Welcome to the LIFE ELEKTRA

Newsletter

Issue #01

ELEKTRA

Project funded by LIFE
LIFE22-CCM-ES-LIFE TURBINES

Since the start of the project, LIFE ELEKTRA has made significant progress in developing innovative electrochemical technologies for nitrate removal, green hydrogen generation, and resource recovery in drinking water systems.

The project aims to enhance water quality, promote renewable energy production and minimize waste. This newsletter provides an overview of our recent activities and milestones, reflecting our commitment to sustainable water management and environmental protection.

The Challenge

Across Europe, nitrate contamination in drinking water poses risks to human health and ecosystems. Simultaneously, water scarcity and climate pressures demand more resilient and efficient solutions that align with circular economy principles.

The Solution

LIFE ELEKTRA addresses these challenges by combining electrochemical denitrification with renewable energy to deliver a zero-waste water treatment process. Our system removes nitrates, produces green hydrogen, and recovers valuable salts, all within an integrated, energy-efficient framework.

Project Objectives

The project aims to:

- Design and validate an electrochemical reactor (ER) and 3D electrodes for effective nitrate removal.
- Integrate photovoltaic power to drive the denitrification step and assess hybrid operation.
- Recover by-products (hydrogen and salts) to maximize resource valorization.
- Optimize water softening and resin regeneration to support electrochemical processes.
- Deploy and monitor pilot plants in Spain, Gran Canaria, and Malta under real operational conditions.
- Develop a Replication & Knowledge Transfer Strategy (RKTS) to ensure long-term scalability.
- Engage stakeholders and disseminate results to foster adoption across the water sector.

Presented at 44GERSEQ Conference in Leioa

During the XLIV RSEQ Electrochemistry Meeting and the 5th E3 Mediterranean Symposium, the University of Alicante presented LIFE ELEKTRA's advances in electrochemical denitrification, reaffirming the project's role in developing sustainable technologies for clean water and renewable energy.

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Engaging future leaders at the Young Water Professionals Conference in Copenhagen

At the YWP Europe Conference in Copenhagen, LIFE ELEKTRA was presented to over 150 young professionals, highlighting its innovative solutions in nitrate removal and renewable hydrogen production, an inspiring platform to connect with the next generation of water sector leaders.

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Attending the 37th AEAS Conference

LIFE ELEKTRA took part in Asociación Española de Abastecimiento in Castellón, presenting the project's dual impact. This milestone event provided a valuable opportunity to share progress with water sector professionals and strengthen the project's visibility within the national innovation landscape.

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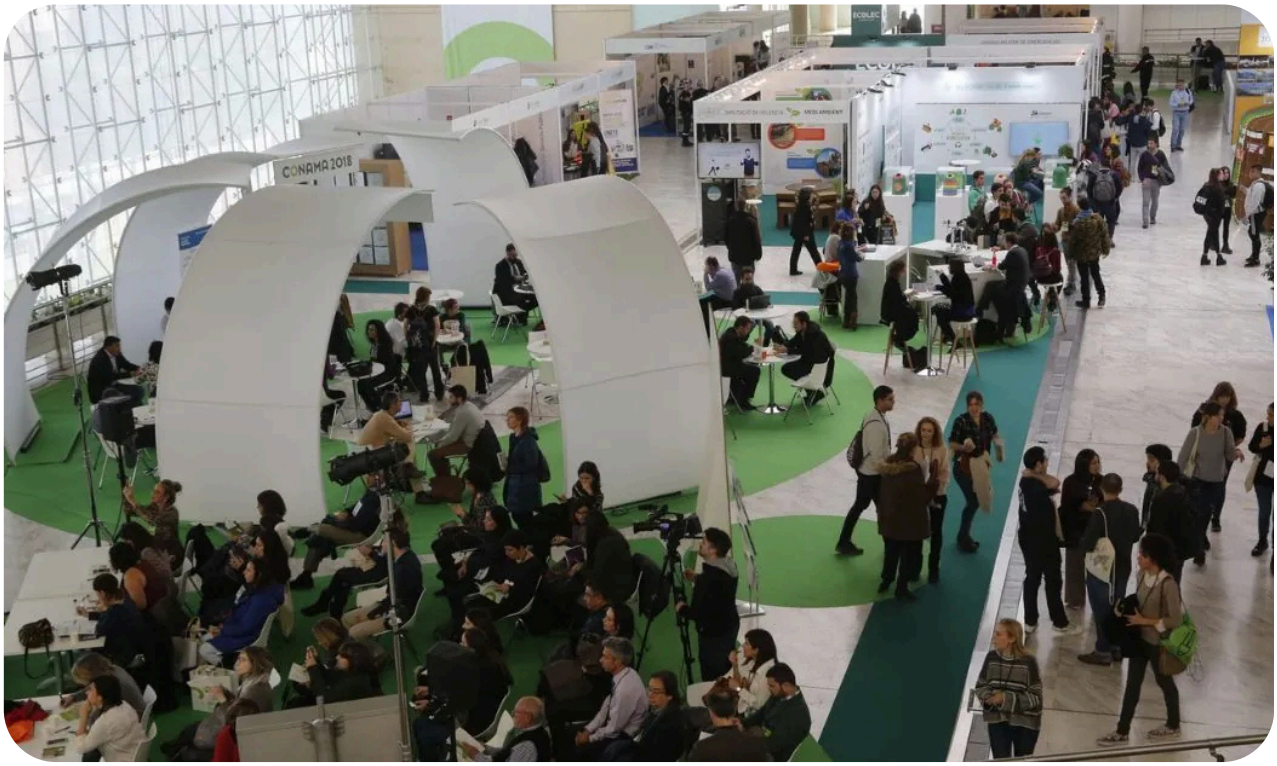
Presenting at CONAMA 2024



