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ON WATCH

Lighter, stiffer, faster, greener – together

While global pandemic-related challenges have seen us take decisive action to ensure the safety of our Baltic Family, it remains difficult to predict what will happen next and when. But we can still honour our value promise to customers to build "Lighter, Stiffer, Faster, Greener – Together". Right now, the focus is even more on: "Together". And rest assured, we will overcome the pandemic. Together.

Recognising the fortunate fact that, at the time of writing, our operations are still running close to normal, we can turn our attention to other key themes in this issue of Baltic Log. Greener, cleaner, more exciting sailing is key to our approach to innovation. Baltic Yachts always aims to meet its customers' wishes, and recent technological advances have enabled rapid progress — especially on the systems side, geared towards environmentally sound solutions.

It is as important to Baltic Yachts as it is to our clients, that the impact our yachts have on the environment is reduced, capitalising on the fundamental fact that the wind is free and sailing is healthy and highly efficient.

That Baltic 142 Canova can generate sufficient power while sailing to cross an ocean with all her electrical systems running without having to start an internal combustion engine, is a significant milestone along the road to reducing fossil fuel use and cutting emissions.

The Baltic 117 currently in build is opting for a similar electric drive and hydrogeneration system, demonstrating the increasing demand by clients for yachts which have less impact on the environment.

Our most recent project, a 68ft day sailer, not only addresses sustainability, but satisfies clients looking for a fun filled sailing experience without having to rely on a large crew. The Baltic 68 Café Racer is an 'un-plug and go' lean machine with a disruptive approach to design and materials.

More than 50% of her hull is reinforced with naturally grown flax, she has sustainable LIGNIA Yacht wood decks, electric propulsion, hydrogeneration capability and a range extending micro-turbine generator which could revolutionise onboard charging. In short, Baltic Yachts is leading the way to emission free performance yachts which are easier and more exciting to sail.

Three recent major design awards shared between Baltic 112 Liara and Baltic 142 Canova recognise the design and engineering excellence of the Baltic Yachts product.

We would like to congratulate Baltic 112 Liara and Baltic 142 Canova for winning major design awards this year and the whole Baltic Family for keeping Baltic Yachts at the leading edge of design, manufacturing and sustainability in these challenging times.

Anders Kurtén — CEO Henry Hawkins — Executive Vice President







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ON COURSE



For Baltic 112 Liara, scoring two 3rds and a 4th shows real potential for the future. After the second day of racing the owner told the organisers:

"I have been on board Liara for every mile sailed since she left the yard. We tore a sail today, but we were on the money until that point. The boat is new to all of us, each day we improve little 'nick-nacks' here and there, we are still working the boat up. This is my fourth boat and everything I dreamt about. Baltic are and have been phenomenal. It never comes out of the box just right, but they have been fantastic with the upgrades."

The SYCA enjoyed a record entry of 19 yachts for their 10th anniversary regatta, the dates of which had been moved to be closer to the St Barths Bucket, partly to make the logistics



of taking part in both events easier. In an unfortunate turn of events, the Covid-19 pandemic forced the organisers to cancel the Bucket for the first time in its history.

Congratulations to owners, crew and support teams for their great performances in the Caribbean!

- 1. Liara powers to windward in Antigua
- 2. WinWin chases down the opposition
- 3. Scaling the rig aboard Liara
- 4. The green machine WinWin
- 5. Liara glides downwind







SHORT OF TIME?

Un-plug and go with this low local emissions E-sailer complete with a flax reinforced hull and boosted by green power

Clients are increasingly looking for ease and speed of use when they go sailing and want to do so in the knowledge that the latest technology has been used to reduce their impact on the environment.

They also want a yacht with an edge, a Café Racer, which by definition, displays disruptive design, is quick and stylish. And they want a yacht which challenges the norm by using materials and techniques which guarantee performance and comfort, reduce emissions and cut right back on fossil fuel dependency.

More than 50% of the 68's composite construction will use naturally grown flax in place of carbon fibre reinforcement. Displacement will be kept to about 20 tons - considerably lighter than a standard performance cruising yacht of the same size. Flax also helps absorb vibration and reduce noise levels.

Although her decks will be laid like teak they will, in fact, be made of a pine-based multi-purpose modified wood called LIGNIA Yacht Wood. It's completely sustainable and is more durable than teak decking enabling it to be thinner and lighter.

