mpm and producing high-quality tissue from virgin and recycled fiber with proven energy savings, maximum efficiency and reliability.

The **AHEAD Line** featuring state-of-art press technology is designed with a unique drying section and allows for the installation of a TT SYD.
The performances your business was just waiting for.

YOUR NEEDS, OUR SOLUTIONS.

www.toscotec.com

TOSCOTEC

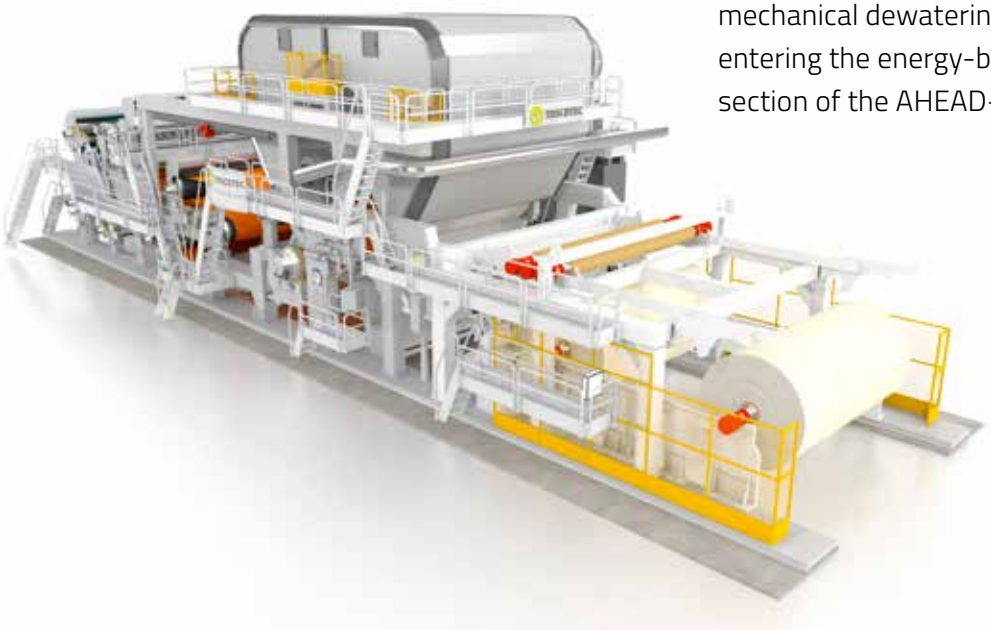
PRESS RELEASE | 5TH APRIL 2018

APP SUCCESSFULLY STARTS UP

TOSCOTEC'S PRODERGY TISSUE MACHINE AT ITS PERAWANG MILL.

Toscotec's new PRODERGY tissue machine fires up at APP Group's Perawang mill, in Indonesia. This start-up is part of a major APP order of Toscotec's Prodergy machines, to be installed at APP Indonesian paper mills.

PRODERGY is Toscotec's leading innovation: an AHEAD-2.0L tissue machine, 5.6 m width, 2,000 mpm operating speed, featuring a second generation TT SYD-22FT and steam-heated hoods. Toscotec's 22FT diameter steel Yankee dryer constitutes a world record: the biggest steel Yankee dryer ever manufactured worldwide for tissue application. This breakthrough equips Toscotec with a significant advantage in terms of technological innovation. PRODERGY's unprecedented drying efficiency is threefold, combining the benefits of the largest diameter TT SYD ever delivered worldwide, an efficient press configuration and steam-heated Yankee hoods. Each element of PRODERGY's drying equation contributes to the best possible energy efficiency of the tissue making process. The exclusive use of steam energy throughout the entire drying process ensures significant cost reduction compared with gas energy drying. The design of the TT SYD-22FT and the steam-heated Yankee hood system with multiple energy recovery stages deliver the highest dryness rate with minimum consumptions.
The press configuration guarantees the highest possible degree of mechanical dewatering before entering the energy-based drying section of the AHEAD-2.0L.



PRESS RELEASE | 11TH APRIL 2018

TOSCOTEC S.P.A. TODAY HAS JOINED ELITE.

ELITE EXCEEDS 800 MEMBER COMPANIES.

Today ELITE welcomes 50 new Italian companies to join its program designed for high growth potential enterprises.

Toscotec S.p.A. is one of them. As a leading manufacturer of paper and tissue machinery for 70 years, Toscotec made its mark at international level by carefully combining production excellence, the respect for people and ongoing research for the best solutions to achieve customer satisfaction.

Alessandro Mennucci, CEO of Toscotec, affirmed: "Elite is the right partner to continue on the path of growth we began a few years ago, allowing us to improve our managerial skills and to get in touch with the financial community. We are also sure that the implementation of our strategy will benefit from sharing ideas with other ambitious entrepreneurs".

ELITE is an international program of the Italian Stock Exchange, created in 2012 in cooperation with Confindustria in order to support enterprises in implementing their growth plans. Thanks to the partnership with Confindustria, a number of ELITE Desks have been set up across Italy, through which more than half of the companies joining ELITE today were selected.

ELITE offers access to numerous financing opportunities, improves enterprises' visibility and attractiveness, it puts them in direct contact with potential investors, and it supports their management in going through cultural and organizational change.

Luca Peyrano, CEO and General Manager of ELITE added:
"50 ambitious enterprises are embarking today on their path in ELITE, joining an increasingly more dynamic and qualified international community. Three facts can easily summarize the impact that ELITE has managed to generate in Italy in recent years: the increase in the size of ELITE companies, the increase in their profitability and the increase in employment generated by these companies in terms of employees. We are convinced that access to new forms of finance is an important lever to improve the competitiveness of Italian companies at a global level, but we believe that strong managerial skills and a clear vision are essential to create more and more value. ELITE companies play a crucial role in achieving this goal, with a significant number of extraordinary finance operations, supporting growth for a value of over 7 billion euro".

PRESS RELEASE | 16TH APRIL 2018

TOSCOTEC'S TT SYD-18FT IS RUNNING EFFICIENTLY

FOR RECONSTITUTED TOBACCO PRODUCTION AT FUJIAN JINMIN, CHINA.

Toscotec's steel Yankee dryer TT SYD-18FT was successfully fired up at Fujian Jinmin Reconstituted Tobacco Development Co., Ltd., a subsidiary of China National Tobacco Corporation, at its Luoyuan mill, Fujian, China.
The TT SYD reached top performance immediately after start-up at the end of March.

The advantages of TT SYD can benefit all grades and types of paper, not least reconstituted tobacco paper.
After Toscotec's successful reconstituted tobacco application in the U.S., the Chinese reconstituted tobacco paper producer Fujian Jinmin is now operating a big diameter TT SYD, which guarantees top drying efficiency at the lowest possible consumption cost.

From the delivery of the first TT SYD in 2000 throughout 18 years of successful and safe applications and two generations

of design, this achievement further reinforces Toscotec's position as the number one supplier of steel Yankee dryers worldwide. The number of TT SYD sold in five continents around the globe has recently reached more than 200 units, way ahead of the competition. Based on its ever-growing experience, Toscotec has constantly been upgrading its design and it is currently in the process of honing the third generation of TT SYD.

PRESS RELEASE | 26TH APRIL 2018

TWINSAVER GROUP FIRES UP TOSCOTEC'S AHEAD-2.0S

TISSUE MACHINE AT KLIPRIVIER MILL.

On March 28 at 3:30 pm, Toscotec's AHEAD-2.0S tissue machine PM5 was started up at Twinsaver Group's Kliprivier operations site in Gauteng, South Africa.

PM5 project is a turnkey supply by Toscotec, which includes the stock preparation system, the AHEAD-2.0S tissue line, the electrification and control systems, the complete plant engineering, erection, and supervision for erection, commissioning, training and start-up. The scope of supply also includes the dust and mist removal systems and the hall heating and ventilation systems. Overall, the plant benefits largely from the numerous stages of energy recovery of the gas-fired hoods and vacuum plant.

Toscotec's AHEAD-2.0S tissue machine is equipped with a second-generation TT SYD-15FT steel Yankee dryer of 15 FT diameter. It features Toscotec's advanced shoe press technology TT NextPress.
The AHEAD-2.0S is set to produce premium-quality super-soft toilet tissue, with a total production of over 30,000 t/y and it will deliver on Twinsaver's plans to increase supply to the local and export markets and preserve its top position in the tissue industry.

Following the announcement of a R580 million (USD 42 million) investment earlier last year, the Twinsaver Group - the leading producer of branded tissue in South Africa - awarded this turnkey project to Toscotec, who presented the most compelling green solutions, in line with the Group's high environmental standards.

"We are very proud of the results of this turnkey project in South Africa. As Toscotec's first turnkey in the country, building on the experience of other tissue machines in South Africa, we completed the supply according to schedule and started producing high quality tissue on the day of start-up. The substantial energy recovery advantages granted by the overall design of this plant are bound to exceed expectations" said **Toscotec's Sales Director, Mr. Marco Dalle Piagge.**

PRESS RELEASE | 2ND MAY 2018

TOSCOTEC'S TT SYD-16FT IS RUNNING EFFICIENTLY AT CARTIERA

DI PIETRAMELARA MILL.

Cartiera di Pietramelara is successfully running a new 16 FT diameter steel Yankee dryer supplied by Toscotec. The second generation TT SYD-16FT replaced a cast iron Yankee and it was started up on schedule in mid-January 2018. The scope of supply also included the complete Yankee steam and condensate system.

Toscotec is the inventor and the undiscussed market leader of steel Yankee dryers worldwide, supplying SYDs both for new tissue machines and in replacement of cast iron Yankees. This proves that paper mills across the globe acknowledge that TT SYD is the best technology currently available on the market in terms of energy efficiency, reliability and safety.

Mr. Di Leva, CEO of Paperdi, said, "After monitoring the new TT SYD for a few months, we can say that it has been performing extremely well in terms of drying efficiency and allowed us to reach the top speed. We are particularly happy with the steam consumption figures, and we expect to bear the fruits of this replacement in the long run, by significantly cutting production costs".


TOSCOTEC

PRESS RELEASE | 7TH MAY 2018

SIXTEEN TT SYD ARE BEING MANUFACTURED AT TOSCOTEC'S MASSA TECHNOLOGY CENTER.

Toscotec, the world's leading supplier of steel Yankee dryers, is currently manufacturing sixteen steel Yankee dryers at its TT SYD Technology Center in Massa. Since its inauguration in 2016, this fully integrated plant has been operating at full capacity, implementing the entire production cycle of Toscotec's TT SYD, from metalworking, precision mechanical machining to thermal treatment and surface metallization, up to non-destructive tests and certifications.

The sixteen TT SYD that are presently under construction feature different sizes, with diameters ranging from 3,650 mm to 6,705 mm and width from 3,100 to 6,050 mm. Toscotec has been manufacturing the world's largest diameter steel Yankee dryers and their demand has been steadily going up to this day: 50% of the TT SYD currently under construction have diameters from 18 to 22FT. In view of this, the strategic choice of the Technology Center's location offers a clear logistical advantage, by ensuring that large diameter Yankees get easy access to the seaport for expedite shipping operations.

The market's demand for medium and large diameter TT SYD is far-reaching around the globe. The orders for these sixteen Yankee cylinders come from paper mills situated across four

continents: Asia, North and South America, Europe and Africa, with Asia and the Americas together taking the lion's share.

Toscotec sustained operations in the manufacturing of TT SYD are testament to the success of Toscotec's design, including large diameter Yankees. Feedback from the first installations of 18FT Yankees and of 22FT Yankees have been of substantial improvements in drying efficiency, attracting paper mills to the opportunity of cost savings. Toscotec's global market share of steel Yankee dryers exceeds 60% and nearly all new steel Yankees currently installed in paper mills in Western Europe are Toscotec-supplied.

Parallel to the success of its manufacturing operations, Toscotec is relentlessly striving for new breakthroughs with its R&D division. Following the engineering of the second generation TT SYD in late 2013, with improved rib design and metallization, as well as increased thermal exchange, Toscotec's steel Yankee dryers are now looking into the future with their third generation's design, which will be presented later this year.

PRESS RELEASE | 15TH MAY 2018

TWO TOSCOTEC'S TT SYD START UP

AT BATAAN 2020, INC. IN THE PHILIPPINES.

On March 16 and April 24, the Philippine paper and tissue producer Bataan 2020, Inc. has fired up two Toscotec's steel Yankee dryers TT SYD-3600MM at its Samal mill in Bataan province, Philippines. Toscotec's second generation TT SYD replaced previous installations of cast iron Yankees on PM2 and PM5.

The scope of supply also includes erection supervision, commissioning and start-up assistance, as well as onsite training programs on operation and maintenance.

With this new double reference, Toscotec enters the growing Philippine market and strengthens its undiscussed leadership as global manufacturer of steel Yankee dryers. In Asia alone, Toscotec has sold over one hundred TT SYD, out of more than 200 units worldwide. Particularly in

the segment of replacing cast iron Yankee with steel Yankee dryers, Toscotec is very far ahead of the game, with over 80 TT SYD replacements in five continents around the world.

