

Germany versus the Netherlands: battle of the boats

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Two countries. Two different city centre fuel cell boats. One goal: to show that hydrogen fuel cells can be a realistic power source for passenger vessels.

	ZemSHIP	Fuel Cell Boat
Passenger numbers	100	87
Length	25m	21.95m
Cruising speed	14 km/h	16 km/h
Hydrogen storage	50kg	24kg
Range	2-3 days	9 hours

[F079 Image 1](#)

MindsinMotion.net caught up with Alexander Overdiep again to discuss the similarities and differences between his Dutch Fuel Cell Boat and Germany's ZEMship.

Regular *MindsinMotion.net* readers may recall that Alexander is project manager of Fuel Cell Boat BV, the consortium behind a boat powered by hydrogen fuel cells that aims to carry passengers up and down the famous Amsterdam canals.

His vessel took to the water for the first time in September 2009 in a technical launch, in the wake – to use a nautical term – of Hamburg's ZEMship.

ZEMship is an excursion ship that began operating on the Alster lake in the middle of Hamburg city centre in the summer of 2008. A pilot project, it is due to run for two years to show that ships powered by full cells offer the ideal solution for ecologically sensitive inland waterways.

[F052 Image 2](#)

Compelling argument

A similar goal is shared by Alexander and his team at Fuel Cell Boat. But, there are differences to their approaches, he says. "The big difference is the type of ships we're using. ZEMship is a standard passenger ship. To put it crudely, they built a hydrogen system in place of a diesel one. They didn't change the ship, whereas we built ours from scratch, specifically designed around

the fuel cell system,” he explains.

Of course, Alexander is going to champion his boat over ZEMship, but he has a compelling argument when it comes to the technological advances that his team has made to ensure it’s not seen as just a canal boat.

For readers who are not familiar with the Amsterdam waterways – and those whose knowledge has grown barnacles – canal trip boats have to stay in the canal and are not allowed to cross Amsterdam harbour which, like Alster, is in the centre of the city.

[F079 Image 2](#)

“It’s a tremendously busy nautical highway with lots of ships coming from the North Sea, passing Amsterdam and going directly to the River Rhine. So you need the highest level of navigation instruments, which canal boats do not have,” says Alexander.

However, the Fuel Cell Boat is no ordinary canal boat. It’s the first to have a radar system, allowing it to cross Amsterdam harbour like a normal ship. What’s more, the radar has GPS connectivity to allow it to retract and go under bridges.

“As soon as we’re outside the last bridge, the radar will rise automatically and as soon as we are coming to the city centre canal site it stops. It’s one of the biggest differences between us and similar ships,” he says.

Crack the nut

Whatever the differences between vessels, Alexander is sure of one thing: hydrogen needs to be part of our future energy mix. The problem, he says, is the old story of how the hydrogen is produced. If it’s made from fossil fuels, then obvious problems still exist, he says. It’s a problem the Fuel Cell Boat team, like many others, has not been able to crack – the hydrogen for their boat is being trucked in from Germany.

“It’s a pity because we wanted a completely green supply chain,” Alexander laments, knowing all too well that this is the real battle that must be won.

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