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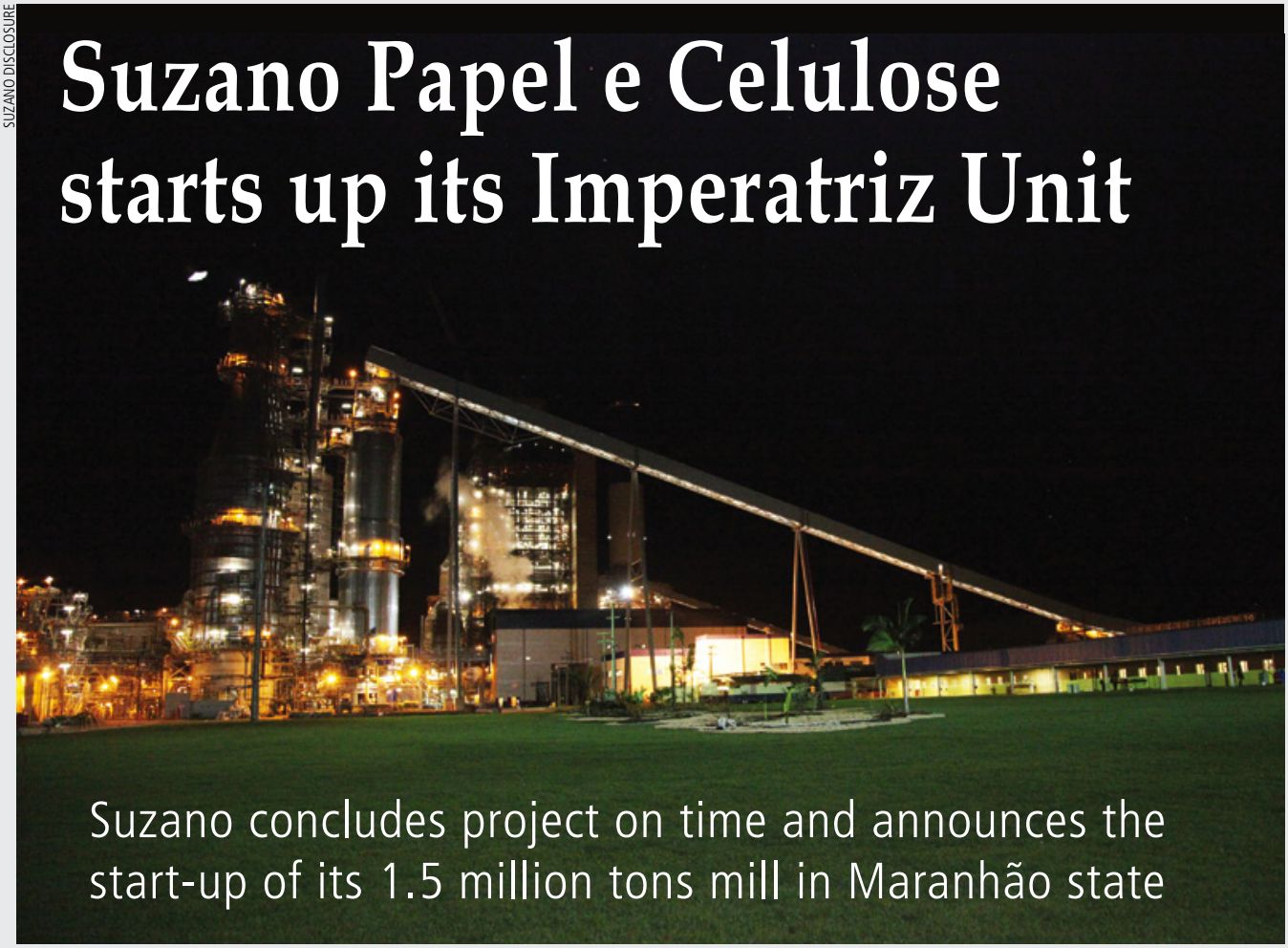
Special for *O Papel*

Suzano Papel e Celulose starts up its Imperatriz Unit

SUZANO DISCLOSURE



Suzano concludes project on time and announces the start-up of its 1.5 million tons mill in Maranhão state

In December, Suzano Papel e Celulose started up its latest production unit with an annual capacity of 1.5 million tons of eucalyptus market pulp. Located in the city of Imperatriz, in Maranhão state, the mill occupies a total area of 1.5 million m², with 96,000 m² of constructed area.

