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Opportunities for a Green
Hydrogen-Based Cooperation
between the EU and the Gulf
Cooperation Council

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The first summit between the European Union and the Gulf Cooperation Council countries occurred under the Hungarian Presidency. As its EU Presidency programme reveals the Hungarian Presidency aims to further deepen cooperation between the Gulf countries and the European Union. There are serious energy security reasons behind this, in addition to the region's stability. For the EU, it is important to replace fossil fuels as quickly and cost-effectively as possible - and there are serious political and environmental reasons for this also. This puts the Gulf countries in an increasingly prominent position, but at the same time, there are many aspects of cooperation that the EU needs to consider for the future.

The EU's relationship with the Gulf Cooperation Council (GCC) dates back to 1989. Although the relationship was temporarily affected by the pandemic and internal tensions in some GCC countries, it has regained momentum in recent years. A joint declaration on strategic cooperation with the Gulf was adopted in 2022, with priorities including climate change, energy security and the green transition. Former Italian Foreign Minister Luigi Di Maio was appointed as the first EU Special Representative for the Gulf in May 2023. However, there has not yet been an EU-GCC summit: the first will take place on 16 October, marking a new milestone in the history of relations between the two regional organizations.

One of the biggest issues facing the energy sector today is undoubtedly hydrogen. There are few topics that are the subject of such debate and anticipation. This is partly because it can be used in a wide range of applications, and partly because it is a very low pollutant.

Although hydrogen is the most abundant element in the universe, it is rarely found in its pure form on Earth. Energy security became an immediate priority in Europe following the outbreak of the Russian-Ukrainian war. The European Union, recognizing and experiencing the economic and political dangers of Russia's dependence on raw materials, decided to diversify it. The main strategy for this is set out in the [REPowerEU plan](#) of May 2022, when it states that it "aims to urgently reduce our dependence on Russian fossil fuels by achieving a clean transition faster than planned and by working together to create a more resilient energy system and a real Energy Union." Accelerating the clean transition will also mean, among other things, increasing the pace and scale of solar and wind power related infrastructure installations, of which [a record 73GW](#) was achieved in 2023. This is where green hydrogen comes in, because, also according to the document just quoted, "Renewable hydrogen will be a key substitute for natural gas, coal and oil in hard-to-abate industries and transport." And hydrogen will become renewable (and therefore green) when the electricity used for hydrolysis is provided by renewable energy sources, such as solar farms or wind turbines.

In addition to its strategic role, a target for the quantity to be achieved has been also set. The EU aims to produce 10 million tonnes of renewable hydrogen on its territory by 2030, while aims to import another 10 million tonnes. Although the 2020 Hydrogen Strategy (which, despite the importance of hydrogen, has not yet been updated) does not mention the Gulf region as a potential source of origin, developments in recent years indicate that the region has the potential to become an unavoidable global player in the hydrogen sector. The industry could thus become a key area for cooperation with the EU, which, although not mentioned in the hydrogen strategy quoted above, is something the EU is thinking about and preparing for.

5 out of the 6 countries of the Gulf Cooperation Council (Bahrain, Qatar, Kuwait, Oman, and Saudi Arabia) have some kind of official document called a vision, which sets out how to diversify their economies away from hydrocarbon dependence. The EU and the GCC have already been working together on this issue since 2019 in the framework of the Economic

Diversification Dialogue project, which aims to contribute to strengthening EU-GCC relations by building on the EU's exchange of experience. Renewable energy and the associated green hydrogen industry could be an important stepping stone to economic diversification. Not only because it would allow the Gulf countries to green their own energy sector and make it less exposed to global demand and price volatility for hydrocarbons, but also because hydrogen could be exported, just like fossil fuels. And there could be a very strong demand for hydrogen in the future, just think of the 10 million tons EU target mentioned earlier. There is also plenty of scope for diversification for these countries, as their exports to the EU, except Bahrain, are mainly oil and gas-related products, mostly between 40-60%, but 80% for Saudi Arabia and Qatar and 90% for Kuwait. But given the rise of hydrogen, with its political and economic implications (for example, the total value of investment in hydrogen projects at various stages of development has increased from \$90 billion in 2020 to \$680 billion in 2024), it is no coincidence that several countries in the region have come up with ambitious plans.

