



**NESOI**  
EU ISLANDS FACILITY

**FAIR ENERGY  
COMMUNITIES**

# FECOS



 **SICILY SALINA**

**“FECOS intends to address critical energy poverty issues. In Fondo Saccà, a slum has been dismantled and a green building created as the core of the local energy community “**



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.



## **FAIR ENERGY COMMUNITIES**

### **ABOUT** THE PROJECT

#### **Project Promoter**

Associazione Comunità Energetica di Fondo Saccà  
 Fondazione di comunità di Messina Fondazione Horcynus Orca



#### **Stakeholders**

The public and private owners of the buildings

The national Energy Services Manager



**Country** Italy



**Sector** Energy Community



**PROJECT VALUE** 1,866,000 €

#### **DESCRIPTION**

The project envisages to finalize and implement a working model for solidarity-based energy communities, able to mutualise energy between members according to social algorithms, connecting energy efficient buildings.

#### **AIM OF THE PROJECT**

The project aims to finalize the energy community model implemented by the newly formed Energy Community (EC) of Fondo Saccà located in the Municipality of Messina (Sicily), and replicate it in 3 other Sicilian territories: the Municipalities of Mirabella Imbaccari, Casalvecchio Siculo and on the small island of Salina (Aeolian archipelago).

#### **FUTURE STEPS**

Dissemination of the model. Identification of funding opportunities for municipalities. Many projects towards clean energy transition: energy efficiency activities in buildings, urban regeneration, production from renewable sources (solar above all, but also other sources to be included).

## **HOW THE EU ISLANDS FACILITY NESOI SUPPORTS THE PROJECT**

- 1 Review or completion of energy audits and technical dimensioning of the project
- 2 Analysis of the legal framework and assessment of existing procedural PPP options
- 3 Definition of technical, investment, financing, revenue stream and management costs
- 4 Definition of the targeted tendering procedure and guidelines for the PPP contracts
- 5 Action plan and identification of project / process monitoring procedures
- 6 Data collection and market analysis
- 7 Economic and Financial planning and economic-financial feasibility assessment
- 8 Business Plan, preliminary Information Memorandum and Identification of potential financing options
- 9 Market testing with potential investors



## Fair Energy Communities- Interview



### INTERVIEW WITH

Giacomo Pinaffo, Fondazione di comunità di Messina

**Q: How was the project initially designed? Why choosing this specific approach?**

A: Energy communities are one of the tools identified to promote sustainable development models for territories with weaker socio-economic characteristics. Urban regeneration projects and energy communities had already been implemented to fight energy poverty and inequality. The energy aspect is crucial in those territories because of the high cost of energy impacting on disadvantaged families, the high potential for photovoltaic production given the location and high solar irradiation in Sicily, and the strong possibility of having an impact on the lives of these people.

**Q: What were the challenges? How does NESOI help overcome them?**

A: There are some challenges of an administrative and regulatory nature: the energy community is a structure introduced in the legislation but still in progress, parts of the legislation are missing to complete the picture and allow investments and their concrete realisation. Besides that, we are using an algorithm to share energy and subsidies not only based on each participant's consumption but also based on needs: it also models social difficulties (income, health...). NESOI will allow the model to be finalised and packaged so that it can be replicated. For municipalities, the model developed by the project can be a useful tool to address social issues and they could use the model to develop a social policy for disadvantaged people. Through the support of NESOI, the aim is to develop pathways, documentation and templates that can be tools for municipalities to replicate and adapt the model.

**Q: What will be the next steps towards the concrete implementation of this project?**

A: The package is complete: material that municipalities can use to create solidarity-based energy communities. Beside regulatory clearance, the concrete realisation will depend on the release of the next calls for projects issued by the national recovery plan on the energy community topic. Indeed, municipalities need financial resources to implement the actions.

**Q: What would you identify as your strengths when setting up your project?**

A: Experience and focus on social aspects, that are translated into technology. Know-how of partners and ability to implement as they are physically present in the area.

