

Press Release

LNG as environmentally-friendly alternative fuel advances transition to clean transport

- **Joint project between RWE as well as Duisburg Port and University of Duisburg-Essen confirms the benefits of LNG (Liquefied Natural Gas) over diesel**

Essen, 6 November 2020

Liquefied natural gas is an ideal replacement fuel for conventional diesel, as it is far more environmentally-friendly and easier to handle. That is the outcome of a joint pilot project run by RWE Supply & Trading and duisport, the operating company of Duisburg Port. The collaborative project, run with the scientific support of the University of Duisburg-Essen studied the use of LNG in the world's largest inland port over a period of two years between early-2018 and mid-2020.

Andree Stracke, Chief Commercial Officer Origination & Gas Supply at RWE Supply & Trading, sees LNG as a bridging technology: "The introduction of alternative energies is a key lever for reducing emissions from transport. LNG is already a good solution for reducing emissions in heavy goods transport and shipping - until alternative propulsion systems such as hydrogen or synthetic fuels become economically viable and available in sufficient quantities. We are therefore delighted that our partner Rolande has recently built an LNG filling station in the Port of Duisburg".

RWE Supply & Trading is one of the world's leading traders of liquefied natural gas and cooperates with the Dutch company Rolande. The LNG infrastructure specialist already operates the largest LNG filling station network in the Netherlands and is currently establishing a supply structure in Belgium and Germany.

The Port of Duisburg also draws a positive balance: "We have been striving for sustainable logistics at Duisburg Port for a long time now. Our joint project with RWE and the University of Duisburg-Essen has successfully shown that the use of liquefied natural gas leads to a better environmental footprint. At the same time, the use of LNG is safe and offers convincing benefits in terms of economic efficiency. The use of liquefied natural gas in heavy vehicle transportation has proved its worth as an alternative to diesel in the port area – and the trend is rising", says duisport CEO Erich Staake.

RWE

Specialists from the University of Duisburg-Essen Mechatronics and Building Operation and Construction Management faculties accompanied the project as scientific advisors: “Our analysis shows that natural gas used in port vehicles is a practicable, everyday fuel alternative to the established diesel option and capable of lowering greenhouse emissions within the transport industry”, say the scientists. “This is underlined by the positive feedback we documented from Duisburg Port employees. They extensively tested the vehicles and tank station infrastructure under real operating conditions and found them fit for purpose.”

LNG is natural gas that is liquefied by cooling it down to -161° degrees. This reduces the volume to around 1/600 of the natural gas volume under normal pressure, making it possible to safely transport large quantities of gas. In its liquid form, apart from the recognised benefits of lower carbon emissions compared to diesel, LNG also has a sufficiently high energy density for use in long-distance transportation or operation of mobile machinery.

RWE installed a mobile tank station at Duisburg Port to enable port-internal vehicles and the trucks of local truckage companies to fill up on LNG and have access to the alternative fuel. The LNG converted vehicles made available by Duisport were then tested under everyday conditions and compared to the performance of diesel-powered trucks. The university used data loggers and exhaust-fume trackers to analyse the data.

The results revealed around 10% lower carbon emissions and a 50% reduction in carbon monoxide and nitrous oxide compared to diesel. The project thus comes to a clear result that vehicles powered solely by LNG significantly reduce environmentally-harmful emissions and local pollutants compared to vehicles with the same mechanical properties but fuelled with diesel. In addition, the project analysed the practical experience of the employees involved in the demonstration project. The outcome here was also positive. It was not just the fact that the drivers could hardly tell the difference between the LNG-powered vehicles and the diesel trucks. They also noticed the LNG-modified vehicles were significantly quieter to run. The more they drove the vehicles, the sooner any concerns about the potential explosion risk were allayed.

Overall the project partners invested around 1.5 million euros in this exercise, with about half of it coming from the European Fund for Regional Development, which accepted the project as part of its support regime for contestable climate-change-mitigation initiatives.

Further details of the results of this project can be found in the Environment Report compiled by the University of Duisburg-Essen (only German, see [website](#)) and in the Guidelines for Standards and Regulatory Frameworks (only German see [website](#)).

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RWE Supply & Trading GmbH

RWE Supply & Trading provides the interface between RWE and energy markets around the globe. A total of 1,600 employees from 40 different countries are engaged in the trade of electricity, gas, commodities and carbon emission certificates. With precise market analysis and a strong customer focus, they create innovative energy-supply solutions and risk-management concepts for industrial companies. The trading house also ensures commercial optimisation of RWE power plants and markets renewable electricity. In addition, the separate legal entities of RWE gas storage companies also come under the umbrella of RWE Supply & Trading.

Duisburger Hafen AG

Duisburger Hafen AG owns and manages the Port of Duisburg, the world's largest inland port and the leading logistics hub in Central Europe. The Duisport Group offers full-service port and logistics packages for infrastructure and superstructure needs, including relocation management. In addition, its subsidiary companies offer logistical services such as development and optimisation of transport and logistics chains, rail goods services, building management, contract and packaging logistics.

University of Duisburg-Essen (UDE)

The University of Duisburg-Essen (UDE) - one of the youngest and largest universities in Germany. Located in the heart of Europe, in the middle of the Ruhr metropolitan region, its eleven faculties develop ideas with a future. Its strengths lie in research and teaching, and the university encourages diversity, promotes potential and is committed to educational equity, with equal opportunities for all. Its key interdisciplinary focus areas include: urban systems, nanoscience, biomedical sciences, transformation of contemporary societies and water research.

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