CLEAN ENERGY
FOR EU ISLANDS

FINANCING THE ISLAND CLEAN ENERGY TRANSITION

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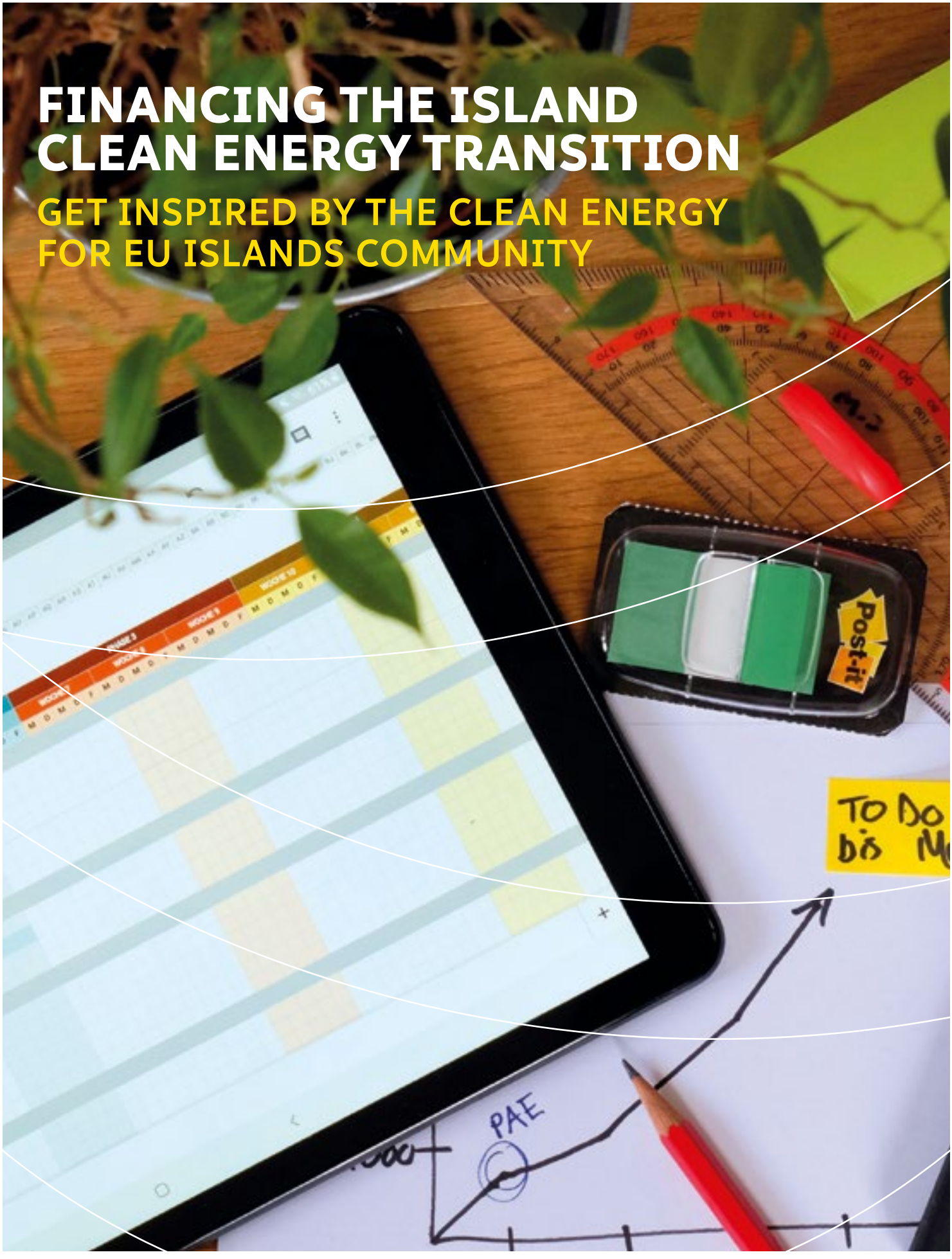

Introduction

The energy transition is a process that will include joint efforts of multiple stakeholders. Islands are recognized as ideal pilot sites which can spearhead the transition to clean energy, and the development towards a sustainable and healthy society.

Whether you're developing a decarbonisation plan or a specific clean energy project, you will need to assess how you will finance it.

With this leaflet, the **Clean Energy for EU Islands Secretariat** aims to provide information to help islands find the right financing resources for their clean energy transition.

The first step for turning your project ideas into concrete activities is to explore the financing possibilities from local, national and EU sources.

So, let's explore!

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Unlocking financing for islands through EU funding

There are various opportunities for financing your projects through the EU funds that exist for a broad range of projects; regional and urban development, agriculture and rural development, employment and social inclusion, maritime and fisheries policies, research and innovation... Island energy transition can be a part of different funds depending on how the project idea is designed. Additionally, new funds were released during 2019 which are specifically aimed for islands and there are several currently open under **Horizon 2020**. Horizon 2020 will resort under the **Life programme** as from 2021 - only research and innovation will stay in **Horizon Europe** (the programme succeeding Horizon 2020).