### THE IMPACT ON LOCAL COMMUNITY



**1 Local Economy**

The investments will activate the local building-related and energy efficiency suppliers/workers, with a relevant economic impact in a disadvantaged area (Sicily has the highest unemployment rate in Italy), also developing new competencies thanks to the technological innovations.

**2 Social Acceptance**

Thanks to the algorithm which takes social difficulties into account, a greater share of the benefits goes to those who are weaker. This is very different from the mainstream approach whereby the creation of energy communities is simply an economic benefit for each stakeholder in the community. This model involves further involvement of citizens.

## Fair Energy Communities– Technical Data

### FOCUS ON

#### ENERGY POVERTY MITIGATION THANKS TO ENERGY COMMUNITIES

Slums were built in Fondo Saccà, in the town of Messina, after a major earthquake in 1908 and after the bombings of the Second World War. Over 1,800 families still lived in the slums in recent years in a state of high urban degradation and social marginalization.

In the framework of a complex urban regeneration programme, part of the slum was dismantled and green buildings, to house disadvantaged people and community services, as well as a public park, were created.

As an outcome of this programme, an Energy Community was created, involving:

- Innovative technological solutions concerning energy efficiency interventions and energy production and management systems,
- A social algorithm, to calculate and redistribute the revenues from renewable energy production.

The redistribution algorithm allows covering the cost of the investments, for which the disadvantaged families did not have to pay anything; and to redistribute the remaining part in proportion to the level of social fragility of the families.

All interventions in the local contexts are deployed through participatory processes using the TSR® (Socially Responsible Territories) methodology introduced by the European network of cities and regions for the social economy. To learn more: [www.revesnetwork.eu](http://www.revesnetwork.eu).



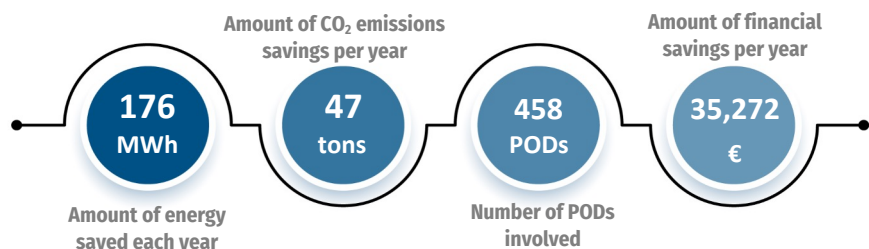
**Green buildings vs. the slum in its initial state.**

The building envelope made of straw and wood has high thermal inertia. The solar and thermal energy productions, a natural ventilation system and the surrounding vegetation contribute to optimizing consumption and allow high energy performance.

### EXPECTED ENERGY SAVINGS

The overall energy needs of the buildings have been estimated using as reference the UNI/TS 11300. In Fondo Saccà the primary energy needs of the new building will be equal to 19 kWh/m<sup>2</sup>/year against the 70 kWh/m<sup>2</sup>/year of a traditional building in the same climatic zone. The building is actually replacing a slum, which is much more energy inefficient. Adding also the interventions in the other ECs, the total primary energy savings will be at least 176.361 kWh/year. Knowing that the energy used in Fondo Saccà and Salina comes exclusively from the electricity grid and that in Mirabella the current energy system is powered by methane gas, a total annual saving of CO<sub>2</sub> emissions into the atmosphere of at least 47 tons is expected.

### KEY NUMBERS OF THE PROJECT



### REPLICABILITY IN OTHER ISLANDS

The project includes an immediate replication of the EC model developed in Fondo Saccà in 3 other municipalities (see support letters), with differentiated local contexts. The fine-tuned EC model, outcome of the project, will be therefore highly replicable in any context. The scalability is ensured by the open structure of the EC, as any neighbor may join it, as long as they are connected to the same local network.