She will also use a compact, lightweight 30kW (Saildrive) electric motor powered by a battery bank which can be charged from the dock or a mother ship. To go sailing, just unplug and go, using the fully charged batteries to provide all your electrical needs, including sail handling systems for the day. While sailing, the free-wheeling propeller can hydrogenerate to top up the batteries. She is also equipped with two lightweight solar panels on the coach roof.

CAFÉ RACER

If you were a Rocker in 1960s London you'd aspire to ride a café racer, a pared down, visually minimalist motor bike designed for fast rides over short distances, primarily between popular coffee bars. Riders and bikes were recognised as disrupters displaying speed, status and rebellion. They had attitude.

The charge in the battery bank should last a day, but the 68 will also be equipped with a range extender using a compact, micro-turbine generator. Although this is powered by fossil fuel it has many advantages over a conventional generator, including minimal maintenance and service costs and just 10% of the emissions. It can be run on hydrogen with no emissions apart from water or bio-fuels although

current support infrastructure means gasoline has to be used. The unit is so small it could be picked up and carried ashore under one arm.

Air conditioning is the biggest consumer of 'hotel' power on a yacht but aboard the Baltic 68 heat recovery technology is being employed to re-use cabin air to make the air conditioning process more efficient reducing power consumption by up to 30%.

Javier Jaudenes, the naval architect responsible for the all-conquering Baltic 108 WinWin, has been commissioned to design the 68 and with the yacht's powerful sailplan, including a square top main and hull lines unrestricted by any racing rule, she should not disappoint.





A LOFT-STYLE CONTEMPORARY INTERIOR WITH A NATURAL TOUCH

The 68's fresh, minimalist accommodation uses materials including wicker, flax and paper cord to produce a cool, contemporary ambience. Light oak timbers and flax composites combine with specialist wallpapers and modern textiles to create an 'unpretentious simplicity' according to naval architect and interior designer Javier Jaudenes.

ामान DIMEN	ISIONS
L.O.A.	20.18 m
L.W.L.	19.23 m
BEAM	5.56 m
DRAFT	4.00 m
DISPLACEMENT	20.60 T
ISP	29.05 m
IG	26.00 m
Р	27.00 m
E	8.80 m
BAS	2.04 m
J	8.30 m
SPL	11.62 m

~>	DES	IGN
NAVAL ARCHITI	ECT	Javier Jaudenes
DELIVERY YEAR	?	2021



As her three-part hull moulding is assembled, testing of voice control systems is revealed

With the three-part hull moulding recently completed for the third largest yacht (by volume) ever built by Baltic Yachts, the finishing touches are now being applied to the precision carbon/foam joints holding the sections together.

The hull is built in three parts – two topsides and a centre section – to make construction easier, more accurate and faster. It also allows some systems to be installed before the hull parts are assembled. The sides are craned into position to make a precision fit before the joint lamination begins.

With this operation complete, one of the last hull components to be fitted will be the sacrificial, foam filled 'crumple zone' located in the forefoot, designed to absorb collision impact without damaging the main structure of the hull.

This global cruising yacht is being built for an experienced owner who has already completed a circumnavigation and knows the challenges that lie ahead. The yacht's propulsion and generating machinery is conventional with the main engine driving through a leg or saildrive propulsion system (SPS). Her owner has called for tried and tested systems, but sophisticated voice control is being introduced below decks in her extensive accommodation for eight guests and a further eight crew. Currently this is being tested in the owner's suite.

The owner's suite comprises a double berth sleeping cabin, an en suite lounge with a glass divider which also doubles as movie, sailing information and tv screen, an upper lounge area equipped with a 2.7m long video 'wall' and a large heads area with a full-size carbon fibre bath.

The yacht's deck moulding is also in three parts for easier and more accurate construction. Solar panels covering more than 60sq m of the superstructure deck will provide more than 8kW to boost the battery bank. The yacht carries two tenders, a 6.5m twin engine Ribeye stowed in the swimming pool recess on the foredeck and a 2.5m crew tender powered with an 8hp Torqeedo electric outboard.



Naval architecture and interior design by judel/vrolijk, a powerful sailplan and a lifting keel will ensure this sophisticated bluewater cruising yacht will carry her occupants at speed and in comfort.

- 1. View of the stern showing the garage opening and the aft deck mould suspended above the hull from the overhead cranes in our Bosund facility. The Baltic 146 will eventually be transported by road to Jakobstad for launching next year.
- Baltic 146's deck is constructed in three parts for greater accuracy and speed of build. Here the aft section is test mounted onto the hull which already contains some accommodation modules.
- Baltic 146's engine being lifted into the hull at our Bosund facility. The Scania unit will drive a forward facing pull propeller set on a leg which can rotate through 340 degrees. Note foam 'crumple zone' built into forefoot.



