



ISOLA DI
PANTELLERIA
PARCO
NAZIONALE



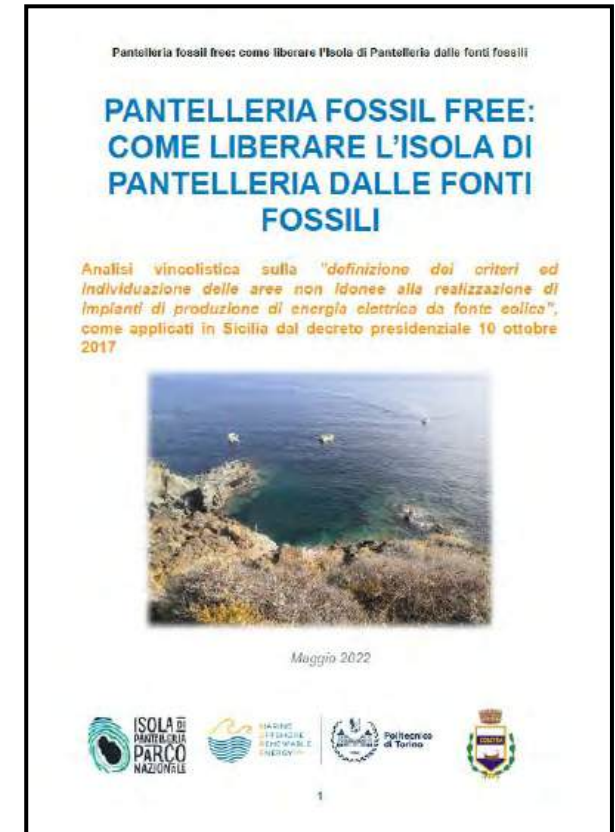
Island of Pantelleria
**Spatial energy planning for the
decarbonisation of islands**

1. Decarbonization Planning: Tools developed



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- **CETA (Clean Energy Transition Agenda)**
A strategic pathway developed with the Secretariat to guide the Clean Energy Transition process.
- **Pantelleria Fossil-Free Initiative**
Constraint analysis focusing on the "Definition of Criteria and Identification of Areas Unsuitable for the Installation of Wind Energy Production Plants."

