

## **Executive Summary**

The Greek electricity sector is undergoing structural changes and the corresponding electricity market is undergoing reforms aiming to integrate local electricity sector with the rest of Europe, attract investments and promote competition.

As of March 2022, the total capacity for electricity production in Greece is approximately 21.5 GW<sub>e</sub>, of which 42% are conventional sources (9.0 GW<sub>e</sub>) and 58% renewables (12.5 GW<sub>e</sub>). More specifically, natural gas accounts for 58% of the conventional sources (5.2 GW<sub>e</sub>) and the main source of the total 12.5 GW<sub>e</sub> renewables is wind energy (4.5 GW<sub>e</sub>, 36%), while photovoltaics and hydro (large and small) represent also a considerable percentage.

The Greek electricity market reform is structured to include direct participants, consumers, and investors from private and public sectors. Direct participants include producers, retailers, operators and distributors. The electricity market is under the supervision of Regulatory Authority of Energy. The Greek electricity market attracts diversified foreign investment and encourages competition. The market reform has been progressing at all levels, with the introduction of independent operators to increase price transparency.

The Target Model was officially introduced in November 2020. Under the Target Model, four sub-markets operate in parallel to encourage price discovery and stability. The Greek electricity market reform supports environmental policies, regulations, legislative frameworks and practices of the EU towards climate-neutral goals. The government has prepared a detailed roadmap (NECP) to address specific energy and climate objectives by 2030. Moreover, a series of national energy laws and regulations have been developed in line with EU's Energy Package.

The electricity demand in Greece is expected to increase in the coming years with the support of power system upgrades. As a Member States of the EU, Greece has its own 10-year National Energy and Climate Plan (NECP), covering the period from 2021 to 2030, to meet the new energy and climate targets in 2030. A new energy generation mix with increasing RES projects is expected to create more environment-friendly services in the downstream of the electricity value chain. In a future RES-dominant energy system, storage will provide valuable flexibility services. As the targets set in NECP eventually achieved, energy storage in batteries, water pumping and hydrogen will create a new market.

In the light of the above description, it is obvious that it is very interesting to analyse the Greek electricity market and identify its prospects for the future years. To that effect,

the China Energy Europe Renewable Energy Holding S.A. have cooperated with the Soft Energy Applications and Environmental Protection Laboratory of the University of West Attica and produced ***The Greek Electricity Market Report***, aiming to provide concise and reliable information for the current status and prospects of the Greek Electricity market.

The Report starts with an overview of the Greek Economy in Chapter 1 and the Electricity Market overview in Chapter 2. In fact, Chapter 2 makes a concise analysis of the electricity generation capacity, supply and demand, market structure and participants. In addition, the sector trends are highlighted and the electricity grid is described.

The Greek energy mix is analysed in Chapter 3. More specifically, each one of Natural Gas, Coal, Renewables, Exports and Imports as well as emerging energy technologies are described in detail.

The Electricity wholesale market is analysed in Chapter 4. Analysis is carried out for the Greek Target Model and each one of the electricity trading markets is described. In Chapter 5 the main interesting information concerning the Policy and Regulatory Environment are given. An overview of the energy efficiency laws and regulations as well as the Greek policy and regulatory environment are discussed; therefore the reader may acquire a clear picture on this critical issue.

Chapter 6 contains the Greek Electricity Market Outlook, referring to the National Energy and Climate Plan (NECP), demand and installed capacity projections and, finally, power generation trends.

In Chapter 7 the Wholesale Electricity Price Trends are presented exploiting modelling and simulation methods.

*Anyone who is interested in the whole report, please contact:*

*China Energy Europe Renewable Energy Holding S.A. +30 210 6851652*

*or University of West Attica in +30 210 5381237*