Sustainable Places Conference: MAESHA

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MAESHA

Demonstration of smart and flexible solutions for a decarbonised energy future in Mayotte and other European islands

Decarbonizing Islands: MAESHA Project

This project has received funding from the European Union's **Horizon 2020 Research and Innovation programme** under Grant Agreement No. **957843**.

Project highlights

Start in November 2020 Decarbonize European islands

Horizon 2020 funding programme

Innovation project 11.8 M€ budget

WHAT IS MAESHA?

Mayotte Replicable model of smart energy system End in October 2024

Means “Future” in Shimaore, a dialect of Mayotte

High dependency today on expensive and polluting fossil fuels 16 millions inhabitants

Grid flexibility for intermittent renewable energies integration

2400 islands within the EU

WHY THIS PROJECT?

Demonstration in Mayotte (FR)

Combination of solutions towards a smart network

Renewables = Key for islands decarbonisation

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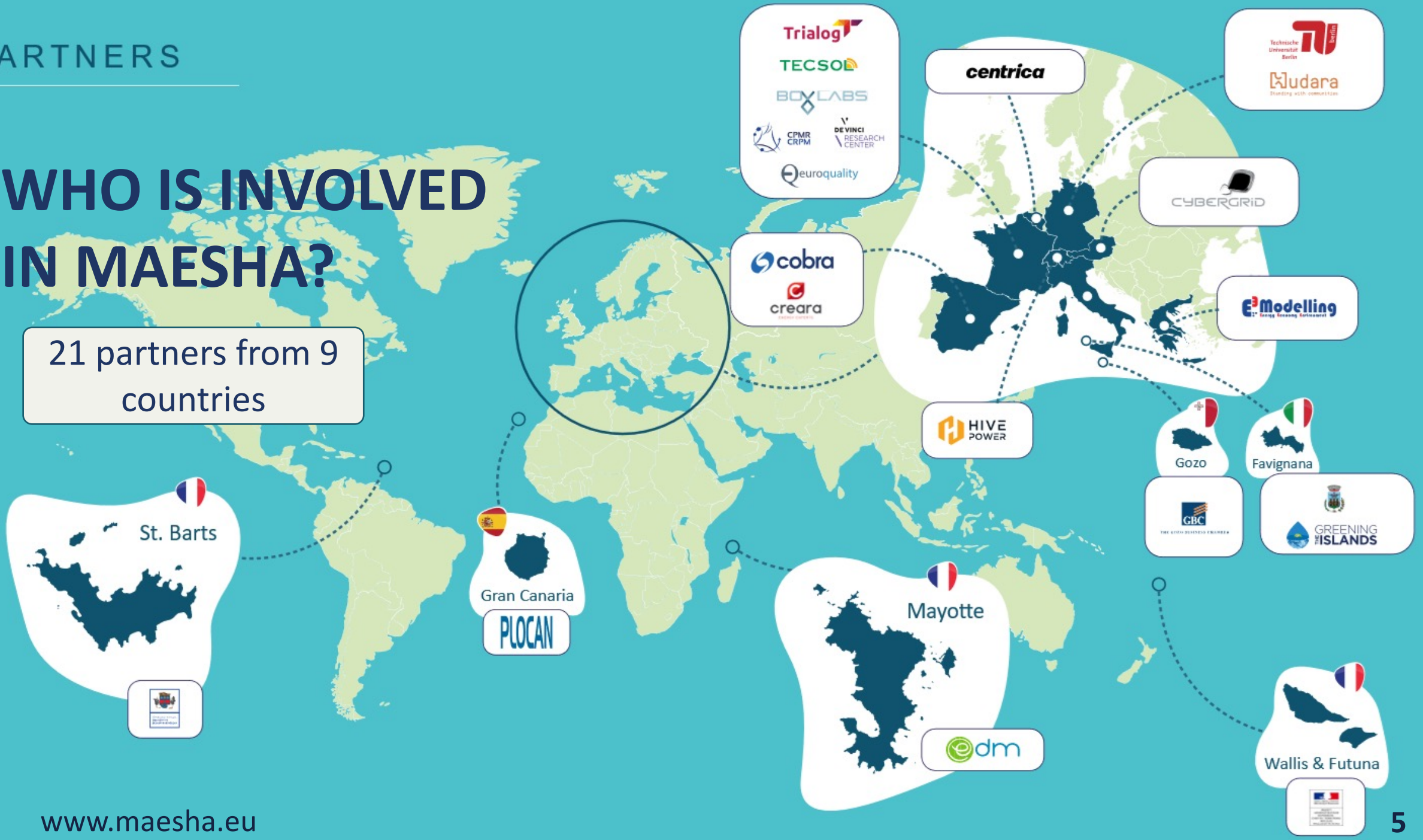
WHO IS INVOLVED IN MAESHA?

21 partners from 9 countries



Introduction

Our European islands face serious threats and great challenges today…

MAESHA

MAESHA
– “future” in Shimaore –
has just become present!

A sustainable transition of the energy system is required to increase resilience of our most vulnerable fellow people!

