FAQs for Press

What does Volta future do?
The Austrian start-up Volta future, located in Upper Austria, has invented and produces the first maintenance-free electrical iWOP (invisible waterline outboard power-drive) in the world with universal application in salt water and freshwater. The founders DI Horst Pesendorfer and Thomas Bergmair have set a new benchmark internationally with the first maintenance-free electric power drive for motorboats.

How did Volta future begin?
Like many other success stories, the development of our fully electrical outboard power drive started on a sheet of paper and then in a garage by the Traunsee lake. That was five years ago. Our guiding principle was and remains: good electric outboard motors must work easily, but it's not easy to build them. Today we are almost ready for series production for a market worth billions.

What was your motivation for inventing the iWOP?
In 2015 it all started as a hobby. By 2018 the inventor and founder Horst Pesendorfer had invested a 6-figure sum in building an electric power drive for his motorboat. His motivation: to be able to glide around the Traunsee lake in a 2.5 t boat in summer (when there is a ban on petrol-engine boats). After copious research, it transpired that no electric outboard motors existed in this performance class. Nor were there any innovations or new concepts. Pesendorfer then recognised the potential of rethinking everything in terms of E-mobility. The aim became to realise an "invisible" outboard motor so that a swim platform could also be fitted. In 2016 Pesendorfer built the motor fully under water, with the propeller directly connected to the rotor shaft. This concept did, however, have hydrodynamic disadvantages at high speeds, and the idea of the iWOP (invisible waterline outboard power-drive) was born.
The limited company Volta future GmbH was formed in Spring 2021 for the final development and industrialisation stage, and a self-funded 7-figure sum was invested, supported by the Austrian Research Promotion Agency's start-up programme. Today the new company employs 5 people and cooperates with various engineering consultancies and research institutions.

Which boats is the drive concept suitable for?
Basically the iWOP is suitable for all pleasure craft and motor yachts between 6m and 14m with power ranges between 60 and 250 kW, or 500 kW with twin engines. Due to the good modular architecture and scaling strategy, the iWOP is also available in optimised design for planing or semi-displacement hulls with tight kW gradation. A version for displacement hulls is to follow in 2025.

The market is occupied by major international brands. What chance does a start-up have of breaking through?
The electrification of drive solutions is forging inexorably ahead, including in a wet environment. By 2025, every fifth newly licenced motorboat worldwide will have an E-drive.

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The market for outboard and inboard motors is worth more than five billion Euros every year, and the trend is upwards. This means good prospects for Volta future. With the invention and development of a completely new concept for electrical iWOPS (invisible waterline outboard power-drive), we are breaking new ground in the world of motorboats.

Where does the greatest market potential lie for you?
Around 500,000 leisure craft are licenced in the DACH region alone (Germany, Austria, Switzerland). Re-equipping these for E-mobility with our unique drive concept (type of fitting and power range) has been approved. Worldwide, the annual new market for leisure craft also amounts to several billion Euros. The proportion of this solely for drive systems (outboards and inboards with z-gears >100hp<1000hp) is still a market valued at billions. And our products are also well-placed in it. We are assuming that within 4 to 5 years, the electrical percentage in this segment alone will be 20-25% (i.e. around 0.5 billion Euros) for newly licenced craft every year.

What is propelling E-mobility onto the water?
Combustion engines are still polluting lake and sea water with toxic exhaust fumes, oil and fuel. In Germany alone, around 73,000 tonnes of CO_2 are emitted by sports craft every year. On many European lakes and rivers, and in cities, this has led to a ban on combustion engines. For boatyards there has so far been no attractive solution for equipping boats with electric power drives that could be achieved quickly and did not involve time-consuming or cost-intensive rebuilding of the boat. With the invention of the iWOP by Volta future, all this has now changed.

Will E-power drives soon be mandatory on the water?
Increasingly restrictive environmental regulations and the banning of motorboats on inland waterways, combined with increasing environmental awareness amongst the population, are accelerating the switch to alternative drive technologies for boats. The commitment of the Austrian government and the European Union (the Green Deal) is also encouraging the trend towards E-mobility and sustainable power drive systems. By 2025, every fifth newly licenced motorboat will have an E-drive. Our major advantage here: converting from a combustion engine to the iWOP is easily possible. The future trend towards environmentally aware E-mobility will also drastically transform the boat market over the next few years.

Why is your invention so ground-breaking?
So far there has been no uniform drive system for sports and leisure craft that could be installed regardless of the boat's construction type without modifying the hull. With the invention of the iWOP, we have now changed all that. With this internationally unique drive system, we intend sustainably to revolutionise E-mobility on the water. With the innovative, fully electrical iWOP outboard drive system, we are offering the first environmentally friendly alternative to the combustion engine for high performance classes (up to 222 kW) to be certified in the world, combining a uniform drive concept with E-mobility.

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What exactly should we envisage with your drive concept?
This is a completely new drive form for planing and semi-displacement hulls which, in addition to emission-free operation and a uniform construction method, also offers numerous benefits to boatyards and boat owners such as, for example, low conversion or installation costs, ease of maintenance, individual design, reliability and a lower centre of gravity. Our iWOP drive concept is a “ready to run” solution. This means that the customer gets a complete system with a compatible overall concept and all necessary peripheral equipment, batteries etc. whilst the system can at the same time be rapidly integrated.

Who are your products aimed at?
Our main target group is boatyards, particularly in the Premium segment, who therefore serve a niche market. By extending their product range with the iWOP, they can now also easily electrify part of their existing fleet. We also plan to approach end customers and dealers direct with our new product.

