



# Integrated multi-vector management system for Energy isLANDs

Partners:



Pilot Sites



## NORWAY: The Industrial Harbor (Fredrikstad)

The Port of Borg is situated in an industrial area on a small peninsula called Ora just outside Fredrikstad, Norway. The area is home to an assortment of industry actors including recycling plants, district heating, LNG storage and distribution, and food industry...

[Read more](#)



## SPAIN: The Technology Park (Huesca)

Walqa Technology Park is located in the North East of Spain near the city of Huesca. The park is an initiative run by Aragon regional government entities and the local city council and is the work place of around 1000 employees...

[Read more](#)



## ROMANIA: The University Campus (Targoviste)

The campus of Valahia University of Targoviste is a 142,000 m2 campus situated in the centre of Romania, 260 meters above sea level. Heavy rain, high winds and a large seasonal temperature differences are characteristic of the area...

[Read more](#)



## INDIA: The Industrial Metropolitan (Delhi/Mumbai)

BYPL is licensed to supply and distribute electricity in Central and North Delhi. The 1.6 million customers in this region are both residential buildings and industry actors such as food industries, recycling plants, care providers, and energy production storage...

[Read more](#)

Efficient, reliable and sustainable delivery of energy is critical to the health and welfare of all people. Providing a low-carbon, climate resilient energy supply is a global challenge, which is even more demanding in remote areas. With increasing penetration of renewable energy resources (RES), and high expectations from end-users for energy reliability, connectivity and utilisation of available energy resources needs reconsideration. Thus, technologically smart and economically viable solutions for extending the lifetime of energy infrastructure will be in high demand. Incorporating more distributed RES and storage assets at the edges of the electricity grid, and optimally balancing these assets with other energy vectors, while extending the lifetime of current infrastructures will not only be economically viable, but at the same time decrease the level of carbonisation in local energy systems.

E-LAND consortium believes that there are still major challenges in connection to technology, society and economics to overcome. In the E-LAND project, the main objective is to tackle these challenges and support the decarbonisation of energy islands by developing a E-LAND Toolbox for Multi-Energy Islands including tools and methods addressing the business, society and technology challenges. Project is going to implement the toolbox and demonstrate the viability and impact of the tools and methods created in 3 real life pilots in Europe and through simulations with 2 cases in India.

Develop multi-vector energy optimisation algorithms that take into account the current and future value of energy storage and end-user flexibility.

Develop and integrate the needed technology tools to change the role of the Energy Island into an actor providing services to the grid.

Increase the use of the current and most advanced innovative business models for energy communities and key energy market players.

Understand how the dynamics of existing communities can be explored and further developed to secure impact and longevity of the introduced solutions.

Implement a modular toolbox composed of technology, business and community engagement related tools, and validate the viability and impact of these tools in three regions in Europe and one region in India with different geography, demography, sociography and maturity.

## 7 SPECIFIC PROJECT GOALS

Create new business opportunities for different storage technologies, including the potential for seasonal storage and cross-vector storage optimisation.

Achieve an economically viable system that will be self-sustaining after project termination.

Pilots have different geography, demography, sociography and maturity in terms of community and end-user activities, implementation of different energy vectors including storage, amount of renewables in the local energy mix and variety of loads that call for efficient and intelligent management system. To further expand the exploitation of E-LAND results, the Toolbox will be modular and the consortium will develop replication guidelines for utilising the tools in replication sites.



This project has received funding from the **European Union's Horizon 2020 Research and Innovation programme** under Grant Agreement No 824388.