



# Stockholm's fully electric ferry powered by Saft



**Ferry operator Ballerina has ordered Seanergy® Super-Iron Phosphate® lithium-ion battery systems to save fuel and improve its environmental credentials.**

Ballerina operates a number of ferries for foot passengers and cyclists on behalf of Stockholm Public Transportation in Sweden. Both organisations were keen to reduce operating costs, noise and emissions from their services and so when Ballerina ordered a new ferry, it asked Saft to supply Seanergy® Li-ion battery systems to provide all the power needed by the ferry.

## **The challenge: Reliability in extreme conditions**

Designed for a round trip that will carry passengers between stops on a 50-minute route over the waterways of Stockholm, the ferry needs to be available throughout the year, completing eight round trips every day. The battery system to meet this duty needs to store a total of 500 kWh for propulsion, hotel loads and communication systems as well as powering on-board winches and pumps. It also needs to be suited to fast charging at two brief stops during the day as well as a full charge overnight. Reliable and effective operation is also essential in the extremely low temperatures of the Stockholm winter.

Case study



**SAFT**



## The solution: Li-ion marine battery systems

Designed specifically for marine propulsion, Saft Li-ion Seanergy® battery system can deliver high-power and / or energy storage in a lightweight and compact package that is modular and can be scaled to meet the required duty. The technology offers high efficiency and long life, even when operating in extreme temperatures.

- Total storage capacity of 500 kWh
- Operating voltage of 650 V
- Operating temperature -25°C to +55°C
- Modular and scalable battery system
- Compact battery volume and low mass



## Reliable and clean operation

Due to enter service in September 2014, Ballerina's new ferry will enable local authority the City of Stockholm to improve its environmental credentials. The new ferry will build on recent work by the City to introduce clean fuels, promote cycling and introduce electric vehicle charging infrastructure. As with any public transport infrastructure, reliability and solid financial performance are essential and the batteries' ability to operate reliably even in low temperatures means that the new ferry boat will work year-round, completing eight round trips of its 50-minute route per day over a very long lifetime of 10 years or more.

- Estimated lifetime of 10+ years
- Reliable performance at low temperatures
- Zero maintenance requirements
- High availability, as batteries can achieve 95% charging within two hours
- Compact and lightweight battery leaves more space for passengers

## Quality and reliability

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*Saft is a pioneer in electrically powered vessels, which are growing in popularity and offer the promise of low operating costs, quiet operation and reduced emissions. Saft sees significant potential in the ferry market.*”

Christer Steen, Saft's Sales Manager for the Nordic Countries and Germany



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