How do you intend to revolutionise the E-power drive market on the water?
We have invented a concept offering numerous benefits: the iWOP is a system which incorporates the advantages of a traditional outboard motor, such as manoeuvrability (steered propeller) and ease of installation, as well as trimming features. Our system also has a unique lift function (hydraulic height adjustment – vertical only – in operation to improve efficiency at high speed or manoeuvrability in shallow waters, for example when berthing). All this is combined with the benefits of a traditional z-gear (appearance and low centre of gravity). The iWOP lies precisely below the water line. Compared with standard commercial outboard motors, additional space is created at the stern, as the upper part is not required. This can be put to good use as a swim platform.

And there are other positive effects with the iWOP concept, such as direct cooling through contact with the water without a pump, and a high degree of modularity and variability because the various long shafts disappear. Weight benefits are also associated with the compact design.
In comparison with standard commercial power drives, there is also more space in the boat, eg. for batteries, as the drive is integrated in the outer area. This means that the motor can be used for craft whose construction is designed for z-gears (inboard motors + z-gears) as well as for craft with a transom.
This unleashes enormous potential in the retrofit market also.

What are the benefits of iWOP for boat owners and boat operators?
The high level of performance of our E-power drives means that for the first time worldwide an environmentally friendly alternative to internal combustion engines can be used. The dual version of our iWOP (133 to 222 kW) enables 10-meter yachts to glide smoothly in the water. Even for uses where speed is crucial (eg. emergency rescue boats) environmentally friendly systems can be used, thanks to the internationally unique E-power drives. In sensitive

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waterways (protected and specially designated areas) the E-power drive in many instances makes operating a boat possible for the very first time.

What are the environmental benefits of your drive concept?
On all outboard motors currently available on the market (including E-outboards), the torque generated through the shaft or gearwheels is transferred to the propeller shaft. This is why even with E-outboard motors, a certain quantity of oil has so far been required. Through its innovative use of a timing belt, the iWOP is the first fully oil-free and thus maintenance-free drive on the market worldwide. Operating costs are also reduced. The redundant (dual) drive system is also fail-safe.

When was the iWOP made available for the first time?
Our product was presented to the public for the first time at the Electric & Hybrid Marine Trade Fair in June 2022. The response was spectacular. If we had had the corresponding production capacity available to us, we would have received numerous orders at the trade fair alone. At the moment it is possible to make a non-binding reservation on our home page.

What will the iWOP cost?
The final prices will be announced at the year end 2022/2023. They will be of the order of magnitude of a premium diesel outboard motor, excluding battery.
We plan to start deliveries in Summer 2023. Unfortunately, due to the current component shortage, we cannot definitely confirm that every reserved order will be delivered in 2023. At the moment we are therefore proceeding on the FIFO principle (first in – first out).

What does your capacity planning for production look like, and what quantities are achievable?
At the moment we cannot yet build 100 motors per year. In 5 to 6 years' time, however, we are planning for a production volume of around 1,000 power drives per year.

When will the iWOP be ready for series production?
At today's perspective, the iWOP will be ready for series production in the first quarter of 2023.

When can orders be placed for the iWOP?
Orders can be placed from the year end 2022/23. Non-binding reservations for the iWOP are already possible.

In the medium-term, do you intend to sell the company to one of the major international manufacturers?
We are not categorically excluding partnerships and participations involving international manufacturers. Talks are being held with a few interested parties, but our stated aim is to build and expand the company with the help of interested investors who recognise its enormous market potential, so that in a few years' time we will be and remain leaders in this

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area of technology. At present we are not thinking of selling to an established participant in the market. At least in the medium-term we intend to remain an owner-run company that is a relevant and innovative player in the market and a significant employer.

How high are your development costs, when do you expect a ROI?
We are not publishing detailed figures here. Let us simply say: development to the point of series production naturally swallows up a lot of money. This is why we are looking for investors who are convinced by our concept and its enormous market potential.

What market opportunities does your invention present?
With the iWOP we want to sustainably revolutionise the range of applications of E-power drives for boats. Since we presented our system at the international trade fair

Electric & Hybrid Marine in Amsterdam, we have received an enormous number of enquiries. Boatyards are interested in prototypes, we have already had enquiries related to the supply of hundreds of motors. The worldwide market for outboard motors in all performance classes amounts to around five billion Euros. In the iWOP's current performance class the figure is still over two billion Euros (including inboard systems that can be replaced with the new system).
In the electrical sector, the global market for motors in the iWOP's performance class will very soon reach half a billion Euros – at the moment there is no well-known manufacturer offering smart electrical systems in this performance class as a series product, and the lack of alternatives is again putting a brake on the market switchover to electro-mobility. This is precisely where we come in.

All the benefits of the iWOP at a glance:
More usable space in the boat than with inboard systems, the possibility of space for swim platforms, in contrast to normal outboard systems.

- the highest performance electrical "outboard motor"
- a choice of versions (66 – 222 kW continuous output, in dual form up to 444 kW)
- can be used all-year-round: no need to refit (in summer) on waters where combustion engines are banned
- cost savings due to maintenance-free and oil-free system
- long life
- due to the space-saving design, on boats designed for an outboard motor it is possible to retro-fit and use a swim platform
- the dual system guarantees high reliability (2 independent systems/motors)
- efficient partial-load operation due to the use of 2 motors
- improved glide behaviour even on larger boats (6 – 14 m) due to high torque, plus the motor housing works like a hydrofoil

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