Mr. Emmanuel Gaspar, Executive Vice President of Bataan 2020, Inc. declared, "At Bataan 2020, we are committed to responsible industrial production to protect the environment. Among other projects, we produce steam from renewable power sources. Toscotec's TT SYD make it possible for us to actually reduce steam consumption and keep up the highest standard of efficiency on our operations. We are happy to say that the two TT SYD have been performing extremely well since start-up".

Gabriele Martinelli, Toscotec's Area Sales Manager Asia & Pacific replied, "We are very proud to see Toscotec's cutting edge technology applied to a green project, such as Bataan 2020's. The market is definitely moving toward the most efficient drying solutions, which deliver the best performances with the lowest ecological footprint. This is why we are confident that TT SYD and its continuous evolutions will play an increasingly important role in the years to come".

TOSCOTEC PRE-ANNOUNCES TWO NEW TECHNOLOGIES

AT CIDPEX NANJING 2018.

During Cidpex 2018 held in Nanjing from April 18 to 20, Toscotec pre-announced two of its latest technology solutions for tissue.

According to Toscotec Sales Director, Mr. Marco Dalle Piagge, for many years now, Toscotec has always been focusing on the research and development work related to tissue machine's energy reduction and efficiency increase. In previous years, Toscotec mainly focused on the drying section and developed leading innovations with numerous references across the globe, such as its steel Yankee dryer TT SYD, steam-heated hoods, various press configuration including its shoe press technology TT NextPress and its jumbo press TT SPR-1425 with diameter 1425 mm. In 2018, Toscotec introduced two innovations positioned outside of the drying area of the tissue machine: a new crescent former concept in the forming area and the Core Assist Drive in the pope reel section.

Toscotec's new crescent former concept allows for an increase in water removal in the forming section, reducing the water content carried to the press area, thereby cutting on the drying burden of the press and drying sections. At the same time, it makes it possible to decrease the nip pressure between the press and the Yankee, allowing for higher bulk

and higher quality of the final product and reducing the machine energy consumption by 10% to 20%.

Toscotec's Core Assist Drive technology, by effectively reducing the nip pressure between the pope drum and the reel spool, better preserves paper bulk during winding, and increases the quality of the final product. This technology is about to enter its commercial operations, and the first tissue machine with this application in the Chinese market will start up in the summer, while in the European and the US markets other 4 machines are currently undergoing erection.

The detailed information of these two technological innovations will be released in June, during It's Tissue 2018, in Italy.

In addition, Mr. Dalle Piagge also offered the latest update on the world's first AHEAD-2.0L PRODERGY crescent former tissue machine, fired up in early 2018.

This machine has a width of 5,600 mm, a design speed of 2,100 m/min and it is currently undergoing a testing phase. It is expected to reach the operating speed of 2,000 m/min in the following weeks. Among a few specific conditions, it is worth highlighting that the steam pressure available on site is quite low, and the mill uses wet pulp coming directly from the nearby pulp mill, as raw material. Both of these conditions undoubtedly pose great challenges to the drying capacity of the tissue machine.

Based on the actual conditions of the user's production base, Toscotec increased the size of the steel Yankee, thereby improving its drying capacity, installed a TT SYD of second generation with diameter 22 feet, and a steam-heated hood system with numerous stages of energy recovery. This has significantly cut the mill's production costs, in comparison with gas-fired hoods, and it will achieve the objective of high speed with low consumption.

As we have learned, this tissue machine is the first of eight AHEAD-2.0L PRODERGY tissue machines sold by Toscotec, the other seven machines of the same model will successively start up in the upcoming months.

PRESS RELEASE | 18TH JUNE 2018

TOSCOTEC TO SUPPLY A DRYER SECTION REBUILD TO PAPERTECH PM1

IN TUDELA MILL, SPAIN.

Toscotec was selected to rebuild the dryer section of Papertech PM1 at Tudela mill, Spain. The customer has recognized Toscotec is the right partner to provide the best technology available in the drying process and to accomplish the company targets.

The ambitious aim of the project is to improve the actual gross production, by overcoming several constraints by intelligently applying Toscotec's Steel Dryer technology and its features. The base project goals were: increasing the production, by maintaining the same length of dryer section, and drying a wider paper sheet with the same dryer face length.

The scope of supply will be on a turnkey basis, confirming once more the consolidated skill of Toscotec to manage complex projects and coordinate all the involved parties.

With this achievement, Toscotec will strengthen its reputation for being an all-round partner for Paper and Board manufacturers.

A key factor of the dryer section modification is to replace completely the last four sections with TT SteelDryer technology, thus resulting in 20 new TT SteelDryers with increased diameter and drying face width. The scope of supply also includes TT AirTail, an advanced rope-less tail threading system, specifically designed for low speed and high basis weight.

Toscotec's service specialists will provide erection, supervision, commissioning and start-up assistance.

Delivery is forecast within the end of 2018, with start-up at beginning of 2019.

PRESS RELEASE | 2ND JULY 2018

TWO NEW TOSCOTEC'S PRODERGY TISSUE MACHINES START UP

AT APP OKI MILL, INDONESIA.

Toscotec fired up other two AHEAD-2.0L PRODERGY tissue machines at APP's OKI mill, in South Sumatra, Indonesia.

Following the start-up of two AHEAD-2.0L PRODERGY at Perawang mill earlier this year, these two OKI machines started production in less than 3 months after the start-up of the first of a series of Toscotec's PRODERGY machine ordered by Asia Pulp & Paper (APP) for its Perawang and OKI mills in Indonesia. In the next few months, other four machines will start up at the same site.

The AHEAD-2.0L PRODERGY is Toscotec's top of the line tissue machine, featuring 5.6 m width, 2,000 m/min operating speed, a second-generation steel Yankee dryer of 22 feet diameter and steam-heated hoods. Toscotec's TT SYD-22FT is the biggest steel Yankee dryer ever manufactured in the world for tissue application. Toscotec's energy saving innovations consolidate OKI mill's optimized green process: the paper mill is fully integrated with a massive pulp mill of 2.8 million ton/yr estimated output.

Equipped with the most advanced environmental technology presently available, OKI production base is very much green-oriented. The mill will be powered by clean and self-sufficient energy generated from the pulp production process and wood bark gasification. Tissue production guarantees the highest standards in terms of tissue machine's efficiency

and energy consumption reduction, thanks to PRODERGY's technological advantages.

Toscotec's Chief Customer Service Officer Mr. Valter Di Nardo commented, "The erection, commissioning and start-up of OKI tissue machines was completed in record time. Toscotec's technical team on site installed the first foundation plate on January 4. After just over one hundred days, we fired up the first AHEAD-2.0L PRODERGY, and after one week, the second start-up followed suit. The mill expressed satisfaction for tissue quality starting from day one".

PRESS RELEASE | 9TH JULY 2018

TOSCOTEC LAUNCHES ITS KEY INNOVATIONS

AT IT'S TISSUE 2018.

Toscotec launched its latest innovations during **iT's Tissue 2018**. The advanced technologies it presented at its NOWNEXT open house include: Toscotec's S-Crescent Former and the new TADVISION® machine.

The S-Crescent is a high efficiency forming section, which significantly increases dryness before the pressing area, through optimized dewatering. The aim is to reduce the burden of water removal for the press and consequently the drying section, by boosting dewatering in the wet section of the tissue machine.

Drawing on the experience of its successful installation in the U.S. market in 2004, Toscotec entirely redesigned its TAD machine to achieve superior tissue properties, including bulk and absorbency, and outstanding results in energy consumption. The new TADVISION® ensures improved runnability and machine efficiency thanks to its unique serpentine TAD section, composed of three TAD honeycomb coated drums. A detailed Computational Fluid Dynamic analysis ensures a highly optimized airflow in the air-system ducts leading to the TAD section and Yankee hoods. Overall, TADVISION® ensures a more effective use of energy, bringing consumption down to 4.5-5.5 MWh/ton, a significant decrease compared to the consumption of current TAD machines, which is estimated in the range of 6.0-7.5 MWh/ton. Toscotec is continuing its energy reduction program and is committed to further reducing the overall consumption to less than 4.5 MWh/ton for a plant of the same production capability over the next few years.

The other advanced technologies presented at Toscotec's NOWNEXT open house include new upgrades of Toscotec's rewinding line, TT WIND-H and TT WIND-L, and an overview of Toscotec's excellence in tissue drying, with TT SYD and the Yankee Hood and Air System plants. In particular, Toscotec's rewinders feature improved performances through a newly perfected automatic web tension control, fast cycles, operator friendly automation and the automatic shaft handling system. The Energy and Environment department presented the most comprehensive range of drying configurations presently available in tissue making, designed to suit all needs and operating conditions, with state-of-the-art heat recovery technology, including up to six energy recovery stages in one single plant.

Finally, Toscotec's YES (Your Expert Service) division launched its 24/7 service catering for customers round the clock all over the world, with a very special tool, YES – CONNECT-VISION, the new helmet enabling fully integrated communication and problem-shooting excellence.

This year visitors concluded their experience of NOWNEXT open house in the newly inaugurated canteen, a brand-new building within the expanded perimeter of Toscotec's headquarters, which includes recreational space for employees, such as a fitness center and two lounges.

PRESS RELEASE | 9TH JULY 2018


TOSCOTEC
NOW
NEXT
NOWNEXT


TO CHOOSE TT SYD
6
7
8
9
10
10
TOSCOTEC
NOWNEXT


TOSCOTEC
Continue the journey
Discover
NOWNEXT
ENERGY
SAVING
PLANT 8

PRESS RELEASE | 12TH JULY 2018

TOSCOTEC'S MODULO-PLUS FIRED UP

AT CELUPAPER S.A., ARGENTINA.

Celupaper S.A. successfully started up PM4, a new MODULO-PLUS tissue machine supplied by Toscotec, at its Papelera Nicaragua mill, Argentina. The tissue machine started producing sellable paper immediately after start-up and is scheduled to reach the target speed in the following weeks, after careful fine-tuning.

The new MODULO-PLUS produces 65 tpd and it features a single layer TT Headbox, TT SuctionPressRoll, TT SYD-3200MM, TT Milltech-MYH monosystem gas-fired hoods. The scope of supply also includes the approach flow system, the electrification & control system, training, erection supervision, commissioning and start-up assistance.

PM4 is part of a series of repeated orders awarded to Toscotec by the leading South American tissue producer. In 2015, the Italian manufacturer carried out the rebuilding of PM2, an existing Fourdrinier machine, and supplied a new steel Yankee dryer TT SYD-2500MM and the complete steam and condensate system. In 2016, Toscotec supplied PM3, a complete MODULO tissue line.

Mario Speranza, CEO of Celupaper S.A. says, "Thanks to the continued production increase implemented with Toscotec's plants, we have grown significantly in the South American market. Since 2015, we boosted production by over 100 tpd. Tissue quality, machine efficiency and energy reduction are our key standards of investments in new equipment. Throughout 4 years of close partnership with Toscotec, we have achieved good results with respect to all of these aspects and have continuously improved such results".

"PM4 project evinced once again the excellent cooperation we have with Celupaper. With every new project, we aim to improve their performances. We worked intensively together on the reduction of energy consumption, starting from the design, with our TT DOES solution (Drying Optimization for Energy Savings) all the way to the fine-tuning of the plants at the mill site. On PM4, we also optimized the layout of the electrical and auxiliary plants, to guarantee better access for the operators to the different areas of the machine" commented **Toscotec's Project Manager Pier Paolo Brunazzi.**

PRESS RELEASE | 18TH JULY 2018

TOSCOTEC AND TISSUE INDUSTRY LEADERS JOIN FORCES AT TAPPI

TO SET GUIDELINES FOR STEEL YANKEE DRYERS.

Steel Yankee dryers have been operating since 2000, and in recent years, they have become the dominant trend in the tissue industry. At present, the estimated number of steel Yankee dryers in operation worldwide is almost 400 units.

However, to this day, there aren't any official guidelines regulating their safe operation, proper inspection and maintenance. The National Board Inspection codes for pressure vessels (such as ASME, PED, CSEI, JIS etc.) regulate the design and construction of steel Yankees, but their domain ends with the delivery. End users often demand that SYD checks and services be performed according to TAPPI's standards, pointing to the need for an internationally recognized set of guidelines.

In 2015, Toscotec first put forth the idea of creating an official set of standard practices for steel Yankee's operations. TAPPI has since entrusted the Yankee Dryer Safety

and Reliability Committee - Steel Yankee Subcommittee with the task of creating a new TAPPI TIP (Technical Information Paper) dedicated to Steel Yankee Dryers. In parallel, Toscotec has played a key role in helping update the TAPPI reference book Guidelines for Safe Operation and Condition Assessment of Yankee Dryers, which includes both updated contents for cast iron Yankees and steel Yankees. These publications are expected to become available in 2019.

Toscotec North America's Lead Technical Service Analyst, Troy Kapalczynski is Chairperson of TAPPI's Steel Yankee Subcommittee. As he explained, "The subcommittee is composed of manufacturers and end users who collaborate to expand the knowledge of Yankee dryers and address key questions about what and how procedures should be done in order to safely operate, properly control and maintain one of the most important equipment of a tissue mill. We are working to give end users the answers they need to optimize their operations".

Valter Di Nardo, Toscotec's Chief Customer Service, added, "The subcommittee runs a peer-reviewed, highly specialized and technical project. Specifically for steel Yankees, we addressed issues such as inspection guidelines and principles, non-destructive examinations, routine and non-routine inspections, warm-up and cool-down procedures, and boiler water chemistry. In addition, we also developed maintenance and repair practices among other operating and reliability guidelines. These are all fundamental questions for Yankee managers worldwide".

