



Global Energy Solutions

For Prosperity and Climate Neutrality

Hereby you are receiving the Global Energy Solutions newsletter for the month of November 2021.

Our topics:

Increasing the production of electrolysers: Interview with Ulf Bäumer (thyssenkrupp)

Strengthening global solutions: GES industry partner meeting in Ulm

Energy transition in Germany: Electrons or molecules?



Ulf Bäumer, thyssenkrupp

More output: from 1 to 5 gigawatts

The order situation at the producers of electrolysis plants is more than good. In an interview, Ulf Bäumer of thyssenkrupp explains how the company is currently ramping up its production capacities: through the use of robots, through digitalisation and the further development of components - large-scale industrial production instead of manufacture. In the process, the use of precious metals such as platinum and iridium is also to be reduced, mainly for cost reasons. thyssenkrupp wants to increase the output of electrolysers from currently 1 gigawatt per year to up to 5 gigawatts. Bäumer considers the German government's goal of increasing electrolysis capacity in Germany to 5 gigawatts by the end of the decade to be ambitious but

feasible. Could electrolysis become a bottleneck for the production of green hydrogen on a global scale? Not necessarily, says Bäumer. At the moment, many companies around the world are ramping up their production. The decisive factor is how quickly companies and countries are able to conclude and implement contracts.

[To the interview](#)

[To the Video](#)

Technically feasible, economically viable, globally implementable

On 25 October 2021, the first meeting of the Global Energy Perspectives project took place in Ulm. More than ten industry partners are already working with the Global Energy Solutions association from Ulm and accepted the invitation. In the project, options for a solution to the global energy and climate issue are being examined with a view to the needs of ten billion people in 2050. The goal is a world in which people everywhere live with adequate prosperity - in line with the global sustainability goals of the United Nations. At the same time, the environment is to be protected and the climate system stabilised.

The project partners agree that they want to work on their own issues in the context of the global challenges and in close exchange with the other sectors represented: Housing construction and the cement industry are just as involved as the steel and chemical industries. The focus is on solutions that have a chance of being implemented worldwide and that make a real contribution to tackling the global challenge of climate protection.

Energy transition in Germany: electrons or molecules?

The climate problem will either be solved globally or not at all. This is the position of GES, and it is from this perspective that we are following the national discussion in Germany. It is characterised by different and in part contradictory approaches.

How can Germany become climate neutral by 2045? In recent weeks, three new studies have been published on the subject. The [German Energy Agency](#) tends to say goodbye to the "all-electric" mainstream and relies more on synthetic gases. In the main scenario, only 49 percent of Germany's energy needs are met by electricity. Hydrogen and synthetic energy sources come into play instead. Most of the total amount (657 terawatt hours) would then be imported.

Another focus is set by the [Ariadne project](#) of the Potsdam Institute for Climate Impact Research. According to this project, the share of electricity in final energy (currently less than 20 per cent) should grow to up to 69 per cent in 2045. This would require a radical increase in domestic electricity generation.

[Climate paths](#) is the name of another new study by the Federation of German Industries (BDI). Eighty companies worked together on it for months. Hydrogen plays a relatively minor role in the BDI study. The

demand in 2045 is estimated at 240 terawatt hours. The investment requirement in Germany until 2030 is estimated at 860 billion euros.

In GES' view, Germany can only contribute to solving the global challenge if it also expands the space of possible solutions at home in the sense of technological openness. Approaches that can hardly be financed even in Germany and are not viable without the infrastructural conditions of a rich industrialised country cannot be a solution for the world.

More climate gases instead of less – more realism please!

A new, renewable-based energy economy is emerging - but far too slowly to be able to reduce CO2 emissions to zero by the middle of the last century. This is the central statement of the International Energy Agency (IEA) in its [World Energy Outlook 2021](#). Instead, record-breaking amounts of coal and oil would be consumed in the current year, the second largest increase in history. Moreover, the market ramp-up of hydrogen is much too slow. See also: [Net Zero by 2050](#)

[The Production Gap](#) is the name of a study by UNEP, the United Nations Environment Programme. According to this study, governments worldwide are planning to produce more than twice as much fossil energy by 2030 as would be compatible with the 1.5-degree target.

Short news

In the short news, news of the last few weeks is picked up which, from GES' point of view,

- give hope, because they contain building blocks of a possible global solution and / or
- contribute to developing a realistic view of the challenges ahead, which is a prerequisite for finding a solution.

In the Canadian province of Alberta, a [multi-billion dollar investment in blue hydrogen](#) is planned. In Edmonton, hydrogen is to be produced from natural gas. More than 95 per cent of the hydrogen produced during steam reforming is to be captured and stored underground. The company Air Product wants to produce 1,500 tonnes of blue hydrogen per day. The plant is scheduled to go into operation in 2024.

The IEA has published a [study on the reduction of methane emissions](#). According to it, 70 per cent of the emissions come from the oil and gas sector. About half of these could be avoided without further costs. The proceeds from the sale of the gas would be higher than the costs of avoidance. From GES' point of view, this is an important finding, because we consider the path to climate-neutral hydrogen via natural gas to be indispensable. In this context, of course, the problems that exist today in this context must be solved, e.g. the so-called methane slip, i.e. the leakage of the climate-damaging gas from plants and pipelines into the atmosphere.

Europe's dependence on energy imports continues to grow. According to a [report by the EU Commission](#), net imports rose to 60.9 per cent in 2019. This compares to 58.2 per cent in 2018 and only 56 per cent in 2000. These figures underline once again that the European energy self-sufficiency called for by more than a few voices is an unrealistic scenario.

The [electricityMap](#) visualises the current daily electricity mix and thus the CO₂ emissions caused by the electricity generation of various countries. Germany, for example, is in the middle of the pack, France is better off in terms of the CO₂ intensity of electricity production - mainly because of the high proportion of nuclear power.

The provider of certificates for the voluntary compensation of CO₂, [Atmosfair](#), has opened a new business segment and now operates a power-to-X plant for the production of synthetic paraffin in Emsland. Compared to conventional paraffin, the product is significantly more expensive. Meanwhile, the industry association [IATA](#) has declared its intention to be CO₂-free by 2050.

You find our monthly newsletter interesting? Then feel free to recommend [it](#) to others or send it to friends or acquaintances right away. You can subscribe to it free of charge [here](#). Thank you for your support.

Further Infos under:



Imprint: Global Energy Solutions e.V, Lise-Meitner-Straße 9, D-89081 Ulm, Germany |
+49 (0) 731-85071287 | office@global-energy-solutions.org | <https://global-energy-solutions.org> |
CEO: Christof von Branconi

global-energy-solutions.org