Main objective: Decarbonizing the energy system of Mayotte and other European islands

DEMONSTRATION IN MAYOTTE (FR)

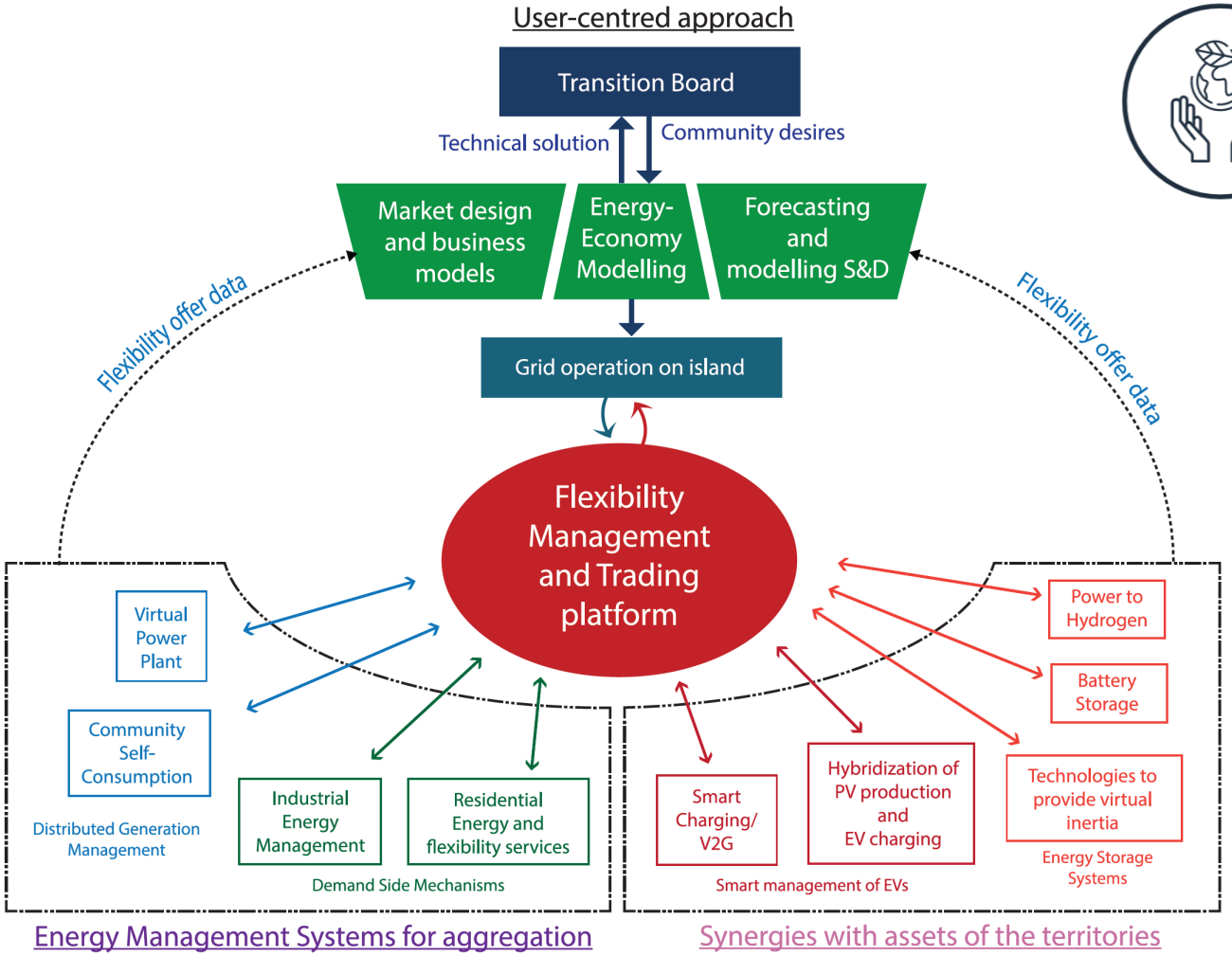
- Enable the large-scale deployment of RES
- Installing tailored innovative flexibility services
- Studying and modelling local energy systems and community structures

Ensure the wide replicability of the solution

REPLICATION SITES

> 1.2 M island inhabitants

Overall Approach



Involvement of local communities

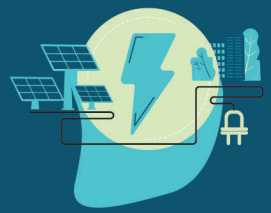
Tailored energy markets and regulatory frameworks

