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Now the blue way is also the greenest one - HH Ferries becomes ForSea

As part of the HH Ferries sustainability voyage, the Tycho Brahe and Aurora ferries now operate fully on battery power. This makes the route between Helsingborg and Helsingør the world's first high-intensity battery-operated ferry line, with departures for both passengers and transport operations every 15 minutes, 24 hours a day, in all weather conditions. To show that the journey towards becoming the most sustainable transport company in the region is serious, the shipping company will also change its name to ForSea.

Pioneering technology charging fast and green

ForSea Ferries have chosen to charge their batteries with "green electricity", from non-fossil fuel sources such as wind, water and solar energy. This means that there are no emissions from the two battery-operated vessels. In total, ForSea's emissions will be reduced by about 65%, as Aurora and Tycho Brahe will sail more legs than the remaining ferries in the fleet.

A fully automatic laser-controlled robot arm will be plugged into the ferries, recharging them each time they are in port. This means 5-9 minutes of efficient charging for a 20-minute crossing, ensuring that the ferries will continue to depart frequently and on time.

The journey across Öresund is also a journey towards zero emissions

Sweden has a long-term climate goal to have a net greenhouse gas by 2045. This goal is something the ferry line wants to reach earlier than that.

"We only have one planet and one of the things that we, as a shipping company, can do to contribute to a more sustainable world is to actively safeguard the marine environment," says Johan Röstin, CEO at HH Ferries Group. "We have always cared for the environment and were living up to the most recent emission regulations back in 2007. With battery-driven ferries we are taking a big step forward for less emissions, smoke and noise. And we will not compromise on efficiency. Thanks to groundbreaking technology and talented co-workers the crossing will only take 20 minutes.

A free ride for everyone who wants to experience a greener crossing

On Saturday, November 10th, the Helsingborg-Helsingør route celebrates the world leading news by treating everyone to a free ride. The offer is valid throughout the day (10 am – 8 pm) and there



will be festivities onboard, as well as in the terminals on both sides of the strait. The cult band Torsson and Nick Schröder are some of the attractions that will entertain passengers onboard.

The region that never sleeps

The longing for, and need of, travelling across Öresund is probably almost as old as time itself. But what started as a risky journey on single wooden logs eventually transcended into power-driven ferries – efficient, punctual and safe, but not entirely environmentally friendly.

“The two battery-powered ferries are the first step on our sustainability journey for an even better ferry route. We will not settle with just how we manage the power onboard between our destinations of Helsingborg and Helsingør, we are sailing toward zero emissions and towards the future in every way our company operates”, says Johan Röstin. “To us it is important that the “blue road” between the two cities remains, for a vibrant, expansive region where people can meet and businesses can grow and prosper. Today and for future generations.”

For further information:

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Read more about the battery project at www.forsea.com

Additional press material can be found at www.skyfish.com/p/hferriesgroup



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FAQ

Why is battery-operation more environmentally friendly than traditional fuels?

In diesel operations, we create our own electricity using diesel engines. As with other fossil fuels, combustion of diesel causes emissions of carbon dioxide, sulfur oxides, nitrogen oxides and particles, all of which have a major impact on our environment. In battery operation, however, the batteries are charged using on-shore produced electricity instead.

Another advantage of battery operation in comparison to diesel is that the energy combustion is much lower due to the efficiency of the power. When a diesel engine generates electricity, a large amount of the energy disappears in waste heat. This waste is significantly lower in battery operation and the overall energy consumption of Aurora and Tycho Brahe is therefore 40% lower in battery operation than in diesel. A final, but just as important, benefit of battery operation is that the noise level reduces significantly when the ferries sail with electric power, which is not only a pleasure for those onboard the ferry, but for the marine life in Öresund as well.

How long to the batteries last and where are they placed on board?

It is expected that the batteries we have today will last for about five years. As battery technology is developing very quickly right now, we expect the next generation of batteries to have an even longer life span than the existing ones. Onboard there are 640 batteries with a weight of 90 kg per battery. The batteries, along with the necessary peripherals, are placed in four large containers between the chimneys on the upper deck. In total, the weight of the ship has increased by approximately 280 tons.

How long does it take to charge the batteries?

On the Danish side we will charge for 6 minutes and on the Swedish page we will charge for 9 minutes. This is enough to suffice for the journey across the strait.

How much energy is charged at each opportunity?

Each trip consumes approximately 1,175 kWh, which is nearly the same amount a residential home consumes in a month. In each port is a tower with a robot arm that connects the charging cable automatically every time the ship comes to the dock. The system charges 10.5 kV, 600Amp and 10.5MW. The batteries have a total capacity of 4,160 kWh, which means that we always have a surplus of electricity if for some reason we cannot load during a stop or if the transit takes more time than usual.

What happens if the batteries cannot be charged or if the electricity runs out?

If, for some reason, we cannot charge the batteries, the vessel can be run with either hybrid or diesel operation. All machines are left onboard and if the batteries are empty or partially emptied, we can either switch to diesel again or we can operate in hybrid mode, meaning a combination of diesel and battery power. The batteries can also be recharged using the ship's own diesel engines.

What has been the cost of converting the vessels to battery operation?

The entire project has been budgeted to 300 MSEK. The EU has contributed 120 MSEK and the money comes from the "European Union Fund", which is co-financed by the European Union.

Why will HH Ferries Group get a new name?

The current brand is doing a good job, but it was not enough. In order to better reflect our values and vision, face/surpass the competition and offer our customers an even better experience, we needed to become even more service-oriented. We are part of the infrastructure that plays an important role as a regional link between Denmark and Sweden. We must strengthen our brand and make it even more attractive. Therefore, we now start another journey, to a destination beyond Helsingør and Helsingborg. A journey towards the future, focused on minimizing our environmental impact. The blue road is now also the greenest.

What will happen to Scandlines?

Scandlines will continue to operate its line network in Denmark / Germany on the ferry routes Rödby-Puttgarden and Gedser-Rostock.

We will continue to sell tickets that combine ForSea's crossings between Sweden and Denmark with Scandlines crossings between Denmark and Germany.

What will happen to HH Ferries?

HH Ferries Group will now become ForSea Ferries.

The route between the two cities Helsingör and Helsingborg will continue to be operated by ForSea.

Will all ferries be repainted?

All ForSea ferries will be repainted in 2019: Tycho Brahe, Hamlet, Mercandia IV and Mercandia VIII. Aurora was the first and has already been repainted in ForSea's new blue and green.



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