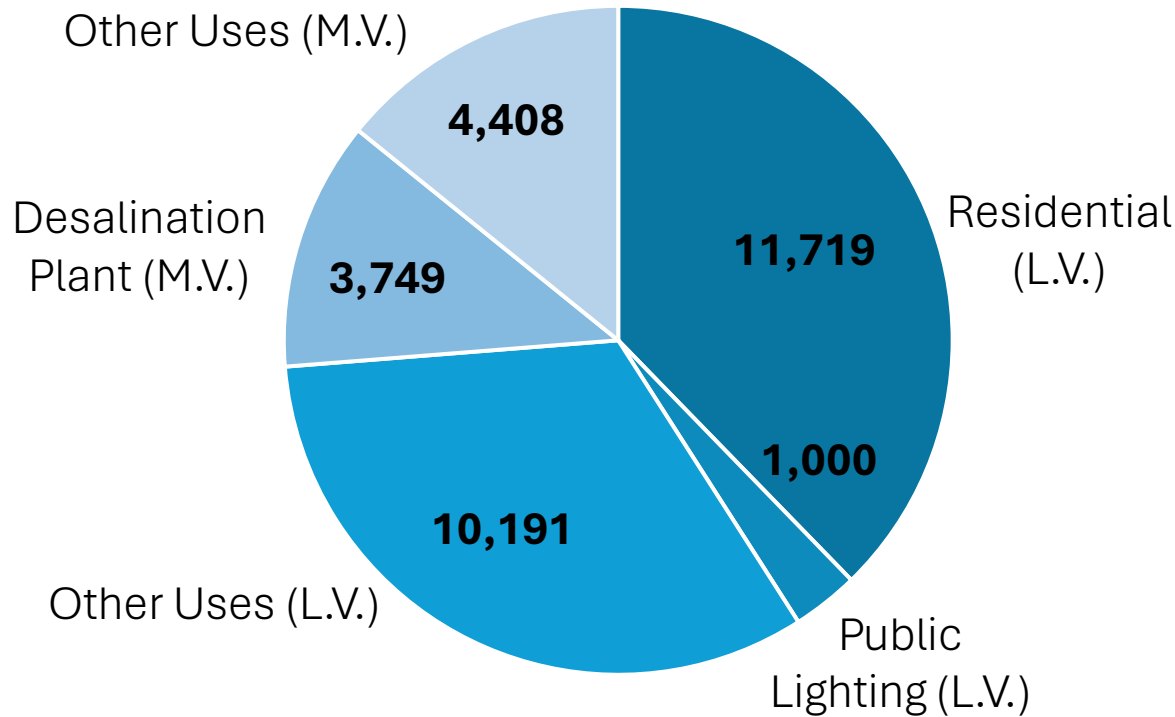


2. Energy Consumption in Pantelleria



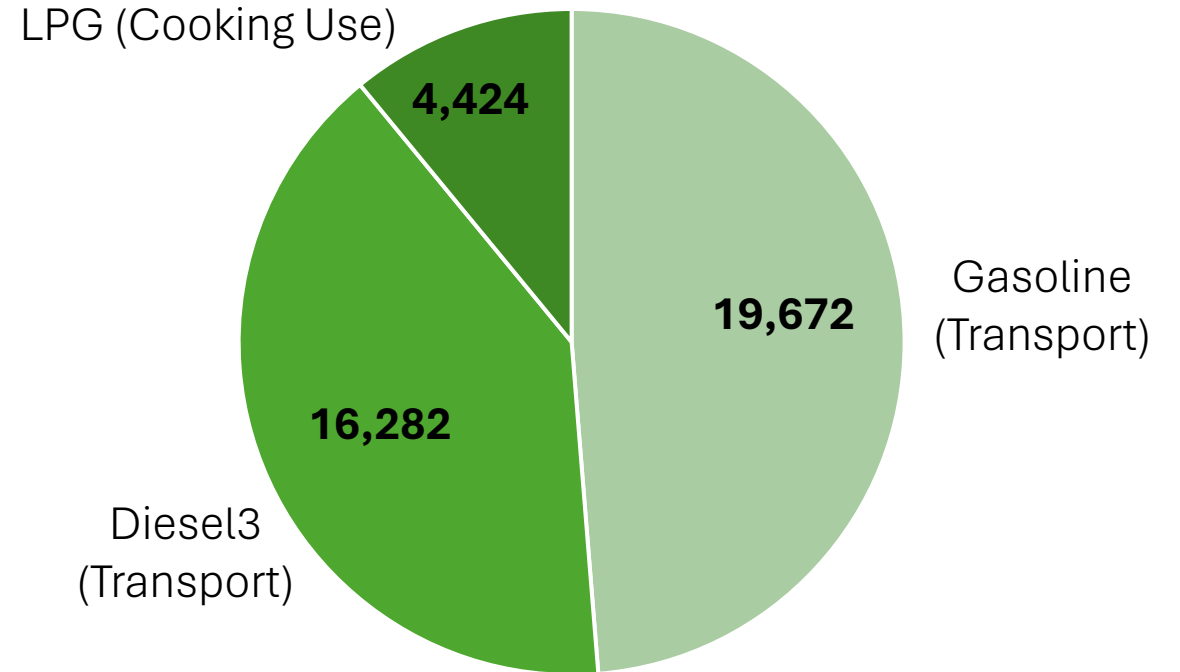
Derived from data provided by the local Distribution System Operator (S.MED.E. Pantelleria S.p.A.) and fossil fuel distributors. The total energy consumption in 2018 amounted to **72,439 MWh**.

ELECTRICITY



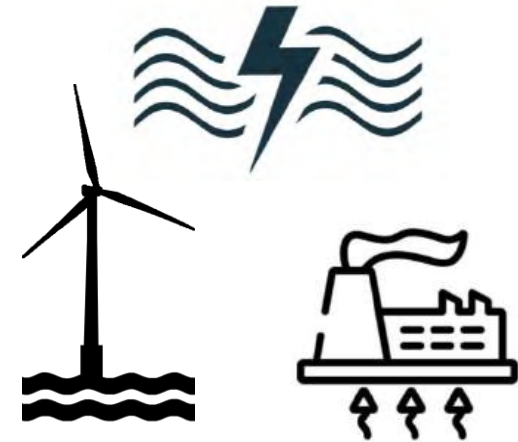
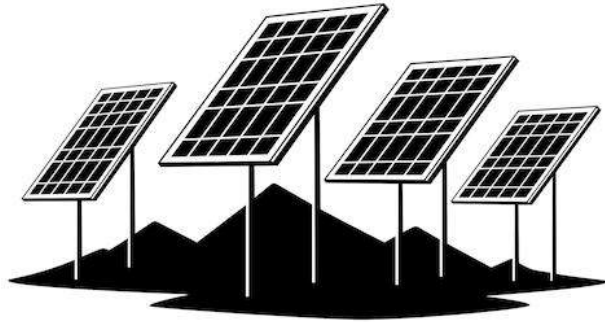
TOT: 31,067 MWh

