

Bracell's Project STAR:

# Switching On Demand Between Kraft and Dissolving Pulp

The remit to ANDRITZ was a challenging one; Royal Golden Eagle (RGE) group, owner of Bracell in Brazil, wanted to create the "biggest and the greenest" pulp mill in the world at its Lençóis Paulista mill. This meant that there must be no fossil fuels used in the mill, NOx emissions kept to a minimum, and very low water consumption. Last, but by no means least, RGE wanted a mill that would switch between kraft pulp and dissolving pulp as quickly as possible according to market demand – which is a challenge in itself as the two processes are completely different.

ANDRITZ stepped in to take on the enormous challenge after being awarded the contract in 2019. The order was carried out on an EPC basis, to include engineering, procurement, construction, and civil construction. ANDRITZ scope of supply included the complete wood processing plant, the world's largest recovery boiler, two hardwood fiberlines, two independent pulp drying lines, and the world's largest

non-condensable gas treatment system, focusing on the use of side streams in the recovery cycle.

The mill started up on time just 25 months after the beginning of construction in 2019 and is now one of the world's largest and most sustainable pulp production sites in the world. Furthermore, the flexible fiberlines supplied by ANDRITZ, along with its A-ConFlex™ technology, have already been proven successful by switching between kraft and dissolving pulp three times since the start-up. The mill can now produce 3 million tonnes per year of bleached kraft pulp, or alternatively 1.5 million tonnes per year of dissolving pulp.

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The STAR project: one of the largest and most sustainable pulp mills in the world, complying with the highest environmental standards.



Approach system rebuild on PM2 at Stora Enso's Anjalankoski mill in southeast Finland.

## Approach System Rebuild: ROI in Just Eight Months!

It's not often that a major system or process upgrade at a paper mill has an ROI of less than a year. However, in the case of the latest approach system rebuild on PM2 at Stora Enso's Anjalankoski mill in southeast Finland, the investment payback time was just eight months. ANDRITZ has a lot of experience in approach system rebuilds around the world with some 20 successful projects already completed in Europe and Asia. In 2013, ANDRITZ carried out audits for 13 out of 50 of Stora Enso's

paper machines located at various mills around the world that could benefit from a rebuild of the approach systems.

After a successful rebuild on its Anjalankoski PM3 that was carried out in 2015, Stora Enso again contacted ANDRITZ to carry out the same project on PM2 due to the impressive energy and operational savings achieved on the first rebuild.

#### OVER 50% REDUCTION IN ENERGY PLUS REDUCED FIBER AND WHITE WATER LOSS

ANDRITZ reconfigured the various stages of the PM2 approach system, reusing existing equipment wherever possible as well as adding its new MIVC chamber cleaning solution, which has a molded section chamber with dilution holes for better performance.

After the rebuilt system was started up in October 2021 the installed power utilization had come down by 54%, representing a saving in power consumption of 4,536 MW. Moreover, after the rebuild, the fiber loss on PM2 reduced by 931bdmt/a, or 2.7bdmt per day, and a further reduction in power consumption of 2,379 MW/a was achieved. The amount of white water loss rejected has also reduced by 54% to 46,200 t/a.

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ANDRITZ reconfigured the various stages of the PM2 approach system.