European Commission

CE4EUI Forum 2026

Memorandum of Collaboration

Italian stakeholders session

Preamble

The participants of the Clean Energy for EU Islands Forum 2026, hereinafter referred to as "Forum 2026", including representatives of EU island communities, regional and national authorities, European institutions, energy system operators, private sector actors, civil society organisations and experts, meeting in Mallorca on 20 - 21 May 2026, draw on:

- personal and professional background knowledge and experience,
- the work carried out by the CE4EU Islands Secretariat,
- the experiences of the *30for2030* and other European islands,
- exchanges held during the Forum session.

The participants also take note that:

- EU islands face specific challenges for their clean energy transition,
- many island communities are already testing and implementing concrete clean energy solutions**,**
- progress depends on how effectively all stakeholders are aligned.

Based on these considerations, the participants share the following key messages and orientations emerging from the session discussions, which this document summarizes with a specific focus on the challenges, priorities and possible follow-up actions relevant to the clean energy transition of Italian islands.

Context

The Forum 2026 discussions highlighted the strategic role of islands as drivers of innovation for the European clean energy transition and the crucial importance of aligning all different stakeholders for its achievement.

The Forum 2026 brought together different actors involved in islands energy transition, allowing for exchanges across governance levels and sectors in order to accelerate the implementation of clean energy initiatives on EU islands.

Participating stakeholders

Name and surname	Organisation	Country
Enrico Giglio	Politecnico di Torino (Co-facilitator)	Italy
Riccardo Novo	3E (Co-facilitator)	Italy
Gaspare Inglese	Pantelleria National Park	Italy
Massimo Miraglia	Municipality of Pantelleria and Lampedusa e Linosa	Italy
Angelo Parodo	Municipality of Carloforte	Italy
Lorenzo Di Fresco	BluEnergy Revolution	Italy

Luca Daceva	BluEnergy Revolution	Italy
Francesco Luise	Greening the Islands Foundation	Italy
Caterina Carà	MOREnergy Lab (Energy Center), Politecnico di Torino	Italy
Claudio Moscoloni	MOREnergy Lab (Energy Center), Politecnico di Torino	Italy
Guido Grammatico	Municipality of Favignana	Italy
Davide Cozzella	Municipality of Procida	Italy
Alessandro Bianco	Unione Nazionale Imprese Elettriche Minori (Italian National Association of Small Electrical System Operators)	Italy
Matteo Spiller	Politecnico di Milano	Italy
Corrado Maria Caminiti	Politecnico di Milano	Italy
Tommaso Dieci	Politecnico di Milano	Italy

Pictures

PICTURE	
CAPTION	*Picture of the Italian stakeholders session, during the Forum 2026.*
AUTHOR	Claudio Moscoloni, MOREnergy Lab – Politecnico di Torino.

Key discussion topics of the session

The following key topics were discussed during the session:

- Topic 1: Renewable energy integration, island grid codes and flexibility governance
- Topic 2: Community engagement, local value and landscape-sensitive energy transition
- Topic 3: Decarbonisation of ports and maritime transport

The key outcomes from the discussion are presented as follows.

Topic 1: Renewable energy integration, island grid codes and flexibility governance

Problem setting

The discussion highlighted that the integration of renewable energy sources in small island power systems is not only a technological challenge, but also a regulatory and operational one. In Italian non-interconnected islands, the technical and regulatory framework still largely reflects rules and assumptions developed for mainland power systems. These frameworks are considered too rigid or insufficiently adapted to the specific conditions of isolated grids, which are characterised by limited system size, low inertia, seasonal demand variations, and a strong need for real-time operational control and infrastructural investments.

In this context, some participants stressed the importance of defining clearer and more island-specific rules for: 1) the management of renewable generation, including control and curtailment; 2) the development of grid-storage facilities, which do not follow the same market dynamics as on the mainland.

In small isolated systems, curtailment may become necessary to preserve system security and power balance under high renewable penetration. For this reason, it should be governed through transparent, predictable and technically justified rules, reducing uncertainty for both system operators and investors. The absence of dedicated grid codes, clear curtailment thresholds, and well-defined responsibilities can also lead to a reduction in terms of bankability of renewable projects and slowing down the transition.