FOSSIL FUELS



TOT: 40,378 MWh

3. Technologies Identified for Decarbonization





PV Up to 15 MW
Installation on rooftops and other suitable areas. Many locations face landscape constraints, including Dammuso traditional houses. Maximizing deployment wherever feasible remains essential.

WIND up to 1 MW
Currently impossible to install due to regulatory constraints. However, discussions with the Secretariat have identified a potential opportunity in the Arenella area.



Offshore Wind, WEC, and Geothermal Energy
Innovative research projects are currently in progress to explore these technologies.

4. Photovoltaic Projects

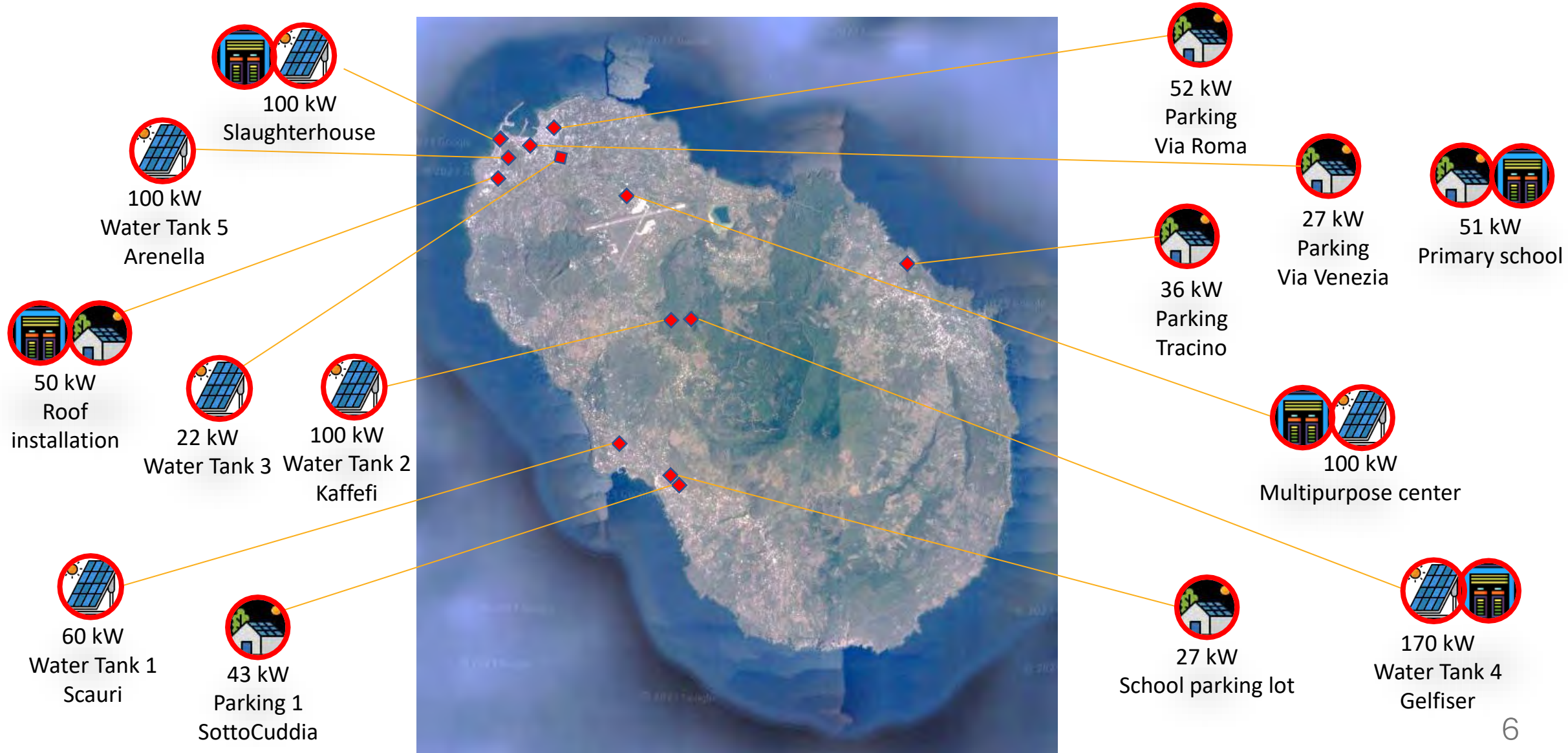
Ongoing:

