Press release

RWE and TotalEnergies to collaborate with ARC marine on nature-inclusive Reef cubes® at OranjeWind wind farm

- **RWE and TotalEnergies have signed an agreement with ARC marine for 66 nature-inclusive Reef cubes®**
- **The Reef cubes® will be placed around 11 turbines at the OranjeWind offshore wind farm on top of the scour protection**
- **The placement of the cubes is aimed at contributing to marine biodiversity at the wind farm**

Utrecht, 4 December 2025

RWE and TotalEnergies have signed an agreement with ARC marine for the supply of 66 innovative Reef cubes® at a section of the future offshore wind farm OranjeWind, in the Dutch North Sea. Installation of the foundations of OranjeWind will start in 2026. Once the construction of the offshore wind farm is completed, the 66 Reef cubes® will be placed at 11 turbine foundations. This will be one of the biggest deployments of artificial reef structures at a wind farm in the North Sea to date. With this nature-inclusive project, the companies aim to further enhance the provision of habitats for marine life and research local biodiversity.

In total, 66 Reef cubes® will be deployed creating 1,440 m² of surface habitat. Each Reef cube weighs almost 6,000kgs, is 1.5m in height and are made of low-carbon, recycled materials that are certified safe for the marine environment. Shell materials will be included in the mix to promote native oyster settlement and long-term habitat formation. The cuboid design of the cubes is proven for stability, efficient transport and ease of deployment. They will remain in place for the full operational lifetime of OranjeWind.

Enhancing marine biodiversity

The Reef cubes® contain cavities and textures which are expected to make them an attractive habitat for marine flora and fauna. Earlier research by ARC marine in the North Sea has shown that a wide range of species lived in and directly around the Reef cubes® during trials. The expectation is that similar results will be delivered at the OranjeWind wind farm. Cod and native oysters have been selected as focal species because they create wider ecological benefits. By providing the habitat and shelter they require, the project is expected to support a much broader community of marine life across the ecosystem.

RWE Offshore Wind GmbH | Corporate Communications & Public Affairs | RWE Platz 4 | 45141 Essen | Germany
T +49 201 5179-5008 | communications@rwe.com | www.rwe.com/press

Tobias Keitel, Chief Technology Officer RWE Offshore: "We are proud that the OranjeWind project can make a contribution to biodiversity in the North Sea through the deployment of ARC marine's Reef cubes®. This is fully aligned with RWE's commitment to making a positive contribution to biodiversity with our projects and assets."

Jean Gavalda, Director Offshore Wind Construction at TotalEnergies: "Together with our partner RWE and in alignment with the Dutch regulator's guidance, OranjeWind is deploying ARC marine's Reef cubes®. This initiative demonstrates our commitment to combining renewable energy development with marine biodiversity protection, creating new habitats for North Sea wildlife."

Tom Birbeck, CEO ARC marine: "RWE and TotalEnergies placing this order with ARC marine marks the transition from pilot to full commercial delivery. It shows that leading developers are now implementing Nature-Inclusive Design at scale, not just testing it. OranjeWind proves that biodiversity enhancement can fit seamlessly within standard offshore construction, providing measurable ecological value alongside asset protection. Our mission has always been to make NID practical, scalable and measurable and seeing it delivered here is a major step forward for the industry."

About OranjeWind

OranjeWind offshore wind farm is a joint venture project by RWE and TotalEnergies. The 795 MW wind farm will be located 53 kilometers from the Dutch coast. Offshore construction is scheduled to start in 2026 and the wind farm is planned to be fully operational early in 2028. It will provide electricity for the equivalent of one million Dutch households annually.

For further enquiries:

Geertje van Duijne
Media Relations
RWE Benelux
M +31 621 350 140
E: geertje.duijne@rwe.com

Pictures of the Reef cubes® for media use (credit: ARC marine) are available at the RWE Media Centre

Further information about the OranjeWind project can be found here.

Editors Notes (not for publishing):

- Scour protection is a protective layer which is placed on the seabed at the base of an offshore wind turbine foundation in order to protect it from erosion by strong currents. It has traditionally been provided by rock armour
- RWE and ARC marine have recently successfully deployed Reef cubes® as replacement for conventional scour protection at the Rampion wind farm. It is the first real-world deployment of the patented Reef cubes® as scour protection at an operational wind farm, and forms part of the Reef Enhancement for Scour Protection (RESP) pilot

TotalEnergies and electricity
TotalEnergies is building a competitive portfolio that combines renewables (solar, onshore wind, offshore wind) and flexible assets (CCGT, storage) to deliver clean firm power to its customers.
As of the end of October 2025, TotalEnergies has more than 32 GW of installed gross renewable electricity generation capacity and aims to reach 35 GW by the end of 2025, and more than 100 TWh of net electricity production by 2030.

About TotalEnergies
TotalEnergies is a global integrated energy company that produces and markets energies: oil and biofuels, natural gas, biogas and low-carbon hydrogen, renewables and electricity. Our more than 100,000 employees are committed to provide as many people as possible with energy that is more reliable, more affordable and more sustainable. Active in about 120 countries, TotalEnergies places sustainability at the heart of its strategy, its projects and its operations.

About RWE
RWE is leading the way to a modern energy world. With its investment and growth strategy, RWE is contributing significantly to the success of the energy transition and the decarbonisation of the energy system. Around 20,000 employees work for the company in almost 30 countries worldwide. RWE is one of the leading companies in the field of renewable energy. RWE is investing billions of euros in expanding its generation portfolio, in particular in offshore and onshore wind, solar energy and batteries. It is perfectly complemented by its global energy trading business. Thanks to its integrated portfolio of renewables, battery storage and flexible generation, as well as its broad project pipeline of possible new builds, RWE is well positioned to address the growing global demand for electricity, particularly driven by further electrification and artificial intelligence. RWE is decarbonising its business in line with the 1.5-degree reduction pathway and will phase out coal by 2030. RWE will be net zero by 2040. Fully in line with the company's purpose - Our energy for a sustainable life.

About ARC marine
ARC marine is an award-winning UK eco-engineering company pioneering Nature-Inclusive Design (NID) for marine and coastal infrastructure. The company wrote the British Standard PAS 1401:2025 and delivers nature-positive solutions for offshore wind, coastal defence and marine restoration. Its patented Reef cubes®, Reef mats and Reef walls are manufactured using low-carbon, plastic-free materials made from up to 98% recycled content. ARC marine's mission is to repair and regenerate the world's marine ecosystems by transforming infrastructure into thriving habitats.

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