

PRESS ANNOUNCEMENT

An innovative carbon capture and utilisation technology and an innovative toolbox for minimum energy consumption and minimum carbon footprint of ships are announced by Danaos and ECC at COP28

An innovative technology to utilize (rather than store) captured carbon on board, was announced by [Danaos Management Consultants](#) and the [Energy Competence Center](#) (ECC) during the event organized by ECC at the Greek Pavilion of COP28 in Dubai. "This is an absolutely cost-effective solution, which becomes even more attractive when combined with ECC's equally innovative ship design toolbox. The captured dioxide is converted into a completely ecological fertiliser, solving the environmental problem and addressing the global food shortage. The same technology can be applied on land, even more easily than at sea, complementing the well-known solution of underground storage of dioxide produced by industry. Instead, fertiliser will be produced for agriculture but also for the reforestation of lands, everywhere in the world", as stated by the CEO of Danaos Management Consultants, Mr. Dimitris Theodosiou.

The ECC toolbox in question targets the minimum energy consumption and the minimum carbon footprint of a ship. Specifically, Prof. NTUA Mr. Antonis Kokossis, who coordinated the relevant research of ECC, explains: "For ships, we started development of computational tools, which allow the analysis and comparison of energy-integrated options and highlight innovative design proposals. The tools capitalise on knowledge and experience in energy integration and couple it with Life Cycle Analysis to determine the environmental footprint. We specifically studied the case of a Greek short-sea shipping vessel and came to an energy saving of 2% to 12%, depending on the fuel used. By incorporating carbon capture technologies on board, emissions reductions of up to 80% were recorded. In the case of liquefied natural gas (LNG) combustion, in fact, special advantages emerge for the cryogenic capture technology, which allows easy utilisation of the captured dioxide. With such data and the toolbox, the techno-economic assessment

of alternative fuels and technologies in the useful life cycle of ships, and even the introduction of new engines and propulsion methods, becomes much easier."

The announcements by ECC came as a result of another innovation, this time by the General Secretariat for Research and Innovation (GSRT), which co-financed the establishment of Competence Centers, such as the ECC, in an unprecedented partnership between private sector enterprises and the wider State. "While internationally most startups, which mature and promote technological findings of researchers, fail due to their low access to the business world, Competence Centers have such access from the beginning, since the majority of their equity comes from business. ECC is fully oriented to the transfer of technology and know-how from research to the market, through specialised energy tools, such as those presented at COP28, and customised demonstration applications of innovative technology. We are proud of our partners and their capability to create and implement innovations in the energy transition landscape," said ECC Director Dr. Stelios Bikos.

During the one-hour discussion, which took place at the Greek pavilion of the International Conference on Climate Change COP28 on Monday, December 4, 2023, entitled "From capture of carbon dioxide to green fuels", the President of the Special Parliamentary Standing Committee on Environmental Protection, New Democracy Member of Parliament for Iliia (ancient Elis), Dr. Dionysia Avgerinopoulou referred to the European Union's maritime policy and the revised National Energy and Climate Plan (ESEC), while announcing the organization of the 9th International Conference "Our Ocean Conference" in Athens on 16th-17th April 2024. On the shipping side, Dr. Konstantinos Rokkos, President and CEO of TST International praised the role of shipping as a pillar of the national economy, outlined the shipping world's concerns regarding the new regulations being instituted for it in the midst of global competition, and discussed directions and scenarios that Greek businessmen in the field can follow in their attempt to successfully adapt to the new data. The debate was moderated by Mr. Vassilis Triantafyllos, Special Advisor on energy issues to the Deputy Minister of Environment and Energy, Ms. Alexandra Sdoukou.