Batteries Included: The Boom of Emerging Storage Markets in Europe

by Siddiqa Batool, *Jr. Analyst – at PTR Inc.*

- The European Commission has launched the REPowerEU plan to reduce dependence on Russian gas, phase out fossil fuels, and increase renewable energy deployment. The plan aims to increase the target for renewable energy deployment from 40% to 45% by 2030.
- Some key European countries have not surpassed 1 GW in installed capacity of battery-based energy storage systems at the grid-scale level, while emerging markets such as Greece, Poland, Portugal, and the Netherlands are exploring options to install utility-scale battery energy storage systems.
- The EU and its member states must take proactive steps to support the growth of the stationary energy storage sector to achieve their renewable energy targets and ensure a sustainable and cleaner energy mix.

Europe has been taking active measures to tackle the energy crisis caused by rising electricity demand, higher electricity market prices, and the Ukraine-Russia crisis. To achieve this, the European Commission has launched the REPowerEU plan, which aims to reduce dependence on Russian gas, phase out fossil fuels, and increase renewable energy deployment. The plan emphasizes the need to increase the target for renewable energy deployment from 40% to 45% by 2030. To achieve this, the EU is focusing on streamlining the permitting process for renewable energy and increasing energy storage deployment. The European Association for Storage of Energy has estimated that the EU will require 200 GW of energy storage capacity by 2030.

A number of European countries, such as Germany, France, and Italy, have recognized the benefits of using battery-based energy storage systems at the grid-scale level. However, these countries have not surpassed 1 GW in installed capacity, unlike leading markets such as the United States and the United Kingdom. In contrast, emerging markets like Greece, Poland, Portugal, and the Netherlands are exploring options to install utility-scale battery energy storage systems.

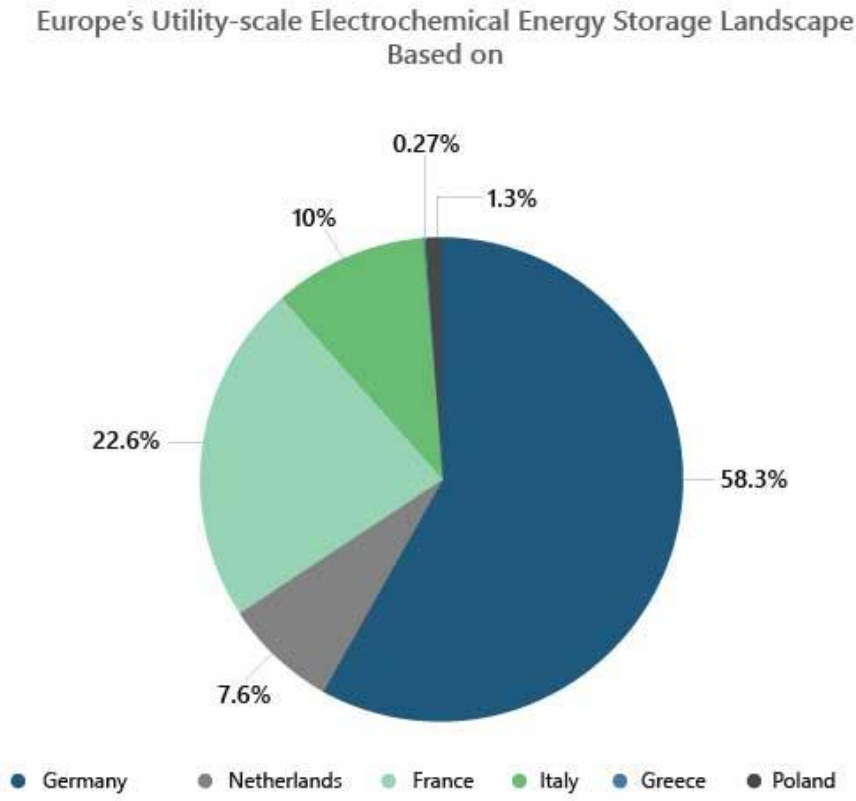

Figure 1: Europe's Utility-Scale Electrochemical Energy Storage Landscape.

Source: PTR Inc.

Brief Overview of the Emerging Markets

Greece

Greece is aiming to increase its renewable energy capacity and reach 70% of its energy mix by 2030, which requires the installation of 25-30 GW of renewable energy. To facilitate the integration of renewable energy, the Greek government may increase its target for deploying energy storage from 1.5 GW to 3 GW. The government has announced that the National Recovery and Resilience Plan will allocate funds to support the development of energy storage facilities, including battery energy storage projects. In 2022, the European Commission approved a funding package of approximately $374 Million to support 900 MW of utility-scale energy storage projects in Greece. These projects will be awarded through bidding in 2023 and must be completed by the beginning of 2026.