Smart platform aggregating flexibility services

Demonstration of solution and study of replicability

Multi-axis approach

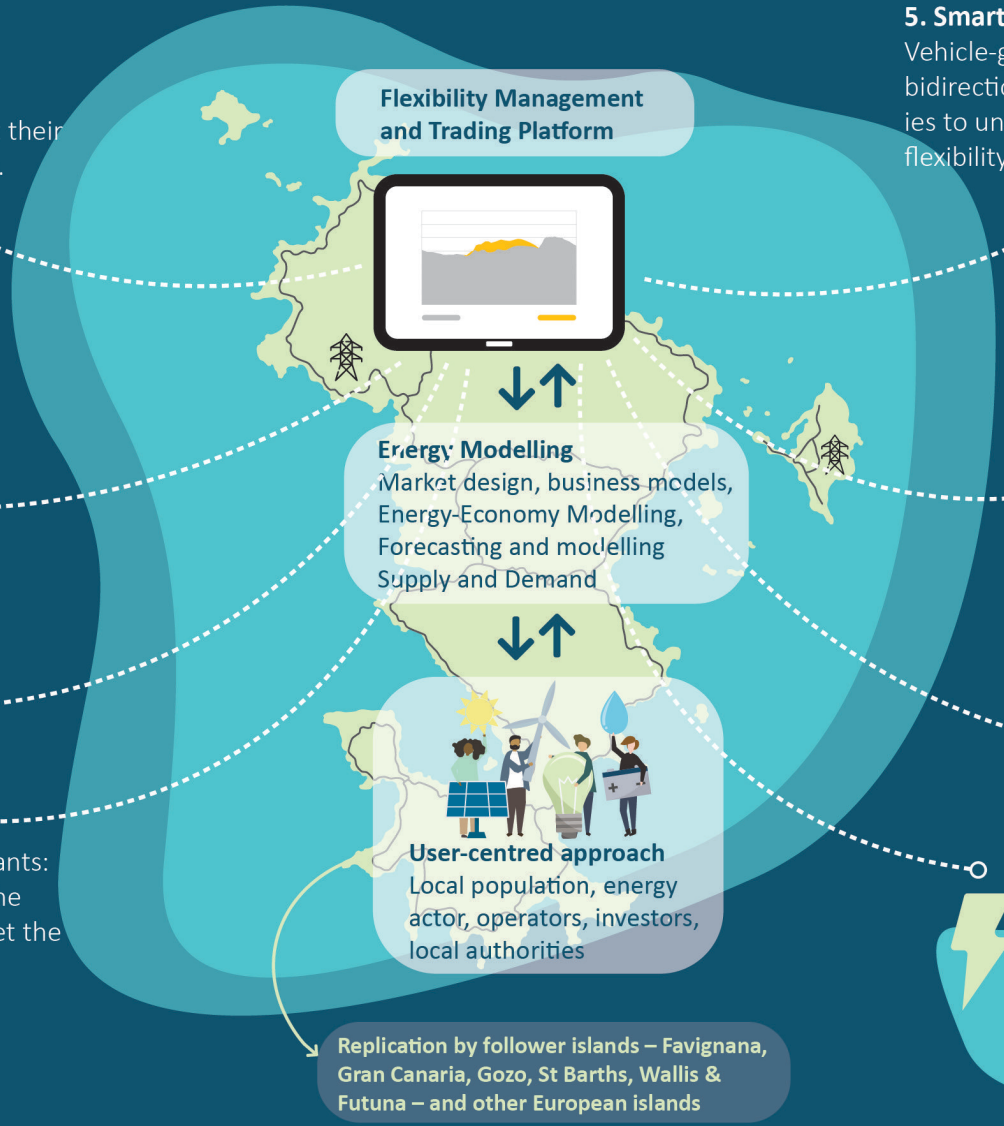
4. Residential Energy and flexibility services
Capacity of residential consumers/producers to adapt their electricity consumption profile.



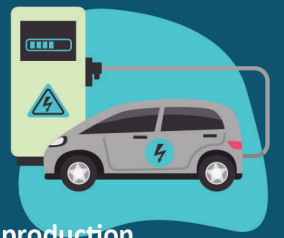
3. Industrial Energy Management
Switch to local generators or shift activities for a few hours to lighten the load on the grid

2. Community self-consumption
Overall improvement in energy management and potentially lower grid losses

1. Virtual Power Plant
Centralized management of plants: clustering and dispatching of the production is optimised to meet the balancing requirements



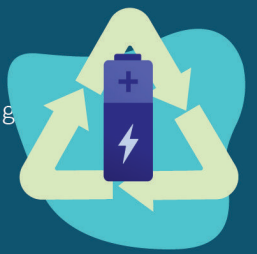
5. Smart Charging/V2G
Vehicle-grid-integration (V2G) and bidirectional power flow from EV batteries to unlock an important new source of flexibility for the islands



6. Hybridization of PV production and EV charging
Higher levels of solar self-consumption and lower expenses for operating electric vehicle charging infrastructure

7. Technologies to provide virtual inertia
Frequency and voltage stability enhancement

8. Battery Storage
Efficient way of storing energy from the grid



9. Power to Hydrogen
Hydrogen as an energy vector for long-term energy storage

Impacts

Impacts foreseen

1. Significant reduction of fossil fuel consumption
2. Creation of local renewable energy communities
3. Enhancement of the stability of the power grid
4. Improvement of air quality, local economy, society and environment

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MAESHA

www.maesha.eu