

OPEN CALL: Transnational Service on Innovative Energy and Water technologies (SIEW)

ACTIVITIES TO BE FUNDED

The services offered within the portfolio can be integrated in the **fields of action** listed below:

1. **Desalinated water-energy nexus:** the technologies for energy recovery, the evolution of new reverse osmosis (RO) membranes and innovative configurations have managed to achieve a reduction of the specific energy consumption (SEC) over the last few years to a historical minimum. There are still opportunities to improve the energy efficiency of the process and to make a commitment to renewable energy as an element in the reduction of our dependence on fossil fuels.
2. **Emergent desalination technologies:** testing and demonstration of new desalination technologies, with the aim of becoming an industrial-scale alternative or complement to reverse osmosis (e.g. forward osmosis (FO), pervaporation, membrane distillation (MD), capacitive deionisation, Nano porous graphene, biomimetic membranes, aquaporin's, microbial fuel cells, electro dialysis with bipolar membranes, etc.).
3. **Energy audit and verification services of water treatment process:** energy efficiency verification of water treatment processes (desalination and wastewater treatment plants), verification of the electromechanical equipment installed, their energy consumption, and photovoltaic solar field's performance (a service for public bodies and SMEs).
4. **Solar energy for wastewater treatment:** scientific support to the development, consulting services, demonstration and testing solar-based wastewater treatment technologies using direct solar irradiation, with the aim of providing a low-cost complement to current WWTPs for disinfection and decontamination (namely for contaminants of emerging concern removal).
5. **Photovoltaics for water pumping:** scientific support to the development, consulting services, demonstration and testing of floating photovoltaic systems for water pumping (namely for irrigation purposes), including energy performance

assessment and the economic performance analysis. Furthermore, the design and development of photovoltaic systems for high power pumping.

6. **Solar thermal collectors/fields for desalination:** scientific support to the development, consulting services, test and demonstrate solar thermal collectors/fields to provide heat for desalination processes.
7. **Hydro-environmental modelling:** state-of-the-art modelling of fate and transport of contaminants from catchment to coast. This includes a range of contaminants, e.g. Faecal Indicator Organisms (FIOs), viruses, nutrients and emerging pollutants, and processes, e.g. eutrophication and mixoplankton, simulating various sources, e.g. diffuse and point sources, and receptors such as; bathing water and aquaculture sites.
8. **Real-time water quality:** predicting water quality in real-time using process-based or data-driven models linked to environmental sensors and remote sensing.
9. **Advisory services** regarding the financing of R&D&i dealing with the WE nexus. Public and private funds (with special emphasis on EIC Accelerator for SMEs) would be analysed. The scope of the service should be limited to an orientation / pre-evaluation / analysis of alternative sources of financing for: a) R&D&I projects and b) start-up business plans.

A maximum of three services within the aforementioned fields of actions will be provided. The specific services offered and the maximum number of services per type available are:

	Service to be offered	Maximum number of services
1	Technical studies and reports.	1
2	Laboratory analysis and testing.	2
3	Validation technologies for public water bodies tenders.	1
4	Technical documents for public water bodies tenders.	1
5	Evaluation/Validation of the energy efficiency of a desalination process.	1

6	Evaluation/Validation of the energy efficiency of a wastewater treatment process.	1
7	Technical support in a hosting of a pilot unit, prototype or new devices (TRL<7) focused on desalination, related fields and renewable energy desalination in the ITC facilities with the aim of carrying out the evaluation/validation of the development.	1
8	Technical support and consultancy for the development, upscaling and demonstration in real conditions of innovative solutions related to desalination and the use of renewable energies.	1
9	Evaluation of water/wastewater quality and treatment efficiency, including chemical, microbiological and (eco) toxicological analysis, according to European Directives.	1
10	Evaluation of the energy efficiency of a solar based water/wastewater treatment.	1
11	Technical support in hosting a prototype or pilot unit (TRL<7) for water/wastewater treatment using solar energy, in the UEv facilities for evaluation/validation of the technology.	1
12	Evaluation of the efficiency of photovoltaic systems.	1
13	Design of floating photovoltaic systems for water pumping and of photovoltaic systems for high power pumping.	1
14	Design and sizing of new electric energy storage systems for water pumping systems.	1
15	Technical studies on fate and transport of contaminants in hydro systems from various sources and considering different receptors.	1
16	Development of real-time water quality platforms.	1
17	Resource and impact assessment of renewable schemes in order to optimise the scheme and achieve maximum performance and minimum environmental impacts.	1
18	Consultancy on energy efficiency enhancement of innovative processes and systems related to seawater desalination. Target stakeholders: Private sector.	1

19	Consultancy on developing sustainable water treatments for industrial wastewater. Target stakeholders: Private sector.	1
20	Technical assistance on developing certification procedures concerning water treatment technologies. Target stakeholders: Public bodies.	1
21	Pre-evaluation and analysis of alternative sources of financing for: a) R&D&I projects and b) start-up business plans.	2

CALL ELIGIBILITY CRITERIA – Who can apply?

The call is open to all types of organisations established in the Interreg Atlantic Area, i.e. 36 Atlantic regions of 5 countries: France, Ireland, Portugal, Spain and the United Kingdom¹. The organisations would be looking to become more competitive, to upgrade RDI results or expand them, and/or to improve and delve into current policy landscape in the Water-Energy nexus area.

Partnerships or associations of up to three organisations can also apply as a consortium. There is not requirement about the geographical distribution from the consortium partners but it's mandatory as well that all the partners belong to the aforementioned Atlantic regions.

Self-employed will not be eligible for EERES4WATER services provision. **Only one proposal per applicant is allowed.**

CALL EVALUATION CRITERIA - How will applications be evaluated?

Applications will be evaluated according to the following criteria and scored on a 200-point scale with the distribution described below:

Excellence (30% - maximum 60 points; threshold 30 points)

- Technical and commercial novelty and ambition
- Relevance for Water-Energy nexus area/market

¹<https://www.atlanticarea.eu/page/3>

- Competitive position
- Alignment with applicant overall business/research/policy strategy

Impact (40% - maximum 80 points; threshold 50 points)

- Market generation potential (size, growth rate, demand level and expectation, customer needs, market share) in the short, medium and long term (for private organisations applicants) // Social impact from improved policy landscape (for public bodies) // Technical advance to be achieved (for academia applicants)
- Estimated added value of the proposed product, service or business model.
- Market barriers potential reduction and early adopters' engagement
- Cost and time to market reduction
- Job creation potential
- Societal, environmental, ethics and gender relevance, in particular within the frame of the Sustainable Development Goals (SDGs).

Quality and efficiency of implementation (30% - maximum 60 points; threshold 30 points)

- Appropriateness, feasibility and mutual consistency of objectives, impact, approach and proposed activities.
- Technical/business experience of the team.
- Realistic timeframe and comprehensive description of implementation (milestones, risk management) taking the applicant's innovation ambitions and objectives into account.

The proposals will be ranked. From those above 150 points (overall threshold) and passing the abovementioned thresholds for every criterion, an allocation of the requested services will be done according to the number of services available as depicted previously.

HOW TO APPLY

- Go to www.eeres4water.eu/open-call
- Complete all sections of the application form and submit by 31st October at 20:00 GMT.
- You will be contacted with the results of your application by December 2021 at the latest.

Questions can be sent to: contact@eeres4water.eu



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