

IREM



LA MADDALENA



"The municipality of La Maddalena wants to lower the emission of pollutants in its extremely valuable territory, famous worldwide for its natural beauty."



This project is supported by the EU Islands Facility NESOI. NESOI has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N°864266

The European Islands Facility NESOI aims to unlock the potential of EU islands to become the locomotives of European Energy Transition. To do so, NESOI aims to mobilize more than €100 million of investment in sustainable energy projects to give EU islands the opportunity to implement energy technologies and innovative approaches, in a cost-competitive way. NESOI has selected 56 such projects across the European Union and provide them with financial resources and technical support.



Increasing the Renewable Energy Mix for La Maddalena

ABOUT THE PROJECT

**Project
Promoter**

Municipality of La Maddalena



Stakeholders

Public transport utilities
e-Distribuzione (DSO)

Legambiente of the Sardinia Archipelago
National Park of the Sardinia Archipelago



Country Italy



Sectors PV, Mobility



PROJECT VALUE 3.8 M€

DESCRIPTION

The Municipality of La Maddalena wants to identify their optimal energy mix, considering the transportation sector and its synergies with the energy sector. This can be achieved by analysing local regulations, renewable energy potential, energy consumption data, transportation data, and various scenarios utilising renewable energy penetration.

AIM OF THE PROJECT

The IREM project aims to promote energy transition in La Maddalena Municipality using local renewable energy sources (RES) and planning transport strategies. The study will analyze scenarios with different RES penetration, enabling optimal allocation of budgets and financing. The coordinated strategy ensures coherent growth and avoids inefficient solutions or unused plants.

FUTURE STEPS

IREM's ambitious energy and transport plan will enable future steps towards reducing fossil fuel consumption and greenhouse gas emissions on the island. This will occur by implementing RES, electric mobility, and vehicle charging stations, leading to energy and economic savings, as well as positive social impacts.

HOW THE EU ISLANDS FACILITY NESOI SUPPORTS THE PROJECT

- 1 Climate change risk analysis and vulnerability assessment
- 2 Support in participatory processes for the promotion of zero or low carbon transportation modes
- 3 Mapping of the main financial instruments available to finance the identified actions and preliminary indication of the steps to approach them





INTERVIEW WITH

Federica Porcu, Deputy Mayor Municipality Of La Maddalena

Q: How was the project initially designed? Why choose this specific technology / sector?

A: La Maddalena's economy is influenced by its past, with significant upheavals due to American bases, downsizing, and G8 investments. The island's economy is seasonal and winter-based, with current policies focusing on waste management and transportation during high tourist seasons. The objective is to initiate energy reconversion, sustainable renovations, and preserve the territory as a National Park to achieve lasting prosperity with minimal environmental impact and promote sustainable development.

Q: What are the challenges of the project?

A: La Maddalena's economy and society are deeply influenced by its past, with significant upheavals due to American bases, downsizing, and G8 investments. The island's economy is characterized by seasonality and winter activities. Current policies focus on immediate issues like waste management and transportation during high tourist seasons, leading to a lack of long-term vision. The objective is to initiate a process of energy reconversion to achieve lasting prosperity with minimal environmental impact, planning sustainable renovations of public and private structures, and preserving the territory as a National Park. This approach aims to address immediate challenges and promote sustainable development in the region.

Q: What are your next steps towards clean energy transition?

A: The local administration has been drafting several plans, including the Municipal Urban Plan, Coastal Use Plan, Sustainable Tourism Development Plan, and Clean Energy Transition Agenda. They have also been working on the archipelago's candidature as Capital of Culture. The plan now focuses on redeveloping existing heritage and using virtuous criteria for new interventions, raising awareness among the population to achieve set goals.

Q: Within your views, where could this project be replicated?

A: The project can be adapted easily to different areas on the mainland such as remote, rural or especially coastal areas. This will be achievable thanks to the open approach used to define the activities, based on common pillars defined by the EU Commission through the documentation dedicated to sustainable mobility, energy and climate plans.

THE IMPACT

ON LOCAL COMMUNITY



1 Local grid benefits and economic impact

IREM aims to analyze power-transport synergies, providing flexibility and energy management. A local investment of 150,000€ is expected due to specialized maintenance and reliance on municipality inhabitants.

2 Social Acceptance

The social acceptance will be assessed during the project and particularly when the target objectives and the measures to reach are identified since the key stakeholders will be engaged and the island community is indeed the most important stakeholders.

FOCUS ON The La Maddalena Archipelago National Park

La Maddalena Archipelago National Park is the first national park in Sardinia. Established in 1996, it spans 5,134 hectares of land and 15,046 hectares of sea, offering rich biodiversity with 2 protected flora, 63 protected fauna, and 27 habitat types. The archipelago maintains naturalness, with zoning dividing territory. Flora is Mediterranean, with endemic and invasive species. Fauna includes birds, marine mammals, turtles, fish, reptiles, and invertebrates, some protected by international conventions.

The Archipelago, protected by landscape constraints, features public interest assets like Dogana and Villa Barra Caracciolo, and acknowledges historical and cultural value of military fortifications, religious architecture, and museum collections. The park plan highlights natural attractions like Spiaggia Rosa in Budelli and Candeo cliffs in Caprera, enhancing the archipelago's natural heritage through aesthetic and perceptive value.

The park's 2016 Management Plan focuses on habitat conservation and biodiversity, addressing threats like wildfires, alien species, and human impacts. It aims to limit degradation, reduce fragmentation, and improve habitat quality. The plan also protects plant species like *Limonium strictissimum* and *Silene velutina*, which are threatened by tourist development and alien species.



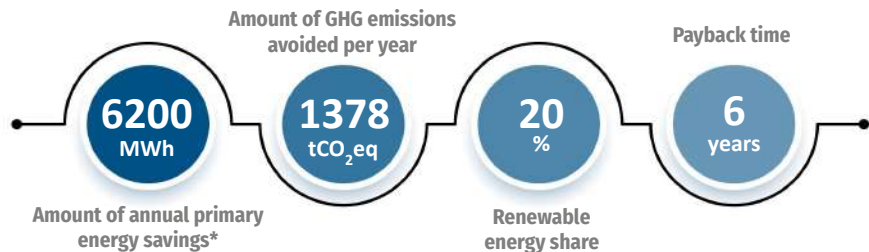
Arcipelago di La Maddalena National Park

(Source: Patrick Nouhailer, <https://web.archive.org/web/20161030112833/http://www.panoramio.com/photo/94602929>, CC-BY-SA-3.0, modifications: none)

EXPECTED ENERGY IMPACT

The Italian Power Grid is expected to produce 6,200 MWh of electricity, primarily from RES. The national factor for RES is 0.447 kgCO₂/kWh, while diesel use is around 2.61 kg CO₂e/liter. RES integration will save 1,360 tons of CO₂ and reduce 18 tons through the sustainable mobility plan, increasing the RES share in electricity by 15%. Additionally, new sustainable mobility strategies will reduce transport consumption by around 5% using clean technologies.

KEY NUMBERS OF THE PROJECT



REPLICABILITY IN OTHER ISLANDS

The proposed actions will be based on European documentations from SECAP (Sustainable Energy and Climate Action Plan), CETA (Clean Energy Transition Agenda), and SUMP (Sustainable Urban Mobility Plans), aiming to create a replicable strategy based on communitarian guidelines. Solutions will be chosen for cost savings, ease of purchase procedures, and high reliability, adaptable to various mainland areas such as remote, rural, or especially coastal areas.

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