

Chalki, the first eco-island model in Greece



SUMMARY

Launched in 2021, the "Chalki, first GR-Eco Island" initiative is a Greek government pilot aiming to make Greek islands models of clean energy and green economy. Coordinated by the Greek Ministry of Environment and Energy and involving Greek and French partners, the project focuses on solar power, carbon reduction, and energy self-sufficiency. It also enhances healthcare, education, and mobility while promoting sustainable water, waste management, and green tourism. Chalki's success is setting a precedent for other Greek islands in renewable energy and sustainable growth.



CONTEXT

In 2021, the Greek government launched the 'GR-eco islands' national initiative, aiming to transform Greek islands into models of green economy, energy autonomy, digital innovation, and eco-mobility. Chalki, an island of 250 inhabitants, located in the Dodekanese, in southeastern Aegean Sea, was selected as the pioneering site. The economic activity of the island mainly relies on agriculture and tourism. Facing challenges of demographic change, economic decline, lack of infrastructure and access to services, the introduction of renewable energy emerged as a potential solution, offering economic benefits and dependency to fuel price fluctuations.

OBJECTIVES

The overarching objective of "Chalki, first GR-eco Island" is to achieve the comprehensive development of **the island as an eco-model** by enhancing well-being, social economy and community empowerment. The project established **a solar-powered energy community**, based on social economy and citizens participation principles, to reduce the island's carbon footprint and energy costs for residents and local businesses.

Moreover, the introduction of new technologies such as 5G and infrastructures seeks to enhance the overall quality of life, offering improved access to healthcare, education, and mobility. Additionally, the initiative aimed to ensure more sustainable water and waste management, while promoting the development of green tourism and agriculture.

Themes: Democracy and participation, access to services, smart and start-up villages, digital, infrastructure, transport and mobility, energy, climate, nature and environment, social economy, **Rural Revitalisation.**

Country: Greece

Organisations: the Municipality of Chalki island & energy community of Chalki "Chalkion"; the Ministry of environment and energy of South Aegean region; the French embassy in Greece; companies including Vinci – Omexom, Akuo energy Greece, Singelidis group automotive, Vodafone telecommunication, Ald automotive.

Start & end date: 07/2021 - 11/2023

Budget: 1,200,000 €

Funding sources: The National Government of Greece and private companies funding the Energy Community of Chalki "ChalkiON"

Website: [Chalki: the first GR-eco Island. Article](#)

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ACTIVITIES, KEY ACTORS, AND TIMELINE

Greek and French companies partnered together under the coordination of the Greek Ministry of Environment and Energy to carry out various activities and create the first eco-island in Greece. On the 19th May 2021, the "ChalkiON" **energy community** was established, deploying photovoltaic systems that produce green energy which meets the island's energy needs. This energy autonomy allows for local energy production and consumption with any surplus energy being set to the grid to earn energy credits through the process of **virtual net metering**. In addition, the municipal building was upgraded by integrating photovoltaic tiles on its roof.

A total of six electric vehicles and charging stations, an electric boat as well as a smart public lighting system were supported and implemented through the initiative. In addition, the project integrated innovative telecommunications services such as 5G and new technologies to enable more efficient services such as telemedicine and e-learning.



RESULTS

The groundbreaking Eco-island initiative has delivered significant positive outcomes in the territory and demonstrated that could be a model for replication in other islands. Local residents and stakeholders actively participate in energy production and consumption, leading to tangible advantages for both households and businesses. ChalkiON, a pioneering energy community, stands out as the first to own and operate a photovoltaic station on a non-interconnected Greek island, in collaboration with the local authority. Virtual net metering is employed to allow ChalkiON members to balance the energy generated by the solar park with their actual electricity consumption.

Through an analysis of electricity bills from Chalki's residents, it was determined that the island's annual energy requirement averaged around 1,700 MWh. This validates the installation of the 1 MW PV park, positioning Chalki as Greece's first energy-independent island. Notably, the 1 MW photovoltaic park owned by the energy community has led to a 55% reduction in electricity bills for the 250 residents, businesses, and the municipality of Chalki. This translates to annual savings ranging from 180,000 to 250,000 euros and a reduction in CO2 emissions by 1,800 tons annually.



SUCCESS FACTORS/LESSONS LEARNT

The journey towards renewable energy sources adoption in islands is a multifaceted societal challenge that calls for a tailored, local approach rather than centralised policies. **Active community involvement** and collaboration with local governmental bodies are key to success.

Chalki stands as a compelling testament to the transformative power of solar energy in bringing renewable energy solutions to isolated communities. This endeavour not only offers cost-saving benefits but also facilitates remote electrification, enhances energy security, and reduces dependency on geopolitical factors.

A significant milestone was achieved in July 2021 when a Memorandum of Cooperation was signed by all relevant agencies, under the guidance of the Ministry of Environment and Energy, underscoring the tangible impact and potential for scaling up this innovative model. With the success of Chalki as a blueprint, similar initiatives are set to be launched on 40 Greek islands.



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