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Efficient technologies in tissue making

TOSCOTEC

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CONTENT

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TOSCOTEC ABSORBS MILLTECH INTO TISSUE TECHNOLOGY BUSINESS

Toscotec has absorbed tissue machine hood and ventilation specialist Milltech into its own tissue technology operations. Toscotec purchased Milltech in 2012 and has since operated it as a separate company, but now believes Milltech's solutions are best offered as a brand within Toscotec's portfolio.

All of Milltech's employees have transferred to Toscotec, including managing director Luca Linari, who takes on the role of Sales & Product Manager for Energy and Environmental Systems for Toscotec.

This development makes Toscotec one of the few tissue machinery suppliers which can offer the entire suite of technology for tissue production from one source.

"This is a natural evolution for us," **said Toscotec Managing Director Alessandro Mennucci.** "When we acquired Milltech it created an ideal synergy because minimizing energy consumption is central to our technological vision. Milltech has proved its worth in this respect, but there is no longer any benefit from it remaining a separate company. Its manufacturing facilities are already on site here at Toscotec, and it is strategically rational to operate as one entity."

FLEXIBILITY IN THE USE OF COGENERATION
FOR THE PRODUCTION OF TISSUE PAPER AND ITS ADAPTATION TO THE ELECTRICAL SYSTEM

47th ATICELCA Congress, Milano Marittima (RA) 26th & 27th May 2016.
Authors: Luca Linari - Head of Energy & Environment Dept., Toscotec S.p.A. Davide Mainardi - Sales & Customer Care Director, Toscotec S.p.A., Joan Vila – CEO, L.C. Paper 1881 S.A.

L.C. Paper 1881 S.A., a company located in Besalù, in the autonomous community of Cataluña, currently operates two paper machines: PM2, Fourdrinier configuration, used for the combined production of MG paper and tissue, and PM3, a CF machine, entirely dedicated to the production of tissue.
In 2014, L.C. Paper has decided to rebuild PM2 in cooperation with Toscotec. At the time, PM2 was producing packaging paper and paper tablecloths, using 100% recycled fibers. This rebuild has adopted the same solution which was already working on PM3, that is using the exhaust gas coming from a gas engine to heat up the air inside the Yankee hoods of the paper machine. The goal of this solution was to uphold the mill's green philosophy, which has made it into the leader of environmental management in paper production.
In this article the authors aim at illustrating the practices used in managing both the thermal energy coming from the gas engine to be used in the hoods and the quota of electrical energy, which, according to the relevant Spanish regulation, can be sold to the system, benefiting the power grid and the system itself as it serves as backup.

Introduction

The use of cogeneration by definition allows significant energy savings in the field of papermaking. Cogeneration consists in the supply of electricity quota and the recovery of residual heat generated in the process of electricity production itself. In this respect, it is normal to get electricity production efficiency in the range of 32% and 35% when using a gas turbine. However, this efficiency increases to 45% when using a gas engine. If we consider the recovery of the residual heat of the cycle and mainly the heat resulting from the exhaust gases coming from the generator, then the electricity production efficiency can get to figures close to 100%.
One should investigate the validity of a cogeneration system based on the type of electrical system in use, in order to evaluate its profitability. Given the natural gas average cost of 29.3 €/MWh (Spain, 2015), the cost of electricity production from cogeneration is approximately 97 €/MWh, which is rather high if compared with the average purchase price of electricity from the national grid.
Since primary energy savings are the object of crucial debates in any country, the savings themselves can provide precious support in the process of making the installation of a cogeneration system a profitable business.
At the same time, you should take into account the fact that the use of cogeneration is not equally profitable across the whole year, as it depends on the variability of the prices of the electricity market, established by the local provider. The prices depend also on the grid consumption and on the generation mix of the system, as well as on the quota from renewable energies. This applies in Spain as in any other European country, in Italy in particular.

Figure 1 – PM3 (left) and gas engine for electricity generation (right) at LC Paper.

The application of cogeneration at LC Paper

LC Paper's plant in Besalù installs two gas engines integrated with two tissue machines. The cogeneration system is equipped with two Wartsila gas engines, of 6 MW each (see Figure 1 on the right). Electricity yield is equal to 43%. Although, if we consider internal self-consumption, the figure drops to 41.5%. The generator produces electricity at 6 KV, which is then increased to 25 KV to feed the plant and again to 132 KV for grid connection. The business model chosen by the mill is to purchase all the electricity necessary for papermaking from the grid and to give the quota generated from cogeneration entirely back to the grid (this mechanism is called "todo-todo"). In this context, the amount of electricity that is being sent back to the grid at every given hour can be guaranteed rather precisely, this being a minimum requirement of the Spanish national power grid. The gases, which the system produces in the amount of 11Kg/s at 420°C degrees, are utilized according to two working principles:

1) Using the gases which are sent directly to the wet end and then through a cascade system are blown to the dry end, with both burners running at a minimum or turned off;

2) Using the gases sent directly to the dry end, with the dry burner running at a minimum or turned off. These gases mix with the gases of the wet end, which works as a separate system parallel to it, and uses a wet burner, operating even in conditions of very high temperature.

The gases coming out of the hoods at the temperature of approximately 300 °C, are blown to a recovery boiler running at 17 bar(g). These gases exit the boiler at a temperature of 220°C, going through an air-to-air heat exchanger which pre-heats the combustion air of the wet end hood (in the second configuration) and then they are fed to a recovery boiler working at the low pressure of 0.5 bar(g) to generate steam to be fed to a steam box. The 17 bar(g) is a hybrid boiler equipped with a gas burner to reach the maximum value required for steam generation. We calculate thermal efficiency by considering the efficiency of each usage. In general, this value is the quotient of the electrical energy generated at the clamp of the power station (efficiency equal to 43%) multiplied by the sum of the gas used in the power station and the heat recovered, divided by the typical efficiency of its next usage. For instance, if we re-use the heat in a boiler, the efficiency is considered equal to 90%, whereas if the heat is re-used in a drier, the efficiency is equal to 82%. In the case of the analyzed application, the definition of the efficiency is the following:

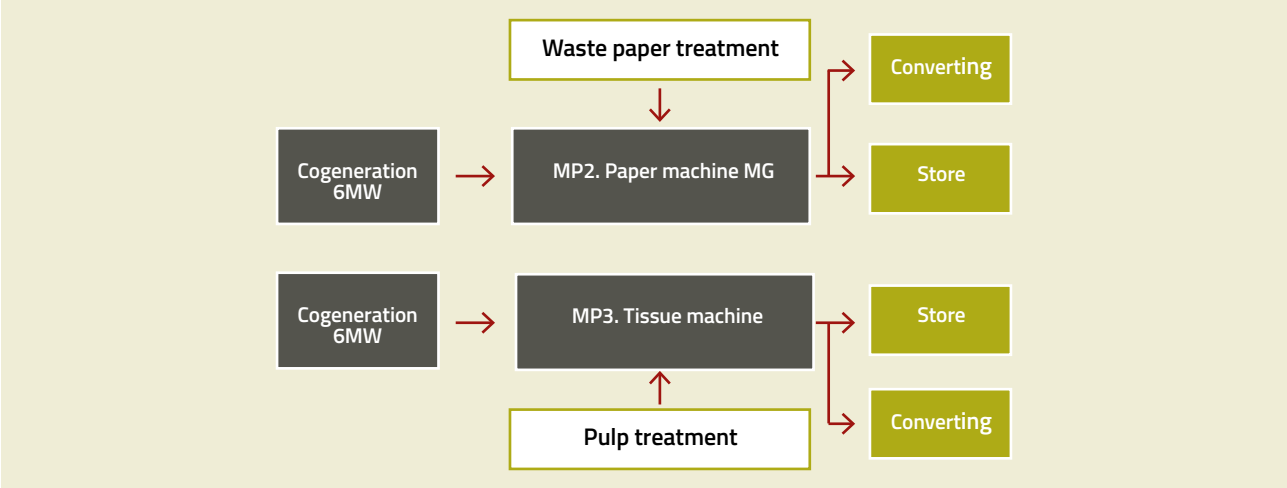

Fig.2 – Simplified flow scheme of LC Paper

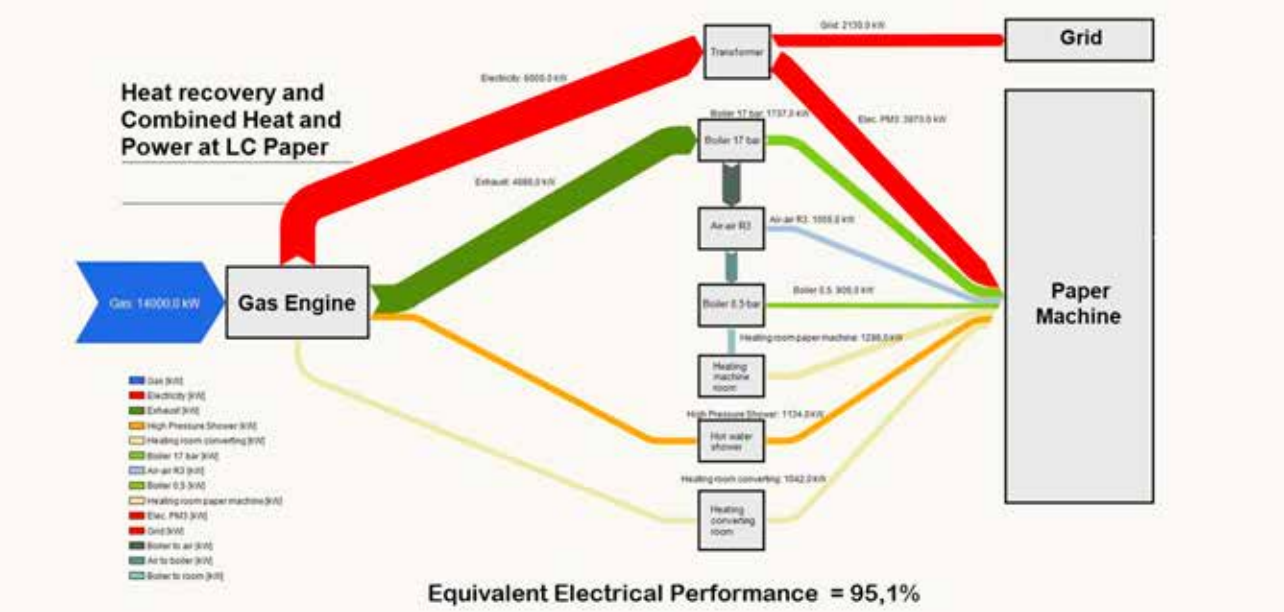

Fig. 3 – Simplified Sankey Diagram PM#3

REE=EE/(Qg+Qh/0,82+Qbhp/0,90+QR1/0,88+QBlp/0,9+QR2/0,7)

Eq. 1

EE= the Electrical Energy produced
Qg= the used gas heat
Qh= the heat recovered in the hood
Qbhp= the heat recovered in the hood @ 17 bar
QR1= the heat recovered in the air-to-air heat exchanger
QBlp= the heat recovered in the boiler @ 0,5 bar/0.9
QR2= the heat recovered in the air-to-water heat exchanger, used to heat the building/0.7.