TECHNICAL 39.60 m / 35.8 m L.O.A. / L.O.H. L.W.L. 31.03 m BEAM 7.86 m DRAFT 6.00 m / 4.00 m LIGHT 103 000 kg DISPLACEMENT BALLAST 30000 kg DESIGN Dvkstra Naval Naval Architect Interior Design deVosdeVries design

Tommy Johansson

UNDER CONSTRUCTION

Lars Gripenberg

Project

Management

Baltic Yachts

BALTIC 117 CUSTOM

Hydrogeneration for Custom Classic



Classic looks of carbon sloop belie 'smart' technology to make her greener

With her two-part pre-preg/SPRINT advanced composite hull now joined on the centreline the decision has been taken to introduce hydro-generation to the project by using the yacht's controllable pitch propeller (CPP) to drive her electric motor as a generator while sailing.

This yacht will be fitted with a conventional shaft and with the ability to alter the angle of attack of her propeller blades, highly efficient charging through her Danfoss electric motor will be possible.

As work continues on her hull construction and fit out, outside the yacht is a full-size mock-up of the steering cockpit providing the client with a chance to get a feel for

what it will be like aboard the real thing. The mock-up helps the project team decide the final positioning of items like winches, the heights of coaming and the arrangement of the cockpit sole beneath the helmsman, who can alter height and angle to make the steering position more comfortable.

There's also an opportunity to fine tune the position of two customised ports in the superstructure's aft bulkhead. The glazing by Vision Systems can be used as a display for sailing information and other read-outs. In this case up to four read-outs can be displayed in each port.

The accommodation will feature 'smart' cabins fitted with a series of sensors which will power down air conditioning and lighting when the space is unoccupied. This and the use of heat recovery technology in the air conditioning and ventilation systems are aimed at reducing energy needs.

Other features include an adjustable solid bimini which can be raised or lowered using a chain drive system set inside its four supporting pillars, a 5.2 metre tender which can be slung from the davits aft or stowed on the foredeck and a lifting keel.

Designed by Dykstra Naval Architects the Baltic 117 Custom, with her tall bermudan rig, displacement of just over 100 tons and deep bulwarks, looks as though she'll be a fast and comfortable sailing yacht, ideal for her owner's global cruising ambitions.

- Easy access to the Baltic 117's hull at our Jakobstad facility.
 Bulkheads are shown with their pre-determined apertures for pipe and cable runs in the bilge and larger access cut outs.
- 2. This 1:1 mock up of the steering cockpit allows fine tuning of winch positions and coaming heights plus the positioning of instrument readouts (white panels) displayed in the superstructure portholes

BALTIC 112 LIARA

A Yacht For All Seasons

Baltic 112 Liara is more than proving her worth as a multi-role superyacht in her first intense season of cruising and racing, with very little on the change list

Poised to take part in the St Barths Bucket and then transit the Panama Canal to cruise the Pacific, New Zealand and watch the America's Cup in 2021, Baltic 112 Liara's plans have been stopped in their tracks by the global Coronavirus pandemic.

This gave us time to ask the skipper, John Walker, how Liara was working out as a multirole superyacht. "So far, so good – we have a very happy owner which is the number one goal."

"The whole custom boat concept is a balance – in general light weight is 'loud', and wine and fridges and nice mattresses are heavy! So when you start the process of a boat like Liara a clear end goal is key. We have a very small list of things we would change which after a year of intense use is a great place to be," said John.

Liara did, however, manage to take part in the Superyacht Challenge Antiqua (see page 4) which this year attracted a record fleet of almost 20 yachts and included the Corsair Class made up entirely of Baltic-built yachts. She managed 3rd in class, a performance which, said John Walker: "Showed enough promise to whet the appetite."

To take part, Liara had to switch from cruising to race mode, a process which takes about a week using the permanent crew of five. "It depends how many people you throw at it," said John, who explained that the biggest task is emptying the boat - sailing-wise, there are very few changes.





Dramatic reductions in heel angle and pitching point to success for superyacht's sliding foil

As Baltic 142 Canova charged across the Bay of Biscay at speeds of up to 24 knots it was clear that her revolutionary Dynamic Stability System retractable, sliding foil was providing a marked improvement in the yacht's motion and handling characteristics and a better than expected reduction in heel angle.

