

Compact but capacious & versatile

by Przemysław Myszka

The autumn season of our port trips began with visiting the Finnish Naantali (coupled with partaking in Finnlines' launch of its spanking-new Superstar ferry *Finnsirius* across the Naantali-Kapellskär crossing via Långnäs). Whereas the EU TEN-T Core Port and its charming, easy-to-fall-in-love-with town are pretty compact, plenty of various cargo activities are taking place throughout its quays. Naantali took care of 4.42 million tonnes in 2022, including 2.29mt of general cargo (1.96mt wheeled, some 143k ro-ro cargo units, and 328kt break-bulk) and 1.47mt of liquid and 663kt of dry bulk, respectively. Naantali is also home to vibrant passenger traffic: 207k ferry travellers were welcomed last year.



Photos: Port of Naantali

Interestingly, though the sister ships *Finnswan* and *Europalink* (up-to-date serving the Naantali-Långnäs-Kapellskär link) offered room for passengers (554 apiece, plus 4,215 lane metres for cargo), *Finnsirius* comes across as a true cruise ferry (1,100 pax/5,200 lm), a concept perhaps new to Finnlines whose operations have always been more clustered around freight. "*Finnsirius* is Finnlines' new eco-efficient flagship, designed specifically for the fast-paced freight transport route between Finland and Sweden. At the same time, *Finnsirius* offers upgraded services and more travel comfort than the previous generation of ro-pax vessels. Freight is Finnlines' core business, but it is a genuine pleasure to introduce our new service concept to our passengers," commented Antonio Raimo, Line Manager at Finnlines, on the ferry's name-giving day of 13 September 2023 in Naantali (with Tiina Ahola, representing the Ahola Group, serving as the vessel's godmother). On the whole, when *Finnsirius*' sibling *Finncanopus* replaces *Finnswan*

With its recent investments (€6.5m, including €1.8m from the EU) in upgrading the ferry quay for Finnlines' traffic (with new ramps, onshore power supply from Hitachi, Cavotec's latest generation auto-mooring technology – the biggest the company has thus far delivered – and larger asphalted truck parking area), Naantali has further strengthened its vital role of serving Finland's trade with Sweden, not least the security of supply to the Åland Islands. The coronavirus pandemic more than underscored the latter when, for a couple of weeks, it was only Finnlines trafficking with Sweden (while Lillgaard continued shipping from Naantali to the Åland Islands; the port usually serves around four-fifths of Åland traffic). Overall, the seaport and Finnlines more than highlighted their position over these full of disruption years – as other ferry lines scrambled to control damage by downgrading their networks, the two remained dedicated to keeping the flows running with, among others, medical supplies.





Photo: Green North Energy

at the beginning of 2024, the route's passenger carrying capacity will nearly double from 1,108 to 2,200, while the cargo one will increase from 9,210 to 11,180 Im (including Lillgaard's 780 Im *Fjärdvägen* that plies to & from Långnäs).

I also had the chance to visit the currently under-reconstruction ferry passenger building (originally from 1974, but one couldn't tell that by looking at the already refreshed facade). The ground floor for serving footed travellers is ready. At the same time, the other premises, including a new seat of the port authority – naturally, with a sauna on the roof! – are slated for completion in spring 2024. The Port of Naantali has invested in geothermal energy to heat and cool the building. Counting the money spent on modernising the passenger facilities, Naantali's ferry investment totalled some €10m over the last three years.

Overall, the Finnish seaport aims to noticeably increase its cargo and passenger traffic share between Finland and Sweden. As Tom Pippingsköld, President and CEO of Finnlines, said during the *Finnsirius* reception, their investments prove their dedication is not for the next two or three years but decades. The same holds for the port, with its timely and well-executed investments facilitating the line's tonnage renewal.

Out with the old, in with the new

Having mentioned energy, here, too, some profound changes have taken place in Naantali

– and even more will happen before long. The port houses a combined power plant, supplying some 85-90% of the Turku region (over 362k inhabitants, making it Finland's third largest sub-regions of 69 in total) with electricity and heat (the latter is transferred to the nearby cities by a district heating tunnel, one of the longest in Europe). The facility, operated by TSE, also produces steam for industrial customers. The new multi-fuel plant was inaugurated in 2017 to move away from coal towards biomass. Such a shift translates into more cargo going via the Port of Naantali since it takes three times more biomass by weight to produce the same energy output (up to seven times more volume-wise). Back in 2019, Clean Electricity Generation and TSE announced a successful logistics, handling, and combustion trial of over 1.0kt of CEG Renewable Black Pellets, produced in Derby from sustainably sourced biomass, shipped to Naantali, and used at its power plant as a drop-in substitute for fossil coal in co-firing.

In the past, Naantali used to handle much more liquid bulk thanks to the now-decommissioned refinery of Neste. That said, Green North Energy (GNE) intends to breathe new life into the premises by erecting its first green hydrogen and ammonia plant at the expense of €580m (primarily focusing on further refining hydrogen into green ammonia). Production at the 280MW-strong plant is planned to start in 2026. In mid-May 2023, the company shared that an environmental



Photo: Przemysław Myszk



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impact assessment had been initiated. "The production will operate within a closed process, so the biggest impact will be any heat generated in the process that cannot be used in the district heating network," GNE said in a press release. The investor also underlined, "The evaluation is being conducted at the Luolala plant site, where Green North Energy is looking at different options for the location of the new plant. The main production infrastructure already exists at the site, which also offers excellent logistical connections and the possibility to use waste heat in the City of Turku's district heating network." Ulf-Erik Widd, Account Lead at Business Finland, an organisation that gave GNE €2.8m in R&D funding at the end of 2022, commented on the project, "Green North Energy is a great example of the versatile use of the hydrogen economy. At Business Finland, we want to promote similar projects in Finland and create a foundation for international growth in this fast-growing market." Also last year, GNE, Meriaura, and Wärtsilä signed a letter of intent to build a project cargo vessel that runs on ammonia produced using renewable electricity. The newbuild will be ordered and operated by Meriaura, Wärtsilä will provide the modular multi-fuel main engines, and GNE will supply the fuel. The parties target next year for delivering the ship, with 2026 planned for starting green ammonia operations. Apart from that, a feasibility study is underway for a bio-ethanol production site in Naantali.