As the leading supplier of steel Yankee dryers worldwide, Toscotec is the leading provider of content for TAPPI's Steel Yankee Subcommittee. In this respect, **Toscotec North America's Area Engineering Manager, Alessandro Rocchiccioli** pointed out, "We have 18 years of experience in the design, manufacture, and operation monitoring and service of steel Yankee dryers. With over 200 references, we have TT SYD running across the globe under a wide range of different environmental, pressure and operating conditions. We want to share this experience with the entire tissue industry, because the market has confirmed that steel Yankees are the future and, as an industry, we need a clear regulatory framework, as cast iron Yankees had back in 1992".

ARTICLE | 26TH JULY 2018

TOSCOTEC BOOSTS ITS GREEN PERFORMANCE

THROUGH SUSTAINABLE OPERATIONS.

Toscotec has successfully renewed its ISO 14001 certificate and EMAS (Eco-Management and Audit Scheme) registration for the twelfth consecutive year since 2006. It thereby confirms its long-standing commitment to eco-sustainability, starting from its own environmental performance.

In 2005, Toscotec began procedures to evaluate its internal processes according to the strictest international standards of environmental protection. This entailed undergoing an articulate and audited procedure, which led to the the draw up of an environmental management system and a three-year plan. Specifically for EMAS, the Italian supplier also issues an annual report, examined by private and public bodies, including external auditors and EMAS national Competent Body ISPRA.

As a result, back in 2006, Toscotec became the first Italian supplier of tissue and paper machinery to obtain both the ISO 14001 and the EMAS registration and to this day, it remains the only one in Italy.

Toscotec strives to step up the eco-efficiency of its operations on an annual basis. In this view, EMAS is a guarantee vis-à-vis the community and the market at large, as it ensures a comprehensive set of corporate behaviours with environmental impact is kept under serious scrutiny.

Andrea Marzaro, Toscotec's Operations Director (COO), affirmed, "Toscotec is working towards a continued and tangible improvement of its environmental performance, on a voluntary basis. Full compliance with Italian laws and regulations is the minimum prerequisite for us. We are determined to go the extra mile, pursue the highest environment standards and achieve excellence. Eco-sustainability and environmental protection are our core values and as such inspire our operations. Energy reduction, in its widest sense, is a big part of it".

In recent years, Toscotec has partly redesigned its layout to become a fully integrated and compact production base, thereby optimizing its manufacturing efficiency. Inspired by lean production, it streamlined its logistic operations and achieved a concrete reduction of power consumption, due to the rationalization of handling and transportation processes.

Toscotec's headquarters currently include eight workshops, four of which dedicated to the pre-assembly of tissue and paper & board lines. Pre-assembly is one of the cornerstones

of Toscotec's quality guarantee. It aims to reduce the time, the energy and the costs of the erection at the mill and therefore achieve the performance guarantees in a shorter period.

Andrea Marzaro also pointed out "With respect to renewable energy, since 2011 we have been generating electric power from solar energy. In 2011, we implemented the first installation of solar panels on the roofs, covering an

area of approximately 1,250 m2 and generating up to 190 kWh electricity, which we give back to the grid. Phase two was carried out in 2012, across 600 m2, with an output of 100 kWh. Phase three is currently underway".

Toscotec is committed to protecting the environment at local level through its operations, and globally through the design and manufacture of its cutting-edge technology. The Italian manufacturer manages both direct environmental aspects - pertaining to its own operations, like waste, emissions, use of raw materials, energy and water resources, etc. - and indirect aspects.

With respect to its indirect environmental aspects, **Toscotec's Technical Director, Paolo Raffaelli** pointed out, "Through our advanced design and manufacturing process, we have achieved a significant reduction of the environmental impact generated by our machinery and process, confirmed by field data and positive customer feedback. Our engineering approach aims to enable paper mills to improve their overall performance, by reducing the need of fresh water, electricity and thermal energy, and minimizing their atmospheric emissions, including noise".

From TT SYD and TT SteelDryers, to Energy Saving tissue lines, to TT SAF (Short Approach Flow) and TT DOES (Drying Optimization for Energy Saving), Toscotec is the leading supplier of technology specifically designed for energy savings and with view to this, it is extensively investing in R&D and innovation.

PRESS RELEASE | 2ND AUGUST 2018

TOSCOTEC'S TT STEELDRYERS ARE GOING TO LAND IN CANADA.

CASCADES PACKAGING SELECTED TOSCOTEC TO SUPPLY A DRYER SECTION REBUILD AT KINGSEY FALLS MILL.

Cascades Packaging entrusted Toscotec with a major rebuild of the dryer section of PM1 at Kingsey Falls mill, Canada. In view of the challenging targets of the project, Cascades decided that Toscotec's technology was the right match for this rebuild, thanks to the flexibility and high level of customization guaranteed by the Italian supplier with regards to the seamless integration between the existing equipment and the new tailor-made solution.

Toscotec's rebuild will achieve an 8% production increase. The Italian supplier will accomplish this substantial upgrade without increasing the overall length of the dryer section and without increasing the actual width of the dryers' frame in cross direction. Toscotec's TT SteelDryer allows better performances in terms of specific evaporation rate, thanks to its reduced shell thickness. Due to its shorter taper length, TT SteelDryer

dries a wider sheet with the same space requirements of a traditional dryer section.

The scope of supply includes a number of TT SteelDryers, specifically designed for an operating steam pressure of 14 barg, as well as doctors, wire tensioning system, guiding and sheet stabilizing components. Toscotec's service specialists will also provide supervision, commissioning and start-up assistance.

With this new contract, Toscotec strengthens its reputation as a top P&B machinery supplier on technically demanding markets such as North America. In particular, through its proven ability to supply all-round tailor-made solutions based on the specific features of the existing equipment and to deliver significant upgrades, over the years Toscotec gained the trust of major papermaking producers across the globe.

Delivery is forecast within the end of August 2018.

PRESS RELEASE | 9TH AUGUST 2018

VINDA PERSONAL CARE (GUANGDONG)

FIRED UP TWO NEW TOSCOTEC SUPPLIED AHEAD-2.0M TISSUE MACHINES.

Two of Toscotec's AHEAD-2.0M tissue machines started up at Vinda Personal Care (Guangdong) in Yangjiang, Guangdong, PRC. They will increase the group's annual production by over 60,000 tons. With these start-ups, Vinda kicked off production at its new Yangjiang mill, strategically located by Yangjiang Port in south-west Guangdong.

Toscotec's AHEAD-2.0M lines feature a second generation TT SYD-18FT of 5486mm diameter and state-of-the-art energy saving technology included in the profitable TT DOES package (Drying Optimization for Energy Savings). The two tissue machines started up on the same day at the same time, proving the high degree of proficiency of the start-up teams.

Throughout six years of close collaboration, Toscotec and Vinda have honed their synergy and consolidated their partnership. **Toscotec's Customer Care and Project Manager Stefano Raffaelli** said, "Our teams have reached a very high efficiency of cooperation. Together we have optimized the project timing, during both installation and commissioning. We cut down the duration of tests at the mill, thanks to the thorough checks we perform during pre-assembly at our factory, as an integral part of our quality guarantee".

Vinda International's Project Development Center Director, Mr. Liang Weixiong commented, "After three months of intensive work on site, it is a great satisfaction to see these start-ups hit the targets of the scheduled date and time. It is indeed the result of very careful preparation on all the machine's functions".

Stefano Raffaelli added, "For all our Vinda's machines we implemented an efficient use of steam and condensate with different levels of energy recovery. This carefully balanced system ensures the lowest possible energy consumptions. The dedication and competence of the Vinda and Toscotec teams bring out the best of our technology. We achieved good results in terms of energy usage, as well as production increase with speed-ups and optimizations, all of which exceed the original objectives of the projects".

Toscotec's tissue lines are currently running at six of Vinda's production bases across China, in Shandong, Hubei, Sichuan, Zhejiang and Guangdong.

In the coming months, Vinda will fire up another four Toscotec's lines at its new paper mill in Xiaogan, Hubei province.

PRESS RELEASE | 23TH AUGUST 2018

TOSCOTEC TO SUPPLY TT STEELDRYERS TO CASCADES PACKAGING

AT CABANO MILL, CANADA.

Cascades Packaging selected Toscotec for the supply of TT SteelDryers to be installed at its Cabano mill in Canada. This is a repeated order, following a previous order by Cascades Packaging for a major dryer section rebuild at Kingsey Falls mill. Cascades Packaging confirmed its trust in Toscotec, as the right partner to achieve its strategic objectives of paper machine optimization.

On this project, Toscotec will supply seven TT SteelDryers for the first dryer section, specifically designed for an operating steam pressure of up to 11 barg. The new steel drying cylinders will allow a boost of production and an increase in sheet width at the beginning of the dryer section. Thanks to their reduced shell thickness, TT SteelDryers feature a higher heat transfer rate, compared with cast iron dryers. Since the thermal conductivity of steel and cast iron is similar in the range of operating temperatures, steel dryers with thinner shells offer a higher drying capacity. The scope of supply also includes erection supervision, commissioning and start-up assistance.

Toscotec thus further strengthens its partnership with the Cascades Group in North America. With this new reference, the Italian supplier also reinforces its leadership with respect to the design and upgrade of the dryer section of paper machines.

Delivery is expected for mid-November 2018.

PRESS RELEASE | 30TH AUGUST 2018

CELUPAPER S.A. BOOSTS PRODUCTION WITH A NEW TOSCOTEC

SUPPLIED MODULO-PLUS IN ARGENTINA.

Toscotec will supply a new MODULO-PLUS tissue line to Celupaper S.A. of the leading South American group Grupo Vual, based in Argentina. The MODULO-PLUS machine - PM5 - is scheduled for delivery in autumn 2019 and it will be installed at Papelera Nicaragua mill.

The MODULO-PLUS has a daily production of 65 tpd and is equipped with TT SuctionPressRoll, TT SYD-3200MM and TT Milltech-MGYH Multigen hoods. The scope of supply also includes the approach flow system, the steam and condensate system and the machine and distribution control system.

PM5 is the fourth repeated order awarded by Celupaper to Toscotec in 4 years. The Italian manufacturer had previously supplied a major rebuild on PM2 in 2015, then a MODULO machine - PM3 - in 2016 and finally PM4, a MODULO-PLUS line, which started up in mid-July 2018.

Toscotec's Area Sales Manager Gabriele Romanini said, "The fact that Celupaper chose to work again with us on their PM5 project is an exciting challenge to exceed their expectations on productivity and energy reduction. Our TT DOES (Drying Optimization for Energy Saving) package, in combination with our Multigen Hood in cogeneration mode, is the core of this effort. We are currently working on the engineering, where the design of our system will integrate into the mill's cogeneration plant with a gas

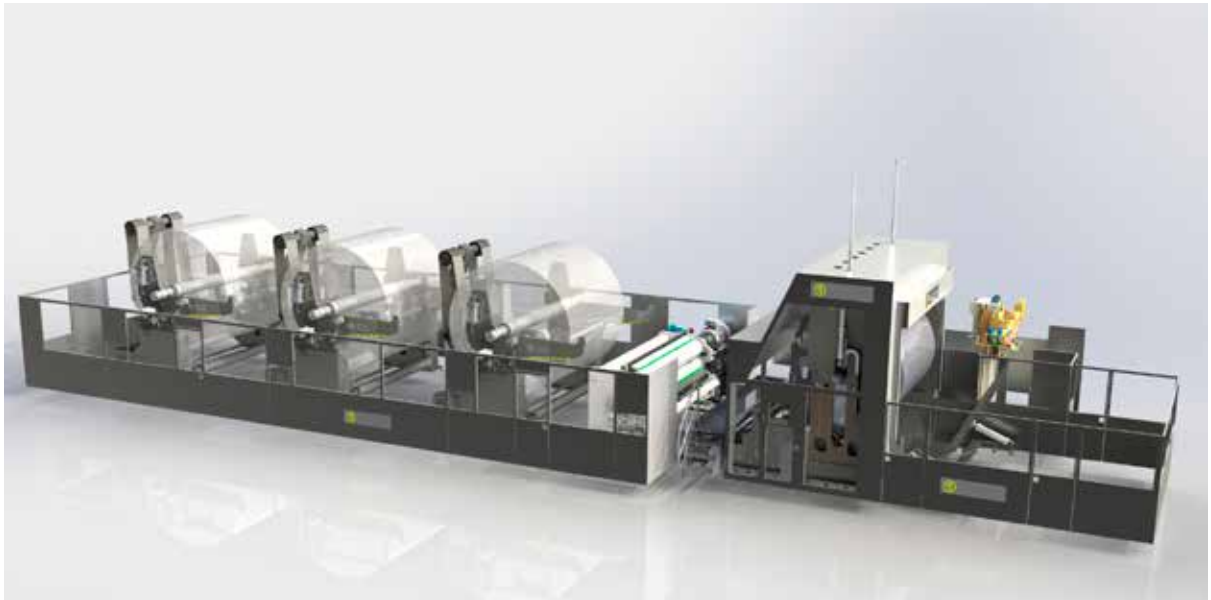
turbine. Back in 2011, our Energy and Environment department won the PPI Efficiency Improvements of the Year Award with the Spanish producer L.C. Paper 1881 SA, for the effective integration of the tissue machine's hood system with the cogeneration

facility. Drawing on that experience, we expect to achieve substantial energy recovery and very interesting cuts on the machine operating costs".