Canova's experienced owner opted for the DSS foil primarily to provide a more comfortable experience for his guests and crew as they travel the world in this extraordinary bluewater supercruiser.

more comfortable for her crew.

It's still early days for Canova as she completed her successful passage to the Mediterranean, but in winds in excess of 30 knots true during her delivery from Finland to Genoa, the foil dramatically reduced the amount of yaw and pitching in an awkward sea, making the yacht easier to handle and much

Trials have already shown that when sailing upwind at a heel angle of 22 degrees the DSS foil reduces this figure to just 15 degrees when deployed, while pitching motion was reduced by almost half. Significantly, these trials also demonstrated a 0.2 knot increase in VMG (velocity made good directly to windward) and this without using the keel's trailing edge trim tab, which will help to further improve performance.

Baltic's After Sales Representative, Sam Evans, who was aboard for the delivery, reported that the yacht was much easier to handle with the foil deployed as boat speed averaged between 20 and 22 knots and topped out at 24 knots. "We were sailing pretty deep at about 140-150 degrees (true wind angle) which isn't the optimum angle for using the foil, but it still made a big difference," said Sam, who added that they were sailing conservatively in terms of sail choice (a reefed main and staysail).

TECHNICAL

L.O.A.	43.30 m
L.W.L.	41.60 m
BEAM	9.00 m
DRAFT, KEEL UP	3.80 m
DRAFT, KEEL DOWN	6.50 m
LIGHT DISPLACEMENT	146.5 tons

DESIGN

Naval Architect	Farr Yacht Design
Exterior Design	Lucio Micheletti
Interior Design	Baltic Yachts Lucio Micheletti
Composite engineering	Gurit UK
Owner's Project Manager	Mattia Belleri

Gordon Kay of Infiniti Yachts, the company behind the DSS, said that as the sailing team grew more familiar with the yacht, he was confident even more gains would be forthcoming and that further increases in boat speed in higher wind speeds would be recorded.

Sam Evans predicted that the real benefits will become apparent crossing an ocean on a long passage when the foil will really come into its own in terms of comfort and the crew will be able to take advantage of optimum wind conditions and sea state with the appropriate sail plan.

For news about the success of Canova's other innovative features including her electric propulsion and hydrogenerating system, see page 18

DSS FOIL - KEY FACTS

The 9m long foil is housed in a cassette built into the bilge about amidships directly beneath the owner's berth

When deployed it extends 6.5m to leeward. The waterflow over the foil's profile has the potential to create 40 tonnes of lift

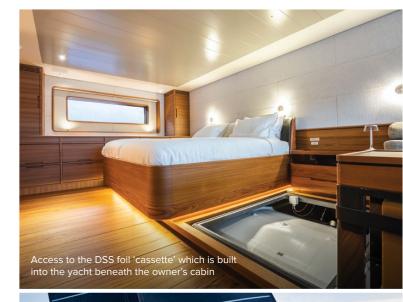
The foil has proven to reduce pitching by an astonishing 42% and heel angle by as much as 34%

33 tonnes of additional keel weight would be needed to reduce heeling by 30% without the foil

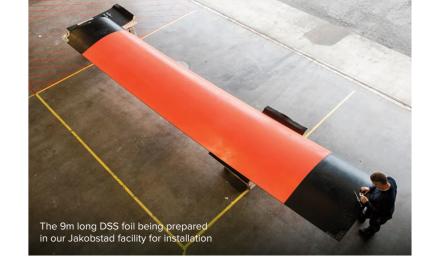
The dynamic load on the upper, outboard bearing could be as much as 140 tonnes

The foil is controlled by a continuous line and a system of pulleys operated by an electric captive winch. Precision engineered bearings ensure it runs smoothly under load

The DSS foil concept was developed by Hugh Welbourn and Gordon Kay of Infiniti Yachts and built by French company ISOTOP









For almost a century diesel has been the propulsion and power generating fuel of choice for most yachts. But the evolution of electric motor technology and its suitability particularly on large sailing yachts is threatening what is now regarded as 'dirty diesel'.

Here at Baltic Yachts we've installed a 400kW permanent magnet electric propulsion unit aboard Baltic 142 Canova which can drive the yacht at normal speeds. It's a fraction of the size of a diesel equivalent, is virtually vibration free and almost silent in operation, which means there are significant weight and space savings through reduced insulation. An electric motor's low maintenance costs are also attractive and its emissions are nil.