The session also underlined that the regulatory framework for small islands has not always evolved at the same pace as technological development and market transformation. This creates a gap between the technical availability of solutions — such as storage, hybrid renewable plants, advanced control systems and demand-side flexibility — and the actual possibility to deploy them within clear, stable and replicable financial and operational arrangements.

Notably, the topic of renewable energy integration is generally of relevance also for interconnected islands, which typically face limited grid hosting capacity.

Suggested approach/solution

Also based on the exchanges with attendees from other countries, the participants of the Italian stakeholders session underlined that the main priority is not to identify entirely new technical solutions, but to create the regulatory and operational conditions for adopting solutions that are already available and, in several cases, deployed in other island systems. Dedicated island grid codes, clear rules for renewable modulation and curtailment, storage-based flexibility services, hybrid

renewable plants and demand-side management schemes were identified as key elements that can support higher renewable penetration while preserving system security and quality of supply.

Specifically, based on the discussions with other participants at the Forum 2026, experiences from other island contexts were discussed:

- Madeira/Porto Santo and the Azores were recalled as practical references showing that dedicated grid codes and island-specific operational rules can be developed and are beneficial for both system operators and renewable plant developers.
- The French non-interconnected zones are benefitting from a dedicated framework for storage systems, defined by the French Regulatory Authority. Centralised storage systems for load shifting and primary reserve, with grid-forming capability too, are being constructed by private developers and then operated by the island grid respective system operators. The private developers are compensated based on their projected investment and operational costs, plus a fee rate considering the project specific risk. The remuneration of private developers follows an annual compensation which ultimately incentivise the availability of the facility, with a target value and a bonus-malus mechanism, and the efficiency of the storage system.
- The Greek Regulatory Authority is promoting the development of hybrid power plants on several islands, for enhancing their electrical self-sufficiency while limiting the negative impacts on power grids. These have been developed through different procurement strategies, based on the size and characteristics of the islands. In general, a co-design between the Authority and the investors is applied to ensure alignment with market propositions.

The discussion especially highlighted the potential role of hybrid (renewables and storage) power plants, centralised storage systems, and demand-side management solutions. In particular, centralised storage could provide system services under the coordination of the island system operator, while flexible demand could support the balancing of renewable generation, especially where electricity consumption is linked to controllable uses such as water production, port activities or other local services maximising sector coupling potential to facilitate high-RES integration and mitigate structural curtailment. However, these solutions require clarification of ownership models, investment responsibilities, remuneration mechanisms and the operational role of the system operators. From a technical perspective, the session recognised that many of the required technologies are already available and that several applications exist in European island contexts.

The highlights gained by the exchanges at the Forum 2026 indicate that the transition of Italian small islands could be accelerated by assessing the replicability of actions already implemented in other territorial contexts and adapting them to the technical, regulatory and institutional conditions of the Italian island systems, rather than approaching each case as if no previous models were available. The priority is therefore not only technological innovation, but also the diffusion of good practices, the adaptation of regulatory frameworks and the creation of transparent conditions for implementation.

Follow-up actions

Participants agreed on the importance of collecting and sharing existing examples of island-specific grid codes, flexibility mechanisms, storage applications and renewable integration strategies already implemented in European islands. This would help identify regulatory and technical models that could be adapted to Italian small islands, highlighting their enabling conditions, limits and replicability margins.

A possible follow-up action would be to develop a structured comparison of existing solutions, with particular attention to curtailment rules, DSO responsibilities, storage ownership and operation, flexibility services, and hybrid renewable plant management. This could support the definition of more concrete proposals for national regulators and institutions, helping accelerate the adoption of solutions that are technically mature but still limited by regulatory uncertainty.

Topic 2: Community engagement, local value and landscape-sensitive energy transition

Problem setting

The discussion highlighted that the clean energy transition on small islands is not only a technical or regulatory process, but also a social and territorial one. Participants stressed the difficulty of communicating energy transition policies to local communities when these policies are perceived mainly as top-down targets, rather than as a shared pathway responding to local needs, environmental priorities, economic challenges and geopolitical risks.

