

Improving energy efficiency

In April of this year, Model commissioned the new Fibre Evolution plant to process drinks cartons and water-insoluble papers. The raw material that the plant recovers is used to manufacture new, high-quality containerboard, which can then be used for customised packaging and displays. The plant has significantly improved the energy efficiency of our company's recycling process.

Model's well-established, ISO 50001-certified energy-management system has also proven effective for new types of process. Even at the early design stage, plans included key elements ensuring an energy-efficient configuration. Various aspects were subsequently optimised, reducing power input from seven megawatts to six. We also paid particular attention to energy efficiency when installing all of the drive systems and power units. For the electric drives we chose water-cooled torque motors, which require ten percent less energy. The plant also uses highly efficient Ahlström agitators, all of which are directly driven.

One of the special features of this new plant is its matrix-based pulping and sorting process. This means that, for each type of recycled paper, it activates only those systems and drives that are required. We also run a special energy monitoring system which precisely captures and records power consumption around the clock.

Some of the plant's individual machine parts and power units are protected under patent. Its overall energy efficiency comes from the sequencing of the different steps in the process. Steam is used only for sterilisation or to generate specific technical properties. Otherwise, materials are processed cold.



Andritz pumps driven by Siemens motors on the 120m³ clarified water tank

A heat recovery system has been integrated into the building's aeration plant, removing the need for an additional source of heating. All of the air extracted from the processing plant passes through a filter to remove dust. An active charcoal filter removes virtually all odours, and all of this clean air can re-enter the cycle. The lighting for both the building and the plant uses only the latest-generation LED lamps, controlled by a KNX system.

By recycling 75,000 tonnes of drinks cartons and water-insoluble paper per year using the Fibre Evolution plant, we aim to reduce CO₂ emissions by up to 48%* per tonne.

(*compared with thermal recycling, Source: *Die Zukunft des Getränkekarton-Recyclings*, Carbotech AG)



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