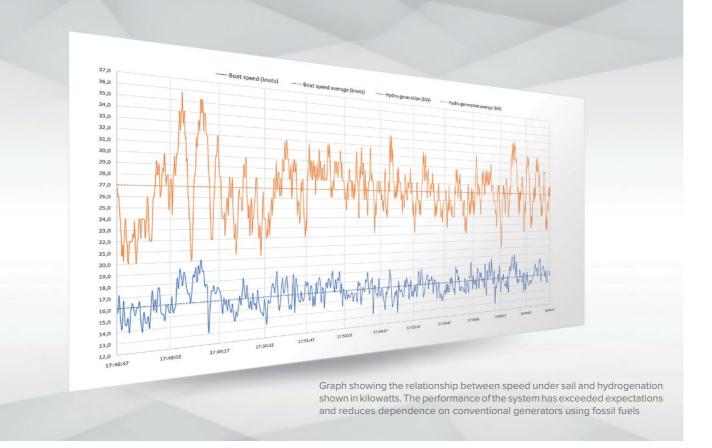
27KW AT 16 KNOTS UNDER SAIL

But arguably its greatest asset is its ability to run as a generator when driven in reverse by the yacht's free-wheeling propeller when sailing. As the accompanying graph shows, the average generating capability in this trial averaged 27kW with the yacht sailing at 16 knots with an output of more than 35kW when sailing at around 20 knots.

These and subsequent results have exceeded our expectations and we can now confidently say that in a moderate breeze Canova could cross an ocean with almost all her electrical systems working, without having to resort to an internal combustion engine to drive a generator. Again, the reduction in emissions and fuel costs are substantial, to say the least.

With Canova's ground-breaking DSS athwartships foil deployed to leeward for extra performance, hydrogeneration becomes even more effective.

In addition to hydrogeneration, two conventional generators can charge the main battery bank serving the propulsion motor. These are automatically controlled



to work at optimum loads for efficiency and the lowest possible emissions.

The Baltic 117 currently in build and due for launch in 2021 also has an electric engine and her controllable pitch propeller, set on a conventional shaft, will be able to drive it as a generator while sailing. A big advantage is that no gearbox is required which reduces noise and entails no loss of power through inefficiencies.

MICRO-TURBINE GENERATING TECHNOLOGY

Dependency on fossil fuels, emissions and the cost of maintenance are all negatives for a traditional diesel driven generator, so the emergence of turbine technology is attracting attention. This micro-turbine has near-zero emissions and can be run on hydrogen or bio-fuels although current support infrastructure means gasoline has to be used.

But the fact that the turbine, which works in the same way as a jet engine, has just one moving part and no requirement at all for lubricating oil, is extremely attractive in a marine environment where changing out or regular servicing of generators is expensive and time consuming. Turbines are also far lighter and smaller, both big bonuses on a sailing yacht where weight will always remain the enemy of performance.

This technology is being used aboard our new Day Sailer project, the Baltic 68 Café Racer, as a range extender (REX)

in the event her battery bank can't quite get her home. This yacht is relatively light and performance orientated so the compact, lightweight mini-turbine is an ideal choice. The possibilities for use in larger yachts are also clear to see.

Having harnessed wind and water for energy supplies we continue to use photovoltaic solar panels and aboard the Baltic 146 currently in build we'll be fitting more than 60m2 on top of the superstructure. To get the best out the cells, the boom needs to be swung out to one side so that when fully exposed to the sun more than 8.7kW can be generated and fed into the battery bank. The fact that solar panels work while at a standstill is a significant advantage as many yachts operate in the tropics – and they provide the perfect green energy supplement to hydro-generation.

MORE EFFICIENT AIR CONDITIONING

It is well understood that air conditioning is one of the greatest consumers of energy on yachts. At Baltic Yachts thermal insulation technology is something we are working on continually as part of our strategy to reduce power demands and in turn the need for power generation. The increased use of thermally efficient glass in yachts and developments like variable speed chillers linked to demand, have done much to reduce consumption.

We continue our work on the flow of air through the conditioning system employing heat recovery technology by re-circulating 'used' air for additional heating or cooling. Anti-bacterial ultra violet filters are used to clean the used air which forms a 50/50 mix with fresh air. An advantage is that the re-circulated air is less humid further increasing the air conditioning efficiency.

Once again, the latest version of this technology will be seen aboard the Baltic 68 Cafe Racer, more details of which can be seen on page 6.





