

eFuels: Synthetic fuel from renewable energy sources

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20/03/2023 Sustainability at Porsche has many facets. In this 'Perspectives on Sustainability' interview series, Porsche employees talk about sustainability from the perspective of their respective fields of expertise. Team Lead Karl Dums talks about the future of eFuels in the automotive industry.

Karl, eFuels are synthetic fuels that have the potential to be nearly carbon neutral and that are made from CO_2 and hydrogen using renewable energy sources. What role will eFuels play at Porsche in the future?

Karl Dums: With the definition of our sustainability objectives in the Porsche Strategy 2030, we laid out our approach: in the development of future vehicles, we will focus on e-mobility. However, we will only meet our ambitious decarbonisation goals if we factor currently existing vehicles into the decarbonisation effort as well and operate them as close to net carbon neutral as possible. Worldwide,

there are roughly 1.3 billion vehicles with combustion engines and our vehicles in particular are known for their longevity.

So we've developed various different ideas for operating combustion engines as near to net carbon neutral as possible. It was clear to us that renewable energy will play a major role in solving the problem. And that's the basis for the concept of eFuels, which enable nearly-carbon-neutral operation of combustion engines. In their fundamental properties, they are no different than kerosene, diesel or petrol produced from crude oil. Porsche was one of the first companies to address the issue on political, regulatory and business levels – and we wanted to communicate that from the outset and create incentives for other companies to get involved.

What was your motivation and how did you become involved in the topic of eFuels?

Karl Dums:I have been working at Porsche since 2008 and have been involved in innovative projects in the powertrain area from the very beginning. First with the electrification of the first Porsche vehicles, then with drive concepts, and most recently I headed the department for advance drive development and aggregate strategy. This is also where we launched the eFuels project. For me, the topic of eFuels ideally embodies the combination of my passion for engines, sustainability, and Porsche's aspiration to be a technology driver. In the project, we are breaking new ground every day and have been able to see that Porsche is not afraid to consistently explore new paths. In addition, I also have a personal drive: I am very concerned about climate change and its impact on future generations. In this project, I can contribute through my work that creates added value for Porsche and society. That motivates me a lot, so that I want to drive the topic of eFuels every day with passion.

Which measures has Porsche implemented so far in the area of eFuels?

Karl Dums: Renewable energy sources are not evenly distributed around the world. In Germany we have rather too little, but in other places in the world they have more than they can use locally. The highest energy densities in the form of sun and wind are found in desert regions, for example, or in southern Chile. So the energy that exists there has to be transported to where it can be used. The production of eFuels makes that possible. We at Porsche AG, in collaboration with HIF Global, Siemens Energy, ExxonMobil and other international partners, have decided to build the 'Haru Oni' pilot plant in Punta Arenas, Chile. We take advantage of the outstanding local conditions to exploit wind energy to produce eFuels.

So what's next?

Karl Dums: We have recognised the demand for and, above all, the benefits of eFuels and had the courage to embark on a new path, to develop a solution, and demonstrate that it's viable. The important thing now is for other players to pick up the ball and follow in the footsteps of Porsche. We believe that with eFuels, we have blazed a technological trail that offers added value to the cause of sustainability around the world. At the same time, there is also potential for other applications: beyond road transport, eFuels could also be used in the aviation sector, shipping or even the chemical industry. The key here is

implementation on an industrial scale. We at Porsche will be involved in it through our investment in HIF Global.

Your wish for the future is...

Karl Dums: ... that in future all existing vehicles and in selected applications new vehicles from Porsche will be operated with eFuels and that we can expand our thinking with regard to our sustainability plans beyond the confines of the automotive industry as well. Electrification is not quite as easy to implement in the aviation and shipping sectors as it is in road transport, for example, and will therefore happen more slowly. I hope that we can manage to create true added value through the use of eFuels. It will allow us to demonstrate that Porsche is striving to be a pioneer in climate protection as well and that we're in the driver's seat.

Info

In the interview series "Perspectives on Sustainability", Porsche employees talk about their specialist subject areas. The interview with Karl Dums is part 2 of the series.

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