

European Symposium 2024

Space data and services for Water and
Energy challenges in Regional Ecosystems

Toulouse/Occitanie

2-3 October 2024

Preparatory Material for European Symposium by
NEREUS-Regions 2024

Call for best practices to address water and energy
challenges at the local and regional levels

Description and Background:

The upcoming European Symposium by NEREUS-regions 2024 will be focused on challenges at the regional and local levels related to water and energy. Both domains play a significant role in accomplishing the Green Deal Going Local Agenda, particularly the green and climate transition. The consequences of climate change become increasingly tangible at regional level with considerable impacts on the territory, biodiversity and economy. Agriculture and Water are key sectors in the regional economies of most partner regions. For this reasons local and regional authorities when managing territories and implementing public policies are increasingly confronted with challenges related to water management and energy and thus seek new innovative solutions.

The symposium aims at bringing together on the one hand responsible authorities for both domains (water and energy), preferably from regional and local administrations and on the other hand service provider, namely companies, start-ups, research organisations and universities to discuss space solutions.

The thematic program will address state of the art, reflections for the future and present best practices from the regional level while discussing with relevant responsible authorities. Local and regional authorities will take the floor to give an overview of the profile of their respective region and the challenges it faces. In response to the overview of the LRA, service providers and research player will take the floor and will give brief presentations on relevant space applications.

Call to identify interested local and regional authorities and best practices/ success stories in the domain:

- Thematic Session A: Best Practices related to addressing **water challenges**: linking space to user needs:
- Thematic Session B: Best Practices related to addressing **energy challenges**: linking space to user needs

a. All NEREUS partners are invited to identify interested public authorities with responsibilities in the water sector (e.g., head of regional water agency, responsible for the water department in regional administrations, staff that works on the strategic and economic implications of water, etc.) to join the session.

b. All NEREUS partners are invited to identify interested public authorities with responsibilities in the energy sector (e.g., head of regional energy agency, responsible for the energy department in regional administrations, staff that works on the strategic and economic implications of energy, on the implications of energy for regional development etc.) to join the session.

You may submit half page introducing your best practice and send it to rayazi.nereus@euregions4space.com and mchrysaki.nereus@euregions4space.com by the latest 30th of June2024.

If the respective authority wishes to participate in a preparatory remote event, please give feedback by the latest **latest 30th of June 2024**.

- a.) The public authorities with responsibilities in the water sector will be invited to present the profile of their region, the water strategy, what are challenges the region faces, what are innovations the region works on, in which domains could the region envision to use satellite-based services or information, views and experiences on public procurement.
- b.) The public authorities with responsibilities in the energy sector will be invited to present the profile of their region, the energy strategy, what are challenges the region faces, what are innovations the region works on, in which domains could the region envision to use satellite-based services or information, views and experiences on public procurement.

Benefits for public authorities joining the session:

- Promotion of regional strategies for water or energy and innovative activities of the respective region in the domain;
- Exchanging information on existing platforms and space data relevant for the management of the water cycle or sustainable energy resources and addressing related challenges;
- Exchanging information on data usage with relevance for water or energy resources
- Learning more about best practices and success stories of space solutions in the water sector or energy sector;
- Definition of needs;
- Opportunity to build partnerships/cooperations with other NEREUS partners with the objective to facilitate increased use of space data for the water and energy sector;
- Stimulating model projects in the domain and for the LRA to become a partner of such a model project;

All NEREUS partners are invited **to identify suitable best practices/space solutions** for a more **sustainable water sector and/or energy sector**. Please promote the call within your networks and contacts. We are looking for best practices/successful uses cases where space-based data and services are used to bring new innovations to the water and energy sector promoting new sustainable practices.

Space data can be a valuable source of information and knowledge for the water and energy sector, providing information about soil, water quality, weather and climate patterns, and environmental conditions, to quote just some examples. By leveraging the power of Earth observation data, water and energy responsible can take better informed decisions and create better experiences for their customers and ultimately contribute to a more sustainable water cycle and energy consumption.

Excerpt "[Copernicus4regions](#)" publication – see page 144

"Water is life. In too many regions in Europe and worldwide, this precious resource is coming under increasing pressure, in particular from economic activities. In parallel, demands for energy are ever increasing, calling for secure, affordable and sustainable production practices. Climate change affects the availability of water and energy in multiple ways. Effective mitigation and adaptation measures need to be taken to reduce exposure and vulnerability to shortages of water and energy and to many other aspects induced by climatic changes. However, it is apparent that

with demands for energy, water, and food growing around the world, there are many opportunities for the needs in one area to produce unintended outcomes in another, with unexpected broader economic, environmental, and security consequences.

Understanding the implications of these linkages is indispensable to the development of sound policies. In this respect, the EU and its Member States agreed to a global action plan for climate to put the world on track to limit global warming to well below 2°C. In parallel, other relevant policies provide for “good quality” rivers, lakes, ground and coastal waters (e.g. EU Water Framework Directive) and for ensuring progress towards a carbon-free economy by 2020 (e.g. EU Renewable Energy Directive).

Well informed action must be taken at all levels: global, regional, national, and local solutions are needed to tackle systemic problems facing the Earth and its interactions with society. At regional level, mitigation and adaptation to climatic changes will occur most efficiently where local water and energy agencies can pool resources and competences to address issues that will inevitably cross local boundaries. Through its dedicated Climate Change Service, Copernicus provides authoritative, quality-assured information to help our understanding of climate change and inform the development of policies addressing mitigation and adaptation measures. This leverages on all relevant Earth observations data and on information available from the other Copernicus Services. Data from all Copernicus Sentinel satellites are relevant in this respect, being related to e.g. glaciers and icesheets (Sentinel-1), sea surface temperature and ocean surface height (Sentinel-3), methane, ozone and cloud/aerosol (Sentinel-5P). Copernicus data and products can support the development of sustainable practices related to water and energy management through e.g. monitoring of inland water basins and snow/glaciers or performance forecasting for renewable energy sources such as solar, wind and hydropower.”

You may watch [here](#) a **Copernicus4regions video** on a best practice **"Monitoring the health of water and sewerage networks"** from Milan, Italy

Overview of relevant user-stories for water and energy in the Copernicus4regions collection, see page 146