Madeira Portugal

The Smart Islands Energy System (SMILE) project is a collaboration of nineteen partners from European countries funded by the Horizon 2020. On three different islands – Samso, Denmark, Orkney Islands, UK, and Madeira, Portugal, the project will demonstrate nine different smart grid technologies. On Madeira, an intelligent control and automation system is being implemented in the existing grid to provide better management of the distribution network and ensure grid reliability and resilience.

AREA: *741 km²*
NO. OF CONSUMERS:
262,000 regular inhabitants
(1.4 mio. tourists per year)
GRID: *not connected to the mainland*
PROJECT: *SMILE*
TOTAL INVESTMENT: *2,188,774 EUR*
FUNDS: *Horizon 2020*

Madeira is not connected island and therefore all energy consumed on Madeira is generated on the island itself. The local DSO – a publicly owned company – is responsible for grid infrastructure, energy generation, transmission and distribution. The peaks in solar irradiation do not cover the demand peaks which is causing difficulties in managing an island network. Smart metering will generate a significant quantity of data crucial for further transition of the island. One of the aims of the project is to evaluate how battery electrical storage systems can be integrated in Madeira island.
More info: ***Smile project***


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Project Specifics

- *An intelligent control and automation system will be implemented in the existing grid*
- *Existing electric vehicle network on the island will be expanded and integrated with the control system via smart charging software*

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Unije Croatia

Unije Island is part of the Cres-Lošinj archipelago and constitutes the westernmost part of Primorje Gorski Kotar County (PGKC). The "Unije: self-sufficient island" project started in 2015 as a collaboration between PGKC, KrK Diocese and the City of Mali Lošinj with the objective to revitalize Unije Island and make it energy independent. REA Kvarner coordinates the project on behalf of the County PGKC.

The project activities are ongoing and are being complemented with other projects and sources of funding, such as the H2020 project INSULAE – Maximizing the impact of innovative energy approaches in the EU islands (2019-2023). The DSO is in charge of managing the demand and supply of energy and includes all stakeholders needed in the process (i.e. operators of the water and energy infrastructures, final energy users). The local community at the island of Unije is informed and consulted about every activity, as their active participation and support is considered of high importance for reaching the project goals.

More info: ***Insulae Project***

AREA: *17 km²*
NO. OF CONSUMERS: *88 regular inhabitants; twice as much during weekends, 800 tourists per year*
GRID: *connected to the mainland grid via a 110 kV submarine cable*
PROJECT: *Unije self-sufficient island (INSULAE)*
TOTAL INVESTMENT: *697,000 EUR*
FUNDS: *Horizon 2020 – Regional Energy Agency Kvarner (REA KVARNER), Ericsson Nikola Tesla d. d. (ENT), Water supply and drainage Cres Lošinj Ltd (VIOCL)*

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Project Specifics

- *Implementation of a battery storage system*
- *The INSULAE project complements a 1,300,000 EUR worth PV plant of 1MW capacity-installed by the national energy company HEP*
- *Several domestic 5 kW-13,5 kWh storage systems will be acquired and installed in the households*
- *Deployment of Smart Boxes connected through 5G*
- *Irrigation and desalination systems will be digitalised*

Community-financed projects

Community financing is an effective way to mobilize both funds and public support for the clean energy transition. Experience shows that by allowing citizens to become investors in local renewable energy projects, they not only become more supportive of clean energy projects, but also tend to change their overall behaviour and approach towards energy. Community financing further allows maintaining revenues in the local economy, thus strengthening the economic and social fabric of the island community.

Aeroe Denmark

Ærø is one of the Danish Baltic Sea islands. In 1981 the island's community established the Ærø Energy and Environment Office, which took the role of a local intermediary in the process of developing a community-owned wind farm. Only inhabitants or companies on the island can buy shares. A bidding process ensured an inclusive character, selling to those inhabitants who wanted to buy a small number of shares before opening to those who wanted to invest a larger amount of money. Local banks contributed to this inclusive approach by providing bank loans to citizens.

AREA: *88 km²*
NO. OF CONSUMERS: *6,050 regular inhabitants (170,000 tourists per year)*
GRID: *connected to the islands of Als and Langeland*
PROJECT: *community-owned wind farms (Vind 1, 2 and 4)*
TOTAL INVESTMENT: *15,000,000 EUR*
FUNDS: *Private (community members and private investors)*

The 6 wind turbines on Ærø are owned by 650 local shareholders (more than 10% of the inhabitants on the island) and a local fund, which invests part of its returns into local community projects. The wind power project paved the way for a number of other renewable energy projects on the island, including three solar district heating plants and the world's first all electric ferry project of its size.
Today, over 55% of the island's total energy comes from wind, solar, and biomass, and Ærø aims to run 100% on renewables by 2025.
More info: ***Aeroe Energy and Environment Office***

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Project Development Steps

- *Preparation of project documentation*
- *Licensing*
- *External experts on the development of the project*
- *Building the wind turbines*

Eigg UK

The Isle of Eigg launched an off-grid electric system powered by wind, water and solar in 2008 with direct investment from islanders, making Eigg the world's first community to develop such a project. The National Lottery and the Highlands and Islands Community Energy Company partially funded The Heritage Trust to form a company, Eigg Electric Ltd. (partly citizen-owned), which would operate the new 1.6 million £ network.

