## Industrial Applications

- **Study for the Stachtorroi Electrode Landing Station (2025):** The study is placed in the framework of the broader project "Installation of cables and electrode stations for the Direct Current (DC) electrical interconnection between Crete and Attica (2x500MW)". It concerns the construction of a landing pier needed for the installation and future access of electromechanical facilities to be put on the island of Stachtorroi. The study addresses the construction of a pier consisting of a section with natural rock armour protection of a total length of 50m, and a quay wall section for the mooring of auxiliary vessels, with a total length of 20m. The study was conducted on behalf of ELEKTROMEK S.A.

- **Study of current loading on two sub-sea electrode installations of the interconnection of Crete with mainland electrical grid (2024):** The study's scope was to estimate the loading induced by moving seawater on the protection structures of two electrode underwater stations along the path of the direct current electricity cable (2x500 MW) designed to connect Crete Island with the mainland power grid of Greece. This project can be seen as part of the Great Sea Interconnector intended to link the power grids of Greece, Cyprus, and Israel via a 1200 km cable to be placed on the sea bed at depths reaching 3000 m. One site was around midway of the northern Cretan coast, while the other offshore of a tiny island in Saronikos Gulf at a depth of 40m. All significant current drivers were taken into account including a moderate tsunami, as well as their combination when correlated. Preliminary tests of the cages against sliding were also performed along with relevant technical advice. The material of this project yielded a couple of publications in an international conference and a scientific journal.

- **Collaboration for the development of Decision Support Tool for Navigation in Ports (2022**): The scope of the research contract, co-financed by the European Union and Greek National funds, involves providing assistance, as a Subcontractor to the National Technical University of Athens, to the research project titled: "Decision Support Tool for Navigation in Ports (ACCU-WAVES)" by a consortium including the NTUA. The contract refers to the execution of Work Package "Application of hydrodynamic models" and specifically the Action "Evaluation of Simulation Results," with the corresponding deliverable "Technical report on the evaluation of the practical application of hydrodynamic models in ports." Specifically, our firm's input was: (a) The evaluation and proposals for modification of input data regarding wave reflection coefficients along the boundary line of port works and natural coastlines in 13 major international ports; (b) the qualitative evaluation of model results regarding predicted wave agitation in the area of each port, and the proposal for necessary improvements across 29 major international ports.

- **Study for the construction of an underwater pipeline connecting the island of Aegina to EYDAP (2015):** This study covered hydraulic, port, and structural aspects, including:
  - The inland section of the pipeline from Peranis beach in Salamina to the NW edge of Peranis bay (approx. 180m).
  - The submarine pipeline, 13,954m long, designed to be practically rectilinear and positioned at depths of up to 95m.

- The inland section of the pipeline from the Aegina coastline to the new shafts in the port of Leontiou, Aegina (approx. 18m). A Master Plan Study was also elaborated to provide a framework for future port development.

- **Design of the refuelling port of Atherinolakkos, Greece:** This project involved the design of a new port for the Public Power Corporation's thermal power plant. Works included a 230m long quay for accommodating 40,000 DWT tankers and 30,000 DWT Ro/Ro vessels, and a fishing harbour comprising a 180m long composite breakwater/quay structure, for the contractors.

- **Design and supervision of construction of Skaramangas oil terminal, Greece:*** This project involved the design of an oil terminal, including access walkways, a loading/unloading deck, a firefighting unit, and mooring and berthing piles consisting of high-tensile, large-diameter steel piles for accommodating 3,000 to 50,000 DWT tankers, for Mobil Oil. Our firm also provided supervision of its construction by Costain Civil Engineering.

- **Design of an oil terminal in Thessaloniki, Greece:*** This project involved the design of an oil terminal, including access walkways, a loading/unloading deck, a firefighting unit, and mooring and berthing piles consisting of high-tensile, large-diameter steel piles for accommodating two 200,000 DWT tankers, for the Ministry of the Environment, Physical Planning and Public Works. The studies included geotechnical investigations, environmental impact assessment, and wave penetration studies.

- **Study on water intake facilities for the saltworks of four sites for the prevention of siltation:** The saltwork sites are Kalloni (Lesvos Island), Kitros (Katerini), Megalo Emvolo (Thessaloniki), and Lefkimmi (Corfu Island). They have a long history of intense siltation phenomena at their inlets, resulting in operational difficulties. This study was conducted in collaboration with the Delft Hydraulics Laboratory in the Netherlands and included an examination of the coastal hydrodynamic and sediment transport regime in the area, proposals for works to resolve the problem, and the design of the required structures. The study was conducted on behalf of ADK Consulting Engineers.

- **Design of bilge-water reception facilities for ports of Volos, Thessaloniki, Kavala, Nea Karvali and Heraklion: *** This project involved the design of reception facilities for bilge-waters from commercial vessels in the specified ports, in compliance with MARPOL treaty obligations for petroleum residue removal. The works included berthing facilities for collector barges and onshore processing facilities for separating petroleum from seawater.

**firm's staff experience*