

Low Energy Solutions for Drinking Water Production by a Revival of ElectroDialysis Systems



CHALLENGE

The balance between drinking water demand and availability has reached a critical level in many regions of the world. Factors such as climate change and water over-abstraction are currently exacerbating the water stress of almost one billion people worldwide who worry about obtaining enough water daily. With seawater making up 97.5% of the world's water resources, low energy desalination solutions are crucial in providing sufficient levels of good quality drinking water for the growing world population.

PROJECT OBJECTIVES

REVIVED water aims to contribute to overcoming the drinking water challenge by establishing ElectroDialysis (ED) as the new standard for desalination of seawater. The goal is to produce safe, affordable and cost-competitive drinking water with significantly reduced energy consumption compared to state-of-the-art Reverse Osmosis (RO) technology. The **REVIVED water** project will focus on developing several new innovative ElectroDialysis systems and assessing them in different real environments, ranging from brackish water desalination to industrial-scale seawater desalination.

AT A GLANCE

PROGRAMME:

H2020 – Nanotechnologies,
Advanced Materials and
Production (NMP-24-2015)

TYPE OF ACTION:

Innovation Action

DURATION:

48 months (1 May 2016 –
30 April 2020)

CONSORTIUM:

10 partners from six European
countries

COORDINATOR:

FUJIFILM Manufacturing Europe
B.V. (FUJIFILM), the Netherlands



CONTACT US

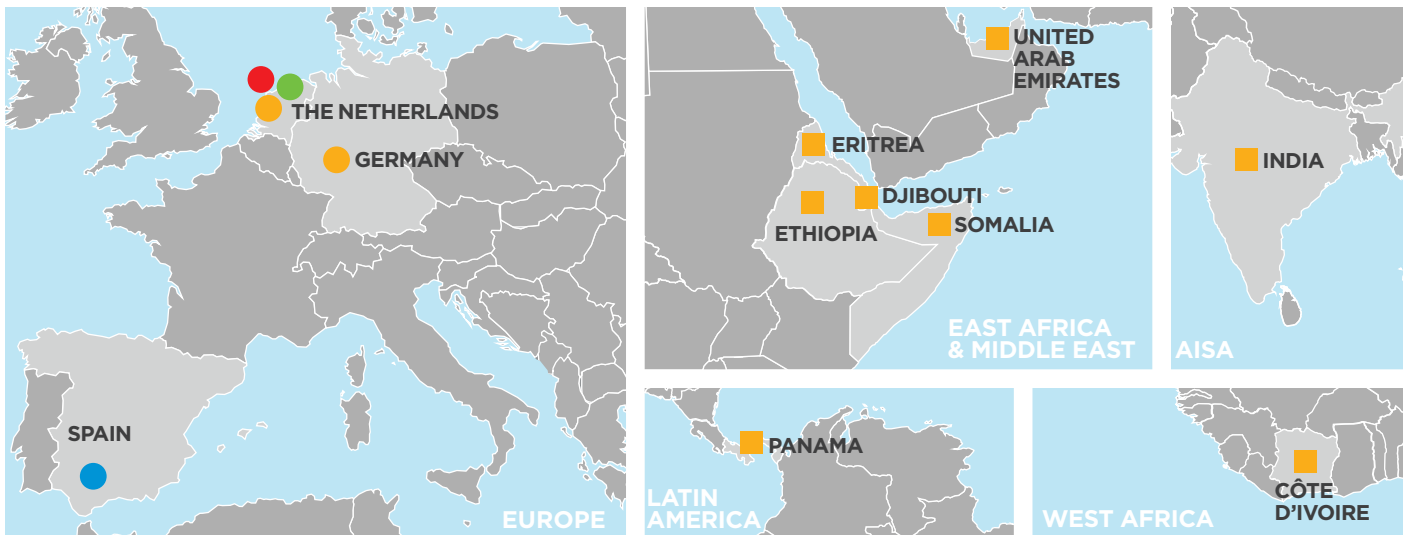
COORDINATION & MANAGEMENT:

Natalie Tiggelman
natalie_tiggelman@fujifilm.eu
www.fujifilmmembranes.com

COMMUNICATION & PRESS:

Alberto Vallejo
alberto@aquatt.ie
www.aquatt.ie

REVIVED WATER'S ED SYSTEMS AND APPLICATIONS IN DIFFERENT PILOT TESTING LOCATIONS



- | | | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> ● ED system <i>Applications:</i> ■ Brackish water desalination in developing countries ● Tap-water softening in Europe | <ul style="list-style-type: none"> ● Multistage ED system <i>Application:</i> ● Industrial-scale seawater desalination | <ul style="list-style-type: none"> ● Multistage ED system + Reverse ED (RED) <i>Application:</i> ● Further reduction of energy consumption for seawater desalination | <ul style="list-style-type: none"> ● RO systems + RED or ED <i>Application:</i> ● Market introduction ED-RO without the need to replace the extensive RO infrastructures already developed around the world |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

EXPECTED RESULTS

- Development of new innovative ED systems based on Reverse ED (RED) and ED components (membrane, electrodes, stacks) for water desalination applications to significantly **reduce their energy consumption** compared to current state-of-the-art energy technologies.
- Assessment of several pilot ED systems in different real environments to discern tangible solutions and **achieve more cost-efficient desalination**, for both seawater and brackish-water, as well as tap-water softening.
- **Sustainable provision of safe and affordable drinking water** all over the world, covering applications ranging from large industrialised plants to small, stand-alone systems for developing countries.

CONSORTIUM

The **REvived water** consortium consists of ten partners from six European countries, coordinated by FUJIFILM Manufacturing Europe B.V. The consortium is industry driven, with five innovative SMEs and large industrial partners. It comprises the whole knowledge spectrum required for the success of the **REvived water** project.



- 1 FUJIFILM Manufacturing Europe B.V. (FUJIFILM) (the Netherlands)
- 2 Abengoa Research (ABENGOA) (Spain)
- 3 REDstack (REDSTACK) (the Netherlands)
- 4 Deukum GmbH (DEUKUM) (Germany)
- 5 Phaesus GmbH (PHAESUN) (Germany)
- 6 European Desalination Society (EDS) (Italy)
- 7 University of Palermo (UNIPA) (Italy)
- 8 Ghent University (UGENT) (Belgium)
- 9 European Centre of Excellence for Sustainable Water Technology (WETSUS) (the Netherlands)
- 10 AquaTT UETP CLG (AQUATT) (Ireland)



This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement no. 685579 (REvived water). This output reflects only the author's view and the European Union cannot be held responsible for any use that may be made of the information contained therein.

WWW.REVIVEDWATER.EU

