

# kontur

Vorarlberg's Business and Lifestyle Magazine



**The new mobility will be  
affordable and suitable for  
grandchildren**

# Just take a step back

At the Obrist Group, based in Lustenau, development work is carried out every day.

The goal: automotive technologies that can not only be used globally, but that are also affordable, suitable for grandchildren and virtually emission free.

Photo: Philipp Steurer

I love to think about sustainable solutions for the environment. The key goal is to provide affordable and environmentally friendly mobility that will be useful for many generations globally." Frank Obrist (58), 1996 founder and CEO of the Obrist Group, which has grown steadily since then, with its parent company in the „Fabrik Lustenau“ business park. It sees itself as a think tank, the task of which is to reduce emissions to zero. "To this end, engineering services with a strong automotive connection are offered. At the Lustenau site,

more than 40 are highly specialized staff and we hold more than 200 patents. We do everything right up to the well-functioning prototype," says Obrist, a native of Dornbirn. The team is a motivated group of people with in-depth knowledge of all important technical disciplines, particularly in thermal management, the development of hybrid drives and control technology. These include numerous graduates from the Vorarlberg University of Applied Sciences.

**100 million new autos.** Frank Obrist explains his endeavours to build a low emission car that - and this is particularly



## Data & Facts

**Employees:** 45 – no apprentices

**Sales:** 18.6 million Euros (2019)

**Export quota:** 100% worldwide

**Investments:** 2.9 million (2019)

**Owner & Managing Director:**

Frank Obrist & DI Frank Wolf

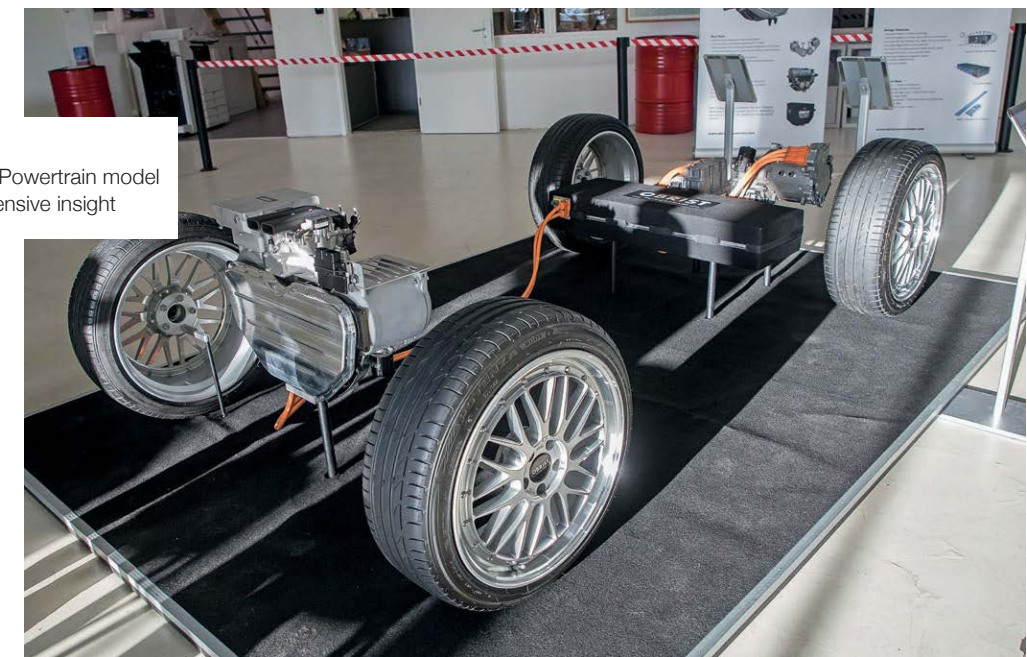
**Other shareholders:**

Dr. Willi Sonderegger, Richard Fischer



**Zero Vibration.** The coin demonstrator impressively shows how smoothly the entire unit runs.

**Inner workings.** The HyperHybrid Powertrain model offers a comprehensive insight



The entire unit is optimized for smoothness – thanks to counter-rotating crankshafts, any vibrations are filtered out. Obrist speaks of a “Zero Vibration Generator” and promises the smooth running of a twelve-cylinder engine. This combination is also encapsulated so that it is almost inaudible.