Mario Speranza, CEO of Celupaper S.A. commented on the order, "We invest in leading-edge technology to step up our growth in the high-quality tissue market in South America. Toscotec's tailor-made design has once again provided us with the flexibility and competitive advantage we need to succeed. We knew that Toscotec had significant experience with cogeneration plants and therefore we have great expectations for the performance and consumption of PM5".

PRESS RELEASE | 6TH SEPTEMBER 2018

HYGIENIC TISSUE MILLS FIRED UP A NEW TT WIND-P TISSUE REWINDER SUPPLIED BY TOSCOTEC, IN SOUTH AFRICA.



On July 27, Hygienic Tissue Mills started up a Toscotec-supplied TT WIND-P tissue rewinder at its Pietermaritzburg mill, in eastern South Africa. This is a repeated order for Toscotec, following the supply of a MODULO-PLUS tissue machine, PM2, in 2017. The TT WIND-P slitter rewinder serves PM2, processing 100% virgin pulp and recycled paper parent rolls.

The TT WIND-P slitter rewinder features 2 unwind stands and handles parent rolls of 2750 mm sheet trim and 2500 mm diameter, with a design speed of 1500 mpm. The pneumatically loaded slitting system has a minimum width of 150 mm. Toscotec supplied the complete electrification and control system, and the sectional drive system. The scope of supply also included the erection supervision, commissioning, start-up assistance, and on-site training.

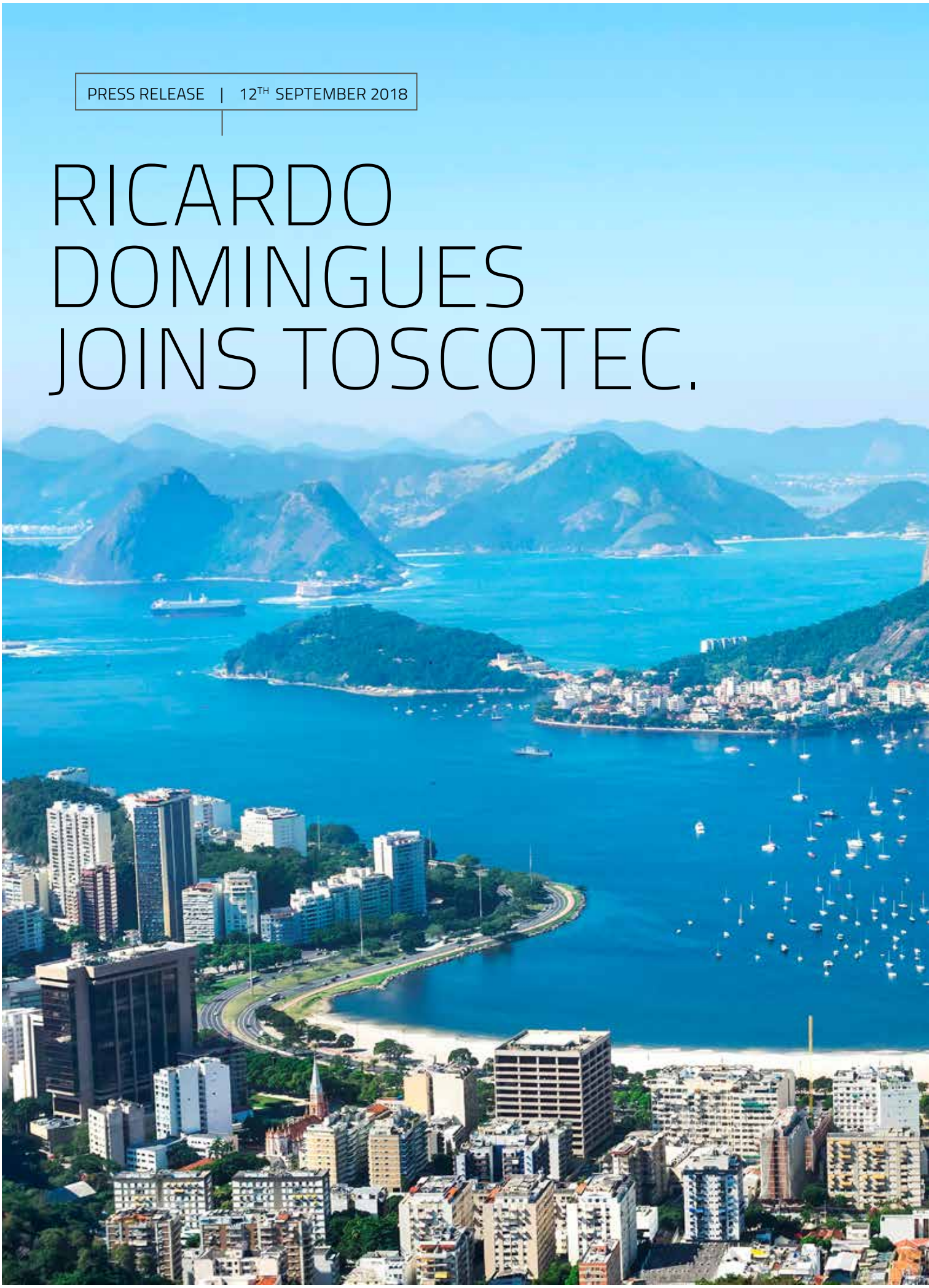
Toscotec Start-up & Service Engineer David Ponte commented, "It was one of the fastest commissioning I have seen for a rewinder.
The TT WIND reached its maximum speed in record time with a final product that was already sellable. Thanks to the great cooperation of Hygienic Tissue's team, we completed fine tuning in two days with the machine running at top speed".

Hygienic Tissue CEO Ashraf Jooma said, "On the day of start-up, we reached the maximum speed in a few hours. On this rewinder, we expect to get the same efficiency that we have on the MODULO-PLUS machine. High efficiency and consumption reduction are our priorities, and we are happy with the results we are getting in both areas".

Matteo Giorgio Marrano, Toscotec Area Sales Manager said:
"The TT WIND-P rewinder completed the scope of supply of a MODULO-PLUS tissue line that has been running efficiently for nearly one year and a half. This is a new achievement for Toscotec in the South African market, which has been growing steadily in the last few years. Hygienic Tissue's strong focus on energy savings matches our mission of tailoring the design of high performing tissue machines to the mill's specific working conditions, in order to optimize energy usage. The good performance of the slitter rewinder goes into this direction".

PRESS RELEASE | 12TH SEPTEMBER 2018

RICARDO DOMINGUES JOINS TOSCOTEC.



Toscotec has revealed plans to expand its tissue and paper & board businesses in Brazil. Toscotec announced that Ricardo Domingues has joined the group as Sales Manager of the Brazilian market, both for tissue and paper & board.

Toscotec is set to consolidate its market position with the support of Domingues, who brings over 20 years of experience in the tissue and paper industry in Brazil.

Thanks to Domingues' international expertise in design, sales and services, Toscotec is taking a new step in growing its customer base in Brazil.

ARTICLE | 20TH SEPTEMBER 2018

TOSCOTEC GROUP'S SERVICE PROVIDER

S.TO.R.I. EXPECTED TO OUTPERFORM ITS 2017 RECORD SETTING RESULTS.

S.TO.R.I., owned by the Toscotec Group, specializes in maintenance services for all minor and major rolls used in papermaking and converting machinery of the tissue and paper industry. In 2017, S.TO.R.I. set a record for turnover in its forty-five year history. This positive performance derives from the strategic synergies achieved with Toscotec, who acquired 100% of S.TO.R.I.'s shares in December 2011. In the period from 2012 to 2017, S.TO.R.I. sustained a 30% growth rate and interim results in 2018 have been confirming this trend, leading to expectations that it will outperform last year's achievements.

Since 2012, S.TO.R.I. and Toscotec have deepened their long-standing cooperation. By merging S.TO.R.I.'s specialization in rolls maintenance with Toscotec's engineering capabilities, they accomplished full integration of expertise and higher efficiency in the design and services of roll refurbishing. S.TO.R.I.'s workshop and offices are located inside Toscotec's headquarters, in Marlia (Lucca).

S.TO.R.I.'s professional experience was built over forty-six years, starting from its foundation in 1972, when it started providing maintenance for papermaking and converting machines. S.TO.R.I. focuses on the inspection, repair and overhaul of not only press rolls but all other rolls, such as forming roll, wire and felt rolls, pope reel drum, and spools. Its mission is to deliver highly specialized services on a continuous basis. The timing becomes important insomuch as customers aim to increase their OEE and reduce maintenance costs.

S.TO.R.I.'s specialists make a precise assessment of the wear conditions of a roll and evaluate its expected performance and risk of failure, so that overhauling can be scheduled efficiently, maximising operation life and minimizing maintenance costs. The majority of S.TO.R.I.'s customers nowadays rely on predictive maintenance. Through regular vibration analyses, S.TO.R.I. estimates the performance trend of a given roll and the possibility of failure. Based on these results, it predicts the period before the next maintenance. This assessment is always a balance of different factors. Drawing on their vast experience, S.TO.R.I.'s specialists

can provide the customer with a number of solutions, factoring in time, quality and cost. Based on the contingent needs of the mill, they apply the best-customized solution at a given moment in time. As a result, S.TO.R.I.'s skilled technicians know the components inside out, including their history, weak points and features, much like a doctor knows his patients.

S.TO.R.I.'s range of highly specialized services include predictive maintenance, preventive maintenance, press roll revision and complete overhauling, dynamic balancing, upgrades and non-destructive examinations (NDE). For press roll overhauling, for instance, the company provides complete service packages, including inspection, repairs and spare parts.

Production capacity exceeds 450 components per year, of which suction press rolls and blind drilled press rolls account for approximately 40%, while the rest is made up of various rolls of tissue, paper and converting machines.

S.TO.R.I.'s client base is twofold. Toscotec-associated business accounts for approximately 20% of turnover and covers Europe, Africa, the Middle East, South America and South-East Asia. Italy-based paper mills and converting companies generate approximately 80% of turnover. Essity, Smurfit Kappa, Lucart, Sofidel, Wepa, Cartiere Carrara, Industrie Cartarie Tronchetti, Industrie Cartarie Pieretti, DS Smith, Renova, The Navigator Company are among its main customers.
To this second client base, Stori provides maintenance for equipment supplied by any manufacturer.
As a result, S.TO.R.I.'s expertise and experience encompasses a wide range of technical solutions designed throughout the years by all the main suppliers and it equips S.TO.R.I.'s experts with the ability to devise tailor-made upgrades for its customers.

STORI

www.storisrl.com

Toscotec's Paper & Board Division

INCREASE YOUR PRODUCTIVITY.

The ongoing quest for extremely innovative, high performance technology solutions and applications has resulted in the creation of top level products including the TT XPress and TT SteelDryer.

Toscotec's PAPER & BOARD Division is focused on optimising production processes by rebuilding and overhauling existing paper machinery.

YOUR NEEDS, OUR SOLUTIONS.

www.toscotec.com

TOSCOTEC

PRESS RELEASE | 9TH OCTOBER 2018

SMURFIT KAPPA
NETTINGSDORF SELECTED

TOSCOTEC TO SUPPLY A DRYER SECTION REBUILD.

Nettingsdorfer Papierfabrik AG & Co KG selected Toscotec to rebuild the dryer section of PM6 at Nettingsdorf mill in Austria. Nettingsdorfer Papierfabrik is a member of Smurfit Kappa Group and one of the largest European sites of the company.
The mill is one of the leading producer of containerboard in Europe. The paper machine 6 produces Kraftliner with 7.4 m reel trim and 1,100 mpm speed.

The rebuild of the dryer section of PM6 is part of the Future Energy Plant Project. This forward-looking project has the objective to reduce CO_2 emissions by 40,000 tonnes (= 2/3 of the current emissions).

With this rebuild, Toscotec breaks new ground and takes it to the next level, by supplying a new dryer section for a large-format paper machine.

Smurfit Kappa has decided to install 5 TT SteelDryers (3 additional and out of the 63 existing dryers 2 will be replaced), as the best technical solution to achieve its production and efficiency increase targets. The TT SteelDryers will be designed for a steam pressure of 12 barg. The supply is on a turnkey basis, including erection supervision, commissioning and start-up assistance.

The rebuild is scheduled for the second quarter of 2019.

PRESS RELEASE | 11TH OCTOBER 2018

SOFIDEL AMERICA PARTNERS WITH TOSCOTEC FOR THE

TURNKEY SUPPLY OF TWO TISSUE LINES AT ITS NEW OKLAHOMA MILL.

Toscotec will provide a complete plant with two AHEAD-2.0L tissue machines on a full turnkey basis to Sofidel America's integrated plant (paper mill and converting) in Inola, Oklahoma, the second greenfield investment of the Group in the United States. The start-up is scheduled for the last quarter of 2019 for PM1 and for the first quarter of 2020 for PM2.

