Program: “CENTRAL MACEDONIA” 2021-2027

Action: “Innovation Investment Projects”

**Project Title:**

**"Development of an energy-autonomous mobile electrodialysis unit for the treatment of groundwater (AQUASOLE)."**

**Summary:**

The Centre for Research and Technology Hellas (CERTH) is participating in the "Central Macedonia" 2021-2027 Program through the Action **"Innovation Investment Projects",** co-financed by the European Union and National Funds.

The project titled "Development of an energy-autonomous mobile electrodialysis unit for the treatment of groundwater" aims to develop and demonstrate in a relevant environment an alternative system for the softening of brackish groundwater and the removal of nitrate ions, making it suitable for potable use. The AquaSole system is based on electrodialysis (ED) technology, is energy-autonomous (powered by solar energy through a photovoltaic panel system – PV), and has zero wastewater footprint, as the two liquid streams produced by the process (dilute and concentrate) can be directly utilized for drinking water (high-purity water) and for irrigation/aquifer recharge (concentrate with inorganic nutrients for soil fertilization).

Indicative expected benefits of the project, through the interventions it includes, are:

- Addressing technological challenges and developing/demonstrating an innovative groundwater decontamination technology in a relevant environment.
- Enhancing the competitiveness of the collaborating engineering company (TEMAK A.E.T.E.) in an emerging new market through the commercial exploitation of the innovative technology.
- Strengthening CERTH’s technological expertise in the field of environmental protection.
- Developing reliable methods for the effective implementation of environmental policy by the end-users of the AquaSole technology, with a positive economic and social impact.

The objectives of the action are both entrepreneurial and scientific. The first ones concern the enhancement of innovation and entrepreneurship of TEMAK S.A.E.T.E. through the development of a new product with significant advantages and competitive features compared to conventional water treatment systems currently available on the market. The scientific objectives are related to the optimization of the ED system's operation and its successful integration with a photovoltaic (PV) system with energy storage, in order to achieve energy autonomy.

**Total Budget: 249.840,00 €**

**CERTH Budget: 128.465,00 €**