During the discussion, the issue of social acceptability of wind energy projects in Sardinia was also recalled, with particular reference to offshore wind developments. This example highlighted how renewable energy projects may face strong local concerns when they are perceived as externally driven, insufficiently connected to local priorities, or potentially conflicting with landscape, seascape and territorial identity. The discussion underlined that such concerns should not be interpreted only as opposition to decarbonisation, but also as a signal of the need for clearer communication, early stakeholder involvement and a more transparent explanation of the local value generated by energy transition projects.

More broadly, the discussion showed that the social acceptance of energy policies and the environmental dimension of renewable energy deployment are closely connected, but should not be conflated. Decarbonisation objectives, landscape preservation and local environmental protection are not the same issue and may give rise to different concerns at local level. This is particularly relevant for small islands, where sensitive landscapes, ecosystems and cultural identities can make even limited infrastructure changes highly visible and politically salient. When these dimensions are not clearly distinguished, the debate may become polarised and even technically sound projects may face distrust, disengagement or opposition.

Suggested approach/solution

Participants suggested that communication should move beyond generic awareness-raising and become a structured component of energy transition planning. Local communities should be involved not only as recipients of information, but as active participants in understanding why specific interventions are needed, what impacts they may generate, and what benefits they can bring to the islands. This also requires acknowledging openly that renewable energy projects are not impact-free, and explaining how their impacts are assessed, minimised, managed and, where possible, made reversible over time.

A further key element is to make the progress of the transition visible and understandable. This means communicating not only the final objectives, but also the intermediate steps, the expected timeline, the reasons behind specific choices, and the results already achieved. Showing that projects

are advancing gradually and transparently can help build trust and reduce the perception that decisions are imposed without local control.

Participants also stressed the importance of linking energy projects to tangible local benefits. For example, where possible, communication should clearly show how the revenues or savings generated by a renewable energy project contribute to reduced energy costs, lower local charges, improved public services, community facilities, or other visible benefits for residents. This includes the use of territorial compensation mechanisms defined by law to support tangible benefit sharing, with a particular focus on reducing energy costs for citizens experiencing energy poverty. In this way, citizens are not only asked to accept an environmental or landscape impact but are also enabled to understand the local value created by the intervention.

From an environmental and landscape perspective, renewable installations should be planned with particular attention to reversibility, proportionality and long-term territorial compatibility. Where feasible, projects should be designed so that their impacts can be reduced over time, adapted to future needs, or reversed at the end of their operational life. This approach can help reconcile decarbonisation objectives with the need to preserve the distinctive landscape and environmental value of small islands.

Follow-up actions

Participants identified the need to collect and share examples of effective communication and community engagement practices adopted in island energy transition projects. Particular attention should be given to cases where local benefits were clearly quantified and communicated, such as reductions in energy costs, reinvestment of project revenues in public services, or visible improvements in community infrastructure.

A further follow-up action could be the development of a simple communication framework for island energy projects, helping local authorities and project developers explain: the reason for the intervention, the expected environmental and landscape impacts, the mitigation and reversibility measures adopted, the local benefits generated, and the way in which citizens can monitor progress over time.

This could support a more transparent and trust-based relationship between institutions, operators and communities, reducing the risk of disengagement and improving the social acceptability of the clean energy transition on small islands.

Topic 3: Decarbonisation of ports and maritime transport

Problem setting

The discussion highlighted the decarbonisation of ports and maritime transport as a key challenge for small islands, where maritime connections are not only transport services but essential infrastructures for accessibility, continuity of life, tourism, supply chains and emergency needs.

Participants stressed that this challenge is amplified by the ageing ferry fleets that often provide territorial continuity services to and from islands. In many cases, these services still rely on conventional vessels whose operating costs are strongly dependent on fuel prices. Although such costs may be partly compensated through regional or national public support schemes, their exposure to fuel price volatility and geopolitical instability creates financial and operational vulnerabilities for both service providers and public authorities. In this sense, the decarbonisation of

maritime transport was discussed not only as an environmental objective, but also as a matter of resilience, service continuity and territorial image.

