

Albania microgrid energy storage

The companies signed a joint venture agreement to develop, construct and operate renewable power facilities in the country, and announced the agreement at the COP29 climate conference, currently underway in Azerbaijan. While they did not specify the total capacity of these installations, or how much each renewable power technology would contribute to this capacity, they noted that the project will include solar PV, wind and hybrid solutions, with the "potential integration" of battery energy storage systems (BESS).

"This joint venture with Masdar is a pivotal advancement in Albania's renewable energy journey, underscoring KESH's commitment to sustainable development and energy diversification," said Erald Elezi, CEO of KESH, which was responsible for 58.3% of Albania's domestic electricity production in 2023.

"Although Albania already benefits from a predominantly green energy mix, this partnership will enhance our energy resilience, improve stability and open avenues for clean energy exports to the region," added Elezi; as part of the agreement, power generated at the joint venture projects will be both supplied to the Albanian market and exported to neighbouring countries.

The deal is Masdar's latest involvement in the southern European power space, following its EUR3.2 billion (US\$3.4 billion) acquisition of Greek power company Terna Energy; the deal has been approved by the European Commission, and is waiting on regulatory approval in Poland, where the company is also active.

Terna currently has an operating portfolio of 1.2GW, and plans to expand this to 6GW by 2029, although the vast majority of this consists of wind capacity. The company currently has 1.1GW of wind capacity in operation, compared to just 8.5MW of solar capacity.

Albania, meanwhile, has sought to expand its solar sector in recent years, launching its fifth round of auctions for new PV capacity in January of this year. Bids were placed for 355.9MW of capacity, and the ministry of infrastructure and energy awarded contracts to eight consortia for 300MW of capacity. According to the International Energy Agency (IEA), Albania's energy mix remains heavily reliant on hydropower, which accounted for 97.7% of electricity generation in 2022, while solar PV accounted for the remaining 2.3%.

Located in the western part of the Balkan Peninsula in South-eastern Europe, Albania hardly makes the headlines when it comes to its developments and aspirations in the energy sector. However, the country's energy mix has one of the highest shares of renewable energy in Europe.

In 2020, the share of renewables reached 45% of the total primary energy supply, up from the 38% target that the government had set in its National Renewable Energy Action Plan (NREAP, 2018-2020). A year later, in December 2021, Albania adopted the National Energy and Climate Plan (NECP), with the country pledging to further increase the share of renewables to 55% by 2030.

However, at the same time, the country's sole reliance on hydropower has made its domestic energy production more vulnerable to climate conditions. Changing weather patterns over the years have forced the country to import energy to cover domestic needs, as a lack of storage capacity requires Albania to sell its generated power during peak months of production. Imports can reach up to 40% of power needs, especially during periods with low rainfall levels, as it happened in 2017 when import costs were equivalent to about 1.5% of the country's GDP.

While wind and solar investments have recorded a significant growth over the past decade, they still represent a very small share of the country's energy supply as they started from a very low base.

Today, Albania remains a net energy importer as domestic energy production is not able to meet demand. When it comes to renewable energy imports, Eurostat data shows that the country ranks 8th in Europe. This is even greater than the dependence of other countries in the Balkan region which have fewer renewable resources to expand their domestic production capacity.

The reliance on imports has made the future sustainability of power supply one of the key national challenges. Power cuts seem to be a regular phenomenon, posing a further economic quandary for the country. According to World Bank, Albania ranks second only to Kosovo among European countries for the number of power outages that establishments might encounter in a typical month.

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