Despite being a relatively new market for battery energy storage systems (BESS) with minimal existing installations, Greece has seen a surge in the pipeline of BESS projects. This is due to the announcement of funding for 900 MW of battery energy storage projects, which has led to the Greek Regulatory Authority for Energy (RAE) receiving applications

for over 26 GW of BESS project licensing. Major players such as PPC Renewables, AENAOS Energy, Terna Energy, and Akuo Energy have already secured licenses for their BESS electricity production projects.

Poland

Poland's Energy Policy for 2040 outlines several crucial initiatives, such as installing 5.9 GW of offshore wind capacity and 5-7 GW of PV solar by 2030, increasing energy efficiency, and reducing the share of coal in electricity production from 72% in 2020 to 56% by 2030. However, upgrading the grid infrastructure in Poland is essential to achieve these objectives and facilitate the seamless integration of renewable energy sources. Battery energy storage projects play a pivotal role in this regard due to their ability to provide flexibility to the grid infrastructure and the favorable regulations in place for BESS installation.

The Polish energy storage market has several regulations in place, such as requiring energy storage systems greater than 10 MW to obtain a license, whereas systems with less than this capacity must register with the relevant TSO or DSO. There is a double taxation exemption for the amount of electricity returned to the system, and BESS developers are only required to pay half the fee for constructing a new power connection. For the first time, BESS is allowed to participate in the capacity market mechanism organized by the TSO in Poland.

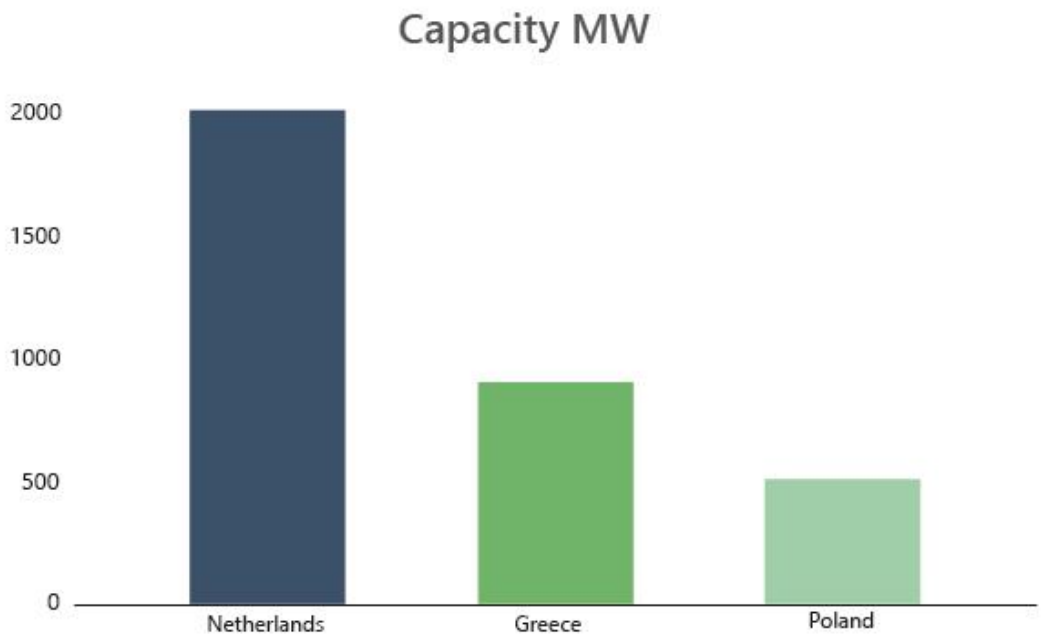

Figure 2: Highlighting Potential Pipeline for BESS Projects.

Source: PTR Inc.

The Netherlands

The Netherlands, along with several other European countries, is dedicated to reducing its dependence on fossil fuels and increasing the use of renewable energy sources. However, the country is facing grid congestion issues that are limiting the capacity of its electrical grid to transport power effectively. This has caused the battery energy storage market in the country to shift its focus from just providing balancing services and arbitrage market profits to becoming a key solution to manage congestion. To help with this, the Authority for Consumers and Markets (ACM) has announced discounts on the transport tariff, which has been a significant barrier to battery storage projects in the Netherlands. Additionally, a double taxation exemption has been provided to incentivize investment in large-scale utility BESS projects. The Netherlands is also exploring the possibility of introducing energy storage targets and aligning its definition of energy storage with the EU Directive 2019/944.

Looking Ahead

The European Union (EU) has been taking various measures, such as the Fit for 55 policy package, to maximize the use of renewable energy sources. To meet the new target of achieving a 42.5% renewable energy share in the total energy consumption of EU states, there must be significant growth in the stationary energy storage sector by 2030 to enable a smooth transition. EU member states need to take proactive steps by implementing supportive policies, removing tariffs on energy storage projects, establishing deployment targets, and providing funding for stationary energy storage. These measures are critical in ensuring that the EU's energy mix becomes more sustainable and cleaner, while maintaining the electrical grid's flexibility and stability.

Contact:

(sale@ptr.inc)