important - must also be affordable for everyone as follows: “Every year around 100 million new cars come onto the market worldwide. With this immensely large number, it of course plays a very important role which cars they are. In connection with the Paris Climate Agreement, we as technicians and engineers are challenged and even obliged to offer appropriate solutions. After all, our grandchildren will ask us later: What exactly have you done to make our environment better? We therefore clearly want to develop a technology that must be both affordable

and suitable for grandchildren. “

“The company has an excellent network of suppliers, which is a prerequisite for the very high product quality. And the high share of equity gives us the opportunity to invest in our developments independently of other donors. We also see an important success factor in the integration of branch offices,” says CEO and co-partner Frank Wolf (54). He too, has the vision of reducing or even avoiding emissions. The company already works with brands such as Audi, BMW and

Daimler. The first environmentally friendly air conditioning system with the coolant R744 for the Mercedes S-Class, for example, was developed by Obrist.

**From technology to innovation.** Frank Obrist is a graduate of the Höhere Technische Bundeslehranstalt in Bregenz (mechanical engineering) and later attended a part-time course in innovation and technology management at the Technical University in Graz and the Management School in St. Gallen. “That brought a new direction from pure technology to innovation,” explains

Photos: Philipp Steurer

Obrist, who also worked for many years in Lindau with Felix Wankel (1902-1988), who was the inventor of the Wankel engine named after him.

The result of many years of development work at the Obrist Group is now on the road as a prototype on Vorarlberg’s streets. A serial hybrid called “HyperHybrid”. Frank Wolf explains: „With this system, the vehicle is only powered electrically; but it combines a very small and very economical vibration-free internal combustion engine with a battery and

an electric motor. The internal combustion engine is a two-cylinder, one-liter gasoline engine with 54 hp that directly drives two generators to generate electricity.”

**The strength is found in serenity.** This motor only generates electricity (for driving the electric motors as well as for charging the battery) – Shifting and transmission are omitted, as are different speeds for different driving conditions. The motor runs – when it is running – only in the optimal speed range.

All fuel molecules can react with the oxygen in the air and optimal combustion occurs. That means that this motor/generator already complies with the EU Commission’s emission specifications for 2030 and beyond. The entire unit is also optimized for smoothness – thanks to opposing crankshafts, any vibrations are filtered out. Obrist speaks of a “Zero Vibration Generator” and promises the smooth running of a twelve-cylinder engine. This combination is still encapsulated so that it is almost inaudible.

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The heart of affordable and almost emission-free e-mobility is our Zero Vibration Generator.



Let's talk about the future. Frank Obrist (middle) and Frank Wolf (lt.) in conversation with "Kontur" editor Ernest F. Enzelsberger.

**1000-kilometer Range.** "This silent power plant allows the HyperHybrid to have a small high-performance battery compared to purely electric vehicles. This will then not be 10,000 to 12,000 euros, but rather just like the generator, only around 2,000 euros," explains Frank Obrist. The complete system is also significantly lighter than just the battery in a purely electric vehicle and even lighter than a classic hybrid. "Thanks to this weight saving, the HyperHybrid is particularly efficient. In mixed driving, it

manages with less than three liters and therefore beats comparable hybrid vehicles by far. Its range is unbeatable at over 1,000 kilometers," says Wolf happily. The basic version of a smaller mid-range car with HyperHybrid could cost less than 20,000 euros. "We have covered 15,000 kilometers with a prototype (Mark I) in six years and have also verified the theoretical data in real driving conditions in all weather conditions. Today we are negotiating with many well-known automobile

manufacturers worldwide about licenses to take over the system. A first license agreement has already been concluded with a globally active market participant.

Prof. Robert Schlögl, Director of the Fritz Haber Institute of the Max Planck Society in Berlin and at the Max Planck Institute for Chemical Energy Conversion in Mülheim an der Ruhr, propagates the serial hybrid as a new kind of the electric drive: "The electricity for these motors should not come from a battery, but from a special internal combustion engine that burns synthetic fuels. The turbine supplies a small battery with the energy needed to operate the electric motor. This battery, which is small compared to purely electric vehicles, can also absorb the energy recovered when braking."

The third prototype is currently being built in Lustenau with a series hybrid, which is operated by a further developed generator with a synthetic fuel (methanol). The vehicle is then purely electric and emission-free. "In principle, our technology is just a step back towards a simple and intelligent solution. Lower costs and weight, but still all the advantages of electric driving, but without range problems," concludes Frank Obrist. Ernest F. Enzelsberger

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Foto: Oliver Larch, Obrist

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zero-emission innovations!



OBRIST Group is an Austrian technology company with over 20 years of experience in the development of thermal management systems, waste heat recovery and components for hybrid electric and battery powered vehicles.

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