

Mr. **ANASTASIS TSOUMANIS**
Keynote Speaker

PRESENTATION TITLE
IKARIA HYBRID ENERGY PROJECT “NAERAS”

ABSTRACT

In Ikaria, the Hybrid Energy Project “NAERAS,” developed by PPC Renewables, combines wind power with pumped hydro storage to support energy generation through small hydro power plants (SHPPs). The integration of hydroelectric turbines (HTs) in Non-Interconnected Island (NII) poses stability challenges, especially due to frequent power fluctuations. To address this, novel deflector control schemes were implemented on Pelton-type turbines, enabling HTs to provide ancillary services during frequency disturbances while a second-cycle synchronization scheme of wind production and pumping has achieved impressive levels of RES penetration at the Non- Interconnected Island of Ikaria.

SHORT CV

Anastasis Tsoumanis is an Electrical and Computer Engineer specialized in hybrid energy systems, battery storage, and electromobility. Since 2020, he has worked as a Project Engineer and Project Manager at PPC Renewables, leading the design and implementation of cutting-edge Hybrid Power Stations and BESS projects in Greece. He has previous experience as a Control Engineer in e-mobility startups and as a technical advisor for research labs in renewable energy. His work has contributed to national-level energy innovation, with publications in CIGRE and other international forums. He holds an M.Eng. from the National Technical University of Athens and was awarded 3rd place in the Valeo Innovation Challenge 2017.