The supply includes two AHEAD-2.0L tissue machines, equipped with second generation TT SYD and gas-fired TT Milltech-DYH Duosystem Hoods, with a high level of energy recovery. Each AHEAD-2.0L machine features a sheet trim of 5,500 mm, an operating speed of 2,000 mpm and is designed for an annual production capacity of over 80,000 tons.

The supply also comprises the stock preparation equipment and accessories, Toscotec's TT SAF (Short Approach Flow) ensuring increased operation efficiency, the Distribution Control System (DCS) and Quality Control System (QCS) and the dust and mist removal systems.

The project's turnkey scope includes the boiler plant, the compressed air station, the bridge crane, the shaft puller, the roll handling and wrapping systems, the chemical preparation system, the hall ventilation system and the water treatment system (Fresh Water Treatment Plant and Waste Water Treatment Plant).

Toscotec will also provide the detailed mill engineering according to US codes and standards, the construction management, the plant and the machine erection, commissioning and start-up supervision and training programs.

The two tissue lines are dedicated to the production of toilet paper and towels and will process 100% pre-dried virgin pulp.

Luigi Lazzareschi, CEO of Sofidel, states: "Toscotec's tissue lines represent an important part of our expansion plan in the US, one of the most important markets for our Group. A key technology investment for our new, integrated plant in Inola to serve the South-Central and Central-Western United States. We opted for one of the most advanced and energy-efficient technology, to help pursuing our penetration in the American market and sustaining the high quality of our products."

The construction of the plant – that will combine sustainability and technological innovation – started in March 2018 and will be completed by mid-2020. Once fully operational, the new facility will employ 300 full-time workers. Since the beginning of the expansion to the United States in 2012, Sofidel has now operations in seven states: Florida, Mississippi, Nevada, Ohio, Oklahoma, Pennsylvania and Wisconsin.

SOFIDEL

Endless care, innovative life.

Sofidel is a family-run company owned by Stefani and Lazzareschi families, and is the second biggest player in Europe today, and the sixth worldwide in tissue paper manufacturing, with net sales of 1,947 million USD (2017) and a production capacity of over one million tonnes per year (1,098,000 tonnes in 2017).

"We are honoured to have been selected for such an important investment by Sofidel. And even more so, this project represents the joint effort of two Lucca-based Italian companies who set out to succeed in the USA. I know that we have already achieved important synergies and I firmly believe that working together for a shared expansion target will lead to a successful outcome," says **Alessandro Mennucci, CEO of Toscotec.**

PRESS RELEASE | 18TH OCTOBER 2018

TOSCOTEC ENTERS THE JAPANESE MARKET WITH TWO TISSUE LINES FOR THE MARUTOMI GROUP.

Toscotec announced that it has been awarded a landmark contract by the Marutomi Group to supply two MODULO-PLUS ES tissue lines. The machines will be installed at Marutomi Paper's mill and at Ono Paper's mill in Fuji city, Shizuoka, Japan, and are scheduled for start-up respectively in the first and second half of 2019. This is a repeated order for Toscotec, who supplied a Steel Yankee Dryer TT SYD-12FT to Marutomi Paper in 2013, to replace an old cast iron Yankee.

Toscotec will provide two MODULO-PLUS ES (Energy Saving) tissue machines, featuring a second generation Steel Yankee Dryer TT SYD, steam-heated hoods TT Milltech-DYH, and the shoe press TT NextPress. Each of the MODULO-PLUS ES machines has a sheet width of 2,850 mm, an operating speed of 1,500 m/min, and an annual production of over 22,000 tons.

The scope is the same for both machines and comprises Toscotec's patented TT SAF (Short Approach Flow) system, a pope reel automatic shaft return system, an in-line shaft puller and the tissue machine's dust and mist removal systems. Toscotec will supply its proprietary Distributed Control System TT DCS, which was developed specifically for these projects on a Mitsubishi platform, in cooperation with the Japanese Corporation. The production lines' detailed engineering, erection supervision, commissioning and start-up assistance complete the supply.

Mr. Takeo Sano, President of Marutomi Paper Co., Ltd., says, "We have been running a TT SYD for four years now and are very impressed with its performance. We immediately thought of Toscotec when we approved this new major investment project. Over the past few years we got to know the company, its people and services and we trusted in their technical expertise and vast experience. We have very high expectations in terms of both product quality and energy efficiency".

"With this new order of two complete tissue production lines, we aim to strengthen our cooperation with the Marutomi Group and become a strategic partner for their expansion. We married the same philosophy of resource and environmental protection and I believe that they will be satisfied with the energy saving results of our MODULO-PLUS ES line. In recent years, we supplied three TT SYD to Japan and we are happy to get such a positive feedback from this demanding market" comments **Alessandro Mennucci, CEO of Toscotec.**

The supply of these two important projects is being supported by Kobayashi Engineering Works, Ltd.

PRESS RELEASE | 25TH OCTOBER 2018

TOSCOTEC TO SUPPLY ONE AHEAD-1.5S TISSUE LINE ON A TURNKEY

BASIS TO C.A.S. PAPER MILL IN THAILAND.

Toscotec will act as a turnkey supplier and provide a complete AHEAD-1.5S tissue production line to C.A.S. Paper Mill in Sing Buri, Thailand. The delivery is scheduled for 2019 and the start-up for the first quarter of 2020.

The turnkey supply includes the AHEAD-1.5S tissue machine, equipped with a second generation Steel Yankee Dryer TT SYD, Toscotec's shoe press technology TT NextPress and steam-heated hybrid hoods TT Milltech-HYH. The paper width is 2,850 mm, the maximum operating speed is 1,850 mpm with a daily production of over 90 tons.

Toscotec will provide its proprietary Distributed Control System TT DCS and the Quality Control System (QCS), the machine's dust and mist removal systems, an offline shaft puller and a jumbo roll wrapping system. A tissue slitter rewinder TT WIND-M is also part of the supply, along with its complete electrification & control system, and dust removal system. It features three unwind stands and it handles parent rolls of 3,000 mm diameter, with a design speed of 1,700 mpm.

The scope also includes the stock preparation equipment and accessories, the patented TT SAF (Short Approach Flow), and a fiber recovery system.

Toscotec will supply the tissue machine's erection, and the supervision of erection, commissioning and start-up. As part of the service packages, the Italian manufacturer will also provide its new YES-CONNECT-VISION helmet camera system, which allows the mill's maintenance technicians to connect remotely with Toscotec's YES specialists, who guide them to solve the problem onsite.

This project follows C.A.S. Group's plan to pursue its diversification by entering the tissue business. The Thai Group selected Toscotec to invest for the first time in the tissue industry, considering the Italian supplier's 30-year experience in the design and management of turnkey projects, on almost 40 different plants across four continents.

Mr. Torpong Thongcharoen, Managing Director of C.A.S. Paper Mill, said: "As newcomers in the tissue business, we conducted a very thorough survey prior to the selection of the tissue machine supplier. Finally, we selected Toscotec, because they presented the most satisfactory design, in line with our requirements in the areas of available energy resources and final product range. We needed one turnkey line to produce top quality products, ranging from low basis weight to towel tissue. Toscotec offered a complete supply and the most compelling design, which was confirmed by what we saw while visiting their references in Asia".

"We were happy to see that C.A.S. Paper Mill readily adopted the energy saving concept of our AHEAD-1.5S tissue machine. The energy saving technology at the core of this design has been successfully running in tissue mills for over a decade now, especially in Asia. TT NextPress gives the added value of the utmost flexibility, with high level of control automation for an easy regulation, and efficient maintenance" said **Gabriele Martinelli, Toscotec Sales Manager Asia & Pacific.**

PRESS RELEASE | 8TH NOVEMBER 2018

CASCADES PACKAGING STARTS UP PM1 AT KINGSEY FALLS

AFTER MAJOR REBUILD BY TOSCOTEC.

Following a major rebuild of the dryer section supplied by Toscotec with the installation of TT SteelDryers, Cascades Packaging fired up its PM1 at Kingsey Falls mill, Canada. The machine was started up on schedule on September 23rd, with the support of Toscotec's service engineers, who also provided the commissioning and the erection supervision onsite.

Toscotec implemented an efficient rebuild aimed to achieve the highest production increase with the lowest possible impact on the existing machine. Toscotec customized its engineering design in order to efficiently integrate its new dryer section into the existing equipment. The project was completed in record time and maintaining the overall length of the dryer section and the width of the dryers' frame.

Mathieu Gendron, Mill Manager of Cascades Kingsey Falls, says, "Toscotec delivered the project

according to the tight schedule we agreed upon. After start-up, we are seeing a promising increase in the production and we are confident that it will match the project targets".

Fabrizio Charrier, Toscotec's P&B Area Sales Manager, comments, "We are happy to see that the first results after start-up indicate that we will achieve the project's target of 8% production increase. This is a very significant result, especially if you consider that the scope of the rebuilding was reduced to a minimum, in order to limit shutdown and construction costs".

PRESS RELEASE | 22ND NOVEMBER 2018

VINDA PERSONAL CARE (CHINA) STARTS UP TWO AHEAD-2.0M

TISSUE MACHINES SUPPLIED BY TOSCOTEC.

On November 19th Vinda Personal Care (China) Limited started up two Toscotec supplied AHEAD-2.0M tissue machines in Xiaogan city, Hubei, China. With the start-up of these production lines, Vinda inaugurates its second production base in Xiaogan, located in the vicinity of its existing mill.

Both AHEAD-2.0M lines feature a second generation large diameter TT SYD, Toscotec's shoe press technology TT NextPress and the energy-efficient TT DOES solution (Drying Optimization for Energy Savings). This new configuration will grant additional improvements of the finished product's quality in terms of softness and basis weight uniformity, and an additional reduction of steam consumption. The two AHEAD-2.0M machines will increase the group's annual production by over 60,000 tons.

Anna Wang, Chief Operating Officer (COO) of Vinda International Holdings says, "This is what we count on when we work with Toscotec, our long-term partner: a successful start-up, on time and on budget. Vinda Personal Care (China) is a very strategic production base for the Group, we are investing on its operations and therefore we expect efficient performances and very low consumptions on these new Toscotec's lines."

Stefano Raffaelli, Toscotec's Customer Care and Project Manager, comments, "We achieved an important objective today. At Vinda's new Xiaogan mill, we started up the first two of Toscotec's machines with advanced technological features in China. We also delivered on the mill's requirement to start up both machines at the same time, thanks to the great coordination of Toscotec's and Vinda's teams during the entire installation and commissioning period. We continuously support Vinda's growth with our most advanced technology. We are currently installing another two tissue machines at Xiaogan mill that will feature significant upgrades both in the forming and pope reel sections."

Toscotec is installing other two tissue lines at Vinda Personal Care (China), scheduled for start-up over the next few months.

PRESS RELEASE | 29TH NOVEMBER 2018

LUCART STARTS UP A TOSCOTEC SUPPLIED AHEAD-2.0S TISSUE MACHINE

AT ITS PORCARI MILL.

Lucart fired up an AHEAD-2.0S tissue machine and a TT WIND-H slitter rewinder supplied by Toscotec at its Porcari mill, Lucca, Italy.

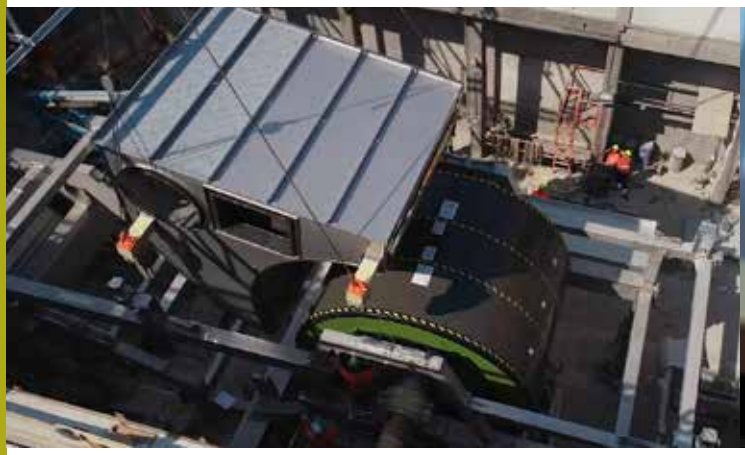
The AHEAD-2.0S machine has a paper width of 2,850 mm, an operating speed of 2,000 m/min, with a production of 125 tpd. It features a shoe press TT NextPress, a second-generation TT SYD Steel Yankee Dryer, gas-fired TT Milltech-DYH hoods, and a new pope reel, which preserves the sheet bulk through the accurate control of the jumbo roll winding pressure. The machine is also equipped with the dust and mist removal systems. In accordance with Lucart's high standards of bulk and softness, the forming section of the AHEAD-2.0S machine is designed for future integration of TT S-Crescent technology.

The TT WIND-H slitter rewinder features a web tensioning control, an automatic tail feeding system and a core winding assist system.

The scope of supply also includes the erection supervision, commissioning, start-up assistance and personnel training programs.

This is a repeated order for Toscotec, who has been awarded a number of contracts by the Lucart Group since 2008, both in Italy and in France.

"Lucart is a strategic partner", says



Riccardo Gennai, Toscotec Sales Manager for Europe, "We have been working on gaining and maintaining their trust for over 10 years, on a range of rebuild projects in Italy and in France. The start-up of this first complete tissue line is a significant accomplishment. It strengthens our mutual long-standing cooperation, and Toscotec's leading position in the Italian market."

