

DKARBONATION DUNKIRK BECOMES LEADING EMITTER OF SOLUTIONS



The Dunkirk conurbation is mobilising its creative energy to become the European showcase for tomorrow's carbon-neutral industry, developing solutions to ensure that economic activity and quality of life can thrive together, relying on its extraordinary industrial-port ecosystem and calling upon every stakeholder to get involved; all of this on the initiative of its industrial fabric, with support from the Urban Community of Dunkirk (Communauté urbaine de Dunkerque), the Hauts-de-France Chamber of Commerce and Industry, the Rev3 initiative deployed by the Hauts-de-France Region, the ADEME (Environment and Energy Management Agency) and the Port of Dunkirk (Grand Port Maritime de Dunkerque).

The goal is to become one of the first carbon-neutral industrial areas in Europe
2030 : -30% reduction in CO₂ emissions* / 2050 : carbon neutrality

AN INDUSTRIAL-PORT ECOSYSTEM IN TRANSITION

The Flanders-Dunkirk region has a thousand-year-old maritime tradition, together with a history in the industrial and energy sectors dating back more than 100 years, including oil refinery, steel production and the chemical industry. It is also Europe's largest energy platform, with a nuclear power plant, an LNG terminal, a combined cycle power plant, a green hydrogen production plant, an offshore wind farm, a solar power plant, and other facilities.

In 2019, business activities in the industrial-port area represented 25,000 jobs, providing employment for 1 in 10 of the local working population.

It is also, and above all, the **third port in France** (a deep-water area with 53 Mt of traffic in 2019, pioneer in the field of LNG-fuelled ships and leader in multi-modality) as well as a European logistics hub (with the E40 and E42 motorways, its proximity to Belgium and the Channel Tunnel, and ferry links with Great Britain and Ireland).

However, its records in terms of logistics, industrial production and energy make the conurbation **France's leading emitter of industrial CO₂** (19% of industrial emissions - Ademe 2017), albeit a transitory situation as, true to its tradition of resilience and the **"Spirit of Dunkirk"**, the area is on its way to becoming **the leading emitter of decarbonisation solutions.**

PARTNERSHIPS AND INNOVATION: PART OF THE REGION'S DNA

Here, the transition is not endured, it is a shared choice. As early as the 1980s, the region ventured into industrial ecology with the first industrial symbiosis in France: the creation of an urban heating network supplied by the recovery of waste heat from ArcelorMittal.

Today, Eqiom and Ecocem produce low-carbon cements by recycling slag from ArcelorMittal, and the GRHYD demonstrator has converted surplus renewable energy into hydrogen, which is injected into the natural gas network.

As a sustainable city laboratory, Dunkirk has become the largest conurbation in Europe to offer high-quality public transport services 100% free of charge. As a pilot region for the Third Industrial Revolution (Rev3), **Dunkirk's ambition is to transform industry by integrating environmental, social, energy and climate-related challenges.** Major French and international groups have used it as a testing ground.

As part of the collective **"Dunkerque l'énergie créative"** initiative, the Dunkirk conurbation has committed to a vast transition programme for the industrial-port platform and has also been selected for the national programmes **"Territoires d'Industrie"**, **"Territoire d'innovation"**, **"Contrat de Transition Écologique"** and **"French Tech"**.

* 46% lower than in 1990

TOWARDS CARBON NEUTRALITY...

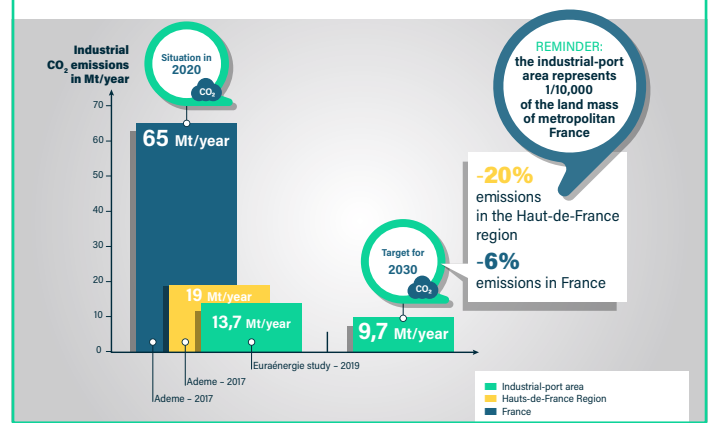
Here, we have willing industrialists and a willing region. With the support of the State and Europe, we are ready to take up the challenge of massively reducing CO₂ emissions, by innovating, industrialising our solutions, welcoming and investing in future industries, and developing the hydrogen sector. Our region benefits from significant sources of renewable and decarbonised energy, as well as land reserves for new innovative projects.

The last few months have seen the creation of the Euraénergie innovation park, the "Fabrique des Compétences" (Skills Factory), "La Turbine Numérique" (Digital Turbine), ArcelorMittal's Digital Lab and industrial pilot projects, as well as regional diagnoses on the recovery of CO₂, waste heat, and the development of hydrogen on the scale of the entire industrial-port platform.

Here **we are already in action**, investing in new facilities to double the recycling of used steel (1 Mt), setting up an industrial pilot project for CO₂ capture (Dunkirk's DMX Demonstrator), investing to recover and transform process gases into electricity and heat (Ferroglobe), and launching an industrial pilot project for recycling process gases rich in CO and H₂ in blast furnaces instead of fossil carbon (IGAR).

This will require strategic, large-scale, public and private investment and infrastructure. To achieve this, the formidable regional dynamics of Dunkirk must be supported right now, to enable the development and implementation of a replicable model for the future: the first competitive, carbon-neutral, industrial-port platform. Today, Dunkirk is France's main emitter of industrial CO₂, but tomorrow it will be the leading emitter of decarbonisation solutions, making a decisive contribution to regional, national and European objectives on the reduction of CO₂ emissions.

A scaled-down lever effect



These actions will also continue into the carbon and heat circular economy, through the introduction of systems for the capture, purification and liquefaction of CO₂, linked via pipelines, rail and river, to France's leading CO₂ hub at the Port of Dunkirk. This CO₂ will be transformed into green hydrocarbon and green polymer within the region, and its surplus transported by boat to the North Sea, to specially created storage sites. The scheme will be complemented by a focus on simplicity, efficiency and innovation.

Dunkirk: infrastructures dedicated to decarbonisation

