

# EUNICE projects

## Green Islands

### Energy Generation & Autonomy System **S4S by EUNICE**

#### S4S - Innovative technology for energy independence

S4S system (STORAGE FOR SUSTAINABILITY, SMART GRID, SOLUTIONS, SECURITY) is the Eunice's pioneering technology system for "smart" management of the produced energy. It includes software that integrates multiple sources of energy together with storage to create a secure smart grid.



## The first energy autonomous island in the Mediterranean

S4S introduces sustainable energy generation and storage in the energy sector, while ensuring security and smart solutions for energy management, both in terms of demand and production, in order to render the system's operation more economical and efficient.

Part of the S4S was first implemented in the internationally awarded "TILOS Project" paving the way and providing a critical trigger and catalytic example of applied energy transfer technology, with immediate and measurable benefits to the environment, economy and energy consumers in the remote island of the Dodecanese at present and in a wider area in the future.

Eunice's pioneering and innovative energy project on the island of Tilos, has won four international awards during its years of operation.

### International Recognition



2017



2017



2019



2020

# S4S

STORAGE 4 SUSTAINABILITY  
SMART GRID  
SOLUTIONS  
SECURITY

The S4S used in the hybrid energy system in Tilos constitutes the applied technology of energy autonomy and independence; it can combine different energy sources, wind turbines and photovoltaics, with storage, while at the same time applying meteorological and technical data, charging, storage and real-time operation data in order to ensure the uninterrupted power supply of the electrical system in a more secure manner and at the lowest possible cost.

— S4S TILOS

Applied technology

Real data



**800kW**

Generated Wind turbine rated power

**160kW**

Photovoltaic rated power

**2,8MWh**

Battery Capacity

**EMS**

Inhouse System

**SCADA**

Inhouse System

## Technological Innovation

S4S by Eunice:

1. Combines different RES sources with storage
2. Manages real-time data (meteorological, technical, storage, operation)
3. Ensures the smooth operation of the system & power generation in remote areas
4. Maximizes energy production in a sustainable way
5. Helps in better system stability
6. Uses excess energy -through smart management & storage- to charge electric vehicles for local transport, introducing new technologies such as eMobility
7. Achieves a smaller ecological footprint
8. Makes the country independent from imported energy sources, puts it on the path to de-Lignitization & energy transformation
9. Enhances tourism development
10. Provides solutions to energy issues over time

## S4S by Eunice in Tilos island

- ✓ Has generated a total of 3,300MWh, thus saving ca. 3,000 tons of CO<sub>2</sub>, an amount equivalent to the CO<sub>2</sub> quantity that could be absorbed by a forest with over 54,000 trees.
- ✓ The savings from emission costs is equivalent to approximately €39,000, thus significantly contributing to the fight against climate change and to the improvement of the environment, life and health of the residents of Tilos.
- ✓ The hybrid plant's operation allowed for the reduction of fuel costs for electricity generation by approximately €510,000, while in cases of grid loss, the hybrid plant in combination with the remaining energy infrastructure available in Tilos is able to fully cover the power supply needs of the island and its residents, with further room for energy exports to the Nisyros-Kos system.



— S4S by Eunice

# Energy autonomy everywhere

— AEGEAN ISLANDS

## S4S Tilos paves the way to more smart islands

The development of S4S is being implemented in four more island regions. Anafi, Donousa, Leros in the Southern Aegean, and Fourni Korseon in the Northern Aegean are to become the new smart green islands with a total guaranteed power of 2.5 MW.

The new Aegean Hybrid Systems contribute to:

- reducing hydrocarbon combustion for energy production
- reducing carbon dioxide emissions
- protecting the environment
- increasing the potential and penetration of Renewable Energy Sources as well as reducing energy costs

while at the same time

- ensure substantial detachment of the islands from their oil dependency and electricity supply, using their high wind and solar potential, which remains unexploited today
- improve the energy security of the islands by utilising innovative energy technologies, such as energy storage systems, smart meters and advanced energy management systems, resulting in the energy independence of the islands and the consumers themselves, with the aim to become NetProsumers, with great economic and environmental benefits.