Elena Troia, Toscotec's Tissue Division Project Manager, adds, "Lucart's technical team helped us working out the best solutions tailored to their need. We worked together to achieve this ambitious goal. The shoe press, paired with the new pope reel design and the future integration of the S-Crescent, contribute all together to the increase of the paper bulk and the achievement of excellent paper quality."

Massimo Pasquini, CEO of Lucart, states, "Our sustained growth is driven by careful investments. We set the highest standards for our suppliers when it comes to environmental protection. We selected Toscotec for the expansion of our Porcari production base, because over the past 10 years we learned from direct experience that their technology gives us a real energy-efficiency advantage. Another important consideration for this choice was tissue quality. This line will be dedicated to premium products, with higher bulk and superior hand feel."

Lucart has voluntarily undergone an Environmental Impact Assessment (EIA) for the AHEAD-2.0S project, in order to improve the environmental performance of this new production line that replaced an existing MG paper machine. Toscotec has recently proved a strong commitment to its environmental performance, as in 2018 they renewed their ISO 14001 certificate and EMAS (Eco-Management and Audit Scheme) registration for the twelfth consecutive year.

PRESS RELEASE | 6TH DECEMBER 2018

FOUR TOSCOTEC-SUPPLIED AHEAD-2.0L

PRODERGY TISSUE MACHINES BEGAN PRODUCTION AT ASIA PULP AND PAPER'S OKI MILL IN INDONESIA.

Asia Pulp and Paper (APP) has begun using four AHEAD-2.0L PRODERGY tissue machines at its OKI mill, in South Sumatra, Indonesia, as part of a series of AHEAD-2.0L PRODERGY tissue machines.

These four machines, included in a major contract between Toscotec and APP, started production ahead of schedule, in just 60 days between August 14th and October 14th 2018.

Thanks to the successful cooperation between APP and Toscotec, these eight start-ups have been completed over a total period of only 8 and a half months. The first two AHEAD-2.0L

PRODERGY machines were started up at Perawang mill in the first quarter of 2018, and the following six machines at OKI mill in the second and third quarters of 2018.

The eight AHEAD-2.0L PRODERGY machines all have a paper width of 5,600 mm and an operating speed of 2,000 m/min. They feature a second-generation TT SYD Steel Yankee Dryer of 22 feet diameter, which represents the biggest diameter for tissue application worldwide. The energy saving design of the drying section relies entirely on steam, as the chosen energy source, including the steam-heated TT Milltech-DYH hoods.

Marco Dalle Piagge, Toscotec's Sales Director, says, "The design of our PRODERGY machines is delivering the highest performance and energy efficiency currently available in the market. We knew that APP has very high standards when it comes to the environmental performance of its operations and production lines, with a focus on greenhouse gases and water footprint. We believe that Toscotec's Energy Saving engineering design and advanced technology will make a significant contribution in this regard."

PRESS RELEASE | 8TH JANUARY 2019

TOSCOTEC PAPER & BOARD CHOSEN BY SMURFIT KAPPA

FOR PM5 REBUILD PROJECT.

Toscotec has been awarded a contract by Smurfit Kappa Cellulose du Pin in France to rebuild the entire dryer section of its 6m wire PM5 at Facture, Aquitaine, France.

Toscotec will rebuild the entire pre-dryer section of the machine, including 36 new TT SteelDryers with a diameter of 1.8 m, maintaining the same machine length of the existing 43 cast iron cans. The scope of supply includes 4 new TT Uniroll for the first battery. Toscotec will also rebuild the existing post-dryer section to improve the present design according to the new production rate, adding 2 new TT SteelDryers. The scope includes a rope-less tail threading system throughout the whole dryer section, an optimised tail transfer to the Film Press with a TT Ripper and TT Transfer (vacuum belt device) and an improved paper sheet transfer between press and dryer section. The main auxiliary systems will also be part of Toscotec's scope, including the lubrication system, the hood with its air and ventilation system and the sheet stabilisation. The hall ventilation system will be also part of the package.

The PM5 produces White Top Kraft Liner with a reel trim of 5,500 mm, Toscotec's rebuild will allow to increase machine speed up to approximately 900 m/min and will strengthen Smurfit Kappa's position as the leading European supplier of White Top Kraft Liner.

The supply is on a turnkey basis and includes engineering, erection, commissioning, start-up assistance and training.

This new rebuild reaffirms Toscotec as one of preferred partners for the Smurfit Kappa Group, with which Toscotec has been working for the past 10 years on several projects, in Mexico, Colombia, Argentina, Italy and Austria.

"It gives us great satisfaction to be selected for such an important rebuild project by Smurfit Kappa Cellulose du Pin. Thanks to the increased efficiency of the overall drying process, PM5 will significantly boost its capacity, and deliver actual energy savings, thereby cutting the mill's energy bill" says **Fabrizio Charrier, Toscotec's Area Sales Manager.**

Mr. Bruno Tormen, Smurfit Kappa Cellulose du Pin's Mill Manager says: "At Smurfit Kappa, we offer our customers constant, secure and reliable quality thanks to our unrivalled standards. Toscotec's design met our targets in terms of the dryer section's performance and machine production increase. The high level of customisation of their turnkey solution was one of the deciding factors for our choice, along with the significant advantages of TT SteelDryers".

TWINSAVER AND TOSCOTEC'S SHARED SUCCESS STORY IN SOUTH AFRICA.

I recently spoke with Garth Towell, Chief Executive Officer of the Twinsaver Group, Anna Marie Viljoen, Product Supply Director and Tony Hulme, General Manager for Operations, about South Africa's leading tissue producer, the Twinsaver Group, and the key to its success. They revealed the importance that the Group places on their choice of technology and how they value Toscotec's AHEAD-2.0S tissue machine and TT NextPress as an important asset to support their growth ambitions.

Who is Twinsaver? What's your ownership structure?

Garth Towell: the Twinsaver Group (TSG) was previously known as Nampak Tissue. Nampak Tissue was part of a much bigger, locally listed, packaging group, with a history of going back 60 years in the South African market. At the end of 2013, Nampak announced to the local stock market that they were divesting of their tissue business unit. A private equity consortium, Ethos Private Equity, made an offer for this business and took over majority control in April 2015 changing the name to Twinsaver Group. So TSG was really born in April 2015!

What is your Mission? How did you structure the business in terms of products and market share?

Garth Towell: Our purpose is improving people's lives with everyday products, used everywhere across sub-Saharan Africa. There are four elements linked to this:

First, our brand. Twinsaver is the number one tissue brand in South Africa. It has a total market share of tissue of around 30% and recent

growth has been driven by investment scale and innovation. Second, our performance. It's about diversification: in 2015 we bought a business that was exclusively tissue, and 3 years on, we have three business units under one Group banner: Personal care (tissue), Home care (disposable foil, wrap, plates, cups, baking accessories and oven trays) and Adult care (incontinence products) and Wet Wipes, developed through business acquisitions.

Third, the customers. Through innovation, the group grows category value and meets customer and ultimately consumer needs.

Fourth, creating value through integrated value chains. It is not just about brand and products, consumers and customers, but also about how we establish a competitive value chain in product supply. We must put the right technology in place that enables the development of solutions that are different and more cost-effective than our competitors. As a result, this real differentiation, will sustain our number one positioning, and support a claim of the tissue authority in South Africa and in the broader Southern African region.

How do you market your products?

Garth Towell: Our products are sold, marketed and distributed to both retail and wholesale customers (B2C), as well as to business-to-business (B2B) customers. We also manufacture and distribute private label products for certain customers, however we are predominantly a branded market player.

Tell us about your first cooperation with Toscotec in 1998: Riverview, PM1.

Ann Marie Viljoen: It all started with a Toschi machine originally installed in 1994 by an independent tissue producer in South Africa. In 1998, Toscotec converted this machine into a crescent former for Nampak Tissue and this became Toscotec's first crescent former. This machine has been TSG's best performing asset for a number of years, producing at 92% OEE. That project was our first interaction with Toscotec and through the years we got to know the organization, the technology and the people. Important to note, however that as part of the selection process for PM5, our team visited your new installations in Portugal, and were suitably impressed.

Focusing on the AHEAD-2.0S tissue machine that you started up on March 28th at Kliprivier mill, what were the reasons for the expansion and for the choice of Toscotec's technology?

Tony Hulme: The expansion and choice of Toscotec's technology was aimed at enabling TSG to deliver on three criteria in support of its growth agenda in the South African market:

1. The requirement to reduce our total manufacturing costs.

2. The need to improve the brand equity of our core products.

3. The requirement to produce a differentiated base sheet, i.e. softer and bulkier.

We then asked ourselves the question: what technology should we invest in today to differentiate our product from all the competition in Southern Africa?

During the engineering phase, we worked with Toscotec to reduce the energy cost by improving the design of the entire process. An energy efficient design meant that we would use energy efficient motors, TT NextPress, TT SYD, Steel Yankee - which was new for us in South Africa, because we previously used cast iron Yankees - and a vacuum system based on turbo blowers. These were the key technological choices we made to reduce the total cost of energy.

Based on these three criteria, what cost drivers informed your technology choice?

Ann Marie Viljoen: we were looking for a tissue machine that could run at an overall efficiency of 90%. The machines that Toscotec installed in the past years had demonstrated the capability to operate at such a high efficiency, with a very quick start-up and learning curve. Also, in terms of fibre yield - considering that fibres contribute about 50-70% of our manufacturing costs - Toscotec's overall design allows TSG to operate at a higher fibre yield.

Why a turnkey supply? And why did you choose Toscotec for your turnkey project?

Tony Hulme: The decision to consider a turnkey supply was based on three main criteria.

First, we believed that a turnkey supplier could leverage better pricing for equipment and services.

Second, TSG wanted the turnkey supplier to be accountable to meet stringent performance guarantees.

And third, TSG believed that it would be easier to manage the project if we had two main contract partners, i.e. civil works and the main equipment supplier.

What's your take on the AHEAD-2.0S machine performance and runnability? What can you tell us about the quality of the product you are producing?

Tony Hulme: All our tissue machines are equipped with a suction press roll, the old pressing technology. We had many discussions with Toscotec, and with others, about the next step in technology. TT NextPress allows us to run in an energy efficient mode. This gives us the opportunity to increase either the softness or the bulk of the base sheet, which will be the competitive advantage in the market. The South African market looks for a very soft product from a hand-feel perspective, and we believe that –as compared to our current products and technology – with TT NextPress we can produce a softer and bulkier sheet. The other advantage of the TT NextPress and of the drying capability of the AHEAD-2.0S is a wonderfully consistent moisture profile and formation across the sheet width. This has resulted in a huge step change in converting efficiency and OEE on our rewinders and also a reduction in customer and consumer complaints.

With respect to energy reduction, what feedback did you get on the AHEAD-2.0S consumptions specifically?

Tony Hulme: Regarding improvements in consumption of the drying section of PM5: we run at a much lower.

We obtained a reduction of our energy consumption equal to 30% compared with the older PM3 machine. The benefits of TT NextPress were also realised during the Performance Tests with the load and tilt tests, delivering true product improvements and energy saving results. The cost of energy accounts for approximately 25% of our total manufacturing cost, so it is important that we reduce the energy consumption of our machines and given the rising cost of energy in South Africa, we have had to find ways to reduce our overall consumption.

How would you describe the cooperation with Toscotec?

Tony Hulme: Toscotec is a very professional, very willing, and a very friendly partner. At this point in time, the Toscotec team supported us in completing one of the most successful start-ups worldwide. You helped us resolve many of the issues in a quick and proactive way, making improvements and keeping this project up and going.

The continued cooperation and partnership is very good and we are very happy with what Toscotec has done for us. Throughout the project - from the initial briefing, through the tendering process, the visits to different plants, the conceptual process, the engineering design, and installation and commissioning and now, the post start-up support and aftersales - our experience with Toscotec has been excellent and the team have been a pleasure to partner and work with.

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TOSCOTEC

PRESS RELEASE | 24TH JANUARY 2019

TOSCOTEC'S STEEL YANKEE DRYER TT SYD STARTS UP

AT CMPC IN ARGENTINA.

Papelera del Plata, part of CMPC Tissue Latam group, fired up a TT SYD-12FT supplied by Toscotec. The new TT SYD is installed on PM3 at Papelera del Plata - Zarate mill in Argentina. This is a repeated order for Toscotec, who in 2010 fired up another TT SYD at CMPC Tissue's Industria Papelera Uruguaya SA in Uruguay. These TT SYD replaced two existing Steel Yankee dryers supplied by another manufacturer.

The new TT SYD-12FT features a diameter of 3,660 mm and a face width of 2,800 mm. The scope of supply includes Toscotec's patented deckle insulation system, which allows for safe and practical application of the deckle insulation on the Yankee's heads without any machining, the drive group, support and bearings, and the main components of the steam and condensate system. The service package included the engineering design, installation supervision, commissioning and start-up assistance, as well as onsite training program.

Simone Pieruccini, Toscotec's Pressure Vessel Technical Manager, says "In order to meet the stringent delivery requirements of the customer, we manufactured and delivered the TT SYD in record time. From the project kick-off meeting to the notice of goods ready for shipment, it took us only 3 and a half months. Thanks to the good cooperation with Papelera del Plata, installation, commissioning and start-up were very successful and the TT SYD started performing well from day one."