Exhaust gases keep a 120°C temperature and a temperature of 160°C before the low-pressure boiler. The hot water produced is used in the manufacturing process, to dilute the chemicals and to feed the wire and felt high-pressure showers, as well as being used in the ventilation of the building.
The resulting process is highly efficient, considered that every quota of the produced thermal energy is then recovered in the different phases of its usage.
Fig. 3 below shows the Sankey diagram for LC Paper's PM#3.

Cogeneration management in a tissue plant in Spain

Since the tissue machine runs 355 days/year, the market price of Electrical Energy makes this operation non-profitable. In this case, the cogeneration plant shut down. In 2015, the cogeneration plant worked for 5460 hours, and it was not operating during working time. From an electrical point of view, these shutdowns do not represent a problem, since they are working according to the above-mentioned principle of "to-do-todo". From a thermal point of view, this situation needs an alternative to the heat generation operated by LC Paper, like in other plants, through the installation of a burner in the wet and the dry end hood. This burner can run or it can stand by. You shouldn't install a burner in the 0.5 bar boiler, as the steam box works only with recovered steam.
In the table below (see Tab. 1) are indicated the market prices of EE in Spain in 2015.
From February to June 2015, the price fell down, due to the introduction into the grid of EE from renewable energies (wind) and hydraulic energy. If we analyse the month of February of this year *(http://www.omie.es/)*, we shall notice that for several days the price of EE is lower than 40 €/MWh, during these days it was necessary to shut down the power plant completely or to keep it operating only for 8 hours/day.
This criterion would allow us to keep the cogeneration system profitable even in the future, considering the potential of new low-cost energy sources for electrical energy generation (nu-

MONTHS	Average Price of EE in Spain in 2015 [€/MWh]
January	51,60
February	42,57
March	43,13
April	45,34
May	45,12
June	54,73
July	59,55
August	55,59
September	51,88
October	49,90
November	51,20
December	52,61

Tab. 1 Prices of EE in Spain in 2015. (Rif. http://www.omie.es/)

ADWDEND	DESCRIPTION	SELLING PRICE QUOTA VALUE	COSTS	YEARLY GROSS MARGIN
Ri	Surcharge of the electrical system proportionate to the investment (plant functioning at 30% of its annual production capacity)	22.496 €/month		
Ro	Sold Energy (EEv) multiplied by the factor 48,67 €/MWh.	EEv.*48.67 €/MWh.		
R3	Product of the sold Energy by the price recognized by the market	EEv.*53.31 €/MWh.		
R4	Savings obtained in the mill from the use of the thermal energy produced	22,5 €/MWh		
	Cost of natural gas		29,3 €/MWh	
	Cost of production of EE		70,55 €/MWh	
	Plant maintenance cost		9 €/MWh	
	Tax		7%	
Total		124.48€/MWh + 22.496 €/month	83.55€/MWh	45.48€/MWh= 3.129.070€

Table 2 – Economic analysis of the investment in 2015

clear, hydraulic, wind and photovoltaic).

The distribution of subsidies for the installation of a cogeneration plant in Spain requires that applicants take part in an open competitive examination organized by the relevant ministry.

Table 2 shows the main factors that contribute to definition of the selling price and it analyses the various items of cost and the resulting operating margins.

If we assume to have a specific amount for the investment equal to 623.000 €/MW installed power, then the investment value for a plant of 12 MW would be equal to 7,476,000 Euro, resulting in a payback period of 2.6 years.

Along with the above said costs, we should consider the advantage of getting a better price on the natural gas due to the high consumption. Similarly, we should consider the quota of energy used to heat the water employed in the air conditioning of the building where the tissue machine is installed and the energy used on the machine's high-pressure showers.

During 2015, the cogeneration plant shut down for 3300 hours, partly due to maintenance (94% of availability) but mainly due to profitability issues. If necessary, the plant can shut down during the night shift. In this case, the tissue machine can continue to run thanks to the usage of burners installed both on the hoods and on the steam-generating boiler.

Thanks to the regulation of the EE purchasing and distribution system in Spain, another operating possibility is to tap into the backup system.

When the electrical grid registers an energy loss, because one power plant shuts down, it is necessary that another plant offset that power loss. This activity is called "primary regulation", when you have the immediate re-integration of the energy loss.

It is called "secondary regulation" when the re-integration of the energy loss is implemented a few minutes after the loss is notified and finally you have "tertiary regulation" when the re-integration is implemented in the following days.

Generally, these three re-integration modes are carried out by:

- In the case of primary regulation: hydraulic plants or plants that do not work at full capacity, therefore they can release a quota of energy to integrate the loss;
- In the case of secondary regulation: working thermal plants which are in standby;
- In the case of tertiary regulation: thermal plants, which are not operational and therefore need a few days to be "warmed up" and re-started up.

The Spanish standing regulation allows any operating power plant to access the secondary regulation system with a minimum input of 10 MW. According to this provision, LC Paper is applying for the permit to access the grid, during the above-mentioned shutdown period of 3300 hours per year. Under these conditions, the profitability of the cogeneration plant would rise and new opportunities would open up for cogeneration, which could be regarded as a substantial input to integrate electrical energy losses on the grid.

Considerations on the energy savings resulting from cogeneration

From the point of view of energy reduction, there are numerous benefits granted by the use of cogeneration in a tissue plant. You need to adapt and find specific solutions for the circuit. We mentioned earlier how you can recover the cogeneration gases in a sequential way, in order to use them as thermal en-

ergy. The thermal energy savings in a factory that uses a cogeneration plant of 6 MW and a tissue machine producing 4.6 t/d could be summarized as follows:

- Dry end hood heat recovery 1.836 kWh
- 17 bar boiler heat recovery 1.115 kWh
- R3 (air/water) scrubber recovery 836 kWh
- 0,5 bar boiler recovery 612 kWh
- HVAC water heating recovery 1.102 kWh
- Total energy recovered from produced gas (Tgas da 420°C a 48°C) 5.501 kWh,

Moreover, you could use part of the water coming from the heating, using the exhaust gases of the gas motor, in order to feed the tissue machine's high-pressure showers or the flooded nip shower. In this case, the main problem is monitoring the hardness of the water, which may have to undergo decalcification through reverse osmosis. Once the treatment is completed, you could heat up approximately 10 m3/tonn of water (corresponding to LC Paper's fresh water consumption) with water at 80°C, therefore increasing the amount of recovered heat to 968 KWh, to achieve a total 7.566 KWh.

Based on the above, the equivalent efficiency is (see Eq. 1):

$$Ree=6.000/(13.800-7.566)=99,8\%$$

Eq. 2

In this respect, it is worth reminding that the efficiency is the same and it considers the efficiency of each supply of primary energy. For this reason, it can exceed 100%.

About the Italian electrical system and the use of cogeneration

As the basis for this brief account, we have referred to Tuscany's companies, which are comparable to LC Paper in size (in terms of self-produced energy of 6-6.5 MW).

These companies purchase EE and gas through the Consorzio Toscana Energia SpA. The breakdown of the purchasing price of EE is: energy + transport and distribution + dispatch + system costs. In order to cut on system costs, it is very important to establish the company's classification from the point of view of energy consumption *(art. 39, Law Decree n.83 of the 22nd June 2012)* and its consumption of EE purchased from the grid. As a reference value, we will consider the PUN National Standard Price (which has a rather complex structure) and in the specific case, we will consider an average cost of 95-102 €/MW.

The provider Servizi Energetici Spa operates the sale through the mechanism of Dedicated Assignment, that is a simplified procedure where the produced electrical energy is transferred. The EE introduced on the grid by producers is given a value by GSE at "the average area price per hour", i.e. the average monthly price according to the time slot – generated on the electrical energy market – corresponding to the market area to which the plant is connected. The so-called unbalance factor affects the definition of the price and it depends upon the costs defined by the operator Terna, which regulates the balance of the grid when new energy is introduced. You could also take part in consortia of EE producers, which act as an intermediary vis-à-vis GSE and guarantee the minimum amount

Prices 2016 (Euro/MWh)

Range F1

ZONE	January	February
North Central	49.26	36.76
South Central	48.50	36.16
North	58.26	41.72
Sardinia	49.06	36.76
Sicily	45.98	39.93
South	37.16	36.40

Range F2

ZONE	January	February
North Central	48.29	36.04
South Central	47.51	35.10
North	49.10	37.47
Sardinia	49.77	37.99
Sicily	51.34	44.75
South	43.62	35.54

Range F3

ZONE	January	February
North Central	36.10	29.26
South Central	35.81	29.39
North	38.26	29.07
Sardinia	34.55	29.81
Sicily	39.71	33.51
South	32.06	29.09

