



NESOI
EU ISLANDS FACILITY

Setup of First citizens' energy
community in the Canary Islands

SOFIA



TENERIFE



“ The municipality of Adeje is willing to communicate about its initiatives around energy communities and show an example to other municipalities in the Canary Islands”



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.



Setup of First citizens' energy community in the Canary Islands

ABOUT THE PROJECT

Project Promoter



energyRIS
 RESEARCH & INTELLIGENCE SOLUTIONS

Energy Research & Intelligence Solutions S.L.U. (EnergyRIS)



Stakeholders

Energy Research & Intelligence Solutions S.L.U. , Town hall of Adeje, citizen associations, small and medium sized enterprises, and communities of owners



Country Spain



Sector

Energy Community



PROJECT VALUE 2,816,500 €

DESCRIPTION

The municipality of Adeje in Tenerife sees a potential in energy communities and together with the company EnergyRIS wants to investigate the feasibility and the potential of citizen and renewable energy communities. Various ways to increase the level of self-consumption of citizens will be assessed.

AIM OF THE PROJECT

- To elaborate a feasibility study to establish energy communities around solar PV assets in the municipality of Adeje.
- Calculate the GHG and pollution reduction potential and possible socio-economic impact,
- Make a regulatory analysis and propose procedures.

FUTURE STEPS

The energy community will further be supported by subsidies granted by the Government of the Canary Islands. At least 2 MW of photovoltaic solar generation for collective self-consumption will be established with the objective of reaching 10 MW. EnergyRIS wants to activate the figure of the self-consumption manager.

HOW THE EU ISLANDS FACILITY NESOI SUPPORTS THE PROJECT

- 1 Identification of suitable technological options given existing project sizing requirements
- 2 Definition of the required environmental permitting procedures
- 3 Cost-Benefit, socioeconomic and environmental analysis
- 4 Identification of the preferred option and corresponding definition of project inputs
- 5 Risk analysis and identification of available mitigation strategies
- 6 Assessment of existing procurement options
- 7 Financial modelling and identification of target scenario
- 8 Identification of financing/funding options, action plan
- 9 Regulatory analysis and governance options on energy communities





INTERVIEW WITH

Prof. Dr. Ricardo Luis Guerrero Lemus, Professor at the Universidad de La Laguna and CEO of Energy Research & Intelligence Solutions S.L.U. (EnergyRIS)

Q: How was the project initially designed?

A: EnergyRIS designed this project to allow people who live in communities, and have roofs on buildings which are not used, to have access to self-consumption of renewable energy. Having worked with solar PV technologies for 23 years, I truly believe that this is the best available technology to help citizens become the prosumers of locally produced renewable energy.

Q: What are the challenges of the project? How does NESOI help overcome them?

A: The main challenge to overcome is the financing of the initiatives. Although there are many people interested in participating in energy communities and installing solar PVs, they often don't have the necessary resources to make the investment. For public subsidies however, the application and justification processes are very complex, which discourages or prevents many potential users from applying for them. The symbiosis of knowledge of the different NESOI partners served to carry out a feasibility analysis, estimate the numbers, reflect calmly to and plan carefully the development of the project. NESOI's support also allowed the SoFIA project to get credibility and recognition.

Q: How does the project impact local citizens?

A: The project has been well received locally, partly also because the project and EnergyRIS are supported by the Adeje City Council. The project allows for more wealth to stay on the island since local economic flows are generated through the trade of renewable energy. Citizens who participate in energy communities get very involved, are very well informed, and then advertise the project with conviction, making the initiative even more popular.

Q: What are the next steps of the project?

A: The continuation of this project is supported by subsidies for collective self-consumption, granted by the Government of the Canary Islands. The energy community would like to develop at least 2 MW of photovoltaic solar generation for collective self-consumption. When enough funding is obtained for the first steps, the solar PV plants will be installed.

It is also now easier for citizens to increase their knowledge about small-scale PV plants for self-consumption, since the City Council has hired EnergyRIS to carry out some tasks, and the council now refers people with these type of questions to EnergyRIS.

THE IMPACT

ON LOCAL COMMUNITY



1 Local Economy

The defined communities in Adeje would create many new working places mainly to handle technical aspects and assist in setting the communities up.

2 Social Acceptance

Local interest and support is created with the pilot in Adeje with 100 kWp on the municipality and through project communications. During the project Adeje residents will get to know about the energy community concept and the benefits it brings.

Setup of First citizens' energy community in the Canary Islands – Technical Data

FOCUS ON CITIZENS AND RENEWABLE ENERGY COMMUNITIES

Despite of receiving a very high solar radiation, the Canary Islands still rely on fossil fuels to produce energy. This situation has negative effects on the environment and on the desired green reputation of holiday destination. In addition, since these islands are not connected to the mainland, fuels must be transported to the islands, increasing the pollution and cost issues.

The suggested solution is to establish energy communities around PV assets installed on public and private buildings which distribute energy to consumers located within a 2-kilometers radius.

The fundamental concept is that a larger PV site (99.9 kWp) on the rooftop a municipal building in Adeje serves as the community's hub. This model will also be evaluated in the event that private community members would like to install their own assets. The residents of the community use the public grid to collectively consume the energy generated by the assets located inside the community. Community members also receive a financial benefit, i.e., reduction in the network fees and tolls, for the electricity supply from the low voltage power grid.

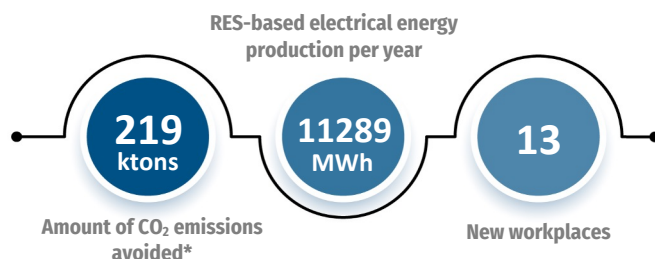


Adeje's municipal music school, with a 99.9-kWp rooftop PV installation, is the hub of the first energy community in the municipality (Picture provided by EnergyRIS)

EXPECTED ENERGY and GHG SAVINGS

3.303 t of fuel oil is saved per year based on total solar energy delivered by communities in Adeje and taking into account the total primary energy use in Tenerife for power production. In terms of GHG emissions, 219 ktons of CO₂eq is avoided during guaranteed lifespan of PVs in Adeje.

KEY NUMBERS OF THE PROJECT



REPLICABILITY IN OTHER ISLANDS

In SoFIA, the studied models should be fully (100%) replicable in other islands of the archipelagos and on the mainland, since there are not technical boundaries to the replication. The only difference would be in the payback times, as the Canary Islands have the highest solar irradiation and, therefore, lower levelised cost of energy.

Picture in introduction - photographer: Mike Peel, source: https://commons.wikimedia.org/wiki/File:At_Palmetum_de_Santa_Cruz_de_Tenerife_2022_028.jpg, license: CC-BY-SA-4.0, modifications: none