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Energy transition in the Port of Duisburg

Duisburg Gateway Terminal (DGT): Official starting signal for the enerPort II project

- **duisport & partners celebrate symbolic groundbreaking ceremony**
- **First climate-neutral hinterland terminal to be built on the former coal island by mid-2023**
- **Climate neutrality based on hydrogen**

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Press release

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Duisburg, March 3, 2022

duisport CEO Markus Bangen today gave the official starting signal for Europe's first climate-neutral hinterland terminal at a ceremony attended by North Rhine-Westphalia's Prime Minister Hendrik Wüst, the Parliamentary State Secretary of the Federal Ministry of Economics and Climate Protection, Oliver Krischer, Duisburg's Mayor Sören Link, the President of the Fraunhofer-Gesellschaft Prof. Reimund Neugebauer, and many other guests. The symbolic groundbreaking ceremony marks not only the forthcoming start of construction of the Duisburg Gateway Terminal (DGT) but also the implementation of the joint project “enerPort II”.

Together with international partners Cosco Shipping Logistics, Hupac SA, and the HTS Group, duisport is building the trimodal DGT on the site of the former coal island in Duisburg, scheduled to be completed by mid-2023. It is considered a model project for the future of logistics and, with an area of 235,000 square meters, it will be the largest container terminal in the European hinterland upon completion.

“The Port of Duisburg will continue to be the leading energy hub in North Rhine-Westphalia in the future and, with this project, is also assuming a pioneering role in the utilization of new energy sources for climate-neutral port and terminal operations,” said **Markus Bangen**.

Prime Minister **Hendrik Wüst**: “The Port of Duisburg is an important gateway to the world for our country. It stands for openness, free trade and

innovation, as the enerPort II model project clearly demonstrates. The first container terminal to run on hydrogen on a completely climate-neutral basis sets the course for a climate-neutral future and is an example of the excellent hydrogen research in North Rhine-Westphalia, which we as the state government support. We are showing how both can be achieved: protecting the climate and maintaining good jobs, prosperity and social security. The energy carrier hydrogen plays an important role in this. With projects like enerPort II, the establishment of the Hydrogen Technology Innovation and Technology Center in Duisburg-Hüttenheim, among other locations, and the RH2INE project, we are on the right track. Together, we are making North Rhine-Westphalia the most modern and climate-friendly industrial base in Europe."

"The enerPort project, which is being funded by the Federal Ministry of Economics and Climate Protection with around 13 million euros, is making an important contribution to a climate-neutral future. The project is testing the practical use and application of hydrogen technology in a highly nationally and internationally networked environment. The resulting findings can also be applied in other contexts, thus helping to secure and shape the supply of CO2-free hydrogen and its downstream products. Last but not least, the close link with local stakeholders in the enerPort project shows how important it is to involve society as a whole," said **Oliver Krischer**, Parliamentary State Secretary of the Federal Ministry of Economics and Climate Protection.

Duisburg's Mayor **Sören Link** states: "duisport will be developing a prime example of successful structural change on the coal island. For the city of Duisburg and the Port of Duisburg, this is a milestone on the path to a more climate-friendly future, where ecological responsibility will play an increasingly important role."

"The enerPort II project is a perfect example of successful cooperation between science, industry and politics on the one hand and between the energy transition and structural change on the other. Here, a new hotbed is being created for a continuously advancing, holistic transformation process. The Port of Duisburg in particular holds great potential for the development of future-oriented energy supply concepts that span all sectors and districts," emphasized **Prof. Reimund Neugebauer**, President of the Fraunhofer-Gesellschaft.

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Project partners drive transformation of energy systems

The other partners in the enerPort II project also paid personal visits to the Port of Duisburg today, including representatives of Westenergie Netzservice GmbH, Rolls-Royce Power Systems AG, Netze Duisburg GmbH, Stadtwerke Duisburg AG, and Stadtwerke Duisburg Energiehandel GmbH.

Westenergie Netzservice is installing an intelligent and sustainable energy system to link the various energy sectors. The focus is on the microgrid*, electrical energy storage, PV systems, plant operation and intelligent control.
Stadtwerke Duisburg is developing a concept for the construction of a hydrogen filling station and an electrolyzer for the production of hydrogen from renewable energies. **Netze Duisburg** is investigating which network infrastructures can be used to distribute the hydrogen. To ensure the economically optimal operation of a cross-sector energy system, **Stadtwerke Duisburg Energiehandel** will act as the interface to the conventional energy markets and stock exchanges.

Rolls-Royce will demonstrate in practical operation at the future container terminal what the climate-neutral, decentralized energy supply of the future could look like. This will be achieved with an intelligent combination of renewable energies such as photovoltaics in conjunction with batteries and green hydrogen. To this end, the company will install three hydrogen-powered mtu fuel cell units with a total output of 1.5 megawatts to cover peak electrical loads in addition to two mtu hydrogen cogeneration units with 2 megawatts of output for the electrical base load and heat supply.

DGT as the first concrete hydrogen project in the Port

The duisport Group and the Fraunhofer Institute for Environmental, Safety and Energy Technology UMSICHT have long been working together to achieve a complete energy transformation of the Port of Duisburg. Future-oriented technologies have already been analyzed and customized models developed as part of the “enerPort” project. These are now being applied in the DGT as part of the follow-up project “enerPort II”. The world's largest inland port thus not only operates Europe's largest climate-neutral hinterland hub, but can at the same time supply neighboring districts with additional energy through intelligent networking. The entire project is being funded by the German Federal Ministry of Economics and Climate

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Protection for a period of four years as part of the “Hydrogen Technology Offensive” (funding code: 03EN3046).

The Port of Duisburg massively expands handling capacities

The entire DGT work processes will be highly efficient and 100% climate-neutral. All movements of goods are digitally coordinated down to the last detail and controlled automatically. The DGT is considered a guiding model for the energy transition of inland ports throughout the world.

With the completion and commissioning of the DGT in 2023, duisport will expand its role as a central hinterland hub in Europe.

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***Microgrids** are small, local energy networks (electricity, heating, and cooling) that supply businesses and others with energy. In the case of DGT, a smart local energy grid couples and controls renewable energies in the form of photovoltaic and hydrogen-based combined heat and power plants with electrical and thermal energy storage systems as well as hydrogen storage and consumers such as onshore power, charging stations and crane systems.