

Greener routes for sustainable sea salt



ZOUTMAN charts its own sea-going vessels to import the raw sea-salt to its facility in North Sea Port, hereby consciously choosing more sustainable ships and larger tonnages to reduce emissions.

All images courtesy of ZOUTMAN.



Sea salt producer ZOUTMAN has recently reshaped its outbound logistics as part of its ambitious course towards net-zero greenhouse gas emissions by 2047. By switching its container flows to multimodal transport, the company reduces thousands of truck miles each year, amounting to 143t fewer CO₂ emissions in outbound transport alone.

Clean Salt, Clear Goals

ZOUTMAN produces high-quality food salt as well as sea salt for industrial, agricultural, and technical applications, such as de-icing salt and salt for swimming pools. The choice for refining sea salt was made from an ecological point of view, as sea salt offers significant ecological advantages over traditional mined salt, says Maarten Delbaere, sustainability manager at ZOUTMAN, "Not only is sea salt an inexhaustible and renewable resource, it is also a natural raw material obtained using only natural evaporation processes (wind and sun) in warm overseas areas. Harvesting raw sea salt produces 30 times fewer CO₂ emissions in comparison to traditional mining salt. Moreover, our refining process is a physical one, without the use of chemical additives. In offering natural sea salt as an alternative to



Maarten Delbaere, sustainability manager at ZOUTMAN, and Wouter Lambert, supply chain manager at ZOUTMAN.

mined salt, sustainability has always been an intrinsic part of our mission. This is now once again reflected in our sustainability programme, ‘Clean Salt, Clear Goals’, which we launched in 2024 to embed sustainability in every aspect of our organisation and work towards a climate-neutral production. Reshaping our outbound logistics was one of the key elements of this trajectory.”

Road to water

“Our inbound and internal transport flows of the raw material already were multimodal for many years, explains Wouter Lambert, supply chain manager at ZOUTMAN, “But our outbound logistics were historically mainly conducted by road. Even though we had been inquiring about using inland waterways and railways to transport our packaged goods many years ago, we noticed that the infrastructure and backing for this were not optimal. However, the start of production in Ghent in our new salt tower in 2023 – the tallest and most modern in the world – and the kick-off of our sustainability programme provided an excellent opportunity to revisit this issue. In cooperation with POM West Flanders and Multimodaal.Vlaanderen, we investigated various goods flows with multimodal potential. The results are impressive: we have been able to shift 80 to 90% of our container transport to inland waterways. For our Roeselare production site, there’s a container barge travelling nearly daily between the Wielsbeke inland terminal and the deep sea container terminals in the Port of Antwerp-Bruges. At North Sea Port, our containers travel through the Stukwerkers Container Terminal at the Sifferdok. To give you an idea, this shift amounts to a yearly reduction of 66,000km of road transport towards the container terminals. That is a significant reduction in emissions. Not only that, but we also notice that, as a bonus, we have a little more breathing room in our administrative handling of container shipments, because saturation of the deep sea container terminals meant that free time per truck was becoming increasingly limited.”

Road to rail

“We conducted a similar exercise for rail transport,” Wouter Lambert says. “We first investigated which flows could be transferred to rail without impacting our customer service. Important factors to take into account were stable deliveries,



ZOUTMAN has thoroughly reformed its outbound logistics by switching to intermodal transport whilst optimising its road transport deliveries.

costs, and, of course, possible routes, as we never use external parties for intermediate storage. Delivery had to be made directly from ZOUTMAN to our customers without increasing current transit times. After extensive research and testing, the first export flow to be switched over in its entirety was our trade with Poland. These are packaged goods that we load into 45ft containers, which are then transported to Poland by train. This switch alone accounts for 56,300km less road transport and a saving of 86t of CO₂ per year. In the meantime, we are also in the process of switching our export flows to Brittany, France, to rail. We are constantly investigating new intermodal opportunities, and our logistics team works very hard to implement them.”



Sea salt offers significant ecological advantages over traditional mined salt. It is an inexhaustible and renewable resource, obtained using only natural evaporation processes.

“Additionally, we are also optimising our road transport deliveries,” Maarten Delbaere adds. “Although we currently export to 60 countries worldwide, 40% of our production is delivered locally to customers in Belgium, and a significant percentage is exported to our neighbouring countries. Road transport, therefore, remains important, which is why we are also looking for ways to make it more sustainable. Since we can now deliver the same products and quality from both our production sites, we can also reduce the number of kilometres travelled to the customer in this respect. In addition, we are investigating the possibilities of electric transport in the future.”

Natural and green refining processes

“Of course,” Maarten Delbaere says, “our sustainability programme includes more than greenifying our logistics. Combining climate-neutrality with the expected increase in production requires optimising our already sustainable process even further, every step of the way. This begins with the feedstock. We purchase high-quality raw sea salt from warm overseas regions such as Australia and the Caribbean, since these regions can harvest year-round and deliver high-quality salt. Transport of raw sea salt is then carried out exclusively by sea-going vessels, which we charter ourselves. We consciously choose more sustainable ships and large tonnages to reduce emissions. We currently receive vessels of up to 80,000t in Ghent, so we are very pleased with the new lock in Terneuzen. However, we are also eagerly awaiting the solutions for the bottleneck in Zelzate, as this would allow us to receive even larger vessels, of up to 150,000t. After all, the more tonnage we can transport in such a ship, the better it is for the environment. The sea salt we receive in Ghent is then partially shipped by inland waterways to feed our production facility in Roeselare;



The refined salt is stored in silos in different grain sizes until it is ready to be packed and shipped to the customers.

another part is processed in our new production facility in Ghent. The process remains the same, though. In both facilities, we start with the same raw material to refine all our different products.”

He explains, “Salt for the food industry and water softening salt follow the same process: washing, then sieving, drying, and breaking into different grain sizes. This salt is also screened for impurities using cameras. The refining process for road salt or other technical products is sometimes simpler, but not always, as food-grade salt in larger grain sizes is often used for industrial applications, too. Take water softening salt, for example: this may be used for water softening in breweries, so it must also be food-grade. The entire refining process is done using natural, physical processes. The washing process includes a double washing with a screw that mixes the salt with water. The first washing is done with brine, the second with fresh water. The salt does not dissolve in either case; it remains in its crystallised form. After sieving, the salt is then dried until it reaches a moisture content of 0.1-0.2%, so that it does not cake in the silos. We store the salt in silos without any additives, so it must be dry enough to store without caking. To make the drying process even more sustainable, we are looking into the possibilities of using green hydrogen in the future. In addition, a wind turbine will be installed on our site in North Sea Port, in collaboration with Luminus, which will supply all electricity consumption for our Ghent site.”

“Furthermore, we also recover the water used for washing,” says Wouter Lambert. “In fact, both of our production sites have a Zero-Discharge status, which means that we do not discharge our process water but recover it, to produce other saleable products, for instance. We are targeting 100% recovery of our process water by 2030.”

“Ultimately, it’s all part of a logical story,” concludes Maarten Delbaere. “ZOUTMAN’s core mission is a green one: to replace mined salt with much more sustainable sea salt. We therefore process it as sustainably as possible. Now that our logistics are also as environmentally friendly as possible, this story ticks all the boxes.”