



CircleToZero: **Workin Sustain**

Interview
with Naveen
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of Business and
Technology
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ANDRITZ

In a nutshell, can you tell us what the CircleToZero initiative is all about?

CircleToZero is a global ANDRITZ initiative with the goal of achieving zero emissions and zero waste at the same time as creating financial growth for customers. For pulp and paper producers this means eliminating unused industry side streams, turning them into new value-added products, and achieving zero waste and zero emission production.

CircleToZero is not only for pulp and paper industries – we also have the initiative implemented into ANDRITZ's other business areas including Separation, Metals, and Hydro.

Can you tell us what sort of response ANDRITZ customers are giving to the initiative so far?

The response has been very good so far and many requests are hitting our mailboxes every day. We think that the tremendous response from our customers is due to the fact that our initiative is aligned with their own sustainable targets, which makes mutually beneficial collaboration and proposals work smoothly and easily.

Do you have any examples of projects you are working on already under the initiative?

We are working with a few customers on confidential projects that are aiming to replace various

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waste streams and turn them into products. For example, at one mill we are working to optimize the water balances to reduce fresh water use and finding ways to use the effluent emissions. We are also working with another customer to introduce new technology to reduce the impact of solid sludge.

Can you tell us about any new business models that you are encouraging as part of CircleToZero?

This is potentially a game-changing area across the industry. We see the initiative as being a steppingstone to employ new "win win" business models with a range of possible opportunities. As we are working with the customer from the beginning of their challenges, we are able to advise on various ways to reuse waste or monetize side streams. Also, we are already working on various examples where outside companies are setting up facilities inside pulp mill fences to take advantage of renewable raw material from the pulping process to make new bioproducts.

The pulp and paper industries are a key part of the circular bioeconomy and we are very keen to involve various partners and stakeholders to further increase the size of the sector and create more value chains. The role of CircleToZero is to further strengthen the circular bioeconomy, especially with the further utilization of side streams. For this to happen, the creation of partnerships with companies outside of the traditional pulp and paper industry is essential.

As a global initiative, can you tell us how you deal with regional variations?

This is a very important question; different regions have different regulations therefore we cannot handle things universally as they are applicable everywhere. However, what we are aiming for is zero emissions and zero waste everywhere. So according to our customers' locations and needs,

we will work with them according to those local regulations, but with the aim of reducing emissions and waste completely.

Can you tell us about the ANDRITZ team that is working within the initiative?

On our team we have several senior development engineers, lifecycle assessment specialists, and business and finance majors. Then we also have various people with project experience. Basically, we have all the skills related to starting with an idea and bringing it to implementation at a mill. Of course, we also have access to the deep knowledge within ANDRITZ when it comes to working with flue gases, solid side streams, and liquids.

How do pulp and paper industry producers join the CircleToZero initiative?

We would like customers to come to us directly with the challenges they are facing by emailing us at circletozero@andritz.com, or alternatively, contacting their local ANDRITZ office.



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