



## Press Release

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Uniper and BP are driving production of "green" hydrogen for use in fuels

- **BP and Uniper, together with the Fraunhofer Institute for Systems and Innovation Research ISI project outline, submit their ideas for the " Real-world laboratories energy transition" competition**
- **The planned project envisages the integration of renewable energy in the form of hydrogen into the transport sector**
- **Power-to-gas technology (PtG) in refinery processes (PtGtR) makes a positive contribution to the energy transition**

In order to demonstrate the technical and economic feasibility of a PtG plant at the BP refinery in Lingen, BP and Uniper, under the scientific supervision of Fraunhofer ISI, have examined and developed options for using the climate-friendly PtG technology for the refinery process. To this end, the partners have submitted a project outline for the ideas competition "Reallabore der Energiewende (Real-world laboratories as a tool for a participatory energy transition)", which was launched by the Federal Ministry for Economic Affairs and Energy. In a first step, the planned project includes the construction and operation of an electrolysis with 15MW electric output, which produces so-called green hydrogen from renewable electricity. By incorporating green hydrogen into existing refinery processes at BP, a renewable component can be added to the production process of conventional fuels.

In the second step, a power-to-liquids process is to be realized. The considerations are to build a Fischer-Tropsch plant in which green gas with biogenic CO<sub>2</sub> can be used to produce synthetic fuels and chemical intermediates. These fuels – like conventional bio-fuels – can be mixed with conventional fuels or even put to use as pure fuel.

While individual elements of the project have already been tested, the innovation is the combination of these systems as well as the entire upscaling beyond the already tested laboratory scale. The project is an example of the holistic sector interconnect approach, as evident from covering the entire value chain from renewable electricity to (synthetic) fuels and chemical and pharmaceutical sector products. Applying this approach in a refinery therefore can contribute significantly to the success of the energy transition. The renewable forms of energy will be integrated into large-scale industrial production processes. This eliminates efficiency losses that otherwise occur in a hydrogen recycling process. Also, the climate benefits from this: By using PtG, it's possible to avoid 90 percent of the greenhouse gases generated by conventional processes used at refineries in the production of hydrogen. Along with the flexibilization of renewable energy in the gas and heating sectors, power-to-X processes also make possible the production of "green" fuels, thereby resulting in an immediate and direct reduction in the CO<sub>2</sub> produced by vehicles. These "green" electricity-based fuels will make it possible to bridge the gap between the renewable power sector and sustainable mobility.

**Wolfgang Langhoff, Chief Executive Officer of BP Europa SE, says:** "In order to be able to present the use of green hydrogen economically in the future, the political signals must literally be green. In concrete terms, this means that the economic operation of such a plant could work if, among other things, the green hydrogen is offset against the greenhouse gas reduction quota in the fuel sector, the former biofuel



quota. This would then also form the basis for a decision for a power-to-gas plant at the Lingen site.”

**Eckhardt Rümmler, Chief Operating Officer at Uniper, says:** "The real laboratory funding is a good basis for launching projects on an almost industrial scale, with which the energy transition is being driven forward. With a coherent design of the Renewable Energy Directive (RED II), politicians now have the opportunity to close the gap to economic viability and bring these applications to the market without subsidies.“

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**About BP**

BP Europa SE employs around 4,600 people in Germany and operates Germany's second largest refinery system with sites in Gelsenkirchen and Lingen. 30 million tonnes of Aral, BP and Castrol petroleum products cover nearly a quarter of Germany's annual domestic demand. The headquarters of BP Europa SE as well as the aviation and shipping businesses are based in Hamburg. Bochum is home to Aral AG, the retail brand of BP Europa SE in Germany. The international research and development center for fuels technologies are also located there.

**About Uniper**

Uniper is a leading international energy company with 12,000 employees and operations in more than 40 countries. It focuses on the safe delivery of energy and related services. Its activities include electricity generation in Europe and Russia as well as global energy trading. Uniper operates gas storage facilities in Germany, Austria and the UK, and plays an important role in the safe and flexible delivery of natural gas. Uniper is one of the first companies to be involved in the field of power-to-gas and is operator of demonstration facilities in Hamburg-Reitbrook and Falkenhagen. Uniper is headquartered in Düsseldorf.

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