— FLEXIBLE - SMART - ALL-IN-ONE

## Aftonomo by Eunice

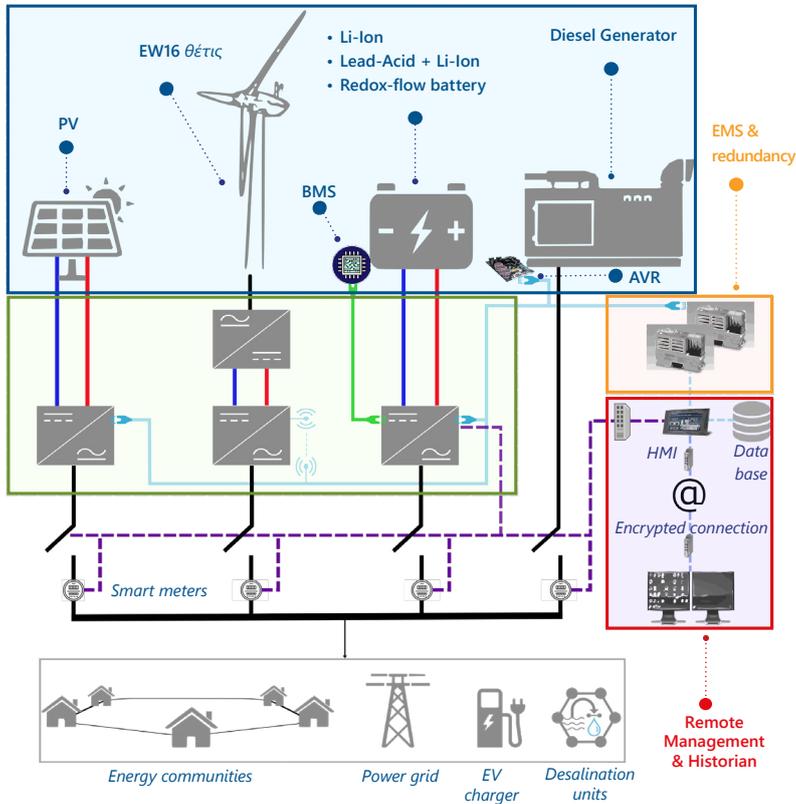
The know-how, the experience from the use & operation of S4S on the island of Tilos, are a reference point for another innovative system of energy autonomy and independence of the Eunice Group that finds full application in homes and businesses. The **Aftonomo by Eunice System**.

The solution offered by Eunice consists of Renewable energy systems such as EW16 Thetis wind turbine or photovoltaics, battery storage system, smart devices and Smart energy management systems and applications which allow the user to control and manage the electricity generated and consumed through the **Blockchain** and **Internet of Things (IoT)** technologies. Furthermore, it enables the future development of electromobility, thus creating opportunities for profit from the utilization of the energy stored in electrical vehicle batteries.

The Aftonomo by Eunice system is already being implemented in residences and businesses in urban centers and throughout the country, enabling citizens:

- ✓ to utilize the abundant and sustainable natural resources, such as the wind and the sun
- ✓ to opt for cutting-edge technologies, designed and produced in Greece by Greek minds and Greek hands, with significant domestic added value
- ✓ To produce, storage, manage
- ✓ to exchange clean energy from renewable sources with each other and, when there is a surplus, to sell it to the grid
- ✓ to participate in the new large market of the Energy Exchange, with immediate and medium-term financial benefits
- ✓ to become NetProsumers and to enjoy energy **AUTONOMY** and **INDEPENDENCE**

# Operational Concept



- Production:** Use of diverse renewable sources in many possible combinations. Possibility to expand production throughout the day.
- Primary:** Power electronics (inverter) take over full power production, offering multiple advantages.
- Secondary:** Highly sophisticated control units responsible for implementation of proprietary EMS algorithm to the system.
- Tertiary:** Remote supervision and management of the complete system.

## We Are Eunice

The first and only company in Greece that generates clean, green energy exclusively from renewable sources. Eunice is one of the leading companies in the field of Renewable Sources in Greece while holds an important position in the international energy map with many years of experience in the development of innovative and integrated solutions and services for the production and use of RES.

The Eunice Group supports a wide range of green energy activities. This includes large-scale wind, solar and storage projects, autonomy and energy independence systems and solutions, the manufacturing of the only Greek wind turbine EW16 Thetis as well as the development and manufacturing of EV chargers, with equity in its privately owned facilities in Mandra, Attica. At the same time, the Group plays a leading role in the emerging sectors of smart energy management as well as the provision of exclusively clean, green electricity, through its subsidiary, We Energy.

**EUNICE**

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