| | |
|---|---|
|  | <p>1 MW from the Municipality under the National Recovery and Resilience Plan "Green Islands".</p> |
|  | <p>6 MW in the Pantelleria Airport, with Secretariat support for project development.</p> |

Already in operation:

| | |
|---|--|
|  | <p>4 MW installation requests by 2025 (2.5 MW from SMEDE, the DSO).</p> |
|  | <p>Medium-scale BESS of 4MW/4MWh already in operation.</p> |

PV Project: 1 MW – National Recovery and Resilience Plan "Green Islands"



PV Project: 6 MW – Pantelleria Airport

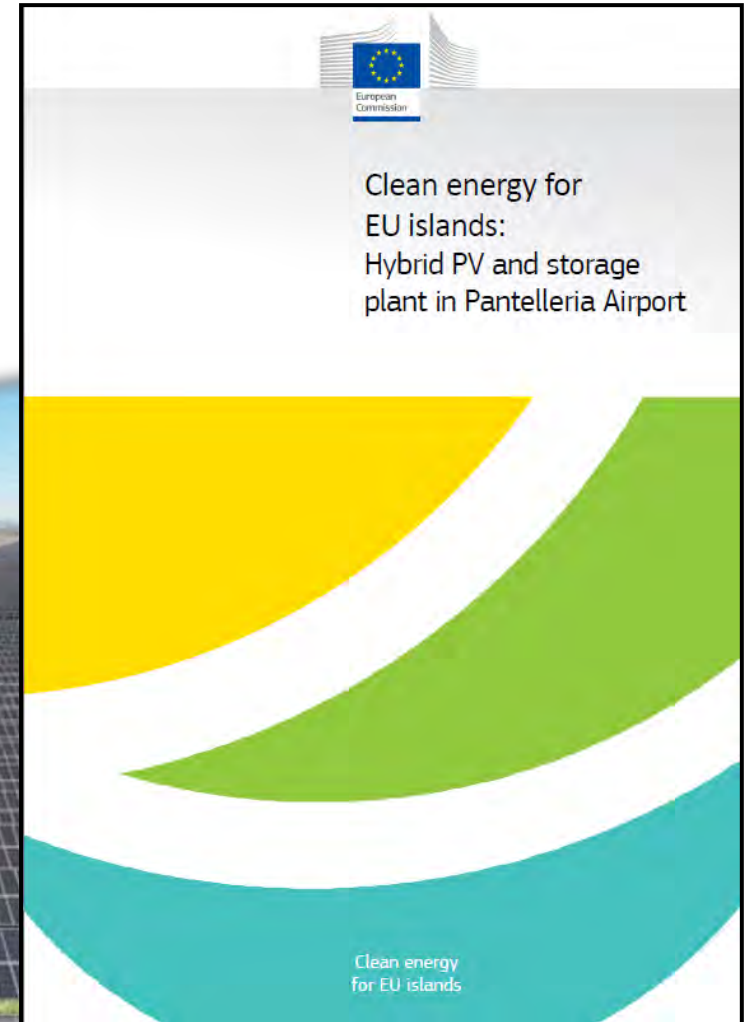


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Limited Areas for Renewable Energy Sources (RES) on Pantelleria

Due to regulatory and landscape constraints, there are few suitable areas for RES deployment. The airport area should be utilized as much as possible.

- **CE4EUI Publication:** “Hybrid PV and Storage Plant in Pantelleria Airport”
- **Example from Italy:** Fiumicino Airport, Rome



Hybrid PV and storage plant in Pantelleria Airport



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Strategic use of underutilized for PV installations.
Critical regulatory and technical constraints,
including maintaining a 150-meter obstacle-free
zone near the runway.