We participated in Spain's leading environmental forum in December, sharing how our zero-waste technology transforms nitrate-contaminated water into clean water, hydrogen, and reusable salts. Our approach reflects how innovation can contribute to both environmental protection and resource efficiency.

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Planning of pilot plant in Gran Canaria

The consortium met in February at Instituto Tecnológico de Canarias (ITC) to evaluate potential pilot sites. Supported by the Insular Water Council, visits to water infrastructures set the groundwork for deploying the project's technology in real operational environments.

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Showcasing electrochemical denitrifcation at the VI Water Congress of Catalonia

In March, we showcased our innovative electrochemical denitrification system at the VI Water Congress of Catalonia, where experts tackled urgent drought-related water management challenges. Our technology received strong interest as a promising tool for sustainablewater treatment and nitrate reduction.

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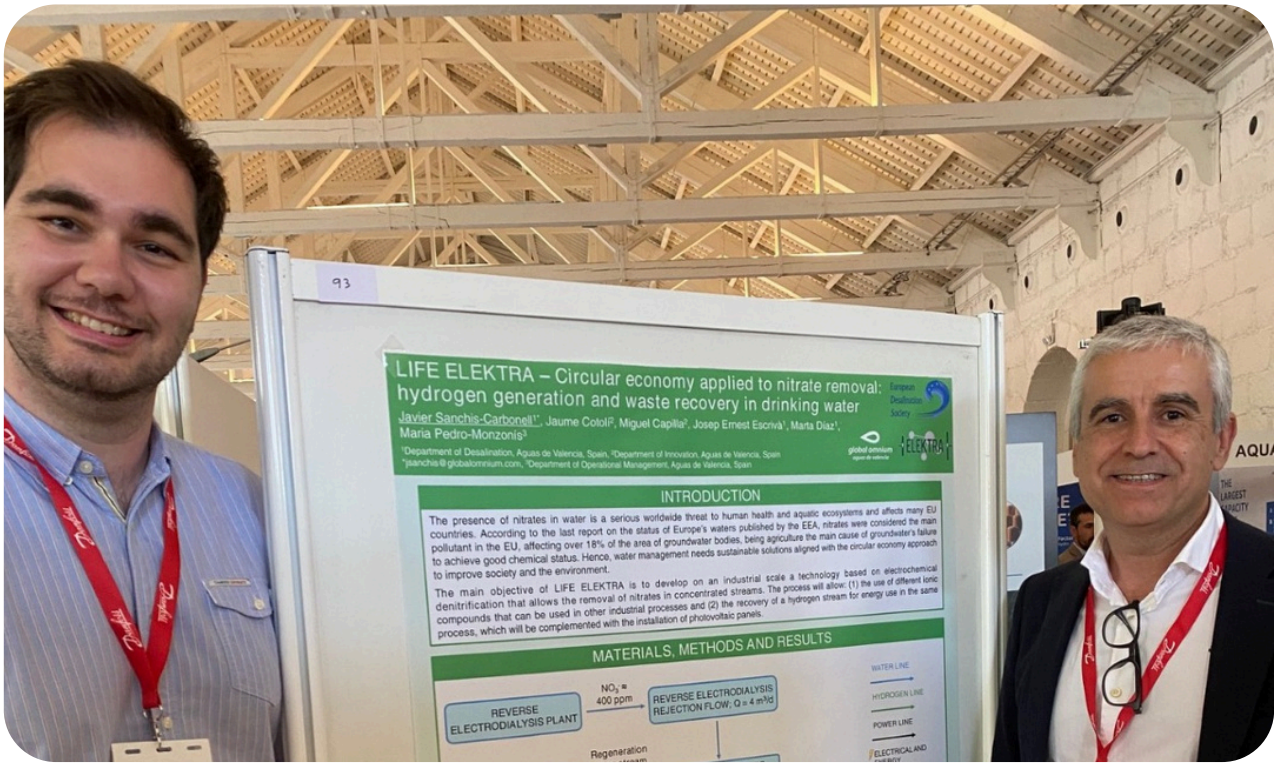
Exploring innovation at EDS 2025