Participants also noted that the transition towards low-carbon maritime transport, including hydrogen-based solutions where relevant, cannot be addressed only as a technological substitution of conventional fuels. New technologies may introduce specific technical requirements related to vessel design, autonomy, refuelling or charging infrastructure, safety procedures, port logistics, storage systems and operational planning. These requirements may not always be fully compatible with existing service patterns, route frequency, timetables or vessel typologies.

In this respect, one of the main challenges is to balance the technical requirements of decarbonisation technologies with the actual needs and expectations of island communities. For local residents and users, maritime transport is often perceived primarily in terms of reliability, frequency, affordability and continuity. Changes to routes, schedules, vessel types or port operations may therefore be difficult to accept if they are perceived as a reduction in service quality or as a constraint imposed by technological choices.

Participants stressed that this creates a broader planning, communication and engagement challenge. The decarbonisation of maritime transport may require not only new infrastructures and vessels, but also a shared understanding of why certain operational adjustments may be necessary, what benefits they can generate, and how negative impacts on daily life can be minimised.

Suggested approach/solution

Participants suggested that the decarbonisation of ports and maritime transport should be approached through integrated planning, combining technological feasibility, service requirements and community engagement. The objective should not be to adapt local needs passively to a given technology, but to identify technically viable solutions that can support decarbonisation while preserving the essential role of maritime connections for island communities.

Existing European experiences, particularly in Northern Europe, provide useful references for the decarbonisation of island maritime connections. The case of Samsø in Denmark was recalled as an example of an island context where the transition towards electric ferry services is being addressed through the joint planning of vessel characteristics, route requirements, port charging infrastructure and service continuity. The island is served by an electric ferry that is 115 metres long and has a capacity of 600 passengers and 188 cars. It runs over a route of more than 17 nautical miles.

Such examples should not be considered as directly transferable models, but as practical references from which technical, operational and governance lessons can be drawn for Italian islands. In this perspective, technical assessments for the Italian islands should be accompanied by a transparent dialogue with local stakeholders, including municipalities, operators, port authorities, residents, tourism actors and service users. This dialogue should help explain the constraints and opportunities associated with different technological options, such as hydrogen, electrification or hybrid solutions, and clarify whether specific changes in service organisation may be needed.

A key element is to make the trade-offs explicit. For example, if a low-carbon maritime solution requires different refuelling times, modified routes, adjusted frequencies or dedicated port spaces, these implications should be discussed openly with the community. At the same time, the benefits should also be clearly communicated, including emission reductions, improved air quality in ports, lower noise, potential local energy integration, and possible long-term economic or environmental gains.

Participatory service design can support this process, provided that it remains focused on preserving accessibility and territorial continuity. Communities should be involved in assessing which operational adaptations may be acceptable, while ensuring that technological choices do not translate into a perceived reduction in service quality.

Cold ironing and complete port infrastructure electrification are essential alongside vessel upgrades to turn ports – where air pollution is concentrated on small islands – into clean energy hubs and assets for isolated island grids.

Follow-up actions

Participants identified the need to collect and compare existing experiences and feasibility studies on the decarbonisation of island maritime transport and port systems, with particular attention to hydrogen-based, electric and hybrid solutions. This comparison should not focus only on the technology itself, but also on the operational implications for routes, schedules, port infrastructure, safety requirements and service continuity.

Concerning the relation with the local and regional authorities, a common effort is required to communicate the benefits in terms of decarbonisation of ports and maritime transport to/from the island. Electric ferries typically require high investment costs but can ensure significantly lower operational costs than the conventional ones. On top of that, the employment of electric ferries abates pollutant emissions at the ports and drastically reduce the operational noise.

Another possible follow-up action would be to develop a framework for discussing maritime decarbonisation projects with island communities. Such a framework could help local authorities and operators explain the technical constraints of different solutions, the expected impacts on maritime services, the environmental and social benefits, and the possible adjustments required from users and service providers.

The above actions could support a more informed and transparent decision-making process, helping authorities and communities to be ready for the significant changes that the maritime transport sector is going to face, and which are already taking place in various parts of Europe.

Nature of the Memorandum

This document reflects the main points raised during the stakeholder alignment session of the Clean Energy for EU Islands Forum 2026. It is intended as a record of the discussions and does not constitute a formal or binding commitment.