The industrial investment is estimated at US$2.4 billion plus another US$575 million earmarked for developing the forest base. This figure comes with long-term financing, grace period and competitive cost. The National Bank of Economic and Social Development (BNDES) provided a R$2.7 billion loan with a 12-year payment term and a three-year grace period. Additional funding came in the form of debentures mandatorily convertible into equity (R$1.2 billion), external financing for the portion of imported equipment and the company's own cash.

The project schedule, which started back in the middle of 2008, was executed as planned. By September 2013, the unit had the following status: 94% overall completion, 98% civil construction concluded, 84% of industrial assembly implemented and 33% of commissioning, testing and simulation of operations, fundamental for the mill's start-up.

Looking back at the commissioning part, project director Adriano Canela recalls that the first circuit to begin operating was utilities, which includes water, steam, electricity and compressed air, allowing to begin tests in the process areas, represented by boilers, evaporation, woodyard, etc. One of the stages mentioned by Canela is the hydrostatic test of the recovery boiler, an important milestone in the construction of the new pulp mill that analyzes the welding of pressure pipes. The boiler received 1,200 m³ of pressurized water at 190 bar (pressure unit), with the objective of verifying potential leaks or weaknesses. "The test was a success and allowed us to advance in other fronts," said the project director.

Other fronts mentioned by Canela include the burning of fuel oil and preparation for the burning of liquor, which stage represents the effective start-up of the production process. "The burning of black liquor, which comes from the cooking of wood in the pulp production process, is precisely the boiler's function in the production process. This last step was concluded in the end of November," he said.

State of the art technologies

The recovery boiler of the Imperatriz Unit is 105 meters tall (equivalent to a 35-story building) and stands as the biggest equipment in South America. Furnished by Metso, size is not the only differential of this equipment. "The monitoring and automation technologies used are the most current in the market," said Canela.

The steam generation capacity also stands out as one of the competitive advantages of the boiler: from the burning of 7,000 tds/day of virgin solids, the equipment is capable of producing 1,207 t/h of steam. For comparison purposes, the boiler at Suzano's Mucuri Unit produces 738 t/h of steam from the burning of 4,700 tds/day of virgin solids.

Although the boiler offers significant competitive advantages to Suzano, the presence of two dryers and two lime kilns is considered the most innovative aspect of the project. "Different from the majority of projects in the sector, which operate with only one equipment each, we opted to double in order to have greater operational flexibility, greater production stability and lower cost. In practice, in the event one of the kilns has a problem, there is no need to stop the entire line. It will operate at a lower capacity but will continue running," said Canela.

In addition to the process islands furnished by Metso, Suzano counted on the participation of other renowned suppliers in this project. Siemens, for example, was responsible for supplying turbogenerators and the entire electrical part of the unit. Each turbogenerator is approximately 20 m long and weighs roughly 350 tons. Installed next to the boilers, the equipment's function is to generate electricity to supply the pulp production process and administrative areas, as well as transform high pressure steam into low and medium pressure steam to be used in the productive process. The two generators produce a total of 250 MW, whereby one turbogenerator is sufficient to generate energy for the entire plant and the other is responsible for generating 100 MW in excess energy, gradually supplied to the power grid. "This is a very interesting aspect from an economic perspective of the project," said the director.

In turn, the effluent treatment plant and water treatment plant were acquired from Centro Projekt and Veolia, respectively. "The entire chlorine dioxide generation part, a chemical used in the processing of pulp, was furnished by EKA Chemicals (Azko Nobel group)," said Canela. Regarding this last supplier, Canela informed that: "in addition to producing chlorine dioxide for Suzano, EKA will produce an excess amount for other interested companies, focusing on market demands of the north and northeast regions". The same production model will be adopted by oxygen supplier Air Liquide. "They are also present at our site and produce an additional amount to satisfy market demands in the region."

Good commissioning optimizes the learning curve period

Since start-up, the learning curve is being satisfied week by week so that the mill achieves its maximum capacity. "If we consider the maximum capacity of 1.5 million tons of pulp, we have reached an average production volume of 125 thousand tons/month. More important than focusing on this goal is achieving production stability, as this ensures quality and optimizes resources and raw materials," said Canela. As such, the company plans a learning curve period of up to 18 months, aiming to achieve maximum capacity in the first 12 months.

Also according to the project director, good commissioning is a key factor for a good learning curve. But it's not the only one. The collaboration of competent professionals is another important factor. "We have recently graduated young professionals specifically trained for the operation, as well as experienced professionals that already worked in other Suzano sites or for the competition. This combination is key for a good day-to-day operation," said Canela regarding the team composed of 600 company employees.

Referring to the capturing of labor in the region, Canela recalls that the process was broken down into two stages: In stage I, the company invested in training people, while stage II focused on selecting and contracting professionals. The people training program comprised two fronts: Skill Building, a project created in partnership with local entities aimed at training people in the areas of civil construction and industrial assembly;

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By September 2013, the unit had already reached 94% of overall physical advancement and 98% of civil construction works was already concluded

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In order to achieve greater operational flexibility, greater stability and lower production costs, Suzano opted for the installation of two dryers

and the Pulp and Paper Technical Course, which focused on training operators. The idea behind the project was to satisfy a local demand for opportunity and the need to contract people on the part of Suzano and its partners. Students from the Skill Building program came out ready to work on the mill's construction or any other project. In the case of the Technical course students, a six-month internship program was offered at other company units and those who performed the best were contracted to work at the new mill. "These groups recently returned to become part of the Imperatriz operational team," he said, referring to the professional training process.

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"We significantly praise production stability, as it ensures quality, optimizes resources and raw materials," says Canela about the learning curve

Strategic location favors commercial logistics

The Imperatriz unit is strategically located for distributing pulp to international markets, particularly Europe and the United States. "The logistics solution that the state offered was one of the main factors that led us to choose Maranhão state," said the company's COO Ernesto Pousada.

Pousada refers to the railway-highway combination and proximity to destination markets. For distributing pulp, the unit has the option of inbound logistics, based on existing highways, and outbound logistics, which utilizes local railways, without cargo transshipment. In practice, the flow of production is guaranteed by a logistics agreement where Vale assumes responsibility for transporting pulp (until 2043) from the new unit to the Port of Itaqui, in São Luis, utilizing the Carajás and North-South railroads.

Suzano built a 28 km railroad extension that begins inside the mill and connects with the North-South railway, where cargo will travel another 100 kilometers until the Carajás Railroad, totaling 630 km until the Port of Itaqui. "The port gives us a 3-4 day transport gain to North America and Europe in relation to other ports in the South and Southeast regions of Brazil," said Pousada.

Expected increase in global demand supports new projects

Even though the pulp produced at the Imperatriz Unit is being directed to the European and North American markets, Suzano's commercial strategy goes well beyond these large commercial centers. "The shipping of new production to these markets is just a matter of logistics. With the extra production from the new mill, we were able to ship most of the pulp produced at the Mucuri Unit (BA) to Asia. That is, the volume that was being shipped to Europe and United states is now preferably going to Asia," said the COO about redistributing the shipping point of pulp.

The majority of clients to be serviced by the new mill are already part of Suzano's portfolio, but new contracts are also being negotiated. "We expect an increase in demand in all markets," said Pousada. However, he recognizes that the commodity is inserted in a highly cyclical scenario in terms of price, many times pegged to the exchange rate situation. "Looking back at the last six years, when the

company decided to build a new mill in Maranhão, there were more difficult moments such as the 2008 and 2009 crisis, as well as more favorable times, like 2010. Based on the current scenario, in which we have an exchange rate devaluation and a good pulp price level, we envision a very interesting return for the project," he said, pointing out that big investments present long term returns.

Despite the variables that do not depend on pulp and paper industry players, such as price and exchange rate, Pousada underscores the importance of dominating controllable variables, like production costs. "Regarding this aspect, we have a very competitive project from a forestry and logistics perspective. I believe the new mill will leverage Suzano in the global pulp market."

The executive is cautious when speaking about eventual risks of excess supply regarding the forecast of new start-ups over the next few years: "History has shown that the key factor of commodity prices is much more associated to the global economic context than the entry of new capacities in the market".

Company and third-party plantations satisfy wood demand of the new mill

The forest base earmarked to supply the Imperatriz Unit is being prepared since 2008. According to the forestry director in Maranhão, Júlio Ohlson, the supply of wood is guaranteed and will come from a combination of company plantations, the *Vale Florestar* Program (being implemented in Pará state), acquisition of forestry assets owned by Vale (in Southeast Maranhão state), and developments in Maranhão and Tocantins states. Forestry investment is estimated at US$575 million, comprising a planted area of 154 thousand hectares, of which 68% are company areas and 32% belong to third parties.

The *Vale Florestar* Program is aimed at protecting and recovering native forests in conjunction with the planting of species reserved for industrial production, with a focus on the sustainable development of the region. The forestry assets acquired from Vale include approximately 84.5 thousand hectares of land, including permanent protection and legal reserve areas, as well as approximately 34.5 thousand hectares of eucalyptus plantations. These areas, acquired and pertaining to the partnership with Vale, include genetic material developed over decades of research in the region and will ensure the supply of eucalyptus wood between 2014 and 2028, with the possibility of renewal.

With regards to company plantations, Ohlson said that Suzano counted on the experience of more than 25 years of forestry research in the region, which ensured an appropriate genetic portfolio, with an average productivity of roughly 42m³/ha/year. Challenges still exist, however. "We are in a forest border. The challenges are certainly considerable on account of the region's characteristics. The soil, for example, is relatively poor and sandier. Water is also a very peculiar aspect: The four to five month period of rain influences the selection of genetic material that's adequate for this situation," he said. Therefore, investments in Research & Development continue being developed, said the forestry director. "This is a permanent effort. We are continuously in search of appropriate material to obtain productivity gains and optimize the use of natural resources."

The fact that forestry activities are still a new thing in the state also required special attention on the part of the company regarding two other aspects: specialized labor qualification, which activity was intensified over the last year to train professionals for controlling equipment used in forests, and demystify the impacts of eucalyptus farming.

Suzano's expertise in the area, based on its experience in other regions, shows that the practices adopted are headed in the right direction. The company has already received Forest Stewardship Council® (FSC®) and Cerflor certification for its two forestry areas in southern Maranhão state. In all, the company has 71,745 hectares – being 30.7 thousand hectares of planted area, 38.7 thousand hectares of protected area and 2.1 thousand hectares of infrastructure area – in the municipalities of Açailândia, Cidelândia, Davinópolis, Governador Edson Lobão, Imperatriz, São Francisco do Brejão, São Pedro D´Água Branca and Vila Nova dos Martírios.

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Ohlson: the supply of wood will come from a combination of company owned plantations, the Vale Florestar Program, the acquisition of forestry assets owned by Vale, and developments in Maranhão and Tocantins states

Evolution of the Maranhão Project

Throughout 2013, important facts marked the construction of the Imperatriz Unit. Provided below is an installation summary of Suzano's new mill:

January: Arrival of harvesting equipment at the Port of Itaqui (MA).

February: Installation of the fiberline press rolls.

March: Arrival of turbogenerator 1 at the site and hydrostatic testing of the power boiler.

April: Electromechanical assembly of the two dryers, each one with a daily production capacity of 2.5 thousand tons.

May: Start of harvesting with 11 machines in the municipality of Governador Edson Lobão.

June: Water-capturing system begins to function, and pump, valve and piping tests are conducted.

July: Five cranes for the woodyard arrive at the unit. The mill also begins to receive energy from the National Interconnected System (SIN) basic grid.

August: First burning of diesel oil in the biomass boiler takes place. The water demineralizing system for supplying the boiler also begins operating.

September: Wood chopping tests begin on the first line. Hydrostatic testing of the recovery boiler is also concluded. Suzano receives FSC forest management certification in Maranhão state.

October: Execution of the first biomass burning in the power boiler takes place. Suzano receives FSC custody chain certification in Imperatriz.

November: Piling of chips begins to be formed and hydrostatic testing of digester is conducted.

December: Production of the first bale of pulp.

To justify his argument, Pousada mentioned that when the second line at the Mucuri Unit started up in early 2008, inserting another million tons of pulp in the market, another player started up operations in Uruguay with just a few months difference in time. "The same questioning occurred regarding the risk of excess supply. But what we in fact saw was an improvement in global economic performance, creating space for the market to increase pulp prices. The start-up of a new mill obviously causes some impact on the market, however, the eventual surplus and the resulting impact over prices are much more associated to the global economic performance. If the global economy continues to grow and segments such as tissue paper continue growing, the market will continue to absorb this pulp without major impact on prices."

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In addition to characteristics inherent in the market, Suzano's CEO Walter Schalka points out other challenges involved in a project of such magnitude. "There exist challenges and opportunities relative to the progress of work we are carrying out in all areas of the company (forestry, industrial, commercial, logistics, HR, pulp and paper). We have assumed a very humble posture in the sense of recognizing that there are points that need to be improved in our relations with customers, suppliers, communities and employees. We are working on a series of actions to evolve in these different fronts," he said. *(Schalka provides additional details about his administration in this month's Interview.)* ■