Recykling gets big boost in the heart of Europe

The word “recykling” is relatively new in the Polish language and culture. Only 39% of paper and board is recycled in Poland (the lowest in the EU), but this is quickly changing. With new collection and sorting infrastructure coming into place, Stora Enso’s investment at its Ostrołękka mill is timed perfectly. ANDRITZ delivered the complete recycled fiber processing line – and a unique reject treatment system.

Nearly two million tonnes of valuable recyclable raw material goes to landfill or waste every year in Poland, mainly due to the lack of an effective waste management infrastructure. This is all changing in 2013 as Poland is establishing a common waste tax to fund the infrastructure development in order to meet European standards. The EU has directed that by 2020 at least 50% of the paper, plastic, glass, and metals in Poland’s municipal waste must be sorted out and reused.

Even with the lack of a public system, companies like Stora Enso “did not just stand by and watch as valuable materials were dumped into landfills,” says Michal Gawrych, Sales and Logistics Director at Stora Enso’s Ostrołękka mill. “We created our own national network of 20 collection and sorting stations. Our system is one-of-a-kind in Poland.”

The baled OCC and mixed waste is transported to Stora Enso’s Ostrołękka mill and recycled into packaging paper and finished boxes. As of January 2013, the mill has an additional “hungry mouth” to feed – the new PM5. PM5, with a capacity of 455,000 t/a of 65-140 gsm testliner and fluting, produces more than five times the capacity of the machine it replaced.

“Demand for lightweight corrugated packaging is growing,” explains Harri Taipale, Stora Enso’s Project Area Manager for the RCF and effluent treatment portions of the investment. “This expansion project enables us to raise our corrugated board self-sufficiency.”

Valuable energy from “waste”

Taipale came to Poland in 2008 to work on the project to build a new power plant and a new demineralized water treatment plant at the mill. “We have the ability to mix fuels in the power boiler,” Taipale says.

The 120 t/d reject treatment system from ANDRITZ contributes significantly to the fuel mix in the power boiler. Michael Waupotitsch, ANDRITZ’s Vice President for sludge and reject treatment, applauds Stora Enso’s focus on mining the valuable elements out of its waste streams. “The metals and plastics in rejects used to be discarded by mills,” Waupotitsch says. “Now they are a stream of additional revenue and a valuable energy source.”

As Poland expands its recycling infrastructure to meet EU standards, Stora Enso has been actively involved. The 1,665 t/d recycled fiber line and advanced reject processing system from ANDRITZ is one of the EU’s largest, and certainly the most modern.
Keeping a good foundation for progress

Stora Enso signed the contract with ANDRITZ in June 2011. "We knew right away that completing the civil works before winter was going to be a really big push for us," Taipale says. "ANDRITZ managed the winter was going to be a really big push away that completing the civil works before ANDRITZ in June 2011. "We knew right away that completing the civil works before winter was going to be a really big push for us," Taipale says. "ANDRITZ managed to fine-tune the RCF system to focus on Stora Enso’s goals of reducing energy consumption and reducing waste to landfill." Alexander Singer, Vice President of Recycled Fiber/OCC for ANDRITZ, says, "By making modifications to the layout and interfaces, we were able to improve the overall design. For example, we used frequency converters to save energy, and added bypass capabilities in the piping."

Happy with the technical solutions

As you walk through the RCF plant, the first impression is that the main components are very large. Second impression is that it is a very compact and well-thought-out layout. "Some of our suggestions even helped reduce the footprint of the installed equipment and therefore the size of the building," Singer says. "Not only does this increase efficiency, it also saves energy as there are shorter pipe runs, smaller pumps, etc." "I am really happy with the technology solution that we came up with," Taipale says. "For example, there is a tight limitation on the dewatering point that we can release to the river. We worked with ANDRITZ to separate the different water loops to reuse as much water as possible and have tight control over COD and BOD levels. That is why we selected, for example, the ANDRITZ screw presses. Fresh water consumption here is a quite low." Asked what was a major learning for him working on an RCF project for the first time, Taipale says, "It seems that what you put in – you get out. The equipment can tolerate variations, as raw materials can change within a short time. We focus a lot of our efforts on controlling the raw material mix and getting the trash out early."

After the FibreFlow drum slushes and de-trashes the fibers, the downstream processes of screening, cleaning, fractionating, and thickening occur. Long and short fibers are fractionated in the RCF plant to supply the two-layer headbox on PM5. Pipeline to old machine

Knes explains that they put a pipeline from the RCF to feed the old PM4 machine (located in another building) in order to start-up and optimize the plant prior to the start-up of the new PM5. "I thought the pipeline would be removed after start-up, however we are still feeding both machines," he says. Taipale explains that by running lower grammages of testliner and flute, "We can use the full capacity of the ANDRITZ RCF plant. The PM4 operators also like the new pulp from the RCF plant. The cleanliness and quality of the pulp from the new line is that much better."

No two days are the same

"I like project work," Taipale says. "There is no routine – no two days are the same. And of course there are always challenges, but with good partners we always find a solution."