Saudi Arabia is a good place to start, as its NEOM project is currently the largest green hydrogen project under development in the region, with plans to produce more than 200,000 tonnes of hydrogen annually from 2026. With this volume, the project takes a prominent place among all the similar ones worldwide. Saudi Arabia has already declared its ambition to become the world's leading exporter of hydrogen in 2021. Saudi Aramco is part of this commitment too, but is currently focusing to blue hydrogen rather than green one. Moreover, Saudi Arabia is already one of the world's leading exporters of ammonia, which is important because one of the most frequently cited plans for the future of hydrogen transport envisages its transfer as ammonia. In 2022 the first blue ammonia shipment of its kind was also made by Aramco in partnership with SABIC Agri-Nutrients, also from Saudi Arabia.

The UAE also deserves a special mention, as the state-owned ADNOC Energy Group has the region's first high-speed green hydrogen refueling station, producing green hydrogen on site. In addition, the state-owned renewable energy company Masdar has a declared goal

to become a leading player in green hydrogen production by 2030. The company is involved in the development, construction, and acquisition of green energy infrastructure in several countries, including Greece, Poland, Germany, and Spain, and it is not excluded that this will extend to green hydrogen as well in the future. Especially, since the company has set a target of producing 1 million tonnes of green hydrogen by 2030, but only about half of this would be produced in the Emirates and the other half elsewhere in the world.

Of the GCC members, Oman stands out, too. A report on the country's green hydrogen potential was prepared by the International Energy Agency in 2023. It concluded that Oman could be one of the most competitive countries in terms of green hydrogen production prices, thanks to its natural potential on one hand, and the expected price reductions that will result from the large-scale deployment of electrolyzers, solar panels, and wind turbines in the future from the other. The country has a declared target of producing 1 million tonnes of green hydrogen per year by 2030. However, even if it achieves this, it is questionable how much of this the country will be able to export.

All in all, all three countries have very strong hydrogen targets. In addition to economic considerations, there is probably an additional component, namely that they see hydrogen as a soft power tool. As these countries are major exporters and users of fossil fuels, they contribute directly and indirectly to greenhouse gas emissions. However, by starting to green their economies and energy sectors, they are showing a willingness to change all this, which could be read as a fight for 'climate'. This can be channelled into other areas of foreign policy.

Cooperation based on green hydrogen has great potential for parties. GCC countries can benefit economically and politically, while the EU can move closer to its goals of green hydrogen exports, and with this managing the green transition and deepening energy diversification. However, the effectiveness of this cooperation may depend heavily on the GCC's ability to serve as a platform for coordinating the Gulf countries' hydrogen strategies. As described above, several countries are willing to become a leader in term of

hydrogen in the Gulf region. Although the EU could continue its cooperation on hydrogen with the Gulf countries on a bilateral basis without any particular problem, the potential competition between them could lead to some conflicts. The GCC has not been a homogeneous political entity and there have been previous cases of political disagreements creating tensions within the bloc. The case of Qatari diplomatic crises of 2017 is a good example of this. That time Bahrain, Saudi Arabia, the United Arab Emirates and Egypt severed diplomatic relations with the country and imposed a land, sea, and air embargo on it, which lasted until 2021. Although relations have since normalized, tensions in the Middle East, particularly if prolonged, could pose physical, economic and political challenges for GCC members and the nascent hydrogen industry alike.

The conflicts surrounding the region are far from being the only factor in the formula. If the announced capacities are indeed built by 2030, the real question will be whether the EU will be able to build and install the network needed to accommodate such a large volume. Even if both sides have the infrastructure in place, it is possible that, given the international attention that hydrogen is attracting, other players will want to enter the Gulf countries' green hydrogen market as buyers, increasing competition and narrowing the market for the EU. The geographic location of the Persian Gulf provides the perfect starting point for this, as can be seen from the example of Qatar's LNG. The country's geographical location means that it can serve both European and Asian markets and hydrogen from the region would be no different. With this in mind, it is in the EU's interest to develop ever closer and more comprehensive relations with the countries of the region, thus positioning itself better for the future.