



Global Energy Solutions

For Prosperity and Climate Neutrality

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

Our topics:

Interview with Katherina Reiche, Chair of the National Hydrogen Council

Report on the 11th Dii Desert Energy Forum in Dubai

New paper from GES on methane pyrolysis



Katherina Reiche, Chair of the National Hydrogen Council

Dubai 1st Interview with Katherina Reiche

On 10 and 11 November, the 11th Dii Desert Energy Leadership Forum took place in Dubai. There, GES had the opportunity to interview Katherina Reiche, Chair of the National Hydrogen Council. "I am convinced," she says "we need all colours of hydrogen. Because the demand in Germany alone will be so big in the late 2020s and early 2030s. We see a hydrogen demand of 57 terawatt hours that we can't meet from our own sources." Therefore, says Reiche, Germany should "remain open to new ideas and innovations. And not define too early what we want to find in 20 years' time". In this sense, Katherina Reiche advocates not only green but also blue and turquoise hydrogen. No region in the world can develop a hydrogen economy on its own. Especially in the MENA region (Middle East, North Africa) there are excellent investment opportunities. Investments that run into the billions. With these sums, security and regulatory framework conditions are needed for the investments.

[To the Video](#)

Dubai 2nd report Dii Leadership Forum

The Dii Desert Energy Leadership Forum also witnessed that many solar projects have recently been awarded for an electricity price of little more than 1 cent per kilowatt hour - a dream price a few years ago. Nevertheless, the current increases in raw material costs are clouding the euphoria of those involved. Investors, however, remain confident. After proving how cheap renewables can be, - gladly also in the combination of solar and wind - the participants expect significant project growth in the coming decade: there is no cheaper electricity anywhere else in the world.

There are interesting points of contact for future cooperation between GES and Dii: Development of a certification system of hydrogen for proof of origin and its climate neutrality, CO₂ balancing of the different production methods of hydrogen (green, blue, turquoise, pink) as well as the cost structure of hydrogen or hydrogen derivative transport.

[Read more](#)

GES paper. Turquoise hydrogen is also needed

A new paper by Global Energy Solutions also fits in with Katherina Reiche's discussion on the "colour theory" of hydrogen. It deals with the production of turquoise hydrogen by means of methane pyrolysis. This process does not produce any CO₂. If methane from biogenic sources is used instead of natural gas, even negative CO₂ emissions are possible. Methane pyrolysis is a third option to produce hydrogen: besides conventional steam reforming with water gas shift (grey hydrogen) and electrolysis (green hydrogen, if the energy source is green).

[To the paper](#)

GES member meeting

It took place on 22 November with more than 40 virtual attendees. The Board reported on the ongoing activities of the association, such as the work in the Global Energy Perspectives project funded by the Ministry of Development. The discussion focused on the exchange about the approaches to solutions pursued by GES and the openness to technology, without which the ambitious climate goals will be achieved neither nationally nor globally.

CO₂ and polluter pays justice

In a [study](#), Oxfam criticises the CO₂-intensive lifestyle of the super-rich. According to the study, the wealthiest one percent of the world's population is expected to account for 16 percent of total CO₂ emissions in 2030. The inequality of rich and poor in terms of CO₂ emissions should be at the centre of the debate.

GES' assessment of this: The fact that wealth and CO₂ emissions are correlated is not surprising. Responsibility for combating climate change should therefore not only be seen as an issue between states, as is the case today, but also as an issue between individuals. For example, a Hartz IV recipient in Germany should not be in the same "pot" as a German millionaire. And Indian millionaires should not be able to "hide behind their poor". Following the polluter pays principle, those who have caused CO₂ should contribute to climate protection to a corresponding extent, for example in the form of financing negative emissions.

Short news

At this point, news from the last few weeks are taken up which, from GES' point of view, give hope because they contain building blocks of a possible global solution and / or help to develop a realistic view of the challenges ahead.

[Kairos@C](#) is the name of a joint project between Air Liquide and BASF. With the help of CO₂ capture and storage, emissions in the port of Antwerp are to be significantly reduced. During the first ten years, 14.2 million tonnes of CO₂ are to be avoided. Kairos@C is funded by the European Union.

[Green hydrogen & solar projects](#) is the title of a new study by World Hydrogen Leaders (WHL). The organisation quotes production costs for green hydrogen in the EU of 1.5 to 5.5 euros per kilogram. This compares to 1.5 euros for hydrogen from fossil sources. Nevertheless, WHL is optimistic for the future and refers to costs of 1.62 US dollars per kilogramme for green hydrogen from Saudi Arabia. The study gives an overview of interesting hydrogen projects worldwide.

The Stuttgart-based company [OCEANENERGY](#) wants to produce green hydrogen where its production does not disturb anyone, namely on the high seas. The idea is to build a fleet of ships that generate energy by means of automatically controlled kites. On board, the energy is converted into hydrogen and stored. Production takes place around the clock. From time to time, the green energy carrier is landed. The company is talking about a price per kilogram of hydrogen of less than 2 euros (2030).

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