

Meet Smart Green Shipping, the startup using wind power to decarbonise the shipping industry

As part of our quick founder questions series – or QFQs – we spoke to Diane Gilpin, founder and CEO at Smart Green Shipping, about the climate emergency, harnessing wind power to decarbonise the shipping industry, and establishing a headquarters in Dumfries, Scotland.

Temps de lecture : minute

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What was the catalyst for launching Smart Green Shipping?

The short answer is the climate emergency. There is no doubt about it – we must act now if we are to avert climate disaster. With my experience from yacht and motor racing I think we can apply this racing mindset to this huge challenge. The shipping industry accounts for around 3% of global greenhouse gas emissions and that figure has risen consistently since the first UN climate conference in 1979. I believe that by harnessing wind power we can immediately support the decarbonisation of the shipping industry by reducing fuel consumption costs and emissions. By retrofitting ships with wind power technology, certain vessels on certain routes can save up to a staggering 30% on fuel costs whilst reducing emissions.

There are multiple brilliant climate entrepreneurs working on myriad

solutions.

I believe we've got most of the solutions we need to build a better, cleaner world but we have yet to unleash that potential.

Tell me about the business - what it is, what it aims to achieve, who you work with, and so on?

Smart Green Shipping unlocks the power of wind for the shipping industry and we do this by building and financing autonomous, retrofittable wind technologies to help reduce greenhouse emissions. The first first product in our suite is FastRig - a 100% recyclable wingsail.

Shipping isn't a difficult industry to decarbonise if we really put our minds to it. But we need to move with urgency and work with what we have. We simply don't have the time to wait for the necessary stringent regulation or alternative fuels to catch up - wind and speed optimisation technologies are straightforward solutions that are right in front of us and can reduce emissions from shipping in line with climate science. Wind is freely available to any ship that's equipped to harness it as well as being much more predictable using the latest wind science. The reality is that we currently rely heavily on volatile fuel commodity markets which are driven by humans with all our fears and foibles.

I'm extremely proud to be working at Smart Green Shipping with a team of technologists, academics, entrepreneurs and shipping and wind industry experts with decades of combined experience. In our wonderful team we have a former seafarer who came ashore to complete his MBA

and then applied his operational knowledge with commercial rigour to solve industry challenges; we have one of the very few people in the world with a PhD in optimised sailing routes to cut emissions from international shipping - he is developing our software that accurately estimates the fuel and carbon savings when using wind-assist technology to optimise shipping routes; we also have naval architects and marine engineers with extraordinary backgrounds in yacht racing. It's an incredible team.

How has the business evolved since its launch? When was this?

I founded Smart Green Shipping in 2014. For many years it has just been my husband Ian and I growing the business but gradually we have added fantastic colleagues and we are now a team of nine.

Last year we established our headquarters in Dumfries, Scotland. There we have a team of contractors with extensive manufacturing experience to build our concept designs. We're now delivering three projects: a land-based test of FastRig at Hunterston on the river Clyde, installing FastRig on a commercial ship, and progressing our FastRoute weather routing tools.

How are you funded?

Smart Green Shipping has brought together a group of super supportive investors. These include industry-related investors like Japanese shipowners Mitsui OSK Line Drybulk as well as renewable energy investors and investment from a dedicated climate fund. A number of private investors including an ex-Tesla executive are also supporters. Together they have a wealth of experience and knowledge which they share generously to make our mission a success.

Key grants and investment from a variety of sources has also helped us to make our products become a reality. In 2018/19 we worked with Drax to conduct a feasibility study to quantify the value of fuel savings on one of their chartered ships retrofitted with our FastRigs. In the lab we modelled the exact ship and ran it through computer simulations at her usual operating speed on her normal route and demonstrated fuel savings of at least 20%.

We have also received support from the European Space Agency business incubation unit to develop a prototype version of FastRoute software that will quantify the value of wind on any ship on any route. Scottish Enterprise is now supporting Smart Green Shipping to build a test FastRig that by the end of 2023 will have been installed on a land based site in Scotland. This will ensure we can safely test all the systems before we install it on a ship next year in a project supported by InnovateUK.

What has been your biggest challenge so far and how have you overcome this?

A few years ago during the pandemic I suffered a full-on breakdown where I was unable to get out of bed for weeks. I then lost my business partner, Jeff Zie, to suicide.

There is a human cost to the pursuit of growing a climate business and mental health is an issue that I think we need to pay much greater attention to. One of the things we both found really challenging when talking to investors and potential partners was that conversations only touched on the financial risk involved in this kind of business. But the critical issue that few people are having conversations about is climate risk and climate anxiety.

Every day I wish Jeff was still here with us but in many ways he still is. His hard work, drive and passion to create solutions that address the climate

emergency live in everything that we do. As a team, we recently went to Glasgow to see the different parts of the FastRig come together. This has been decades in the making and as I saw it come to life I knew I was looking at Jeff's legacy in front of me.



How does Smart Green Shipping answer an unmet need?

The best way to lower emissions in the shipping industry is to use less fuel onboard ships. Wind is freely, exclusively and abundantly available for any ship equipped to harness it and that gives ship operators a greater degree of fuel autonomy. We are moving into a future of great fuel uncertainty and we should be asking ourselves questions. What fuel will be available in what port? What will it cost? How do I have to adapt

my ship to use it? Wind mitigates those risks and reduces operating costs and emissions. There is no fuel that can do that.

Smart Green Shipping's suite of hardware and software products have been designed to optimise wind and make it as efficient and effective as possible for ship operators to harness. There are approximately 60,000 ships in the global shipping fleet and according to a UK Department for Transport study, nearly two-thirds of them are suitable for wind technologies. We are presenting them a cleaner, cheaper and more efficient energy source.

What's in store for the future?

By the end of the year we will have installed our live full size demo of the FastRig wingsail which will be an enormous culmination of years of hard work and development to make the technology a reality. From there, the first on-ship installation will be in 2024 and we will begin deploying the retrofittable sails on ships around the world.

The potential for wind power to decarbonise the shipping industry is exciting.

Wind is the obvious solution and those that act now stand to reap significant financial and reputational benefits.

What one piece of advice would you give other founders or future founders?

I would tell them to never give up. I have a t-shirt with those very words on it. I wear it as a reminder to myself to stay strong and focused when things get challenging. I've had many instances in my career where

people told me that I wouldn't succeed or that I was wrong - mostly by men - and it's only through the unending support of family and friends that I realised resilience and persistence are the key to success.

And finally, a more personal question! What's your daily routine and the rules you're living by at the moment?

I keep two rescue horses and chickens so I get up early to attend to them which gets me out into nature and grounds me in a different (real?) world. It's gorgeous to be able to experience the changing seasons and to be outdoors come rain or shine. Most work evenings I walk, jog or do some yoga to get loosened up after a day at a laptop or in endless meetings. Every evening I do a short quasi-meditation where I appreciate all the wonderful things that happened that day, send love to friends who may be suffering, and re-avow to the planet that I will not give up.

Diane Gilpin is founder and CEO at *[Smart Green Shipping](#)*.