"Our targets are higher"

Speaking of energy in another form and for different use, the seaport is also home to Finland's biggest silo (over 300k m³ of capacity/270kt), which translates to making Naantali the country's largest grain port

(because of the Russian war, the volumes have dropped as much wheat from Russia used to transit through the grain terminal). Indeed, the complex, run by Suomen Viljava since 1959, is enormous and a real treat for any photographer who resonates with the industrial chic vibe!

Naantali is also Finland's biggest cement import port, with one-sixth of the volume passing the dedicated silos (almost 160kt last year) brought in by SCHWENK Finland. Early this year, Stevena announced it doubled the capacity of its cement terminal in Naantali

to 10k m³. The new silo also allows for importing completely new types of cement (apart from the high-quality CE-marked CEM I 52.5 N Portland).

Stevena also operates in Naantali's Luonnonmaa Harbour, situated on a bridge-connected island vis-a-vis the port's core part. There, the stevedore warehouses a wide range of recycled products, e.g. crushed and foam glass (the latter made from recycled glass and used as a substitute for light expanded clay aggregates, likewise as insulation for the base floor of a house) and bulk goods (among others, plastic granules). Foam glass is shipped from Naantali to export markets, such as England.

The Turku Repair Yard is also located on Luonnonmaa and has been busy attending to one of Tallink & Silja Line's ferries during my visit. One particular thing stood out when cruising the Luonnonmaa Harbour, namely a single Norsepower Rotor Sail. As it happens, Turku Repair Yard has acted as a testing site for the modern version of the Flettner auxiliary wind propulsion. The port authority has development plans for the island, wanting to modernise its cargo handling capacity significantly.

A couple of other players are also taking advantage of the Port of Naantali. Finnfeeds Finland, part of the International Flavors and Fragrances Group, has a factory that produces betaine, which is found in many cosmetic products. Not so long ago, the company started using a 10MW bio-boiler (running on wood-based biofuels) to slash its CO₂ footprint (by 2.0-3.0kt/year). Together with the previously implemented Adven evaporation service, the annual total reduction in carbon emissions is approximately 19kt (over 100km driven by passenger cars).

Another company is Exxon Mobil Finland, producing lubricants from 1957 under the Mobil and Esso trademarks. Some 100 different product qualities are mixed at the Naantali plant, and the selection includes around 900 product packaging combinations. Operations at the factory include mixing, filling, laboratory studies, storage, as well as deliveries. However, like grain operations, Exxon Mobil Finland's operations in Naantali have been negatively impacted by the Russian war, as Russia was the largest export market for the plant's output.

While driving around the port, one could also see one of Ahola Transport's warehouses. Apart from the fact that the family-owned company feeds a lot of Naantali's wheeled cargo traffic, it also goes the extra mile to walk the green talk. In the port's publication **Towards Sustainability Together**, the haulier shared that it reduced its CO₂ emissions by 62% in 2021 (vs. 2005). "A kilometre not driven is, of course, the most ecological option, and that's why we aim at making our operations as effective as possible



by driving as few unnecessary kilometres as possible with as high a filling rate as possible. That also has a positive effect on profitability," said Åke Nyblom, Business Director of Ahola Transport. Another and maybe a less intuitive way to improve one's green credentials was setting up a unique washing station for heavy vehicles in the company's Naantali transport hub in autumn 2021. The facility features a closed-water circulation system. The recycling rate is 85-90% of the 2,000 litres needed to clean one articulated vehicle (remarkably, 5% is lost due to water going out with the truck & trailer). New water is only used for final rinsing to keep the vehicles shining white.

As shown during a presentation by the more than lovely hosts – Hannu Kallio, the Port of Naantali's Operations Manager, Tarja Siekinen, Communications Specialist, and Yrjö Vainiala, Port Director, Chief Operating Officer & Commercial Director – the Port of Naantali itself does a lot to axe the mark it leaves on the environment. The primary tool is procuring green energy, making it possible to lower emissions even though consumption might be rising. The investment

in cold ironing will also help slash shipping-caused emissions (apart from that, the Superstar-class ferries feature batteries for zero-emission port operations). Auto-mooring, though not directly, also helps to spare the environment. Because it takes five times less time to moor with Cavotec's MoorMaster NxG, while clawing off is almost instant, vessels can reduce their sailing speed without compromising the timetable (the Port of Kapellskär has also invested in such equipment). The Port of Naantali also invested in a sustainable LED lighting system a few years ago and in a wastewater reception system for vessels (connected to the municipal sewage network).

"We are constantly developing our operations to be more environmentally friendly. All parts of the port have environmental permits that control operations. While the permits set a minimum level for the operations, our targets are higher," highlighted Vainiala. He furthered, "Shipping and port operations have an impact on the environment, but together with our partners, we are constantly developing our operations to be more environmentally friendly." ■