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The wholesale market for electricity

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Executive summary

From surplus to shortage

The years from 2020 to 2022 have been a real challenge for the Swiss electric system and for the European energy system as a whole, as global geopolitical trends first induced a global energy surplus and then abruptly reversed the picture with a largely unexpected global energy shortage, forcing Swiss and European policy makers to set up a series of emergency measures to ensure reliable and affordable supplies.

Energy scarcity hits the headlines

In 2022, indeed, a serious drought hitting hydroelectric productions in the whole continent and a series of interruptions of the French nuclear fleet, coupled with the steep decline in the gas flows from Russia and a general shortage observed on the global gas market, brought the topic of energy scarcity back to the headlines in Europe.

Electricity prices from record lows to all-time highs

The wholesale electricity prices in Switzerland and the rest of Europe quickly bounced back from the lows of Spring 2020, reaching their all-time highs in Summer 2022 and retracing to lower, but still high levels during Autumn. More in detail, the wholesale price for electricity in Switzerland went from the 34.0 EUR/MWh in 2020 to 100.6 EUR/MWh in 2021 and up to 298.8 EUR/MWh in January-November 2022. A peak of 487.6 EUR/MWh (monthly average) was reached in August 2022, followed by a decline to the 219.1 EUR/MWh observed in November in the same year. The main European electricity exchanges followed a similar trend, with the German market showing slightly lower prices, and the Italian one slightly higher ones.

Record increases for gas, coal, and EUA prices, moderate growth for the Brent

Electricity prices were mainly boosted by gas prices. Indeed, gas-fired generation plants often worked as a buffer to cover the shortages in hydroelectric and nuclear productions, and skyrocketing gas prices across all European countries hoisted their production cost to unprecedented peaks.

The prices on the Dutch TTF, the most liquid market for gas in Europe, went from around 10 EUR/MWh in 2020 to 46 EUR/MWh in 2021 and 123.5 EUR/MWh in the first eleven months of 2022, hitting a peak above 230 EUR/MWh (monthly average) in August and a retracing below 100 EUR/MWh between October and November. Over the same time span coal prices climbed from the 50 USD/MT of 2020 to the 117.7 USD/MT observed in 2021 and the 292.0 USD/MT recorded in January-November 2022 - a steep increase, still much lower than the spike observed in the prices of gas. Oil prices experienced instead a moderate increase, from 41.6 USD/bbl in 2020 to 70.7 USD/bbl in 2021 and to 105.5 USD/bbl in the first eleven months of 2022. Finally, EUA prices tripled over three years, going from 23.5 EUR/MT in 2020 to 53.1 EUR/MT in 2021 and 79.3 EUR/MT in the first eleven months of 2022, still not enough to preserve the coal-to-gas switch, given the extremely high cost of natural gas.

At the roots of the energy crisis: underinvestment and war

The generalised growth in the prices of most energy commodities can be ascribed to the post-pandemic recovery of the world energy demand, as well as to the consequences of the systematic underinvestment in energy infrastructures that characterized the last few years. The shock was particularly strong in the European natural gas market, that relies on imports for around 80% of its yearly consumption and where Russian gas supplies historically accounted for 50% of all imports. After the outbreak of the war, Russian gas supplies to Europe were slowly but steadily reduced: the flows along the Yamal and Nord Stream 1 routes were interrupted between spring and summer, and the flow along the Ukrainian route was more than halved as compared to the historical figures. LNG cargoes purchased at very expensive prices on the international gas market were the only option to avoid rationing or supply interruptions.

The reaction of Swiss and European Union policy makers

The Swiss and European policy makers swiftly adopted a series of measures to react to the emergency, that is, to avoid shortages and mitigate the impact of high energy prices on households and industrial consumers.

Already in spring 2022 the Swiss government introduced a special fund of 10 billion CHF to support the country's largest electricity companies and avoid domino effects if liquidity problems should have hindered a safe operation on the energy exchange. Along summer, the government further introduced an obligation to build up gas reserves in the neighbouring countries and to subscribe option contracts for the delivery of non-Russian gas in winter 2022/2023. Moreover, the government fostered the creation of a hydroelectric reserve, incentivized energy savings among consumers, and promoted investment in PV panels on public buildings and in the Alps.

The European Commission followed a similar pattern and published between March and May 2020 the "REPower EU" plan, describing a series of measures for promoting energy savings and renewable generation to reduce the bloc's dependency on Russian supplies. REPower EU goes well beyond the already high ambitions set out in the "Fit for 55" package adopted two years before, and is complemented by further measures such as an obligation to fill storage capacities up to 80% by November 1st 2022 and 90% by November 1st 2023, a plan to reduce gas consumption in winter by 15%, and finally a dynamic price cap on gas prices, that was introduced in order to curb energy prices despite the marked criticism expressed by several stakeholders.

The unknowns of 2023 and the strategies to face the upcoming challenges

Despite the prompt reactions of Swiss and European policy markets and the choice to proceed even faster in the decarbonization path, the outlook for 2023 is still uncertain, especially for the European gas market.

Weather conditions will have a strong impact on gas demand for heating, industrial uses, and electricity generation, and will thus impact both gas, and electricity prices. The industrial demand for gas has seen until now an unexpectedly strong reduction in front of almost unchanged output levels, but it is highly unlikely that the industrial consumers may have further efficiency margins, and the magnitude of the possible rebound of their withdrawals is subject to huge uncertainties. Even the continuation of the small gas flow still reaching Europe from Russia cannot be taken for granted, and the availability and cost of LNG supplies will strongly depend on the magnitude and timing of the rebound of the Chinese gas demand.

In short, the outcomes of the wholesale market for electricity in Switzerland – and in Canton Ticino – will be largely determined by European and global events, on which the Swiss and cantonal players can have very little impact. The security, affordability, and sustainability of the Swiss energy supply thus rely even more than in the past on the support provided to renewables, energy efficiency, and research and technological innovation.