TOSCOTEC

PRESS RELEASE | 20TH MARCH 2019

SKJERN PAPIRFABRIK A/S, DENMARK

SELECTS TOSCOTEC TO REBUILD THE DRYER SECTION OF ITS PM1.

Skjern Papirfabrik A/S chose Toscotec for the complete rebuild of its paper machine's dryer section at Skjern mill, Denmark. The delivery is scheduled for the third quarter of 2019. PM1 has a wire width of 3,200 mm and produces core board from 90 to 450 gsm using 100% recycled fibres.

Toscotec will supply a new frame for the entire dryer section and 19 TT SteelDryers, designed for an operating steam pressure of 10 barg, and equipped with bearing housings, steam fits and turbulence bars. The TT SteelDryers will replace most of the mill's existing cast iron cans. The scope of supply also includes: a new tail blowing system in the press section and new mechanical drives for the entire paper machine. An interesting feature of this project is the supply of blowing doctors, which will improve air circulation in the pockets. The services package consists of onsite erection, supervision, commissioning and start-up assistance.

The target of the rebuild is to increase the drying capacity by over

20%, without increasing the paper machine's length, thanks to the advantages of TT SteelDryers and the higher steam pressure. The upgrade will also aim to improve the stability of the web run. The tail threading will increase the machine efficiency, thanks to the new tail blowing system in the press and new ropes system throughout the entire dryer section. As a result, Toscotec expects to boost both the efficiency and ease the run ability of the paper machine.

Enrico Fazio, Toscotec's P&B Head of Sales, says "This is Toscotec's first paper & board reference in Denmark. We are happy to enter the northern European market, because it is very high-tech oriented. We are proud that Skjern mill chose our technical solution. Thanks to Toscotec's advanced technology, the rebuild will meet the targets of the customer, maintaining the same machine length."

Kurt Larsen, Project Manager of Skjern Papirfabrik A/S, says, "We are very much focused on the environmental sustainability of our mill. Toscotec's technology will boost efficiency and production, as well as meet our targets of specific consumption reduction."

TOSCOTEC TT STEELDRYER

SALES REACH NEW RECORD HIGH IN 2019.

Toscotec pioneered the manufacture of steel dryer cans in the 1960s, at a time when cast iron dryers still held a dominant market position. After many years of struggle between the steel and cast iron theories, Toscotec's concept is now winning and it is being selected for many dryer section rebuilds around the globe. Toscotec Paper & Board division Head of Sales Enrico Fazio explains how and why.

What makes Toscotec's dryer section rebuild solutions stand out on the global market?

Toscotec has been designing and manufacturing the dryer sections of paper machines since 1960. When the market, only relatively recently, recognized the advantages of the use of steel for the fabrication of dryer cans, Toscotec notably strengthened its leading position as the steel dryers supplier with the greatest experience in the paper industry. Higher energy cost accelerated this market change, causing the shutdown of many cast iron foundries. As a result, our competitors followed in our footsteps by switching to steel. In the last 5 years, we registered a significant sales rise that led to the manufacture of over 100 TT SteelDryers per year. In 2019, we reached the record-breaking figure of over 170 TT SteelDryers under construction in one single year.

To this day, Toscotec has sold more than 1,500 TT SteelDryer across 5 continents since 1960. These are unmatched results at a global level.

What are the advantages of steel vs cast iron?

Back in the 1960s at Toscotec, it all started from the idea that just like other pressure vessel it was manufacturing, such as water boilers, the dryer cans used in the paper industry could be fabricated in steel as well. To a company that was using steel for other heat transfer applications, it came naturally to apply this experience to paper machine dryer cans. The market did not welcome this innovation at first, the market being very conservative and because most people at the time believed that cast iron was the best material for papermaking applications. This myth was definitely debunked, especially recently.

In term of advantages, first and foremost, steel dries paper more efficiently than cast iron. Its mechanical characteristics are superior to those of cast iron and the construction codes of steel pressure vessels allow the reduction of the shell thickness, thereby achieving higher efficiency on

the heat transfer to the surface of TT SteelDryers and to the paper sheet. The heat transfer coefficient of a steel dryer can be 5% to 10% higher than cast iron.

Secondly, for the same dimension, steel cylinders offer a higher drying width than cast iron. This is because the heads of TT SteelDryers are welded to the shell instead of being bolted into the shell as with cast iron dryers. This design allows the paper to get closer to the heads. As a result,

given two cylinders of the same width, one in cast iron and the other in steel, the steel cylinder dries a wider paper sheet than cast iron.

Thirdly, there is no construction restriction on the diameter of TT SteelDryers. We can engineer and manufacture any diameter, based on the specific requirement of the project.

Finally, the fact that we do not use bolts and gaskets between the shell and the heads of the cylinder, eliminates any risk of steam leakage, which is quite typical of cast iron dryers.

How did the concept of TT SteelDryers developed over the years?

Toscotec has been innovating its technology incredibly over the years. Much R&D work has also been devoted to single equipment, such as TT SteelDryers, and thanks to this, we have made great progress in optimizing our manufacturing process, quality control and engineering design. For instance, we introduced a new design, where the dryer's journals are bolted into the heads. This goes into the direction of cutting maintenance cost, because if you have a problem on one of the journals, you can easily replace it without changing anything else.

How has Toscotec P&B division been evolving in the last few years?

Toscotec's P&B division registered a significant growth in the last 5 years. We significantly increased our sales revenues over this period. We owe it to the fact that the market recognized us as the leading manufacturer of dryer sections. We also provide dryer section rebuilds on a turnkey basis, the last order we received from Smurfit Kappa Cellulose du Pin in France for a 6m wide machine is one such example.

These developments led to the addition of new resources in our technical and sales departments. Looking ahead, it is in our DNA to always embrace new challenges and raise the technological bar. We are currently developing the project of a larger and faster paper machine of 9m width. Looking into the future, we are working to further optimize the manufacturing process of TT SteelDryers. Toscotec made the strategic decision of manufacturing all its dryers cans internally, in order to control the entire construction process, from the supply of 100% certified materials, down to the final quality check of the cylinders. We can certify TT SteelDryers for any country in the world, in compliance with the National Board Inspection codes for pressure vessels, such as ASME, PED, TÜV, CSEI and JIS.

Which key markets are you targeting for P&B at present?

Definitely Europe and Latin America, our traditional markets. North America, where we are already developing a number of projects with top paper groups. We are also working to grow in markets where we see high potential for our technology.

You mentioned the experience you have with turnkey projects, what is Toscotec's definition of turnkey?

Toscotec aims to be a solution provider and not only a machine supplier. If a customer requires a turnkey supply, we have the capability to design, manufacture and install complex technical solutions. So besides the TT SteelDryer, we also make hoods, steam plant, sheet stabilizing systems, and automatic tail treading systems, just to name a few. We also provide services, like erection or/and erection supervision, commissioning and start-up assistance.

The engineering design is completed by our technical department, both for complete paper lines and for rebuilds. Rebuild projects always require the highest level of customization, because they are truly tailor-made to the customer's needs.

Apart from the dryer section in which you are the leading supplier, what other technological solutions are you developing?

In order to become the leading supplier of highly technological rebuilding projects, Toscotec has also developed a series of advanced technological components installed in other sections of the paper machine, including the shoe press TT Xpress. Presently, we are installing TT Xpress with high linear nip load, up to 1,300 kN/m, and mini shoe presses with lower load capacity, up to 600 kN/m. We also provide the TT Transfer, i.e. cutting-edge solutions for tail threading systems using transfer belts.

PRESS RELEASE | 24TH APRIL 2019

TOSCOTEC CHOSEN AS TURNKEY SUPPLIER BY CARTIERA CAMA

IN ITALY TO REBUILD THE DRYER SECTION OF PM1.

Cartiera Cama S.r.l. chose Toscotec for the complete rebuild of the dryer section of its PM1 at Lallio mill, Bergamo, Italy. PM1 produces core board and carton board from 650 to 1,200 gsm, using 100% waste fibres. The delivery is planned in two steps, in July and December 2019.

Toscotec's supply will be on a turnkey basis. It includes 29 TT SteelDryers designed for an operating steam

pressure of 10 barg, which will replace most of the mill's existing cast iron dryers. Toscotec will supply the bearing housings, steam fits, joints and turbulence bars for the entirety of the dryer cans, as well as the new dryer section's main components, including stretchers, guiding devices, canvas rolls and doctors. The scope also comprises mechanical drives for the entire paper machine.

The services package consists of onsite erection, supervision, commissioning and start-up assistance.

The rebuild will boost the mill's production by more than 10%, only by increasing PM1's drying capacity and maintaining the original machine length and the original number of dryers. An additional improvement will be the implementation of the silent drive concept, through the replacement of the existing gears. The simplicity of the silent drive solution drastically reduces maintenance costs and noise generation.

Mr. Davide Bettanti, CEO of Cartiera Cama, says, "Sustainability is the keystone to our business. Today's market is increasingly demanding in terms of environmental protection. At Cartiera Cama we invest in new technology to increase the efficiency of our operations, reduce our environmental impact and improve product quality. On this turnkey project we chose Toscotec, because we wanted to increase the production and efficiency of PM1, by relying on the best available drying technology. "

Enrico Fazio, Toscotec's Head of Sales, says "It is a great pleasure for us to cooperate with a family business such as Cartiera Cama, here in Italy. We had the opportunity to work with them many years ago and we were happy to rediscover during the negotiation of this project that we share the same traditions and vision on the importance of trust and relationships. We are confident that the rebuild will deliver on Cartiera Cama's demanding green targets and, thanks to our solution with TT SteelDryers, we will increase the machine capacity."

BEST PRACTISES FOR TISSUE MILL ROLLS MAINTENANCE

Maintenance managers and supervisors in a tissue mill are required to work to budget and cut the costs of maintenance wherever possible. An efficient management of rolls maintenance, of press rolls in particular, significantly contributes to reducing costs and the risk of emergency stops.

What to do to reduce rolls maintenance cost:

Respect the time limits.
A press roll on a tissue machine should run for a maximum period of 12 months. Regardless of whether you see any sign of malfunction, take down the press after 12 months and send it to maintenance. We calculate this period based on the performance of the inner components, for instance the nozzles of the press are easily obstructed by fibres and need to be cleaned to avoid overheating of the sealing and subsequent failure.

Perform a complete overhauling of the press.
After 12 months, you need to dismantle and thoroughly check all of the press components. Replace all consumables. Thoroughly clean every part, especially the nozzles. Well-kept nozzles are your insurance against very costly emergency stops. Inspect all parts to check their integrity, wear conditions, joint tolerances, and replace them if they fail to meet the requirements.

Regrind the press cover.
After 12 months, the cover needs regrinding, in order to ensure that the press is working with the correct crown profile. If the profile is not right, you may start increasing the pressure on one side or the other, or altogether, in order to make up for an unbalanced profile. This will end up affecting the final quality of the product as well as overstressing the cover and shortening its life.

Take good care of your bearings.
Inspect, clean and lubricate the bearings. Water may have infiltrated inside the bearing, and while it may not have damaged it during operations when it is suspended in oil, it will damage the bearing during your maintenance stop, because as it cools down it condensates and starts its corrosive action against the metal.

Check the integrity of the shell.
After 12 months, it would be advisable to perform non-destructive testing (liquid penetrant and magnetic particle testing) on the shell and the journals to rule out the presence of micro cracks or damages that may result in major fractures in the future.

Ensure proper storage conditions.
As you get ready to store your rolls for a period of approximately 12 months, you should bear in mind that you need to do maintenance right after you take down the roll from the machine and before you store it for months in the mill. After a thorough overhauling, store the roll indoors to avoid thermal shocks throughout the seasons. Make sure that you lubricate the bearings properly. Rotate the roll of 90 degrees every 15 days. This will get the oil moving inside the bearing and will allow for the section subject to load at the bottom to change regularly. It will also avoid deformation of the rubber cover as well as of the shell, which is subject to its own load.

PRESS RELEASE | 15TH MAY 2019

TOSCOTEC TO REBUILD THE DRYER SECTION OF PM1

OF CARTIERA MARCHIGIANA IN ITALY.

Cartiera Marchigiana selected Toscotec to completely rebuild the dryer section of its paper machine at Montelupone, Macerata, Italy. This is a repeated order for Toscotec, who has recently been entrusted with a turnkey rebuild project by Cartiera Cama, which has the same ownership of Cartiera Marchigiana. Thanks to the advantages of TT SteelDryer technology, the rebuild will boost PM1's drying capacity and efficiency, without increasing the paper machine's length.

Toscotec will supply a new frame for several dryer batteries included in the rebuild and 23 TT SteelDryers, designed for an operating steam

pressure of 10 barg, featuring bearing housings, steam fits and turbulence bars. The scope also includes stretchers, guides, doctors, canvas rolls and walkways, as well as an overhaul of the mechanical drives. The service package includes onsite erection, supervision, commissioning and start-up assistance.

The delivery is planned in two phases, from July through December 2019. PM1 has a reel trim of 2,340 mm and produces core board and carton board from 650 to 1,200 gsm, using 100% waste paper.