Eigg Electric generates a limited amount of energy, and so Eigg residents agreed from the outset to cap electricity use at 5 kW at any one time for households, and 10 kW for businesses. If renewable resources are low, for example when there is less rain or wind, a „traffic light" system asks residents to keep their usage to a minimum. The traffic light reduces demand by up to 20 % and ensures there's always enough energy for everyone. Today, this 30 sq km island continues to be an example, not only in how to deliver electricity from renewable energy, but more importantly - how societies could meet their energy needs and become self-sufficient.

More info: ***Island of Eigg***

AREA: *31 km²*
NO. OF CONSUMERS: *105 regular inhabitants (25,000 tourists per year)*
GRID: *not connected to the mainland*
PROJECT: *Isle of Eigg electrification project*
TOTAL INVESTMENT: *1,567,000 £ (approx. 1,760,000 EUR)*
FUNDS: *Isle of Eigg Heritage Trust (50 % citizen-owned, 140,000 £), Isle of Eigg residents' connection fees (51,000 £, paid by citizens), The Big Lottery fund (250,000 £), Highland and Islands Enterprise (250,000 £), European Regional Development Fund (764,000 £), Highland Council (10,000 £), Energy Saving Trust (102,000 £). Triodos bank assisted in the financial arrangements, providing bridging loans.*

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Project Specifics

- *119 kW of hydro power capacity using three turbines of 100 kW, 10 kW and 9 kW at three sites*
- *24 kW of wind power capacity (4 × 6 kW)*
- *About 54 kW of solar PV capacity*
- *160 kW of diesel generator capacity as back-up (2 × 80 kW)*
- *The total system installed capacity is about 357 kW*

Projects financed through investment funds

The ELENA fund managed by European Investment Bank provides grants for **technical assistance** focused on the implementation of energy efficiency, distributed renewable energy and urban transport programmes. It supports programmes above **30 million EUR** with a 3-year implementation period for energy efficiency and a 4-year period for urban transport and mobility. ELENA can cover up to **90% of technical assistance/project development costs**. Smaller projects can be supported when they are integrated into larger investment programmes.
Source: eib.org

What activities do ELENA grants cover?

- Feasibility and market studies
- Programme structuring
- Business plans
- Energy audits and financial structuring
- Preparation of tendering procedures
- Contractual arrangements
- Project implementation units

South Aegean Region Greece

This project implements energy efficiency measures in the regional and municipal street lighting network, as well as energy efficiency retrofits in public buildings owned by the South Aegean Region. Street lighting will be implemented through PPP schemes, where public infrastructure projects will be co-founded by private capital.
Project financing can also be combined with European Structural and Investment Funds under the National Strategic Reference Framework (NSRF) in order to finance activities related to pole replacement and electric system upgrade. For energy efficiency investments in public buildings, six hospitals on different islands were chosen (Kos, Kalymnos, Leros, Rhodes, Syros and Naxos).
Financing based on the energy performance is ensured by NSRF 2014-2020 and private investors.
The project is expected to benefit most of the inhabited islands included in the Region: Andros; Kalymnos; Karpathos; Kea-Kythnos; Kos; Milos; Mikonos; Naxos; Paros; Rhodes; Siros; Thira; Tinos.
***More info:** EIB*

AREA: *5,285.99 km²*
NO. OF CONSUMERS:
309,015 regular inhabitants
(over 1 mio. tourists per year))
GRID: *partially connected*
PROJECT: *Improving Energy Efficiency in the South Aegean Region*
TOTAL INVESTMENT: *38,000,000 EUR*
FUNDS: *ELENA (technical assistance), Regional Operational Programme NSRF 2014-2020, PPPs and ESCOs (investment)*

© REGION OF SOUTH AEGEAN, GREECE

Project Development Steps

- *Energy efficiency in street lighting project will be implemented through the PPP approach*
- *A Special Purpose Entity will be established through a public tendering process*
- *Two proposals will be submitted to the PPP Unit – one for the Regional street lighting network and one for the Municipal street lighting network*
- *Fourteen PPP contracts to be signed, one with the Region and one with each participating Municipality-Island*
- *Preparation of the necessary studies and the implementation of the projects*
- *Maintenance and operation of the energy efficiency technologies*

Support corner

Consult our CLEAN ENERGY FOR EU ISLANDS support section and learn more about financing mechanisms, transition management, community engagement, policies and technology opportunities for your projects: **euislands.eu/support**
Specific information on financing mechanisms can be found in the Secretariat's **Quick-Reference Guide on Financing**.

Find how to finance your **Island Energy Transition**: