Navigator Gets Into Pellets With Colombo Energy Launch

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The Rapid City, SD plant is the former Mountain Pine Management facility and the Kingsbury, NY plant is the former location of Royal Wood Shavings.

The Rapid City plant is already in production of Equustock pelletized horse bedding, cat litter, absorbents and fuel pellets. Plans include additional lines to simultaneously produce Equustock and custom label products.

The Kingsbury, NY plant produces manufactured shavings for the equestrian community serving the Northeastern U.S. Immediate plans are to upgrade equipment and packaging lines to accommodate Equustock’s three distinct shavings products as well as custom labeling for select clients.

According to CEO Claire Brant, “The acquisitions of these two strategically located facilities combined with our existing network of plants allows Equustock to effectively reach markets for all of our products throughout the United States.”

**Sherman Development Has New Ownership**

Sherman Development, a closed 24 MW biomass power generation station in northern Maine, could restart as early as June, according to its new owner.

42 Railroad Ave LLC CEO Steven Johnson announced the finalization of the purchase agreement for Sherman Development from Niagara Worldwide LLC.

Johnson says he plans to rebuild the turbine, activate new transmission lines, and build a rotary kiln to produce more than 100 tons per day of activated carbon.

“Sherman Power Station was constructed to be the diamond jewel of the industry, with an automated feed system and other state-of-the-art technologies, which have been maintained very well by Wheelabrator and Boralex, and when the plant was shuttered a few years ago, it was shut down properly, with all the infrastructure left in place to make the restart very economical,” Johnson says. “In today’s market, the cost to build a biomass fueled power generation station of this magnitude could easily be over 100 million dollars, but at Sherman, even with installation costs of the new activated carbon rotary kiln, we’ll still be able to keep the re-start budget under 10 million dollars and should be up and running by the end of June 2017.”

According to Johnson, Sherman Plant has the ability to take in more than 700 tons per day of wood fiber for fuel.
Colombo Energy
Growing Opportunities

By Jessica Johnson

GREENWOOD, SC

economic forecasts for paper show a weakening
global demand as markets shift to e-readers, e-mails
and smartphones. So when privately owned Por-
tuguese pulp and paper giant The Navigator Co. began
studying how to expand business in order to continue to
enjoy expected high return on investments as well as
maintain strong, sustainable profitability, the company
developed a three-way plan of avenues for growth.

First, the already strong presence in owning forestland
and producing pulp would be ramped up with the invest-
ment of forestland in Mozambique. Next, the existing
Cacia pulp mill would be expanded to include capabili-
ties for producing tissue paper; in addition to the pur-
chase of a primarily tissue paper plant in Portugal.

And finally, the company created Colombo Energy
Co., a wholly owned subsidiary operating in the South-
ern U.S. producing industrial wood pellets for European

Colombo has built the flexibility to go from 500,000 to 600,000 metric ton
capacity by adding green hammermills
and more pellet machines.
and Asian markets.

The former European Sales Director for the paper business of The Navigator Co., and now the CEO of Colombo Energy, António Porto Monteiro says the decision to move into the industrial wood pellet market was, at the time the decision was made in 2014, based on the high growth of that business, as well as on the profitability of the project, in addition to the ability to continue to be good stewards of the environment.

Furthermore, The Navigator Co. had a close relation to a pellet producer in Portugal that brought the inspiration for the project, enabling Navigator first-hand knowledge of the pellet producing business.

Porto Monteiro says Navigator’s shareholders have a very medium/long term vision for the company, and the decision that was made to start a 500,000 metric ton annual production capacity greenfield pellet project was also based on the fact that the U.S. could, and should, be a very interesting market for the company. “This experience could help the company learn the U.S. market and how to operate here, which can be used for paper or for pulp or for more pellets,” he adds.

Porto Monteiro says that while the facility was built mainly to supply industrial needs in Europe, the possibility of selling to industrial markets in Japan or even the heating domestic market, the U.S. is not being discounted. Neither is the European residential market.

Once the decision was made to begin the project, it moved quickly. Project Manager António Sequeira says the project from inception to groundbreaking took about a year. The process of choosing a location started with some internet searches, he explains, before finding information about South Carolina and its Chamber of Commerce.

Sequeira says he and his team investigated sites in forest-heavy South Carolina and Georgia primarily, but focused heavily on South Carolina—due to the warm welcome and sense that South Carolina would be able to support this type of facility. Porto Monteiro says strong support from then Governor Nikki Haley, then Lieutenant Governor Henry McMaster, and the South Carolina Chamber of Commerce was a driving force to helping bring Colombo Energy to the state.

The South Carolina Forestry Commission also had a very active industrial growth push going on and made it clear that South Carolina could support Colombo.

Sequeira says Colombo only considered places with rail access, as well as utilities. “Initially we were looking for different sites that would enable us to connect to different ports,” he adds. “We even checked into the possibility of building our own port. We did a full
The Colombo Energy senior management staff, from left, Ken Leach, Bill Moran, Antonio Porto Monteiro, Antonio Sequeira preengineered plan to build our own port.”

The plan to build a port was eventually scrapped, as the production cost for building a port would require several plants the size of Greenwood to sustain it—not something the first time pellet producer was interested in undertaking.

Colombo Energy would eventually land in rural South Carolina, in Greenwood County on close to 200 acres, a hour and half from Greenville, SC; about three hours from Atlanta; easily reachable by rail to the deepwater port in Wilmington, NC. An electrical substation is connected to the site, supplying a 20 MVA transformer. A volunteer fire department station is close by. Colombo would build an internal spur to connect to the nearby CSX railway.

Ultimately, Greenwood was selected for its wood basket, a concept that was not foreign to the Portuguese, but the term was something they learned upon arrival in South Carolina. The access to abundant amounts of southern yellow pine pulpwood at reasonable prices has lured other large-scale industrial pellet producers to the region, so it’s only natural Colombo would be in the mix here as well.

The first Colombo Energy office was in a Holiday Inn in Sequeira’s hotel room, before Colombo started hiring construction workers and bringing over its engineers from Portugal. “Antonio Sequeira is the heart and soul of this plant,” Porto Monteiro emphasizes.

A major development was that Colombo Energy was able to enter into an offtake agreement contracting 40% of the plant’s capacity for the next 10 years. Additionally, Colombo Energy, from a logistics standpoint, utilizes the deep-water port in Wilmington to store and ship pellets.

The groundbreaking ceremony was held in March 2015.

Operations

Once the site was chosen and the project was off the ground, Sequeira says Colombo began accepting bids for the machinery needed. Thanks to the partnership with the partner pellet mill in Portugal, Colombo already had an idea about what machinery might work for them.

Spanish equipment manufacturer Prodesa was the supplier throughout the mill in Portugal; so naturally, Colombo took a very hard look at what Prodesa’s ProMil-Stolz equipment could offer. During project development Colombo shipped wood from South Carolina to the plant in Portugal to try producing pellets with Prodesa equipment there, just to be sure, Sequeira adds.

“We decided to go with ProMil and got a competitive quote because they wanted to penetrate in North America as well. We are their first big project in the U.S.,” he says.

Ultimately Prodesa supplied the complete milling, pelleting and cooling lines, including five dry hammermills, 15 pellet mills, five vertical coolers and more than 1,800 instrument signals that process through the PLCs to enable a safe and well-informed operation of the plant, with more than 11,250 HP installed.

Prodesa’s comprehensive services have included project engineering, technical support, installation, startup and training as well as support and maintenance of the plant under a two-year contract.

Colombo split the project into three packages: wood yard, drying island and pelleting island. For the wood yard, which included conveyors, stoker, stacker-reclaimer, chipper and green hammermills, it came down to two suppliers Sequeira says, before choosing Bruks.

For the drying island, Colombo had two primary bids and ultimately chose TSI, including the furnace, dryer, cyclones, wet ESP and RTO.

The pelleting island had four primary bids before going to Prodesa.

Mid-South Engineering served as the owner’s engineer, coordinating multiple EPC vendors’ interfaces and providing detailed electrical engineering and “balance of plant” engineering. Mid-South also provided procurement assistance for multiple equipment and installation contracts, and provided document control and on-site construction coordination for the project.

Other notable suppliers include SHW intermediate silos; Eaton power distribution system and motors;
Currently, Colombo is only processing roundwood—management feels this helps better control quality in pellet production. Flamex fire detection and suppression system; MJ Wood sprinklers and fire protection; PEA civil engineering; East Coast and Southern Industrial construction for instrumentation and electrical power distribution.