Davide Bettanti, CEO of Cartiera Marchigiana, says, "Both for Cartiera Cama and for Cartiera Marchigiana we were looking to invest in the best available technology, because we rely on technological innovation to reduce the environmental impact of our mills. We placed two major orders together for our two production bases, because we want to ensure the same product innovation and quality upgrade across our mills, to ensure the flexibility we need to satisfy the demands of the market. Our expansion, in terms of production increase, must also go hand in hand with the rationalization of our energy consumption and with a significant efficiency boost. We have high expectations for the outcome of Toscotec's rebuilds."

Enrico Fazio, Toscotec's P&B Head of Sales, says "We are very pleased about this second order. Just like we are doing for Cartiera Cama, also for Cartiera Marchigiana we will design and implement the best solution, in order to deliver on the mill's plans of production increase and energy use optimization."

cartiera marchigiana s.r.l.

THE NAVIGATOR COMPANY REAPS THE FRUIT OF SUCCESS

AT VILA VELHA DE RÓDÃO MILL.

The Navigator Company is a leading producer of forestry, pulp & paper, tissue and energy. In 2015, it acquired AMS-BR Star Paper, S.A., an established tissue producer that owned two Toscotec AHEAD-2.0S tissue machines at its Vila Velha De Ródão mill: PM1, started up in 2009, 110 t/d capacity, 1,900 m/min operating speed, and PM2, in operation since 2015, 115 t/d capacity and 2,000 m/min operating speed.

Joaquim Belfo, Mill Manager BU Tissue VVR and Pedro Antunes, Tissue Production Manager, shared their views on the efficiently integrated industrial unit at Vila Velha De Ródão and the cooperation with Toscotec, the mill's tissue manufacturing turnkey supplier.

Who is The Navigator Company? What are your main products and how are you positioned in terms of market share?

Joaquim Belfo: In 2009, we started up the second paper mill of Setubal industrial complex - which includes a pulp mill and two paper mills – and we called it "About the Future". This undertaking decisively boosted Portugal's industrial capacity and it positioned the Navigator Company as Europe's leading manufacturer of uncoated woodfree paper (UWF) and the sixth largest manufacturer worldwide. Secondly, we are one of

the largest producers of bleached eucalyptus kraft pulp (BEKP) in the world, for which we rank first in Europe. We currently have an installed capacity of 1.6 million tonnes of pulp - of which 1.1 million integrated with paper production - and 1.6 million tonnes of paper.

We also diversified into the tissue sector and we are presently the third largest tissue producer in the Iberian Peninsula, with a production capacity of 130,000 t/y of tissue reels and a converting capacity 120,000 t/y.

Apart from pulp & paper, we also manage over 110,000 hectares of forest and the largest certified nursery in Europe, with 12 million plants capacity per year.

Finally, we are Portugal's largest producer of renewable energy from forestry biomass, generating 2.5 TWh of electricity per year.

What is your ownership structure?

Joaquim Belfo: We are a public limited company, issued in Euronext Lisbon stock exchange. In 2004, Semapa acquired a majority share in the Navigator Company, and it currently owns 69% of the total share capital. Semapa is one the largest industrial groups in Portugal, headquartered in Lisbon and operating globally in the areas of pulp & paper, cement and building materials and the environment. Public investors own 29% of the company's shares and Zoom Investment holds the remaining 2%.

What can you tell us about your first cooperation with Toscotec in 2009, PM1 at Vila Velha De Ródão mill? 10 years on, how is PM1 performing?

Pedro Antunes: Thanks to the very good partnership between AMS - at the time - and Toscotec, PM1 project was a success. We worked as one united team and figured out the best solutions to the challenges we encountered. After 10 years of operation, PM1 is still producing high quality paper, at an efficiency of more than 90%.

Let's focus on Vila Velha De Ródão mill's second line in 2015. What were the reasons for the expansion and for your choice of technology?

Pedro Antunes: In 2015, given the growing demand for tissue in the market, we decided to increase our production capacity. Vila Velha De Ródão has been designed as a vertically integrated mill, which gave us an advantage, compared to our competitors. We selected Toscotec, because we were pleased with the outcome of PM1 project. In addition, we chose to install their shoe press technology TT NextPress, because it guaranteed higher paper quality – in particular for bulk, softness and moisture profile. There was also a reduction of our production costs, in terms of drying energy consumption.

The biggest challenge on the PM2 project was to define the stock preparation layout, considered that we were faced with the issue of limited available space. Toscotec managed to

install all the equipment according to schedule, start up the machine at the target date, and produce sellable paper from day one.

Why did you choose a turnkey supply on PM2? Why Toscotec as turnkey supplier?

Pedro Antunes: The turnkey format gave us considerable advantages,

in the sense that we only had one supplier to deal with and delegated to Toscotec the detailed management and coordination of the project, including the selection, negotiation and management of a large number of sub-suppliers. This made things much easier for us. We could be very fast in solving problems and had the flexibility to make modifications as we went along.

As for the reasons for choosing Toscotec, first we were happy with Toscotec's work on PM1, which had also been a turnkey project. Toscotec managed to complete the installation from greenfield to paper on reel in record time. They also provided extensive training programs to the staff of the mill, sharing their experience and expertise with our new team. On PM2, they showed us the 3D design of the plant and we could immediately see the careful optimization of the available space. The layout of the manufacturing area implemented in 2008 - including the cellulose handling system, stock preparation, tissue machine and rewinder - had been made in line, in order to maximize the mill's manufacturing and efficiency levels. In 2015, when we added the second tissue line, Toscotec adapted the layout of the new machine to the available space, figuring out a smart way to optimize the auxiliary systems, such as the boiler, the cellulose storage, the air compressor and the rewinder, so that they could be used in common by the two tissue machines.

What results did you get on machine efficiency & product quality? What about TT NextPress performance in particular?

Pedro Antunes: After three years of production, we are running stable at 90% efficiency on PM2. This machine is mainly dedicated to low basis weight tissue and premium quality toilet paper. TT NextPress turned out to be a precious additional tool to manage the process. It allows us to achieve better basis weight and moisture profiles. We are very happy with the uniformity of the profiles on PM2. This translates into better quality of the final product. Another advantage of TT NextPress is that it allows us to reach better machine performance when producing low basis weight tissue. Finally, we can definitely say that PM2, thanks to TT NextPress, is more efficient than PM1 that installs a jumbo suction press roll, in terms of drying energy consumption.

How would you describe the cooperation with Toscotec? Overall, what has Toscotec done for you?

Pedro Antunes: we have a close cooperation with Toscotec. They respond timely and competently to the issues we face. Toscotec's team has very strong problem solving skills. In terms of goods delivery, they meet the delivery time we agreed. Moreover, the training programs that Toscotec delivered onsite at the mill really made us start on the right foot. Our new team at the time had limited experience of modern tissue machines running at 2,000 mpm, and the detailed knowledge that Toscotec's team managed to share with them made all the difference. In general, Toscotec's support to us is not simply about solving problems. They are often proactive in proposing upgrades and improvements on their machines, in order to allow us to benefit from the progress that they make with their technology.

PRESS RELEASE | 26TH JUNE 2019

JAMES SMITH JOINS TOSCOTEC

NORTH AMERICA.

Toscotec North America, Inc. Green Bay, WI and Toscotec S.p.A. Lucca, Italy announced that James Smith has joined the group as Paper & Board Sales Manager for North America.

James has a Mechanical Engineering degree from the University of Wisconsin and more than 30 years of experience in the paper industry with various roles of technical and sales leadership for key industry players. These include Beloit Corporation for North America and Asia Pacific, Mitsubishi Heavy Industries, Paperchine and PMT Italia for the North American market.

James will actively contribute to Toscotec's growing paper and board business in North America, catering to new customers in the U.S. and Canada.

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PRESS RELEASE | 18TH JULY 2019

TOSCOTEC TO SUPPLY AN AHEAD-2.0L TISSUE LINE ON A TURNKEY BASIS

TO PALOMA IN SLOVENIA.

The Slovak Hygienic Paper Group appointed Toscotec as turnkey supplier of a new tissue line at Paloma mill in Sladki Vrh, Slovenia. The delivery is scheduled for March 2020 and the start-up for June 2020.

The turnkey supply includes one AHEAD-2.0L tissue machine, equipped with a second generation Steel Yankee Dryer TT SYD, Toscotec's shoe press technology TT NextPress and gas-fired hoods TT Hood-Duo. The net sheet width is 5,500 mm, the maximum operating speed is 2,000 m/min and

the production is 220 tpd. The AHEAD-2.0L machine will replace the mill's existing PM6 and will manufacture high quality toilet tissue, kitchen towel and napkins for household and professional use in the AfH segment.

Toscotec will provide its proprietary Distributed Control System TT DCS and a complete electrification system. The scope also includes stock preparation equipment and accessories, Toscotec's patented TT SAF (Short Approach Flow), the machine's dust and mist removal systems and a shaft puller.

As part of a comprehensive service package, Toscotec will supply onsite erection, supervision, commissioning and start-up, as well as training programs to the mill's personnel.

Following a capital increase by the private-owned investment fund Eco Investment in 2016, and the integration into the Slovak Hygienic Paper Group (SHP) group, the Slovenian tissue supplier Paloma aims to become the leading manufacturer of hygienic paper products in the Adriatic region and beyond.

Richard Zigmund, CEO of SHP Group, says: "When we decided to invest in new capacity at Paloma's production base, we started looking for a machinery supplier who could manage and successfully complete complex turnkey projects. Toscotec proved to have the right credentials to support our strategic program and supply the state-of-the-art technology we need to set Paloma's manufacturing at full capacity."

"This new project strengthens Toscotec's position as the leading turnkey supplier in tissue" says **Alessandro Mennucci, CEO of Toscotec**, "We look forward to working with Paloma, who has a longstanding tradition in the production of hygienic paper products and has built a strong team of highly specialized professionals. Based on their investment targets, we developed a fully customized design aimed at improving the mill's energy efficiency and manufacturing processes, in step with this capacity increase."

PRESS RELEASE | 22TH AUGUST 2019

TOSCOTEC PARTNERS WITH ENGINSOFT TO

STEP UP THE CUSTOMIZATION OF ITS DESIGN SOLUTIONS USING ANSYS SOFTWARE.

Toscotec is actively cooperating with Enginsoft, official dealer and Elite Channel Partner of ANSYS structural analysis software in Italy, to develop some of the most advanced mechanical features of its design suite.

Headquartered in the U.S., ANSYS is global leader in the development of FEM analysis software. Enginsoft is ANSYS's main Italian distributor and offers technical assistance and engineering consulting services, as well as tailor-made training programs on ANSYS software.

On June 4, Enginsoft organized the annual ANSYS Mechanical Council meeting, where Toscotec was invited to share its ANSYS experience and to propose a number of implementations aimed to add new tools for customized design. Based on its substantial experience as advanced user, Toscotec is providing recommendations for the improvement of ANSYS software.

Toscotec's trademark as tissue and P&B machinery manufacturer is design customization. Through this partnership, Toscotec aims to strengthen its design efficiency, based on the most advanced available tools. The high degree of customization that the Italian supplier offers on all its plants, particularly turnkey supplies based on local manufacturing standards and rebuilds, will benefit from ANSYS's state-of-the-art tools. By maximizing the degree to which engineering design can go into details, it will increase the efficiency and reliability of Toscotec's tailor-made design and optimize its products, to ensure that both the machinery and the process design meet the paper mill's needs.

PRESS RELEASE | 28TH AUGUST 2019

TOSCOTEC TO REBUILD THE DRYER SECTION OF PM1

AT GULF PAPER MANUFACTURING ON A TURNKEY BASIS.

Gulf Paper Manufacturing selected Toscotec for the rebuild of the dryer section of its PM1 at Mina Abdullah paper mill, Kuwait. The paper machine has a reel trim of 2,550 mm and produces fluting, test liner and white top grades from 100 to 200 gsm using 100% recycled fibres. Start-up is planned for the last quarter of 2019.

Toscotec will supply 24 TT SteelDryers, with a maximum operating steam pressure of 10 bar and a design speed of 800 mpm. The dryer section's driving system with obsolete gears will be replaced by a silent drive system. The scope also includes the lubrication unit for the new dryer section and it will be especially designed for the high-temperature working environment of the mill. The supply is on a turnkey basis, including the erection, commissioning and start-up.

The target of the rebuild is to boost the drying capacity, thanks to the TT SteelDryers. The dryer section's length will remain unchanged.

Enrico Fazio, Toscotec's P&B Head of Sales, comments, "This new project consolidates our presence in the Middle East region, where we have delivered over 100 TT SteelDryers since the mid-1990s. We are very happy to start this cooperation with Gulf Paper Manufacturing, who is a very well established producer and renowned company in the Middle East. I am confident that the rebuild will meet their production targets,

thanks to TT SteelDryer's advanced technology."

Mr Ghaleb Al-Hadhrami, Gulf Paper Manufacturing Projects & Development Manager, says, "We had known each other for many years, but didn't get the chance to cooperate. This is the first project that we do together, and we hope i twill be the first of many in the years to come. We were impressed by the remarkable reference list of TT SteelDryers and other equipment. We got to know the people and the company, including its ability to manage complex turnkey projects. This is why we decided to select Toscotec for this important rebuild, where we expect to exceed our targets."

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