



EFFICIENCY WITHOUT COMPROMISE: REFINER EXCHANGE AT MONDI

SUCCESS STORY

Mondi Neusiedler and ANDRITZ achieved higher capacity, stable quality and lower costs with the Refiner Exchange Concept.

ANDRITZ



"It couldn't have gone better."

Often, if you want more capacity, you need more space. That could mean anything from using more of an existing room, to constructing a whole new building. Or you might try more powerful motors, usually at the cost of more energy. It's not often that you can increase your output, while using the same space and motor set-up. But that's what happened at Mondri Neusiedler's Kematen mill.

ANDRITZ was able to do all of this with its TwinFlo Customized (TFC) refiner concept, installing the upgrade in just two days.

Mondri Neusiedler's Kematen operation in Austria is a mill with long history and new ideas. Like its Theresienthal sister mill just 10 minutes away, it has been producing specialty papers for more than 150 years. It turns out highly respected, specialized uncoated fine paper in sheets and reels, in a portfolio that includes brand names like PERGRAPHICA premium printing papers. Kematen's output encompasses over a thousand grades in more than 50 colors, in basis weights ranging from 40 to 400 gsm. End-use markets include laminated, book, sticky-note and colored copier papers, and at the heavier end, greeting cards and luxury packaging. There are also a few new surprises coming soon, that the company isn't revealing just yet!

With such an unusually wide range of capabilities, an innovative mindset is evidently part of the culture at Mondri Neusiedler. And that attitude clearly played a role when Kematen reconfigured its refining set-up in 2024. Before the project, the mill operated six refiners, supplying two paper machines. Its smaller PM 3 was fed by three old conical units on the ground floor, while the larger PM 4 used three much newer refiners, located one floor lower down (see table).

	OLD REFINER SET-UP	NEW REFINER SET-UP	
Upstairs	3 x conical (PM 3)	-	
Downstairs	34" + 26" + 26" (PM 4)	34" + 34" (PM 4)	26" (PM 3)
Mill Total	6	3	

The firm's innovative proposal was to expand one of the relatively modern refiners, so that it could use its two largest machines to feed PM 4. The remaining refiner on the lower floor would then be repurposed to serve PM 3 instead of PM 4. This would replace the older conical refiners upstairs, and reduce the total number of refiners at the mill from six to just three (see table).

Christian Schadauer, Production Manager at Mondri Neusiedler Kematen, explains, "One of the main targets of this project was a considerable reduction of energy consumption in line with our sustainability roadmap MAP 2030." And as Martin Chabera, Global Product Manager, LC Refining, ANDRITZ, puts it: "Three refiners are cheaper to run than six."

Cost control wasn't only the end goal of the project, though – it also applied to the investment phase, too. Martin Affengruber, Mondri Neusiedler's Project Manager at Kematen, explains: "We put the upgraded refiner on the existing foundation and re-used the motor, to keep costs down. We didn't want to have to remake everything." However, it is not such a straightforward task to build a new, higher-capacity refiner exactly where a smaller one sits. As Martin Chabera explains: "A standard new refiner would have required a new, wider foundation and piping – there wouldn't have been enough space or headroom for it."



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CHRISTIAN SCHADAUER
Production Manager,
Mondri Neusiedler Kematen

From left to right: Martin Chabera, Global Product Manager, LC Refining, ANDRITZ; Martin Affengruber, Project Manager Mondri Neusiedler, Kematen; Christian Schadauer, Production Manager, Mondri Neusiedler, Kematen; Klaus Oizinger, Customer Service and Sales Manager, ANDRITZ.

Optimization options

With several other suppliers also competing to solve this challenge, ANDRITZ proposed its LC Refiner Exchange Concept, also known as the TwinFlo C (Customized) or "TFC" concept. The idea here is to manufacture a refiner base that fits on the existing foundation while using a modular design that supports different housing sizes and mechanical seals. The entire system remains fully compatible with the mill's current drivetrain and inlet/outlet connections. This ensures new capacity options for the existing framework and a very short installation time. According to Mondi's Christian Schadauer: "The modular concept is a real advantage in making best use of the space. It definitely helped make this rebuild easy and affordable."

