Electricity market trends tiraspol

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In the observed period, weighted average monthly electricity prices on the day-ahead market in Poland increased from 163.95 zloty/MWh in January 2018 to nearly 444 zloty/MWh (102.85 EUR/MWh) in October 2024. The record weighted average price occurred in August 2022, exceeding 1.3 thousand zloty.

Electricity is essential to modern life and vital to every country"s economy. Starting from 1990, the final annual electricity consumption reached a value of 124.7 terawatt-hours. It eventually grew to 170.3 tWh in 2021, which happened to be a 5.6 percent increase compared to the previous year. Consumption of solar photovoltaic power has become popular in recent years, but also the capacity of solar photovoltaic per inhabitant in Poland has significantly increased, rising from just 0.1 watts per inhabitant in 2013 to 323.7 W/inhab in 2022. In 2022, 18.09 million customers in Poland used electricity with consumption lower than 50 megawatt-hours.

Throughout the years, there have been different methods and sources of electricity production worldwide. Starting in 2012, the electricity production from solar photovoltaic power generated only 3.4 gigawatt-hours. In 2022, Poland"s electricity production volume from solar photovoltaic power reached a peak of over eight terawatt hours. Another source of electricity production was the wind. Where the production of electricity from wind steadily increased from five gigawatt-hours in 2000 to 16,234 gigawatt-hours in 2021. Biogas and biomass also play a significant role in the production of electricity. In 2012, electricity production from biogas and biomass was the highest at around 10,094 gigawatt-hours. However, in 2021, the production decreased, reaching 7,954 GWh.

The past year has been a tumultuous one for European energy markets. After experiencing extreme volatility and all-time highs little more than a year ago,1Eivind Samseth, Fabian Stockhausen, Xavier Veillard, and Alexander Weiss, "Five trends reshaping European power markets," McKinsey, October 19, 2021. power prices across the continent rose to a nearly unfathomable level last fall. Wholesale prices of both electricity and natural gas nearly quadrupled from previous records in the third quarter of 2022 compared with 2021, creating concerns for skyrocketing energy costs for consumers and businesses (Exhibit 1). Prices have since fallen unexpectedly, thanks in part to warm winter weather.

As a result, Europe faces the real possibility of shortages in dispatchable power--sources that are critical for

balancing loads across the power system and ensuring there is enough electricity available at times of peak demand. To avoid this scenario and replace the dispatchable generation lost from natural gas, nuclear, and hydro, many European utilities have increased coal production, which had been scheduled to drop drastically. A range of stakeholders are also investing in alternative, low-carbon dispatchable-energy sources, such as hydrogen, batteries, demand-side response, and biomass.

European policy makers and regulators are actively discussing solutions to ease the economic impact of high energy prices.

Although all of these efforts will undoubtedly have positive impacts, the challenges are not likely to end anytime soon. With the frequency of high-intensity heat waves expected to increase, additional outages of nuclear facilities planned in 2023, and further expected reductions in Russian gas imports, we expect that wholesale power prices may not reduce substantially (defined as returning to three times higher than precrisis levels) until at least 2027.9Projections based on futures from Bloomberg, European Energy Exchange (EEX), Nasdaq, and PEGAS.

In addition, because wind and solar generation is subject to natural variations and thus provides intermittent sources of green power, balancing resources (such as hydrogen, batteries, demand-side response, and biomass) will also be required.

Over the next several years, a gap will develop between peak electricity loads and the dispatchable power capacity that can be switched on to meet it. This shortage is expected to worsen as natural gas, nuclear, and hydro production continue to decline while peak loads increase. By 2035, Europe"s gap will be equivalent to 19 percent of dispatchable capacity, or 116 GW (Exhibit 4). This, however, is a worst-case scenario and assumes no new capacity is built.

Efforts are under way to close this gap with clean sources of dispatchable capacity. Over the past decade, considerable investments have been made in utility-scale battery systems, biomass, and hydrogen. Our model suggests that by 2035, more than 100 GW of battery capacity, five to ten GW of biomass, and 20 to 30 gigawatts of hydrogen electrolyzer capacity will be needed to meet peak loads. Yet these technologies have to be further scaled, with build-outs remaining highly uncertain due to a reliance on supportive regulations, the availability of government incentives, and the need for raw materials that are in short supply, such as lithium ion.14McKinsey Power Solutions EU Power Model, November 2022.