Awards hattrick

Baltic Yachts enjoyed triple success at the prestigious Boat International Design and Innovation Awards, with Baltic 112 Liara and Baltic 142 Canova between them winning the categories for interior and exterior design and naval architecture.

Announced at a gala event in Cortina, Italy, the awards for Best Exterior Design Sailing Yachts and the Best Sailing Yachts Interior Design went to Liara, while Canova won the Best Naval Architecture Sailing Yachts award.

Liara, with exterior design by Malcolm McKeon Yacht Design, also responsible for her naval architecture, and her interior by the Adam Lay Studio, impressed the Boat International judges with her ability to perform both as a comfortable cruising yacht and as a race boat.

The judges were particularly impressed with Adam Lay's outstanding interior. "The overall décor and usefulness of Liara's interior earned the top score in this category," they said.

It was a close-run thing in the naval architecture category with Farr Yacht Design's Canova and Liara both nominated. The judges agreed that Canova's remarkable Dynamic Stability System foil, the first to be seen in a yacht of this size, tipped the balance along with FYD's naval architecture and engineering work on incorporating the foil.

"The foil's positive impact on Canova's stability and righting moment was obvious both in data and in videos of the yacht underway," said the judges.

Baltic Yachts' Executive Vice President, Henry Hawkins, said: "This success reflects the world class expertise at Baltic Yachts and our ability to work closely with the best naval architects and designers to deliver innovation that works. Congratulations to the Baltic Family and to all the designers involved."

Stop Press

Baltic 112 Liara and Baltic 142 Canova are both nominees in the Sailing Yachts category for the Boat International World Superyacht Awards 2020, the winners of which will be announced in September. The Baltic Family wishes them the very best of luck.

Meeting up in 2020

Although many shows and regattas have been cancelled or postponed this year due to the global pandemic, we very much hope that some events will go ahead including the Monaco Yacht Show in September. When the world gets back to normal, we will look forward to seeing clients, industry partners and friends. At the time of writing, we will be attending the following events this year:

- Palma Superyacht Show 4th–7th June
- Monaco Yacht Show 23rd 26th September
- Value of the control of the control
- Metstrade 17th -19th November





ON COURSE

The "Hows" and "Whys" of a Greener Future

Until recent times, sustainability has clearly been the buzzword of the year in our industry. Lately, this has been overshadowed by the threat of the global pandemic that has profoundly affected us all.

At Baltic Yachts, we have always had the wellbeing of our extended Baltic Family at heart. While we have managed to secure the wellbeing of our staff through the early introduction of stringent safety precautions, we would like to offer our sincere best wishes and fortitude to our extended family; owners, crew, and other affiliates in these times of adversity.

Returning to sustainability, we feel it is a concept that can broadly be applied to well-built boats — even older ones. There are few other consumer products that can boast an equivalent lifespan expectation. The first Baltic ever built, Baltic 46 #1, s/y Queen Anne will participate in the Ocean Globe Race, simultaneously commemorating the 50th anniversary of the Whitbread Round the World Race as well as Baltic Yachts' 50th anniversary.

For as long as we have enjoyed the sport of sailing, the fundamentals are unchanged. The wind is free and sailing, in terms of the direct environmental impact our products have during their (almost infinite) lifespan, is one of the cleanest and most ecologically sound pursuits possible. It also enjoys the additional benefits of being an ideal pastime to share across generations and combines competitive pursuits with a laid-back lifestyle. In short it offers an extraordinarily wide range of choice.

At Baltic Yachts, we try to keep sustainability close to our hearts in our daily work. All our electricity is sourced from local wind farms and hydropower. We encourage employees to shift from internal combustion engine-powered automotive solutions to hybrid- and electric cars. We continuously and successfully manage to reduce build-time waste, and require ever higher

sustainable and ethical standards from our supplier network. Almost all our production tooling is built from recyclable materials, generating a virtuous cycle in our local, circular economy.

This spring, we will be launching an employee engagement competition, in which all employees are encouraged to submit suggestions as to how we could further improve the sustainable aspect of our operations. We will draw a winner, who will receive the grand prize; an electrically-powered small runabout.

When talking about sustainability, the three P's – People, Planet, Profit, are often mentioned in various frameworks. While they are all important, we feel strongly that the most important P is missing. P for Purpose is, in our opinion, the most important.

Our Purpose being building: Lighter, Stiffer, Faster, Greener yachts – together with the Baltic Family.

Anders Kurtén — CEO