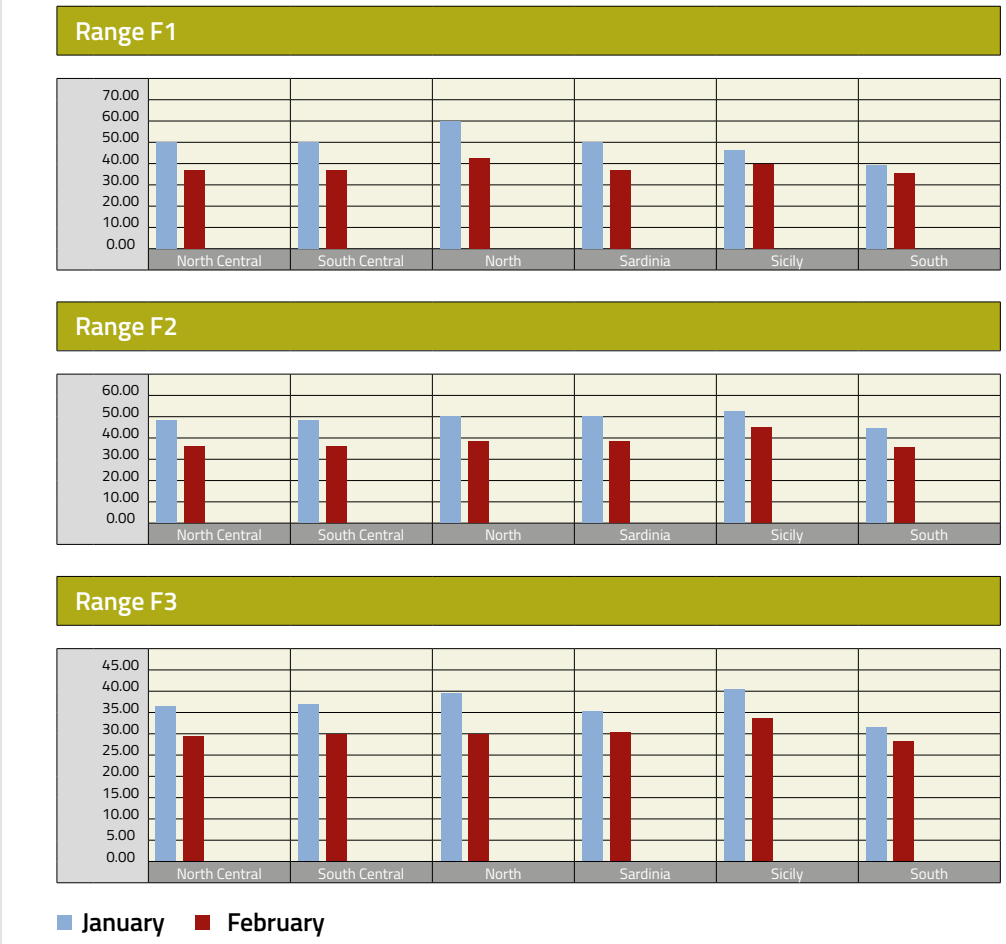

Fig. 4 – Current prices in Italy for the sale of EE in the first 6 months of 2016. Fonte GSE - http://www.gse.it/

of EE introduced on the grid. The members of a consortium have access to better prices. In any case, the selling price is rather low if compared with the cost of production. The tables below show the monthly average prices in Euro/MW, in respect with the time slots and market areas (see figure 4)

Conclusions

According to the existing regulations and relevant tariffs in Italy, as opposed to what happens in Spain, it is not profitable to sell the electrical energy produced with cogeneration back to the grid. In fact, the average selling price is equal to 40-50% of the production cost and it is much lower than the purchase price from the grid. It is essential, in the new plants, to self-produce EE (and limit purchasing energy from the grid as much as possible) and to use the exhaust gases, hence maximizing energy recover. It would be worth looking into the white certificates on a separate dissertation. The situation in Italy is therefore very different from that in Spain, where it is possible to "do business" by supplying/purchasing energy from the grid, as we illustrated in this paper. In respect with Spain, it is worth pointing out that technological decisions substantially affect the possible results. In fact, the use of gas motors, just like in the analysed case, allows great flexibility and adaptability to tariff variations, which are linked primarily to the increasing use of renewable energies (and time slots).

Thanks

The authors would like to thank ICP (Industrie Cartarie Pieretti) and in particular Mr. Tiziano Pieretti, for their support in collecting the data relating to the Italian market, and Assocarta, in particular Mr. Alessandro Bertoglio.

PAPER PRIME S.A. ENTERS INTO TISSUE PRODUCTION
WITH A NEW TOSCOTEC TISSUE LINE

Paper Prime S.A., company belonging to Trevipapel Group which produces Joker Gold brand hygiene professional products (AFH) in Portugal, has signed a contract with the Italian manufacturer Toscotec for the supply of a tissue line in Vila Velha de Rodão.

The new tissue line is scheduled to come on stream in the last quarter of 2016.

Trevipapel S.A. has stepped up its expansion plan and in line with the strong partnership established with Toscotec, decided to place this order with the Italian manufacturer, based on Toscotec's technological advantages, which delivers top product quality and considerably reduces the mill's energy costs. The investment is estimated in 35 million euros and its aim is to supply paper reels to Trevipapel converter units and export. The new paper mill will be also in line with a pulp mill which will add increased value to the investment providing eucalyptus based slush pulp.

Toscotec's turn-key project for TM#1 includes stock preparation plant for dry virgin pulp, AHEAD-2.0S tissue machine with Steel Yankee Dryer TT SYD-16FT, machine auxiliaries including Milltech gas fired hood, steam & condensate and dust removal system, electrification starting from medium voltage cabinets & control system, additional plants and complete engineering and erection activity. A three unwind stand rewinder TT WIND-H completes the supply.

Machine operating speed will be 2,000 mpm with a net trim width of 2750 mm and an average annual production of 38,000 tpy.

About Trevipapel Group

Established in 1991 and headquartered in Lousã, district of Coimbra, Trevipapel Group has grown from a small private company into one of the leading manufacturer providers of hygiene professional products (AFH) in the Portugal due to its Joker Gold brand. With two manufacturing plants strategically located in the center of the country, where are actually converted 20,000 tpy, it serves Portugal, Spain, central Europe and started export to Africa and South America.

TOSCOTEC-SUPPLIED MODULO-PLUS TISSUE MACHINE STARTS UP AT LIUZHOU LIANGMIANZHEN PAPER PRODUCT MILL IN CHINA

Liuzhou Liangmianzhen Paper Product Co., Ltd. has started up the first of two MODULO-PLUS *ES* tissue lines supplied by Toscotec at its mill in Liuzhou, Guangxi. In the next couple of weeks the start-up of the second tissue line and of the TT WIND-M high-speed slitter rewinder will follow suit.

This is the first imported tissue machine to come on stream at Liangmianzhen Paper Product mill, one of Liangmenzhen Group's subsidiaries, and thanks to the strong partnership between Toscotec and the Chinese producer, start-up was successfully achieved according to schedule. This first new line alone will increase the company's tissue production by 21k t/y.

Toscotec's scope of supply included a MODULO-PLUS *ES* machine, designed for a speed of 1500 m/min, featuring TT SYD-15FT (4572mm) and double press configuration, Milltech's steam-heated hood, stock preparation equipment, electrical and control systems, spare parts for the entire plant and a full service package.

The significant advantage of Toscotec's technology has been proved to be its cutting-edge Energy Saving drying package: Toscotec's **TT DOES** (Drying Optimization for Energy Saving) ensures the lowest energy consumption, with the highest machine performances. Its reliance on steam, as the sole drying energy source, perfectly meets the twofold objective of Chinese producers to profit from the most accessible and cost-effective energy source and achieve maximum production of high-quality tissue.

LIUZHOU LIANGMIANZHEN PAPER PRODUCT STARTS UP

ALSO THE SECOND TOSCOTEC-SUPPLIED MODULO-PLUS TM

On September 29th Liuzhou Liangmianzhen Paper Product Co. has started up the second of two MODULO-PLUS *ES* tissue lines supplied by Toscotec at its mill in Liuzhou, Guangxi. In the next couple of weeks will follow the start-up of the TT WIND-M high-speed slitter rewinder.

Following the start-up of the first Toscotec's tissue machine on September 11th at Liangmianzhen Paper Product mill, the start-up of this second tissue line was also successfully achieved according to schedule. These two new lines will increase the company's tissue production by 42,000 t/y.

Toscotec's scope of supply includes a MODULO-PLUS *ES* machine, designed for a speed of 1500 m/min, featuring TT SYD-15FT (4572mm) and double press configuration, Milltech's steam-heated hood, stock preparation equipment, electrical and control systems, spare parts for the entire plant and a full service package.

SUCCESSFUL START-UP OF TOSCOTEC AHEAD TISSUE LINE
AT AMS BR STAR PAPER

The successful cooperation between the Italian supplier Toscotec and AMS BR Star Paper, part of Portucel–Soporcel Group, continues. A new AHEAD-2.0S has been started up at Vila Velha de Ródão plant, in the east of Portugal. The mill already houses another Toscotec AHEAD-2.0S line started up in 2009.

Jose Miranda, Head of Tissue of Grupo Portucel-Soporcel, comments this important result - "The new TM2 is running at an operating speed of 1900 mpm only two weeks after the start-up date producing high quality tissue and demonstrating, one more time, Toscotec excellence and experience in delivering complex "turn-key" projects".

The Portuguese project for the new TM#2 included stock preparation plant for virgin pulp, AHEAD-2.0S tissue machine with Steel Yankee Dryer TT SYD-15FT, Milltech hood and air systems, electrification & control system, additional plants and complete engineering and erection activities. With a daily production of 110 tons, AMS BR Star Paper has increased its production to better satisfy the growing market's demand and to follow the Group's strategic option to diversify its activity in the tissue business.

About Portucel Soporcel Group

As a leading force in the international pulp and paper market, the Portucel Soporcel Group is one of Portugal's strongest brands on the world stage. In June 2013 it was honored as the "Best Company in Europe" by the European Business Awards in the category "Business of the Year". As part of its strategy of international expansion, the Portucel Soporcel group has embarked on a new cycle of sustained growth on two fronts: by consolidating projects currently underway, and moving into new business areas. In Europe, the Group has decided to diversify into tissue paper, with the aim of establishing itself as a major player in the European market. To this end it has acquired the more efficient tissue factory of Iberian Peninsula - AMS BR Star Paper S.A.

WEPA STARTS UP THE NEW TOSCOTEC TISSUE LINE IN LILLE, FRANCE

The WEPA Group announces the successful start-up of the new Toscotec's tissue line installed in Lille, France. The machine came easily on stream after the commissioning period and is now producing high quality tissue products according to the guaranteed technological parameters.

Established in 1948, WEPA started out as a trading company, grew to become a processing company, and since 1958 it has been successfully running its core business as a paper manufacturer, until to be now one of the largest manufacturers in the German Industry for hygiene paper product, and one of the four largest supplier in Europe.

The new Toscotec's line, based on the best available technology, includes an AHEAD-2.0 crescent former tissue machine with TT Headbox-MLT double-layer, a Steel Yankee Dryer (TT SYD-15FT), Milltech hood, steam&condensate and dust removal system. The supply also comprises stock preparation plant for virgin pulp, vacuum plant, boiler plant, air compressors and electrification & control system and an automatic roll handling system. Erection, supervision and training are also included in the scope of the furniture.

With a net web width of 2820 mm and a maximum drying capacity of 120 tpd, the new tissue line has a capacity of 35,000 tpa.

The new machine started up at Wepa Lille site, is already running at the maximum operating speed of 2,000 mpm with great satisfaction of WEPA and Toscotec team.

"This new project strengthens the collaboration with Toscotec, our trusted partner in tissue machinery supply – says Mr. Martin Krengel, President of WEPA. All the start-up phases were performed very well and the machine has achieved excellent performance with high quality tissue at 2,000 mpm just a month after the take-over.

Our readiness to invest in state-of-the-art machinery, choosing the right partner, makes our sustained orientation to the future a success".