Techno-Economic Assessment:

Scenario 1: 5.4 MW PV and
9.8 MW / 27.3 MWh BESS

Scenario 2: 7.0 MW PV and
11.4 MW / 33.6 MWh BESS

Key Constraints for the PV Plant:

1. Regulatory Constraints
2. Interference with Communication Systems
3. Potential Surfaces for PV
4. Glare
5. Additional Risk of Bird Strikes



Hybrid PV and storage plant in Pantelleria Airport

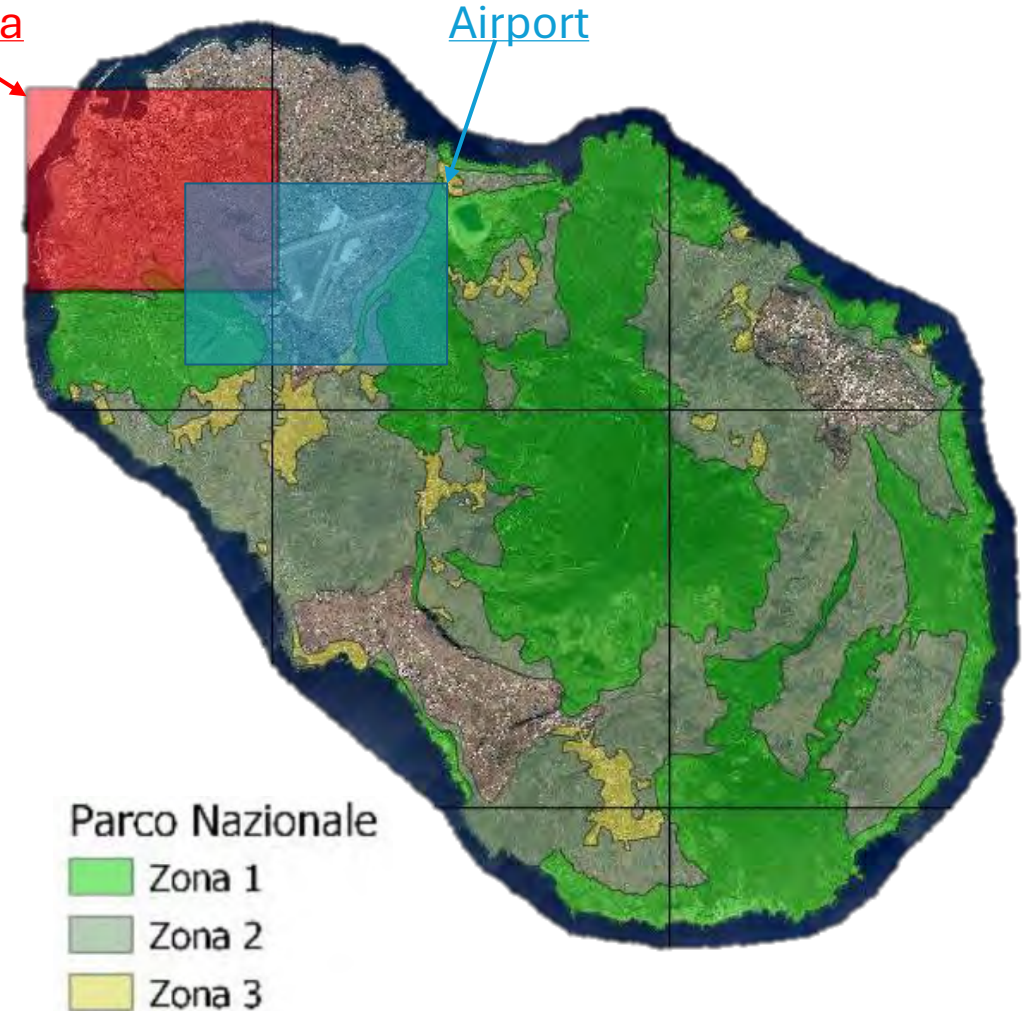


Arenella

Airport

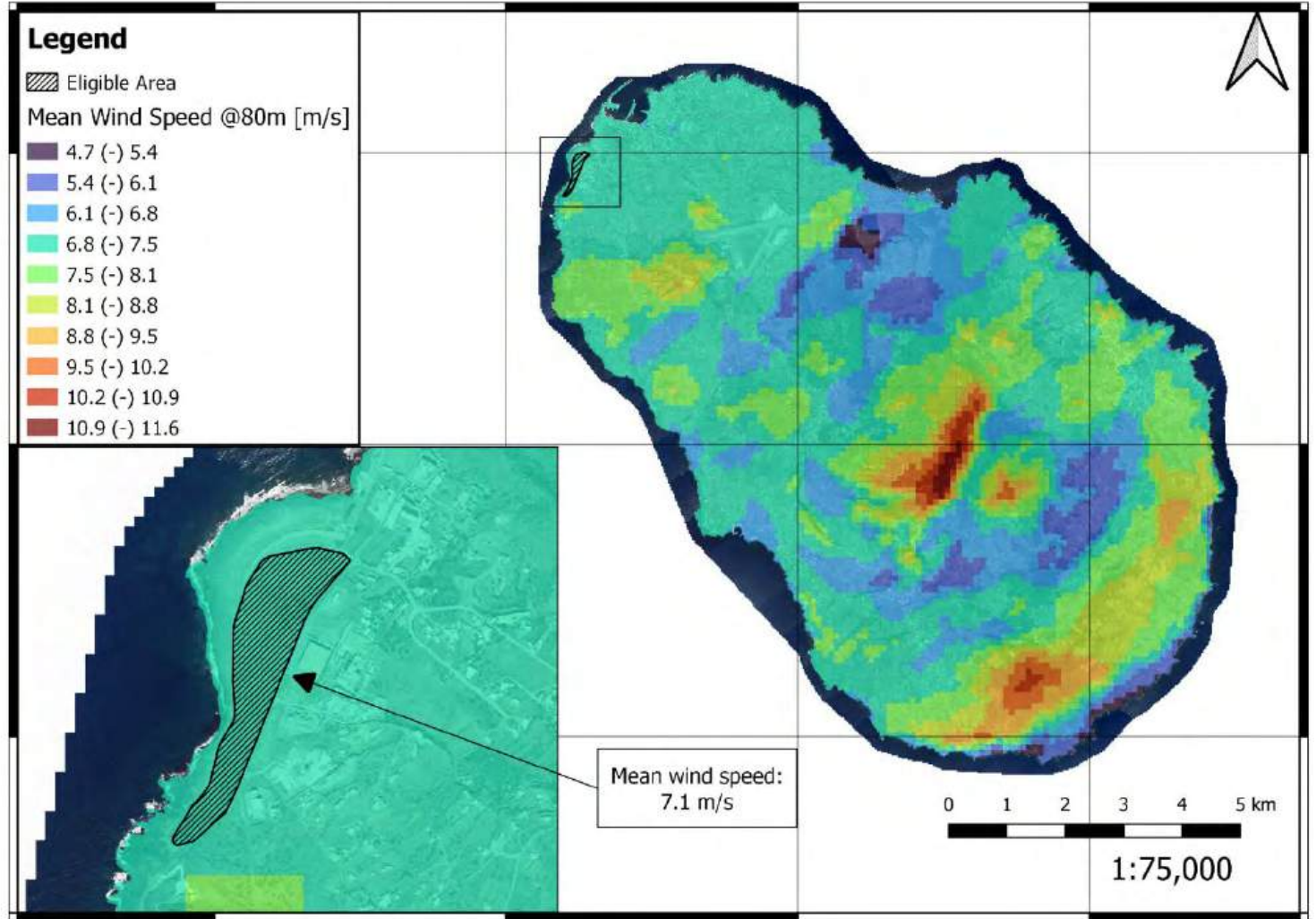
The National Park is divided into three zones by human impact:

- **Zone 1**: Minimal or no human activity; high natural and cultural value.
- **Zone 2**: Limited human activity; notable natural and cultural value.
- **Zone 3**: Significant human activity; primarily cultural and scenic value.



5. Ongoing Wind Projects

5x200 kW at Arenella area
Currently incompatible with
the regulatory framework



6. Innovative Research Projects



An EU project aimed at promoting the acceptance of onshore wind energy.



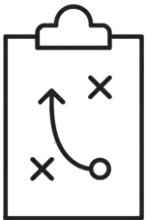
7. Conclusions



1. Identifying eligible areas for RES installation is challenging due to competing interests (National Parks prioritize environmental protection, municipalities focus on efficient land use, DSOs ensure grid functionality, and cultural heritage authorities protect landscape integrity).



2. The areas identified at the airport for PV and in the Arenella area for wind installations effectively balance these diverse needs.



3. The next step is to develop a robust strategic policy and funding framework to capitalize on this work, driving the energy transition forward.

Thank you!



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