



Global Energy Solutions

For Prosperity and Climate Neutrality

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

Our topics:

Interview with Matthias Braun, Advisor to Saudi Aramco

GES proposal for the production of climate-neutral steel

VDI pleads for recycling of CO₂



Matthias Braun, Honorary Senator / Chairman of the Advisory Board Automotive Business, EC Europa Campus

Why the world's largest oil producer relies on synthetic fuels

Matthias Braun is a consultant to Saudi Aramco, the world's largest oil producer. In an interview with Global Energy Solutions, he explains Aramco's interest in synthetic fuels. It is primarily customer-driven. The Chinese market is in first place. China is not only focusing on electromobility, but also on clean combustion engines. According to Matthias Braun, however, Aramco sees its greatest competence in synthetic fuels in Europe. In Paris, the company operates a research centre that deals with several technology paths. According to Matthias Braun, what will prevail depends largely on the regulation of synthetic fuels in Europe. A

green traffic turnaround can only be achieved, he says, if the world's 1.3 billion combustion vehicles are supplied with climate-neutral fuels.

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Climate Neutral Steel – New Proposal from GES

In a paper, Global Energy Solutions subjects the German strategy for future climate-neutral steel production to a reality check. The predominant process today is the so-called blast furnace route, using coke and coal. Steel produced in this way costs at least 390 euros per tonne. In order to produce climate-neutral steel, German policymakers are currently pursuing the approach of direct reduction through green hydrogen. In fact, this would largely avoid CO₂ emissions. However, green hydrogen (from domestic production) is foreseeably too expensive (6 to 8 ct/ kWh), so that a tonne of steel would cost 100 to 150 euros more than today. The consequences would be an exodus of steel production from Germany and/or permanent subsidies. In this paper, GES proposes a different path, namely steel production via direct reduction with green methane from North Africa. The price for a tonne of steel produced in Germany would then be around 440 euros. From GES' point of view, this is an attractive path to climate-neutral steel that also avoids the technical risk of driving with pure hydrogen, which has not yet been realised on a large scale.

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Industrial CO₂ cycles

The *Association of German Engineers* (VDI) has examined possible applications of carbon capture and storage (CCS) and carbon capture and use (CCU). The VDI takes a critical view of CCS, citing risks to the population. (The result for CCU, on the other hand, is unambiguous: "For a greenhouse gas-neutral future, the capture and material use of carbon dioxide is indispensable," it says. CO₂ should be "captured from all still available concentrated sources and the air". The VDI further suggests locating CCU plants near large CO₂ sources such as iron and steel works or refineries.

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News in brief

Franz Josef Radermacher of GES has signed two open letters to the EU Commission. The background is the EU's Fit for 55 programme and the EU's goal of climate neutrality in 2050. [The first letter](#) contains a plea for synthetic fuels. [The second letter](#) is about climate regulations in the transport sector.

The airline Swiss is refuelling all its aircraft departing from Zurich with the CO₂-reduced fuel [Sustainable Aviation Fuel](#) (SAF) with immediate effect. According to Swiss, SAF is three to five times more expensive than conventional paraffin. About 1 percent of Swiss customers would pay a higher ticket price to offset the CO₂ emissions of their flight.

Global demand for electricity is growing faster than renewable energy. As a result, more electricity is being produced from fossil sources. [The new report](#) by the International Energy Agency (IEA) expects electricity demand to increase by 5 percent in 2021, which will also increase global CO₂ emissions. Almost half of the additional demand will be met by fossil fuels, mainly coal.

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