SUCCESSFUL START-UP OF THE TOSCOTEC DELIVERED TM19

AT THE WEPA GIERSHAGEN MILL IN GERMANY

After one year of work, the new tissue line of WEPA Giershagen (Germany) has been started-up on October 27, 2015, far in advance of the schedule and only 13 months after the delivery agreement signing.

By expanding the production output of tissue paper, the WEPA will optimize the existing procurement and logistics structures in Europe, thus enhancing the competitiveness of the entire group.

Mr. Frank Folcz, Wepa Hygieneprodukte GmbH Mill Manager at Giershagen site said: " We are very excited for this new project, the new AHEAD line will increase the site's production of 32,000 tpy with high quality tissue. The erection of the machinery and the start-up phases were optimally performed thanks to the experienced collaboration between Toscotec and Wepa teams."

The turn key Toscotec delivery for the new TM#19, based on the best available technology, included a stock preparation system for virgin pulp, an AHEAD-2.0S tissue machine, TM and plant auxiliaries, electrification & control systems. Full engineering, erection, erection supervision, training, start-up and commissioning completed the Toscotec's scope of supply.

With a design speed of 2.000 mpm, the tissue machine is equipped with single layer headbox, double press configuration, TT SYD-15FT and Milltech Hood, Dust & Mist removal system.

The new line will produce, among the other grades, high-quality super-soft toilet tissue.

LAUNCH OF BOTH PAPER MACHINES IN FRANCE AND GERMANY TAKE PLACE AS PLANNED IN THE 3RD AND 4TH QUARTERS OF 2015

Source: www.risiinfo.com - RISI, 25th November 2015

WEPA Group now has a production capacity of 720,000 tonnes per year. Martin Krengel, the WEPA Group executive chairman states, "Our willingness to invest in state of the art technology underscores our future-oriented corporate strategy. The additional production capacity will contribute substantially to optimizing our supply chain and to strengthening our market position in all of Europe."

ARNSBERG, Germany, 25 November 2015 (Press Release)
The WEPA Group, with headquarters in Arnsberg, Westphalia, was able to put the two new paper machines into operation in Lille, France and Marsberg, Germany in the 3rd and 4th quarters of 2015 as planned. With these, more than 40 new jobs have been created at the two locations combined.
In Lille, start-up took place at the beginning of August. Following successful optimisation steps, the machine was already capable of producing high-quality raw paper for making bathroom tissue and kitchen rolls after only a few days. The paper machine is equipped with the best technology that is currently on the market and produces around 35,000 tonnes of hygienic paper per year at a rate of 2,000 m/min. This raises the overall production capacity of the WEPA location in Lille to a total of 92,000 tonnes per year, which will be marketed primarily in France and Benelux as bathroom tissue, kitchen rolls and cosmetic tissue.

The second machine, which is essentially identical in construction, could also be put into commission at its location in Marsberg, Germany in the 4th quarter. After an absolutely trouble-free construction phase, the first parent rolls were produced on 27 October. With a production capacity of 32,000 tones, the plant will raise the location's capacity to more than 125,000 tones of raw paper per year. This will be processed into bathroom tissue and paper towels predominantly for the German market.

"The construction of each paper machine in less than a year from the ground-breaking ceremony to starting operations is setting standards for the future. The excellent cooperation with our long-term machine supplier Toscotec as well as with all other suppliers is what made this milestone possible," is what Walter Hirner, member of the WEPA Group's board of directors on technology had to say.

Both plants make a considerable contribution to reducing CO_2 emissions especially as regards their particularly high energy efficiency. This way, resources are conserved and cost structures are optimized. By decreasing purchases of semi-finished goods, the WEPA Group also optimises their logistics chains among their European locations.

TOSCOTEC STARTS UP ITS FIRST AHEAD-1.5M TISSUE MACHINE AT YUEN FOONG YU TAIWAN

The Toscotec-supplied AHEAD-1.5M tissue machine has started up at Yuen Foong Yu's Chingshui mill in Taiwan.
Yuen Foong Yu Paper, with its famous brand Mayflower, is currently the largest paper manufacturer in Taiwan and it ranks 49th in the world.
The start-up has been welcomed by the Taiwanese producer as the positive outcome of a strong cooperation between the two teams: "We are pleased with the qualified teamwork and Toscotec's support all the way from the engineering phase to the commissioning field work. We look forward to seeing the outstanding performances and energy saving results that we expect from Toscotec's technological solution" says Mr. Ming Fa Tang, YFY's Deputy General Manager.

The scope of supply of the Italian supplier included one AHEAD-1.5M machine, installing Toscotec's second generation Steel Yankee Dryer TT SYD-18FT, a 1425 mm diameter suction press roll and steam-heated hoods, as well as the stock preparation system. The machine has a working speed of 1650 m/min and it will increase the mill's production capacity by 40k t/y.

The Taiwanese producer has chosen Toscotec's cutting-edge technology and customized design as the winning solution that strikes the perfect balance between machine performance and the lowest possible total energy consumptions. The masterly combination of a large diameter Steel Yankee Dryer, a single jumbo press roll and steam hoods delivers key advantages in terms of energy savings. TT DOES (Drying Optimization for Energy Saving) is now widely acknowledged as Toscotec's signature design solution, especially on the Asian market, where energy savings are a major concern for tissue producers.

STEEL YANKEE DRYER ARE A REVOLUTIONARY PROGRESS IN THE DEVELOPMENT OF TISSUE MACHINE

INTERVIEW WITH VINDA INTERNATIONAL'S TECHNICAL DIRECTOR MR. DONG YI PING

Source: Tissue Paper & Disposable Products magazine by Zhou Yang

On August 12th 2015, CNHPIA Executive Vice Secretary-General Ms. Zhang Yu Lan and Zhou Yang, by invitation of Vinda International Technical Director Mr. Dong, visited Vinda Paper (Shandong) Co. Ltd. and interviewed Mr. Dong on Vinda's user experience of Steel Yankee Dryers, the selection of a tissue machine's model and other key issues in the industry.

Vinda Paper (Shandong) Co. Ltd. has a production of 50,000 t/y, from two Toscotec Crescent Former machines, with net sheet width 2,700 mm, speed 1,500 m/min, TT SYD-16FT.
At present the mill is erecting its third Toscotec's tissue machine, with net sheet width 3,400 mm, speed 1,500 m/min, TT SYD-16FT, production 30,000 t/y, and it plans to install another machine of the same model next year, increasing Vinda Shandong's capacity to 110,000 t/y.

Mr. Dong Yi Ping graduated in 1986 at Tianjin University of Science and Technology and in 1991 obtained a Master's Degree in Engineering. He joined Vinda in 1992, holding various positions over time, production head, Vice General Manager, General Manager, Director and presently Technical Director of Vinda International Group. Mr. Dong is also a member of the editorial board of the Tissue Paper & Disposable Product magazine.

Steel Yankee Dryers are a revolutionary progress

Tissue Paper (TP): in comparison with CI Yankees, are SYD to be considered clear-cut winners in terms of advantages or does each technology have its pros and cons? Could SYDs be considered as the second revolutionary progress in the development of tissue machines after the CF technology?

Dong Yi Ping (DYP): I believe that the SYD can truly be considered as a revolutionary progress in the development of tissue machines. In comparison with CI Yankees, SYDs do not have apparent weak points, on the contrary their advantages are very evident. Since the manufacturing cycle of SYD is much shorter, the TM delivery time is also shorter. For instance, the delivery time for a tissue machine installing a CI Yankee, such as the machines we used to purchase in the past, requires up to 11-12 months, while the TMs that we order now with SYDs can reduce this period to 8-9 months. This is crucial from the point of view of a tissue producer. Besides, before the invention of SYDs, the manufacturers of high efficiency CI Yankees across the globe could be counted on one's fingers, Valmet and a few others, so the offer could not satisfy the high demand of the market.

A part from that, the fact that the coefficient of thermal conductivity of steel plates is higher than cast iron allows an increase in machine speed. Also, since steel can resist to higher pressures, thickness can be reduced, weight goes down, therefore reducing the load of the Yankee's drive. And since steel has a higher ductility than cast iron, the risk of explosion can also be reduced.

Steel Yankee Dryers have already become the mainstream configuration

TP: In your view, what is the user experience of SYDs like in the world and in China? And how do you envisage its future development?

DYP: the process of acceptance of something new requires time, nobody wants to be the first person to try something completely new. The first user of SYD was led to choose to try out this technology because the CI Yankee that they were using was suddenly damaged and could not be replaced by the same kind of Yankee in a limited period of time.

The supplier of this steel Yankee managed to deliver it within 3 months only, and after startup the operating efficiency was very good.

Vinda started considering the option of SYDs about 7-8 years ago. In 2011 we ordered 4 Toscotec tissue machines and we also placed a separate order for 2 TT SYD, to be installed on Kawanoe-Zoki tissue machines purchased in the same period. In 2012, Vinda purchased Toscotec's 100th TT SYD. Up until today, Vinda has started-up and is about to start-up over twenty Toscotec's tissue machines.

In recent years, quite a few old tissue mills in Europe are progressively substituting CI Yankees with steel Yankees.
Presently, steel Yankee dryers have already become the mainstream configuration for medium-high speed or high speed tissue machines. I reckon that in future years, all around the world, the number of SYD installed in medium-high and high speed tissue machines will go up.

The key advantages of SYD: safety and speed increase

TP: what kind of precious experience has Vinda gained in the process of using SYD? In your opinion, what is the greatest advantage of using SYD from the point of view of actual production?

DYP: I think that the two greatest advantages of SYD in terms of actual production are its safety and the increase in machine speed. The safety factor ensures continuous production and increases efficiency of the machine. Moreover, the maximum working pressure of CI Yankees is 7.2 bar, while SYD can reach 10 bar, so this represents the condition for speeding up the tissue machine. According to our experience, if you simply substitute your Yankee with a SYD, you can achieve an increase in machine speed of 15-20%.

In 2011, Vinda Liaoning mill placed an order for two Kawanoe's BF-10 machines and decided to use Toscotec's SYD. These two machines feature suction hood (only suction, without blowing hot air), with design speed of 770 m/min. Due to the fact that we installed the TT SYD, and made the necessary modification to the best former, without requiring for a greater contribution from the hood, finally we reached an actual operating speed of 1000 m/min.
The increase in machine speed is definitely a key aspect for the mill's production capacity and to increase its returns.

Medium width machines are better suited for the Chinese market

TP: in terms of selection of the tissue machine model, Vinda prefers to use medium width and medium speed machines with net sheet width of 3.4 m and machine speed of 1,500 m/min, and not large width of 5.6 m and high speed of 2,000 m/min. What are the reasons behind this choice?