At the April EDS 2025 Congress in Porto, we presented our official poster covering nitrate removal, hydrogen generation, and resource recovery. The event offered a valuable platform to share insights and align with global innovations in desalination and water-energy sustainability.

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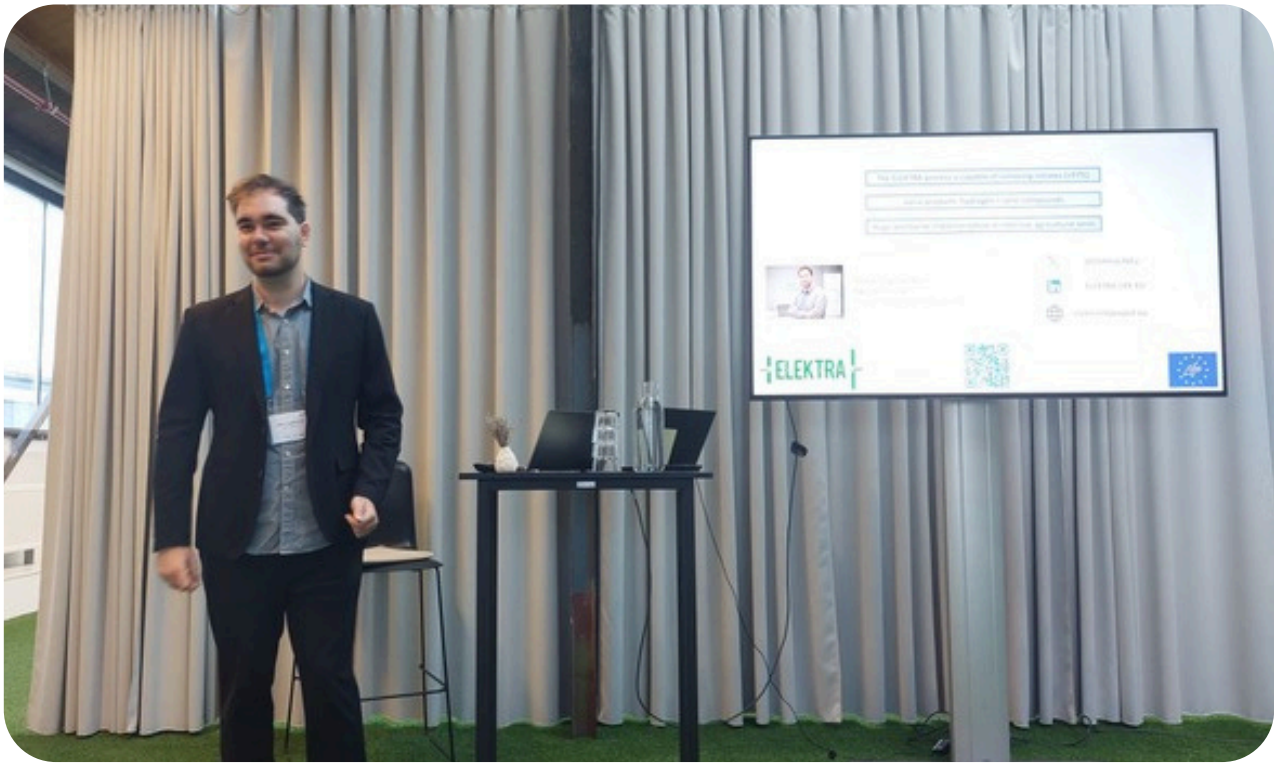
Participation at WSES 2025



LIFE ELEKTRA was featured at the Water Smart Economy & Society Congress in Rotterdam in May, where we explored circular economy solutions and market strategies for green tech. The session provided valuable input to strengthen our business case and connect with new stakeholders.

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Monitor visit in Gandía

In June, project partners gathered in Gandía for a key milestone: the official monitor visit. We reviewed progress across work packages, discussed challenges, and toured the Gandía pilot plant, where the ELEKTRA prototype is already operational. The session confirmed our commitment to delivering impactful results.

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Stay updated

To keep up to date with the project and never miss a new activity, please visit our website and follow us on social media.

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