Another reason why the mill was interested in ANDRITZ was its use of simulations, which showed Kematen how their operation would perform with a variety of different refiner options. As Martin Chabera explains: "We are the only supplier that offers refining simulations, and we showed them a range of different size options, up to 34". Klaus Oizinger, Global Product Manager, LC Refiner Plates, ANDRITZ, adds: "The tailor-made aspect of the refiner is one of our strengths, and we were able to demonstrate that a smaller refiner wouldn't have been enough – they would have had a bottleneck even with a 30" design." Kematen's Martin Affengruber agrees: "Together with ANDRITZ, we calculated the size of refiner we needed based on the refining energy appropriate for the range of pulps we use. Their simulations really helped with this. They gave us some reassurance, and were a key factor in the choice of supplier."



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MARTIN AFFENGRUBER
Mondi Neusiedler's Project Manager at Kematen

Kematen also liked ANDRITZ's TFC solution because it is designed for much easier maintenance than standard refiners. Innovations include a swing door, a rotor changing device, a separate inlet housing, accessible process sealing options, and a drop-in bearing unit. The mill's Christian Schadauer confirms, "the new design is much easier to take apart and for maintenance."

After all options were considered, Kematen decided to have ANDRITZ convert one of its 26" refiners into a higher-capacity 34" type (a TFC34). Once the design was chosen, ANDRITZ tailor-made the frame, housing, bearing unit and process and mechanical seals, so the "new" refiner would be able to achieve the mill's technical requirements, while also taking account of the space constraints.



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Global Product Manager,
LC Refining, ANDRITZ





The guaranteed values were achieved immediately on start-up – in fact, the mill didn't even do a guarantee test run, they just signed the acceptance forms straight away. According to Christian Schadauer: "The reconfigured refiner line is running without problems, it's very good."

In summary, ANDRITZ's modular TFC solution allowed Kematen to hit its quality and volume targets, using the existing space, motor and connections, as well as less energy overall – with everything installed in just two days. Martin Affengruber confirms: "It's working just like we planned."

MARTIN AFFENGRUBER SAYS,
"ANDRITZ was a big help with the installation, especially just before Christmas."

MARTIN CHABERA ADDS,
"It all went without a hitch."

Happy Christmas!

As well as the innovative design, another notable aspect of this project was the unusually short timetable. The order was placed in March 2024, and start-up was due less than 9 months later, around Christmas time. According to Klaus Oizinger: "Manufacturing alone normally takes 8-10 months and additional time is required for shipping, assembly, and installation. We had to work really intensively to get it manufactured in time." Martin Chabera also gives credit to the customer, in helping to achieve such a short project timeline: "The work that Kematen did on preparation, cabling, installation and start-up was outstanding."

The cooperation was also evident between the mill and ANDRITZ's automation expert, Manfred Kargl, who was on site to facilitate the start-up. When it came to modernizing the process control system, he discussed the

logic points with Kematen's team and performed the signal checks in person, paving the way for commissioning the new set-up. The mill's reconfigured refiner system first started up on 20 December 2024, following just two days of downtime, and was back in full operation after only a week. According to Martin Affengruber: "ANDRITZ was a big help with the installation, especially just before Christmas," and Martin Chabera adds, "it all went without a hitch".

ANDRITZ had guaranteed that the refining quality on the upgraded unit would be at least as good as it was before the project, at agreed production volumes. And the new system delivered. According to Martin Affengruber: "The refining quality is identical to what we had before, which is a very big deal for us. We need excellent printability and strength."



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KLAUS OIZINGER
 Customer Service and Sales Manager, ANDRITZ

Questions answered

This venture also strengthened the relationship between Mondi and ANDRITZ. From the ANDRITZ side, Martin Chabera says, "the communication, coordination and teamwork were excellent. When we had a question for the mill, there was never any waiting for an answer." Opinions are similar at Mondi Neusiedler: Christian Schadauer says, "we got every bit of help that we asked for. There was always someone we could call, and our questions were answered quickly. The cooperation was really good."

And the collaboration is set to continue. As Martin Affengruber notes: "Since start-up, we have had discussions with ANDRITZ about a few of the things that you can't plan in advance, like adapting production sequences, which we've optimized together. I can't

think of anything that could have gone better. I would definitely do this again and I would recommend this concept for other Mondi mills."



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CHRISTIAN SCHADAUER
 Production Manager, Mondi Neusiedler Kematen



THE ANDRITZ REFINING SERVICE TEAM – GLOBAL SUPPORT FOR ANY KIND OF REFINER

For more insights into the ANDRITZ Refiner Exchange Concept (TFC)
please scan the QR code on the right bottom corner and get inspired.

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