DYP: a tissue producer should select the model of their tissue machine based on one's needs, faster speed not necessarily is a better choice. What we consider first is the economical overall energy consumption per ton of paper, in other words the steam and power consumption are to be considered together as a whole, because a decrease in steam consumption that causes an increase in power consumption is pointless.

Big width, high speed machines have a high specific production, occupy a small surface area, require few operators. But if you use the same machine to produce different grades of tissue, the shift process between grades will inevitably reduce the machine efficiency. Besides, the higher the speed, the higher the energy consumption per ton of paper, the higher the production costs per ton of paper. The power consumption for a CF tissue machine of 5.6 m width, 2000 m/min speed is at least around 1000-1100 kWh/tp and the steam consumption is about 2.5-3.0 t/tp.

The figures for the Kawanoe's BF tissue machines used by Vinda are: operating speed 700-1000 m/min, steam consumption 2.5-2.6 t/tp, power consumption 600 kWh/tp; while the figures for the Toscotec's CF tissue machines are: operating speed 1,300-1,500 m/min, steam consumption 2.6-2.7 t/tp, power consumption lower than 800 kWh/tp, and the overall energy consumption per ton of paper achieves an advanced level for this type of machines worldwide. Also, Vinda dedicates every tissue machine to producing one tissue grade, so as to maximize production efficiency.

Currently our first choice of machine model is a CF tissue machine, with design speed 1500 m/min, production speed rigorously under 1800 m/min; installing a large diameter Yankee enables us to reduce the contribution of the hoods and use a hybrid hood, which blows hot air in the wet end and works as suction hood at the dry end. Also, based on the different grades, we choose a double press configuration with SPR and BDPR, or a single jumbo suction press roll (diameter 1425 mm). Though a balanced configuration of steel Yankee, hoods and press we can reduce the overall energy consumption to a minimum.

In brief, I believe that from the point of view of European and American tissue producers with high energy cost, high labor cost, high land cost, the winning choice falls on large width, high speed TM. From the point of view of the majority of tissue producers in the Chinese market, medium format machines are more profitable.

The fast development of tissue machines made in China

TP: in recent years, Chinese manufacturers of TM are promoting

R&D of medium-high speed machines, do you think that in the future tissue machines that are made in China will be competitive on the market, along with imported machines?

DYP: foreign tissue machines suppliers have accumulated decades of technical practice, they have solid force of R&D and design, wide-ranging experience, and lead on the development trends of TM technology worldwide. The R&D and manufacturing work of medium-high speed TM in China has started off rather late, design and research staff are in short supply, yet in the past few years Chinese suppliers made very fast progress, thanks to the experience absorbed from foreign suppliers' advanced technology. The Chinese market is very big, I believe that in the future Chinese manufacturers will be able to progressively satisfy more requirements of medium small enterprises, and expand their potential for development.

TOSCOTEC'S NEW TECHNOLOGICAL FACILITY FOR LARGE-DIAMETER STEEL YANKEE DRYERS OPENS ITS DOORS

Toscotec pursues its investment strategy in order to enhance its strength in the tissue and paper industry. Inspired by its trust in innovation and a custom-oriented spirit, the company - pioneer and world leader in the Steel Yankee Dryer market - opens the new facility dedicated to the complete production cycle of TT SYDs.

The architectural heart of the facility is the central hall that houses all the stages of the production line: 180m long, 40m wide overall and up to 18m high. From metalworking and precision mechanical processing to thermal treatment in a 10m x 10m oven, all the tests and stamps are made on site according to European (PED), American (ASME), Chinese (CSEI) and Japanese (JIS) regulations. The new center also houses technical and production offices, as well as a conference room and lounge for customers.

The facility is located in Massa, 50 km from Lucca, a location chosen for its easy seaport access for quick overseas shipments.

The new center marks a breakthrough in Steel Yankee Dryer manufacturing and has a clear aim: to increase efficiency and ensure the best product worldwide, allowing Toscotec to further enhance its leadership role in technological innovation.


TOSCOTEC

TOSCOTEC FIRED UP TWO AHEAD-1.5M TISSUE MACHINES
AT VINDA SICHUAN AND VINDA SHANDONG PAPER

The two Toscotec-supplied AHEAD-1.5M *ES* tissue lines came on stream according to schedule at Vinda's tissue mills in Deyang, Sichuan and Laiwu, Shandong. The tissue machines are already running at the maximum operating speed of 1,500 mpm with full satisfaction of the user for tissue quality and machine performance.

After four years of strategic partnership, the Italian manufacturer and the Chinese producer are closely working together at six of Vinda's production sites. "Toscotec's solutions represent the best available technology in tissue machinery nowadays. We are particularly satisfied with their superior energy efficiency. Our Toscotec machines run with the lowest possible consumption figures and offer a crucial advantage in terms of cost-effective production." says Mr. Dong Yi Ping, Vinda Group's Executive Director and Chief Technology Officer.

With a design speed of 1,700 mpm and a net web width of 3,400 mm, the two machines are equipped with Toscotec's second generation Steel Yankee Dryer TT SYD, Toscotec's jumbo suction press roll for improved dryness and softness and feature different energy saving solutions for Yankee hood design, with gas and steam. As a result, Vinda's production capacity has overall increased by 60,000 t/y. Another unit identical to this one at the Shandong paper mill is scheduled for start-up in the second half of 2016. Vinda's mill in Laiwu already hosts PM1 & 2, both supplied by Toscotec, running steadily at 1500 m/min and producing a combined capacity of 50,000 t/y.

TOSCOTEC S.P.A. HAS BEEN AWARDED WITH THE "LLOYD'S REGISTER ENERGY – BEST ITALIAN CLIENT AWARD 2015"

The ceremony took place in Rome, in Villa Wolkonsky, the official residence of British Ambassador Christopher Prentice on 5th of November. The certifying authority conferred this recognition to few Italian companies for their excellent ability to guarantee to customers reliable products with the highest quality level.

"Since 1760 Lloyd's Register has been operating every day with integrity, impartiality and technical competence" says Federico Zanette, Account Manager of Lloyd's Register Energy in Italy "and we would like to thank our most loyal customers with whom we share these values every day".

LUCART PROGRESSES WITH AN INVESTMENT
ON ITS PM4 AT PORCARI FACILITY

The Italian tissue producer Lucart has successfully started-up its PM4 tissue machine in Porcari (Lucca) after the rebuild committed to Toscotec S.p.A..

The upgrade includes a modification of the forming section and the complete replacement of the old hood with a new Toscotec Mono Yankee Hood fed by natural gas and complete with relevant Air System and Heat Recovery System.
The upgrade of the Wire section consists of the replacement of the forming roll and of the main white water saveall, as well as relocation of the headbox and breast roll.
PM4 is a Twin wire former with double press configuration for 2,7 m sheet width, dedicated for the white and coloured tissue paper jumbo reels.
The aim of the investment is to increase the production capacity up to 90 tpd and the operating speed of 20% improving the formation quality and reducing the energetic consumptions.
All along concerned with the environment issues, Lucart has recognized in Toscotec the right partner for this new project.
The hood heating circuit is a mono system cascade type designed considering the future installation of an additional heat exchanger to produce low pressure steam to feed the existing steam box located behind the suction press roll.
Thanks to the good cooperation between Toscotec and Lucart, the project has been managed in a very short time both for the engineering phase and for the installation at mill site.

Today Lucart Group is Europe's largest producer of MG paper for flexible packaging and is one of the top 10 European manufacturers of paper and tissue products. Furthermore, Lucart is one of the European leading producers of Airlaid products.
More than 60 years of experience have allowed Lucart to develop the necessary know-how and technology to create quality products that can satisfy customers' requirements.
The production capacity of Lucart Group is 300,000 tons/year with 10 paper machines and 52 converting lines. The consolidated turnover is around 400 million euro and the number of employees is around 1,200.

TOSCOTEC S.P.A. ATTRACTS AN INVESTMENT
BY SYNERGO SGR TO ACCELERATE ITS GROWTH

Sinergia II, a closed-end fund managed by Synergo SGR ("Synergo"), has acquired a minority stake in Toscotec S.p.A. ("Toscotec" or the "Group"); the Mennucci family will remain as majority shareholder.

Toscotec is a world leader in the design and production of turn-key plants and machines, as well as a first class supplier for components and services dedicated to the global paper and tissue industries. With innovative technological process solutions and a wide products portfolio the Group has gained, through the years, a significant position in the worldwide market.
Synergo aims to support Toscotec further growth, both organically and through selective strategic add-on acquisitions.
The Group, based in Lucca, Italy, has doubled the EBITDA since 2011, and recorded over €100 million in total revenues in 2015, out of which approximately 90% generated abroad.

Alessandro Mennucci, shareholder and CEO, with an experience of more than 20 years in the industry, will continue to lead the Group. Mr. Mennucci commented: "As of today, the Group has been able to build a strong brand in terms of quality and reliability, and has become one of the leading companies in the global reference market. With this new "synergy" we will have the possibility to further enhance our organization and strengthen our business activity worldwide. We want to continue to develop high technology products and to export the Italian excellence, providing first class services to our customers".

Paolo Zapparoli, Synergo CEO, further explained: "It is a real pleasure to partner with Toscotec and its shareholders; the undisputed technological capabilities that the Group has developed over the years offer the opportunity to further extend its leadership in its reference industry. We look forward to working closely with Alessandro Mennucci and his management team to fulfil Toscotec's growth ambition".

SYNERGO

TOSCOTEC

WEPA CHOOSES AGAIN TOSCOTEC
TO UPGRADE CASSINO TISSUE PLANT IN ITALY

Toscotec, the Lucca-based supplier of advanced solutions for the tissue and paper industry, has been awarded to provide a major rebuild to the WEPA PM#13 machine located in Cassino, Italy.
This new project will complete the multiple steps of the plant upgrade assigned to Toscotec and started in 2010 with the rebuild of the original machine into crescent former and continued in 2013 with the installation of Toscotec-Milltech Yankee Hood complete with Heat Recovery system, and in summer 2015 with the optimization of the stock preparation lines including a Toscotec TT SAF® concept delivery.
The Cassino plant is located in the Centre of Italy, close to Rome; it is part of WEPA Group – an European leading company in tissue manufacture. The mill is an important and modern facility, which is completely integrated with a tissue machine, converting lines and automatic storage system. Its capacity is more than 60.000 t/year.

The new rebuild is featuring a double layer fully hydraulic TT Headbox-MLT including polished pipes, a TT SYD-18FT with deckle insulation and the Yankee steam & condensate removal system.

