



Executive Perspectives

A blog-post by Jürgen Wollschläger, managing director at Raffinerie Heide GmbH

H2: The smallest molecule tackling the world's biggest challenges - a play in three acts?

A 'play in three acts' is perhaps the most useful way of thinking about "green" hydrogen, covering not only the progress already made, but also looking ahead to what "game-changing" impact this clean fuel could make in the future.

Act One: 2017/18 saw the discussion focussing on "green" hydrogen's potential. Act Two: 2019 – which has nearly now passed – saw these initial discussions expand across more mainstream audiences. And finally, Act Three, the future. Whilst this final 'act' remains to be seen, what we do know is the valuable opportunity that lies ahead of us – a chance to capitalise on the momentum gained during 2019, to develop and grow. This will be critical if the full potential of "green" hydrogen is to be realised.

2017/18 – Act 1: Expert discussion

The formation of the Hydrogen Council in 2017 sparked conversations about what the future of the hydrogen economy could look like. In 2018, these conversations progressed, with industry players and experts beginning to look more closely at hydrogen's potential for decarbonising transport, heating, and industry.

A January 2018 paper published by BCG and Prognos included hydrogen technologies as one of several possible solutions to a clean energy 'climate path' for Germany. The German Energy Agency (dena) formed an international alliance for the development of cleaner, synthetic fuels by using 'Power Fuels' developed via electrolysis.

It was at this time that the KeroSyn100 project was also launched, focusing on the development of cleaner, "green" hydrogen-based synthetic kerosene. Heide, alongside a consortium of industry

experts saw the potential for synthetic fuels to decarbonise the aviation industry and decided to explore what climate action opportunities this could unleash.

2019 – Act 2: Gaining momentum

During 2019, talk around hydrogen moved quickly into the mainstream. This is not unsurprising given the growing climate consciousness seen throughout the year. Just this month the European Commission introduced the European Green Deal, including plans for the EU to become climate-neutral by 2050 and a European Climate Law to turn this commitment to a legal obligation.

Consequently, hydrogen's voice also grew. International energy institutions continued to consider hydrogen's potential, including the UK Committee on Climate Change and the International Renewable Energy Agency (IRENA), but with these discussions progressing to practical next steps. The financial community started to pay closer attention, with analysts from major investment houses investigating the future potential of hydrogen as a solution to the growing pressure to address climate change.

Most importantly, politicians started taking notice to hydrogen's promise. Across Europe, governments are beginning to introduce subsidies for domestic hydrogen development projects, as seen in Spain and the Netherlands. Here in Germany, a €54 billion 'Climate Package' was approved by the government in September, which included the introduction of a carbon price on transport and buildings, bigger incentives for buying electric cars, higher duties on domestic flights, and more.

In parallel, Heide's low carbon energy transition efforts were also recognised by the German Government this year. The Reallabor Westkueste100 project, which sees Heide working with the likes of wind energy giant Orsted, envisages the production of "green" hydrogen on an industrial scale, helping to implement multiple decarbonising purposes and is quickly progressing to the next stage of development. Similarly, the KeroSyn100 project has also advanced this year, with Heide signing a letter of intent with Lufthansa, which will see the refinery develop synthetic aviation fuels for the airliner.

2020 - Act 3: Where are we heading, H2?

The question that looms as 2020 approaches is whether hydrogen will retain the momentum gathered during this past year. There are already some milestones which suggest it might.

Hydrogen's most high-profile moment will no doubt be at the Tokyo Olympic and Paralympic Games, with the Olympic village constructed to run on hydrogen. Hydrogen will provide electricity for the high-rise buildings in the athletes' village, drive the buses around the city, and even fuel the Olympic torch at the opening ceremony.

This is certainly where I hope 2020 will take the hydrogen story next – from potential to reality. What separates the two is policy and investment, and I hope that both are increasingly elevated to support

a hydrogen-based clean energy future. After a period of discussion, and a period of planning, further action should follow. I hope to welcome renewed progress in the New Year.

About Raffinerie Heide

Raffinerie Heide GmbH is part of the Klesch Group and is one of the largest employers in Dithmarschen, Schleswig-Holstein, with around 560 employees and 40 trainees. The company has an annual processing capacity of 4.5 million tonnes of crude oil, equal to the oil demands of the entire state of Schleswig-Holstein. The refinery with a medium-sized ethos, which was founded in 2010, produces traditional petroleum products such as petrol, diesel and aviation fuel. It also produces light heating oil and base materials for the chemicals industry. Raffinerie Heide, which is one of the most complex refineries in Europe, is among the best in the continent in terms of utilisation and availability thanks to its strict standards of care in relation to maintenance.