

Proposed Approach

Small and medium-sized TEN-T ports face a clear gap between EU decarbonisation and digitalisation requirements and their operational capacity to monitor, report, and manage environmental performance. Despite the objectives of the Green Deal, Fit for 55, and ZEWT, many ports lack real-time environmental data, harmonised EU-aligned reporting, and digital tools that convert data into operational decisions, as well as integration with existing PCS and VTMIS. As a result, ports struggle to establish environmental baselines, prioritise effective decarbonisation actions, demonstrate progress toward 2035 and 2050 targets, and scale zero-emission solutions in a coordinated manner. BioBright will address the Environmental Intelligence and Digital Monitoring scope, acting as the technology backbone enabling ports to transition toward zero-emission and climate-resilient operations.

BioBright will deliver:

- **Real-time monitoring** of GHG emissions, air quality, and water pollutants across maritime and inland TEN-T ports, establishing robust environmental baselines
- **Harmonised, EU-aligned data frameworks** compatible with ZEWT, the EU Port Strategy, and future Green Deal and ESG reporting requirements
- **Decision-support tools** that convert environmental data into actionable insights for decarbonisation planning, biodiversity protection, worker safety, and climate adaptation
- **Digital integration** with existing Port Community Systems (PCS) and VTMIS, enabling smart and interoperable port operations
- **Demonstration and scalability** across multiple medium-sized maritime ports and at least one inland port, ensuring transferability across Europe

Experience

BioBright has a proven track record in delivering environmental monitoring and digital solutions for ports, working with small and medium-sized UK ports and maritime SMEs to implement real-time monitoring of GHG emissions, air quality, and water pollutants. Our projects have demonstrated the ability to collect, harmonise, and analyse environmental data, providing actionable insights for decarbonisation and sustainability strategies. Through these engagements, BioBright has built strong networks across the maritime sector, enabling collaboration with leading academics, technical experts, and port authorities, positioning us to attract high-profile partners and thought leaders to support project innovation and dissemination.

Organisational Capabilities

BioBright is an SME specialised in real-time environmental monitoring and digital solutions for ports. We provide sensor networks for GHG, air, and water quality monitoring, data harmonisation aligned with EU standards, decision-support tools for decarbonisation and climate resilience, and integration with PCS and VTMIS.

Our experience in multi-site demonstrations across maritime and inland ports ensures fast deployment, operational relevance, and high replication potential across the TEN-T network.

Administrative Information

We are planning to be a Partner

Vanessa Giorgia Barzasi

[*v.barzasi@biobright.co.uk*](mailto:v.barzasi@biobright.co.uk)

+447397311336

UK Company