The supply will be provided on a turn-key basis including engineering, supervision and installation. The start up is scheduled on late summer this year.
This investment will allow WEPA to have a state of the art machine with the best available technology. The mill will optimize the production cycle (enlarging also the trim width at the reel) and achieve a real improvement in paper quantity and quality, while decreasing energy consumption and therefore the environmental impact.
The new TT SYD will be the largest steel dryer ever installed in Europe on a tissue machine re-stating the leadership of Toscotec in this tissue machinery line segment.
The project has been assigned to Toscotec considering the good cooperation since several years, Toscotec high level of professionalism and the excellent project handling during the construction and start-up of two new paper machines in the WEPA plants in Lille/ France and Giershagen/ Germany last year.

GREATER QUALITY WITH LESS CONSUMPTION

Following a major plant modernisation venture, one of the Italian facilities of the multinational WEPA succeeded in its intent to obtain greater productivity, an increment in efficiency, and optimisation of the work spaces. A project founded on Toscotec Group's ability to meet increasingly high operational demands and requirements.

Source: Industria della Carta by Gianandrea Mazzola

Toscotec S.p.A. is involved in the design and production of turn-key plants and machines as well as the supply of components and services dedicated to the paper and tissue industries. It can boast innovative technologies and a wide array of solutions that have allowed the Group to consolidate an increasingly notable position on a global level. A growth that, in the course of the years, has seen the development of installations at the production units of major market players, like in the case of WEPA, the German multinational, for whom the company brought to term an important modernisation project of their production unit in Cassino (FR), a facility that produces kitchen towels, toilet rolls, handkerchiefs and paper napkins.

"In 2010," confirms Maurizio Lattanzi, Plant Director of WEPA Italia S.r.l. in Cassino, "the company embarked on an intense plant modernisation programme to replace technologies that had become obsolete and were no longer aligned with market demands."

And so began the quest to achieve a new level of competitiveness pursuant to the prerequisites set forth, through the attainment of a greater productivity and quality of the product, in addition to an increment in efficiency. These, in synthesis, are the goals that Toscotec set for itself in developing the project that materialised first with the rebuild of the machine from TiscoFormer to CrescentFormer, which took place in 2010, secondly with the reconstruction of the Hoods and Air Systems operations department and lastly, just one year later, with the rebuild of the stock preparation plant.

Higher speed, greater efficiency

As mentioned, the first part of the project entailed the rebuild of the machine into CrescentFormer, which took place in 2010, with a technological-production and energy alignment that yielded a substantial increase in operating speed, in productivity, and also considerable energy savings. An engineering feat that in the case-in-point yielded better sheet formation, improved format and basis weight management, in addition to an optimised and simplified forming belt unit for WEPA.

"Simplification", underscores Lattanzi "also in consideration of the presence of the single wire in the CrescentFormer configuration, together with a new wire/felt run and their reciprocal detachment, rendered optimal. From a production point of view, performance, too, was considerably improved."

The adoption of the new-generation drying system in 2014 definitively solved previous issues tied to structure and safety, but at the same time yielded suboptimal energy efficiency. The new configuration entailed a new Toscotec TT Milltech-SMYH (Smart Duo System) hood in winding on a 5-m diameter Yankee. This synergy benefitted also from the fact that the paper mill works in cogeneration modes through gas turbine (hence producing electricity but also steam). To facilitate the attainment of higher efficiency and reliability is also the change championed by the mill with the passage from DC power supply to AC in drives and actuators.

"Another intervention", reveals Lattanzi, "carried out by Toscotec in agreement with WEPA, was to bring the Air System outside the machine hall. This decision certainly resulted in greater operating safety, as well as simpler maintenance operations, minimising the risk of accidental fires."

Maximum flexibility in stock preparation

Last year, the Cassino plant saw the conclusion of the rebuild project dedicated to stock preparation from virgin fibre. This intervention proved the engineering abilities of the entire Toscotec technical staff, in concert with WEPA, to define an advanced process in terms of operational flexibility but also from the point of view of the space occupied by the plant. A compact, optimised layout achieved also thanks to the choice to adopt the Toscotec TT Mix mixing system (Toscotec patent). A focused decision that allowed minimising the installation of some elements (actually completely eliminating the mix tank) and making format change in the production process more flexible and faster.

"Thanks to this new technology", adds Lattanzi, "today we can make a format change in just a few hours, compared to the 24-26 needed before with the old plant configuration.

A decisive benefit in terms of competitiveness."

A tangible adaptation was also made on long fibre line refine-

ment and on the portion that concerns the deflakers on the short-fibre line, with a resulting boost of both process phases. "All this", continues Lattanzi, "together with upgrades on the broke line, has led to an overall 30% lower electricity consumption compared to the initial configuration (hence dating back to before 2010, A/N) and a savings of about 35% in water and stock volumes. Basically, lower plant operation costs and better management of the entire process."

The numerous interventions performed by Toscotec have, in the course of time, led to a modernisation of the production unit in Cassino. A clear demonstration of how important it is to be able to utilise the services of a qualified supplier, capable of supporting its customers not only through the sale of plants (or parts thereof) but also to flank him in co-design with the scope of attaining increasingly ambitious operating goals.

"Goals", concludes Lattanzi, "that today mean greater productivity, estimated in +14% compared to the previous configuration, in lower total consumption, quantifiable in a decrease of 30% and, without a doubt, in improved quality of the final product that allows our company to further raise its level of competitiveness.

VINDA INVESTS IN THREE NEW TOSCOTEC'S TISSUE LINES

The long-standing partnership between Toscotec and the Chinese giant Vinda Group has produced a new order for three tissue machines, scheduled for start-up in the second half of 2016. Two AHEAD-2.0M will be installed at its Sanjiang facility in Guangdong province, where Vinda already has eight Toscotec-supplied tissue machines running, to attain a total mill capacity of 250,000 t/y. This also represents a record-breaking achievement for the Italian manufacturer, who will accomplish start-up of its tenth tissue line on the same production base over the course of just four years.

The third machine will be installed in Vinda Shandong, where Toscotec has already supplied three lines in three years. This AHEAD-1.5M is identical to the machine fired up last August in Laiwu mill, with design speed of 1700 m/min and a production capacity of 30,000 t/y, same as the Guangdong tissue lines.

Vinda Group has once again confirmed its choice of the best available technology with top energy savings, as the winning choice for its unprecedented growth on the market. Toscotec's successful solution TT DOES (Drying Optimization for Energy Saving) delivers the greatest advantages for the mill: highest performances with the lowest operating costs, by skilfully tapping on cost-effective energy sources such as steam and benefiting from Toscotec's signature technology, its second generation Steel Yankee Dryer.

VINDA CONTINUES ITS FAST EXPANSION
IN TISSUE TO REACH OVER 1 MILLION TONS PER YEAR

Source: Perini Journal N.47

Vinda is one of the major players in the Chinese tissue business and has been growing at a very steady rate over the past years. The company's annual tissue capacity will reach over 1 million tons by the end of 2016, meaning it has more than doubled since 2011, when it was just under 500,000 tons.
By installing a few small to medium-size machines each year, Vinda has been able to continue its expansion at a consistent pace despite the slowdown in the Chinese tissue market. It has built its 10 tissue mills in strategic locations around the country so they offer good access to the markets. At the same time, the Vinda tissue brand has also become known in China as a symbol of high quality.

We recently spoke with Mr Dong Yi Ping about the company, its growth and the recent projects at Sanjiang mill, in Guangdong Province. Mr Dong Yi Ping is Chief Technology Officer - Mainland China, and Executive Director of Vinda International Holdings Limited.

How has Vinda been expanding recently?
Mr Dong: We have been growing our tissue business at a very fast rate so we now have a total of 56 tissue machines. We will reach a total production capacity of 1,040,000 tons by the end of this year, meaning a doubling in capacity over the past five years. Our expansion has been done based on growth in the market of our brands, which are known for their product quality. We have worked a lot with our marketing strategies to improve the market penetration in different segments and also to get benefits from product differentiation. To feed this growth we have worked to get additional production capacity through various means such as optimizing operations, the construction of new mill sites and by installing new tissue capacity in existing sites.

Have you been able to keep growing in spite of the slowdown in the Chinese tissue market?
Mr Dong: Yes, Vinda has continued to grow in recent years despite the general slowdown of the market. Certain producers have had to cut their selling prices to survive the crisis, as competition is extremely fierce. Vinda's strongpoint is the brand, and our sales and marketing team is made up of very driven, focused professionals. We have spent significant energy and money in building a strong Vinda brand. In recent years, we have reaped the fruits of this work and continue to do so today. This is the main difference with our competitors.

What are your biggest tissue product lines?
Mr Dong: Our main products include toilet rolls, which account for 50% of total revenue. Other big products include facial tissue, primarily softpack but also box tissue. In recent years, this segment has shown the highest increase, and it's a good business for us. We also supply other product lines including hankies, hand towels, wet wipes and paper napkins.

How successful is the Tempo brand for you?
Mr Dong: When we acquired Tempo from SCA in 2014, we were very excited because this is a brand with 87 years of history. In Hong Kong it was already the number one brand for hankies, with strong brand recognition. Our strategy was immediately to give it a top ranking position, the premium segment. Now Tempo is growing fast in China's main cities and mainland consumers are giving positive responses. We believe that it will continue to grow and establish itself as a major brand in Mainland China, as it has been in Hong Kong.

How have you expanded at the Sanjiang mill?
Mr Dong: As part of our growth plan, we decided to add two machines at the Sanjiang mill in Guangdong Province in 2014. The reason for installing these two machines was to produce more of our top quality Tempo brand, for the premium segment in China. Therefore, PM 7 and PM 8 at Sanjiang started up in August and September, respectively, of 2014. Both of these machines are from Toscotec. They are Crescent formers with steel Yankee dryers, TT SYD®. The key features for us are the TT DOES® technology (Drying Optimization for Energy Saving) and the short approach flow system TT SAF®. The reasons we

chose this technology is that we felt it would give us many advantages including superior paper formation and an excellent CD & MD profile. In addition, an optimal configuration of press, SYD and hood allows us to reach the desired drying results with the highest energy saving. Thanks to the short approach flow system we get further energy savings and this technology also means that less space is required for the layout.

How have the results been?

Mr Dong: The projects to install and startup PMs 7 & 8 were very successful. The machines achieved excellent results in terms of runnability and product quality extremely quickly. We were able to rapidly finish the fine-tuning and enter the phase of stable production. In the market the products have been very well accepted, which is important since the quality of our products has been regarded as the market benchmark in China in the recent years. So we are very happy with the PM 7 & 8 projects. In fact, shortly after they started up we placed an order for two identical machines, PMs 9 & 10, to be installed at the same mill. Those machines will start at the end of 2016.