Flamex provided the required process fire protection in four key areas of the plant. Separate Flamex spark detection and extinguishing systems were supplied for protection of the dryer, hammermills, pelletizers and load-out areas. The systems utilize hot particle detectors and deluge assemblies in certain applications at the plant, in addition to spark detectors and extinguishing valve assemblies for suppression in duct work. The four systems are monitored and operated from the control room by the Inveron HMI system also provided by Flamex.

Startup hit its stride last October, and Porto Monteiro believes that the equipment selection and process design has resulted in a very high quality pellet.

The facility is processing only roundwood, but can accommodate chips. Ken Leach, Wood Procurement Manager, says that the opening of the facility was a welcomed market for the logging force in the area. In the past, this region of South Carolina had aggressive timber buying, but as chip mills closed quickly the region became underserved, he adds.

"They were very anxious for us to open the doors," Leach says about the area harvesters. "They were a little skeptical at first, but once we started buying wood last June, it took some of them a little while to warm up to the idea that this is serious—that we were not joking."

Currently, the procurement team has met requirements for the current sales and production level. Severqueira and Leach say at this point it is almost like a race to see who stays ahead of the other.

The facility is focused right now on processing pine roundwood, Severqueira says, and doesn’t see that changing, citing process stability and stable quality as the driving factors.

"If you have to tune new equipment and you have different types of equipment that is related in the process, you have to have something very consistent and stable—the raw material—because everything else might change. If you are able to control the raw material you have a very important key to bring stability to process success," he states.

Colombo management proudly mentions feedback received from some relevant players in the industry who said that the quality of the pellets is unmatched by the U.S. producers they have seen.

"It gives us confidence," Porto Monteiro says, adding that the pellets have shown through independent testing to have a very high calorific value, a very low ash content (less than 0.5%), a high durability and a good particle size distribution. Porto Monteiro echoes Severqueira in saying this quality would not be possible without absolute control of the raw material.

Two Caterpillar M325D rubber tired material handlers work the wood yard, unload trucks and feed logs onto the mill infeed. Logs move through a Price LogPro drum debarker and then to a BRUKS horizontal drum chipper. Wood is chipped to less than 3/4 in.

Chips proceed to the BRUKS circular blending bed stacker reclaimers, which provides first-in, first-out in-
Colombo currently uses 15 Prodesa ProMil pellet presses, but has space for up to 18 if owners decide to increase production.

Hammermill should production and market demand call for ramp up in capacity.

Raw material proceeds to the dryer island with a TSI rotary dryer, supported by ample emissions control systems including cyclones, a wet ESP and a RTO. Material then goes to the Prodesa hammermill building and then to the pelleting building.

“In strategic places in the plant, we are able to increase production to 600,000 metric tons if we want to,” Sequeira explains. Space inside the pelleting building allows for total of 18 pellet mills, though currently the facility only uses 15.

All pellet presses are vertical. Colombo uses gravity, instead of conveyors, to take pellets from the presses to the coolers. “It just drops,” Sequeira says simply, before explaining that from the coolers, pellets go to storage silos, then rail cars for shipping.

At various points throughout the process, Colombo has the ability to pull samples and test in-house for quality. Sequeira believes this helps keep quality and process under control.

Only two Colombo employees are currently Portuguese: Sequeira and Porto Monteiro. According to Porto Monteiro, that’s exactly how Colombo Energy was intended, to be an American company. Of the 70 total employees, 68 are American.

One of the growing pains of any greenfield operation is hiring hourly employees, and Colombo has felt that challenge as South Carolina’s unemployment reached 15 year record low levels.

Porto Monteiro says on a management level, it was difficult but not impossible to find the right talent, but not necessarily at the local level, and therefore managers had to recruit from other areas of the U.S.

**Markets**

From a sustainability point of view, Colombo has achieved all certifications available for pellet facilities: FSC (Chain of Custody), PEFC (Chain of Custody), SFI and SBP compliant. From a quality point of view, Colombo is certified by PFI for the North American market and aiming to be certified by the European market (EN A1 Plus) in the near future. Porto Monteiro says everything is ready for the audit, but the company is just waiting for the right time to call for it.

At startup the plant was contracted for around half of capacity, which still leaves a sizable gap for the sales department to fill. They are weighing what is expected to be a soft worldwide demand situation for the next year, before picking up steam again—based on projections for the European market, and the potential of the Japanese markets. Porto Monteiro believes that this growth should absorb the extra capacity seen in the Southeast right now.

Head of Sales Bill Moran agrees, “2018 is a projected crossing point.”