The very latest project for us is the new site of Yangjiang, in Guandong Province, which is our 10th paper production site. Toscotec will erect for us two new AHEAD-2.0M machines, PM1 and PM2, for a total production of 65,700 ton/year. Once again, our need to avoid using gas as natural resource has been solved with a tailor-made drying package which delivers higher drying efficiency and output, as well as key energy savings. Both the PMs will feature a TT SYD-18FT with a TT Milltech-HSH steam heated hybrid hood, a combination of a custom-designed Wet End high efficiency hood and Dry End suction canopy heated design.

How would you describe the cooperation with Toscotec?

Mr Dong: **It is a strategic partnership for us. They have been our only tissue machine supplier for 5 years now, with our first project together dating back to 2011. That was PM 1 in the Sanjiang mill; today we are close to starting up PM 10 there. At present, we have 23 Toscotec machines running all over the country, in five different production sites.**

What is Vinda doing to reduce energy consumption in tissue making?

Mr Dong: Our business is tissue making, and our focus is on cutting operating costs. And energy is a big cost. We have therefore chosen the best technology available in terms of energy reduction. We mainly use steam energy and thanks to the technology we chose, we have cut production costs significantly. We put a lot of work into finding a good solution which combines the right size of Yankee dryer, type of hoods and press to increase the drying efficiency to a maximum and reduce energy consumption to a minimum. We've had excellent results and the lowest consumption per ton of paper produced. We never stop thinking to further reduce the energy in each single component and at the end of the year that makes all the difference.

You seem to favor installing small and medium size machines of around 2.7 m and 3.4 m width, rather than the wider 5.4 m "double" machines. Why?

Mr Dong: Our approach is to work step by step, to bring about continued and sustainable growth. We have installed both 2.7 m and 3.4 m machines. So far, we chose the small/medium size, but it does not mean that in the future we won't install double machines. It's also a matter of the converting machines in existing plants. The choice is made by taking into consideration what will give us the highest flexibility, efficiency and ease of runnability on those machines.

TOSCOTEC PROVIDES A STEEL YANKEE DRYER TO FUJIAN JINMIN TOBACCO

Fujian Jinmin Reconstituted Tobacco Development Co., Ltd. has chosen Toscotec's TT SYD-18FT steel Yankee dryer, in order to benefit from high energy efficiency and drying capacity. Start-up is scheduled for June 2017.

Following a similar application in the US, Toscotec consolidates its position in the segment of tobacco in Asia. As market leader of Steel Yankee Dryers worldwide, Toscotec is now well established also in the application of tobacco papermaking, offering the most comprehensive range of sizes and face lengths, up to a diameter of 22 ft and 6 m of width.

For its new project Fujian Jinmin Tobacco has chosen the Yankee dryer with the best production performances and energy efficiency, relying on Toscotec's extensive experience in the field of energy savings and drying optimization.

TOSCOTEC TO SUPPLY AHEAD-2.0S TISSUE PRODUCTION LINE

TO WEPA PROFESSIONAL PIECHOWIC S.A. IN PIECHOWICE, POLAND

Wepa Professional Piechowic, part of the German based Wepa Holding Group, has chosen Toscotec as supplier for it's new tissue line that will be installed at the company's Piechowice Plant in Poland. The new Toscotec AHEAD-2.0S line will strength the Wepa recent strategic growth in the European tissue market that has been launched with the start up in 2015 of similar plants, provided by the Italian Supplier, in France and in Germany. The start-up is scheduled for the first quarter of 2017. Toscotec already operated in the mill on PM#1 in 2009 with the rebuild of the dry end section. This new investment on a second machine in Piechowice will increase the total number of paper machines for WEPA Group up to twenty. For the company, established in 1948, this new project represents another important goal achieved in a short time and meanwhile restates the trustful cooperation with Toscotec for challenging and complex projects.

The Toscotec turn key delivery for the new TM#20, based on the best available technology, will comprise a stock preparation systems for virgin pulp, an AHEAD-2.0S tissue machine, TM and plant auxiliaries, electrification & control system. The tissue machine is equipped with single layer headbox, double press configuration, steel Yankee cylinder TT SYD-15FT, hood and dust & mist removal. Full engineering, erection, erection supervision, training, start-up and commissioning complete the Toscotec supply.

The tissue machine will have a width of 2.8 m and a design speed of 2,200 mpm. The new line will produce, among the other grades, high-quality super-soft toilet tissue and will be capable to run also with waste paper based raw material. The greenfield project will be focused on energy savings and low emission concepts with a great attention to the environmental issues as well as to the impact on the site.

Martin Krengel, Wepa CEO, states as follows: "I am happy to say that the recent brilliant experience with Toscotec in realizing professionally and on schedule both paper machine projects in Lille and Giershagen has allowed us to accelerate our market expansion planning. In addition to a high level of professionalism, an excellent good partnership and solid trust reached with our long-standing supplier were necessary for such a smooth decision to go again with them for this new greenfield project in Poland."

WEPA: €50 MILLION INVESTMENT IN TWIN TISSUE MACHINES
CONFIRMS COMMITMENT TO FRENCH AND GERMAN MARKETS

Building a new tissue machine under any circumstances is usually a pretty challenging activity. Building two at essentially the same time in two separate countries is even more challenging. But that is exactly what WEPA, the large family-owned German tissue producer, did recently by installing two new units, TM 18 in France and TM 19 in Germany late last year. With the aim of simplifying the projects as much as possible, and getting the machines running as rapidly as possible, WEPA decided to order nearly identical 'twin' machines from one supplier, Toscotec.

Group needed paper fast, with no risks

A few years earlier WEPA had recognized its need for more paper in the group, because converting capacity in both France and Germany was around 50,000 tons per year more than the WEPA paper machines were then making. Thus, in 2013 WEPA group management presented the board of directors with a project to build the two machines. The board agreed with the plan and at the same time decided that it made good sense to have just one supplier for both machines, due to the positive cost efficiencies and synergies in procurement, installation, training, spare parts, etc.

The board furthermore suggested two other things: that WEPA choose a technology and a supplier that would involve no risk whatsoever, because the company was in such an urgent need of paper, and that the machines should offer extremely low energy consumption both for cost as well as environmental reasons. Thus the two machines are almost identical, with only very small differences.

CEO is clear about the benefits

Martin Krengel, WEPA's Chief Executive Officer, is very clear about the reasoning for the investments and the advantages that TM 18 and 19 give to the environment, the company and its customers. "Our investment of around €50 million in these two new paper machine projects clearly demonstrates the WEPA Group's commitment to the future. They give a considerable reduction in CO_2 emissions, primarily due to the high energy efficiency of the machines but also due to transport of parent rolls. In this way, we conserve resources and reduce emissions, while also optimizing costs in both plants."

"At the same time, the investments represent a big commitment to our European retail customers which further confirms the WEPA Group as a competent tissue paper partner. The additional new paper capacity generated in the French and German markets with these two new paper machines now gives us even better customer proximity and service."

Machine at Lille, France was first

TM 18 at the WEPA Lille plant in northwest France was the first of the two projects, getting started about 3 months ahead of TM 19 in Giershagen, Germany. The two machines were supplied as part of turnkey agreements with Toscotec that each included an AHEAD-2.0, 2.8 m wide tissue machine, plant auxiliaries, electrification & control systems, as well as full engineering, erection, erection supervision, training, start-up and commissioning.

Under 12 months for each project

Not only were the projects remarkable for taking place simultaneously, but also for the speed with which they were carried out. Dirk Euteneuer, the Managing Director of WEPA France, which also includes the mill in Troyes which was recently-acquired from Lucart, explains the TM 18 project.

"We have two existing two paper machines at Lille but we were short of paper. So we were buying about 25,000 tons per year of jumbo rolls, with most of it shipped from southern Europe where there is excess capacity. Thus we needed a third paper machine in Lille to get in balance and the WEPA management took the decision that we would make all our own paper, and save money on parent rolls and transport, as well as reducing the CO_2 footprint for that transport. In addition, we saw we could make great energy savings with this state-of-the-art machine."

Dirk Eutener
Managing Director, WEPA Fr

Frank Folcz
Giershagen's Mill Manager

Martin Krengel
WEPA's CEO

The Lille project went extremely fast, with civil construction commencing in September 2014 and TM 18 making salable paper on 3 August 2015. Such an enormously rapid construction and commissioning is almost unheard for modern, advanced tissue machines, but Dirk says it was the result of great teamwork.

Communication: The key to success

"The WEPA board wanted us to move as quickly as possible because of the reasons mentioned. We therefore achieved this extremely rapid installation and successful startup based on a great cooperation between Toscotec and WEPA. I would even say it is a friendship between us, because it was such a close cooperation. To achieve this, good communication is the key, on a daily basis. We were always in touch and discussing things like 'where are the bottlenecks, what's happening in that area, where do we need to focus resources right now, etc.' If everything is communicated well, success won't be far behind." Startup took place on August 3 and it was excellent, says Dirk, with salable paper was being produced by the end of the first day. The first rolls were still hot, he says, when they were moved to converting, with the converting team very happy with the uniform, and high, quality being produced. Since start-up the machine has been well above the starting curve agreed with Toscotec, with speeds reaching 2,000 m/m, the top speed target, much quicker than expected.

"We were absolutely ahead of the startup curve and running much faster than we anticipated," continues Dirk, "although of course as you approach maximum speed, the gap above the startup curve drops. We were very pleased to be ahead of budget in terms of both time and money on PM 18. In addition to being a successful project in technical terms, the investment is also a very concrete sign of WEPA's commitment to the French market for the long run."

German project is 'unbelievable' accomplishment as well

Although WEPA perhaps had less need to prove its commitment in Germany, its home country where it has five paper mills and a 25% market share, the TM 19 project at Giershagen was nonetheless equally important. And equally successful.

When asked about how the project, and especially the start-up went, **Giershagen's mill manager Frank Folcz takes a deep breath and states:**
"It was truly unbelievable. I've been working in the paper industry for almost 30 years and have never seen a startup like this. It honestly took us only five minutes to get paper on the reel. We then ran for 30 minutes during which time we made 1,500 kilograms, and carefully recorded all the key operating data for the machine. Since it was evening, we then shut down, and the next day we started up with the same data and operating parameters. That was 2 o'clock in the afternoon and we ran until 6 AM the next morning, making 33.6 tons that went straight to the converting plant. There was not a single kilogram of broke."

"That's the way the project has gone, making good paper within the first five minutes and, since then, we haven't looked back. We had hoped to have a good startup but this success was hard to believe. In addition, we reached 2,000 m/m in less than three weeks, on 18 November after the first run on 1 November."

No sleepless nights

Looking back at the construction schedule in Giershagen, Frank says it was very similar to Lille, with a time span of 339 days from the start of digging on 22 November 2014 until the machine startup on 1 November 2015. And although it was a very accelerated schedule, he claims it was smooth sailing the entire time.

"I can tell you that during the whole project, all 339 days, I never had a sleepless night, or lost any sleep worrying about this project," says Frank. "I always had the feeling that we were carrying out a very good project and that the startup would be positive. Overall everything was running very well during the whole operation, so when it came for startup, the whole project team including the WEPA side as well as our Toscotec partners were very confident it would go well. And it did."

Martin Krengel, CEO, sums up the successful, accelerated-speed projects as follows: "I am happy to say that both paper machine projects were realized very professionally, on schedule with the planned start-up curves far exceeded. But in addition to a high level of professionalism, a good partnership and solid trust between the parties is necessary for such a smooth cooperation."

"For these projects we, meaning WEPA as the buyers well as Toscotec as the supplier and our long-standing partner, brought together our best teams. The result is that experience, motivation and passion for the job have been successfully combined here to produce these successes. The very successful start-up of WEPA´s two new paper machines is, to me, the best possible proof of that teamwork and cooperation."

SUCCESSFUL START-UP OF THE TOSCOTEC DELIVERED TT DOES PACKAGE AT ISMA 2000 S.L., IN LA TORRE DE CLARAMUNT MILL, BARCELONA, SPAIN

The ISMA 2000 PM#1 has been started up smoothly according to the time schedule, after a major dry-end rebuild delivered by TOSCOTEC. The delivery agreement of the new drying technology for the tissue line was signed by ISMA 2000 S.L. and Toscotec S.p.A. in June 2015.

"Toscotec's commitment was to deliver to the spanish producer the latest edge-technologies in tissue drying to create a further reference in rebuilding projects to increase efficiency and cut operating costs. **With great satisfaction we announce that the rebuild has allowed ISMA 2000 S.L. to increase the productivity of the tissue machine of 30 %." said Davide Mainardi, Sales & Customer Care Director of Toscotec S.p.A..**

The delivery included a Steel Yankee Dryer TT SYD-3600MM provided with Toscotec patented solution for head insulation, a yankee steam & condensate system and a new hood, TT Milltech-SMYH Hood type, with high level of heat recovery.

Fernando Luz, ISMA General Manager, said: "To invest in TT DOES (Drying Optimization for Energy Saving) package has been the right move to continue our project, based on an intensive energy-saving concept, already initiated in the phase of pulp treatment. Today we are able to produce 100% recycled hygienic tissue by using complex raw material with high quality fibers and less specific energy consumption input".

TOSCOTEC OBTAINS A REPEAT ORDER

FROM CELUPAPER S.A. FOR A NEW TISSUE MACHINE PM4 IN BUENOS AIRES, ARGENTINA

Toscotec will supply a new MODULO-PLUS tissue line to Celupaper S.A., part of Grupo Vual, South American leading regional player for the production of high quality tissue products.

The new line will be installed at Papelera Nicaragua. This is the third order in 2 years: previously Toscotec has been chosen to reconfigure the existing Fourdrinier machine PM2 with the installation of the TT DOES package (Drying Optmization for Energy Saving) already started up in 2015 and to supply a new PM3 MODULO line that will start up in May, this year.

Toscotec's MODULO-PLUS will be delivered with a design for the production of high quality tissue products featuring a gross daily production of 65 tonn. The tissue machine is equipped with single layer headbox, one press configuration, TT SYD-3200MM, TT Milltech-MYH Monosystem Hood fed by natural gas and steam and condensate removal system. Approach flow system, electrification & control, as well as erection supervision, start up assistance and training programs are also included in the scope of supply.

"With this series of investments we believe to play an important role in South American market. Today the group has already three manufacturing plants (Jose Juan Yapur, Celupaper and Papelera Nicaragua), one pulp manufacturing plant (Celulosa Alto Vale) and many distribution centers located in Santa Fe, Córdoba, Bahia Blanca and Buenos Aires employing more than 700 people." Confirms Mario Speranza, CEO of Celupaper S.A.

"It's an honor for us to continue the good cooperation with Celupaper. **Our aim is to reach significant results in terms of productivity and of drying energy saving. The TT DOES continues to be a key technology of our lines to bring concrete benefits to our customer and take their performance forward."** says with great satisfaction Alessandro Mennucci, CEO of Toscotec S.p.A. The PM4 will be started up within the end of 2017.

RUSSIAN JSC SYASSKY PULP & PAPER MILL

STARTS UP THE 45,000 TONNE/YR TOSCOTEC AHEAD TISSUE MACHINE AT SYASSTROY MILL

The Toscotec supplied AHEAD-1.5m tissue line came on stream on 29th April, 2016, well in advance to schedule at Syassky Pulp and Paper mill in Syasstroy, in the Leningrad region of Russia. The delivery agreement of the tissue machine was signed by Syassky PPM and Toscotec in December 2014.

After the PM3 start up the Syasstroy's site is actually one of the most efficient Russian paper mills, employing over 2000 people to make 110.000 tons a year – almost twice the productivity of many competitor mills.

"The Toscotec AHEAD-1.5M tissue making line is designed to produce high quality tissue from dry and slush pulps, entailing a real reduction of the mill's energy cost. That is important not only for us but also for our customers who realize the importance of sustainable industrial production. Toscotec has well understood our technological target as well as economical needs. Our partnership begun in 2009 with two new rewinders and continued in 2012 with an AHEAD line (PM2) until this new successful cooperation", says Mrs. Irina Mozhaeva, the Chairman of the Board of Directors of Syassky PPM.

Toscotec scope of furniture for the new PM3 included AHEAD-1.5M crescent former tissue machine with a single layer headbox, single press configuration with suction pressure roll TT SPR1045, a 12FT diameter Steel Yankee Dryer TT SYD-12FT and a reel section TT Reel-P. The delivery also included the stock preparation plant, gas heated hood and steam & condensate system as well as electrification & control system. Engineering and services (erection supervision, commissioning & start up assistance, training) completed the package.

Information about JSC Syassky Pulp & Paper Mill

Founded in 1928 with the unique aim to cover the needs of the domestic market, in the last years Syassky PPM put in progress a huge investment process and has been reorganized as joint stock company with the result to be able to satisfy the growing demand for domestic but also for export markets.

TOSCOTEC TO SUPPLY A DRYER SECTION REBUILD TO SMURFIT KAPPA PM1 IN BARBOSA PLANT, COLOMBIA

Toscotec will rebuild the dryer section of Smurfit Kappa Papelsa's PM 1 at Barbosa mill, Colombia. The customer has recognized in Toscotec the right partner to provide the best technology available in drying process and support the company for a quick growth in the South American market.

The project is finalized to improve efficiency, increasing the operating speed and the reel gross production over 40%. The crucial point of the dryer section modification is the application of the TT SteelDryer technology throughout the entire paper machine, with 5 sections and a total number of 42 dryers.

The scope of the supply includes also an advanced rope-less tail threading system and sheet stabilization designed to reach an operating speed of 1000 mpm.

Toscotec service specialists will provide supervision, commissioning and start up assistance.

The order is scheduled for the end of 2016 and expected erection and start-up for the beginning of 2017.

Toscotec Steel Dryer technology is a well-known and proven solution with over 1200 units running worldwide, providing an extremely high drying capacity. The main benefits Papelsa is looking for, with the application of the new 11 bar coded TT SteelDryers are:

- Higher heat transfer rate thanks to the thinner shell thickness of the steel dryer;
- Wider drying face length with the same space requirements, leading to the possibility of drying a wider sheet width;
- Safer equipment.

With this project Toscotec strengthens its partnership with Smurfit Kappa in South America and thanks to the advanced technology and the flexibility shown on various projects reinforces its commitment to complex rebuilding and emphasizes its leadership on the dryer sections.

CELUPAPER STARTS UP THE NEW MODULO TISSUE MACHINE SUPPLIED
BY TOSCOTEC AT PAPELERA NICARAGUA, ARGENTINA

Celupaper S.A. started up the new PM3, the first of the two tissue machine that the South American producer has commissioned to the Italian leading supplier in the last 2 years. This start-up follows the rebuilding of PM2 that Toscotec also carried out in February 2015.

The new line is installed at Papelera Nicaragua mill, Argentina. Based on an intensive energy-saving concept, PM3's delivery included the approach flow system featuring ultimate Toscotec technology TT SAF®, a MODULO tissue machine with single-layer headbox, single press configuration and TT SYD-2500mm featuring TT Milltech-MYH (monosystem gas heated hood). The supply also comprised an electrification and controls package and steam & condensate system.

The excellent cooperation between the two teams has allowed to get immediately the target of productivity, optimizing the production cycle, both in terms of flexibility and energy costs. This project will increase the mill daily tissue production of 50 tons of different grades of high-quality tissue.

"A new era for Celupaper has just began. We believe to play an important role in South American market according to our vision: to meet the demand with high quality products following the market growth and retaining the customers. Now we are waiting for the next Toscotec PM4 that will be started up within the end of 2017", says Mario Speranza , owner of Celulpaper S.A.

TOSCOTEC STARTS UP PM1 PRESS SECTION REBUILD
AT PAPETERIE SICAL, FRANCE

Papeterie Sical and Toscotec announce the successful start-up of PM#1 after a deep press section and related parts modification. The machine came in operation according the planned shut-down time and, after the optimization phase, is now producing the targeted container board products quality.

The project, finalized to improve out press dryness performance, liners top side printability as well as machine runnability, includes new TT Combi-Press with a tailored TT Pick-up press roll, new press rolls with related cleaning doctors, a major press frame rebuilt integrated in the wire section structure, and a complete tail threading from press to dryer section including the area of the existing shoe press in last position.

A broke pulper modification and initial part of dryer section implementation with new TT SteelDryer is part of the rebuild, that includes erection, erection supervision, start-up assistance and training.
With a web width of 2.570 mm and a design speed of 500 m/min, the renewed PM#1 produces container board grades as Brown Test Liners, Brown Liners and Medium in the range 100 to 220 g/m^2, with a yearly capacity of 45.000 tons/year.

Thanks to the strong cooperation between the two project teams, the success of this rebuild confirms the Toscotec ability to supply technological and complex reconstruction in the board sector.

EXHIBITIONS 2017

TISSUE WORLD	Milano, Italy	MiCo - Milano Congressi	March 28 - 30
CIDPEX	Nanjing, China	Nanjing International Expo Center	April 22 - 24
MIAC	Lucca, Italy	Lucca Fiere	October

EXHIBITIONS 2018

TISSUE WORLD	Miami, U.S.A.	Miami Beach Convention Center	March 21 - 23
IT'S TISSUE!	Lucca, Italy	Toscotec Open House	June

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