



APG: December stands out with high run-of-river production that is atypical for the season

APG Factbox shows lowest import balance since 2011 due to extraordinary renewable production.

The last weeks of 2023 (calendar weeks 49-52) were characterized by unusually high run-of-river production in Austria due to the high levels of precipitation and warm temperatures throughout the country. Renewable energies generated a total of 4,002 GWh (gigawatt hours) of electricity in December, covering around 81% of Austria's electricity demand (4,951 GWh). At 3,060 GWh, hydropower alone contributed around 76 percent of the renewable energy. At 752 GWh, wind energy accounted for around 19 percent.

Due to the change in climate, rising temperatures and the increase in precipitation in the form of rain in the winter months, hydropower is gaining in importance during this period. Compared to December of the previous year, run-of-river hydropower was able to produce around 78 percent more electricity. To facilitate the use of the energy produced by renewable sources without any limitations high-capacity grids, storage facilities, power plant reserves and digital intelligence within the electricity system are required.

Lowest import balance since 2011

Usually the renewable production (especially hydropower) drops drastically in the winter months and Austria is dependent on imports throughout the cold season. However, the exceptionally good generation from renewables in December ensured that Austria was able to export electricity abroad on 11 days (on the balance sheet), resulting in a particularly low import balance for this calendar month.

"On balance, Austria had to import 194 GWh of electricity in December. This is the lowest import balance since 2011," explains Gerhard Christiner, CTO of APG. "In terms of the energy transition and the growing share of renewable energy, the rapid expansion of all forms of renewable energy is a development that we explicitly welcome. However, in order to make the best possible use of the renewables' potential, we also need to further expand the electricity infrastructure and storage facilities. In addition, comprehensive digitalization of all players in the electricity system is necessary to efficiently manage the system, especially to handle volatility."

Need for redispatch measures highlights existing deficits - redispatch costs in 2023 exploded by 51%

A strong grid is necessary to make the volatile, renewable electricity available and to transport the electricity to where it is needed. To avoid grid overloads and ensure a secure supply, the electricity flow is managed with so-called redispatch measures, i.e. the targeted and controlled use of thermal and hydraulic power plants.

"In 2023 redispatch measures were necessary on 217 days (8 in December). This generates cost which at the end of the day have to be borne by the electricity customers," emphasizes Thomas Karall, CFO at APG. At the end of 2023 the costs for the electricity customers generated by redispatch measures totaled 141.6 million euros. Compared to the costs in 2022 this is an increase of 51 percent.



A strong grid with sufficient capacities would considerably reduce the need for interventions in power plant schedules and reduce related costs. Therefore the immediate expansion of the grid infrastructure has the highest priority.

Positive momentum of installed PV systems makes analysis of electricity demand more difficult

In December (calendar weeks 49 - 52), 4.951 GWh of electricity were consumed from the public grid in Austria. Compared to the average for 2017-2021, this is around 6 percent below the reference value. This is not least due to increased production of private photovoltaic systems which are used to directly cover the electricity demand without going through the public grid. As a result, Austria's electricity consumption cannot be precisely verified at present and the electricity consumption forecasts in the future are also subject to uncertainties. At the same time this dynamic leads to massive back-feeding of regional electricity surpluses from the distribution grids into the trans-regional APG grid. The hitherto usual peak consumption at noon does no longer "exist", on the contrary, electricity surpluses have to be transported via the transmission grid to storage power plants or abroad. In addition to the new challenges regarding load flows, this also significantly changes the electricity price curve and even leads to negative market prices on weekends with low demand. Therefore a comprehensive grid and storage expansion strategy is required to ensure effective system management and to handle the volatile renewable production.

Energy exchange within Austria

The trans-regional electricity grid of APG also enables the exchange of energy within the country. Electricity surpluses in individual provinces can thus be distributed throughout Austria to compensate deficits. In December the provinces Lower Austria (327 GWh) and Upper Austria (210 GWh) were able to produce the highest energy surplus which they made available throughout Austria via the APG grid. Salzburg with 195 GWh, and Carinthia (193 GWh) had to withdraw the most electricity from the grid.

Responsible energy consumption

It is important to act responsibly when it comes to electricity consumption. Saving electricity reduces CO₂ and overall systemic costs which is a significant contribution to ensuring system security. The trend of reducing CO₂ has to be pushed further. This also includes electricity from private PV units to cover the consumption of households.

Tips for saving electricity can be found at www.apg.at/stromspartipps. With the APG Powermonitor, it is possible for the Austrian population to see the most effective electricity saving hours and thus make an active contribution to CO₂ reduction and system security. The APG Powermonitor can be found at: www.apg.at/powermonitor.

APG strengthens grids until 2034 with 9 billion euros

After a thorough analysis of the current problems, APG has envisaged the necessary investment projects and is investing around EUR 9 billion in the electricity infrastructure by 2034. The transformer capacity will be almost doubled to 57,000 MVA, the number of substations will be increased by around 39 percent to 90 and the number of transformers by around 74 percent to 165. The entire system of the west-east axis will be strengthened by building, converting or reinforcing around 500 km of 380 kV and around 400 km of 220 kV power lines. More information at: <https://www.apg.at/news-presse/apg-zukunftsnetz-bringt-versorgungssichere-energiegewende-auf-ueberholspur/>



APG continually keeps track of the development of the domestic electricity industry and regularly publishes diagrams at <https://www.apg.at/infografiken> regarding the topics: energy exchange, energy consumption in Austria, energy consumption in Europe, renewables production, import/export, electricity prices, etc.

About Austrian Power Grid (APG)

As independent transmission system operator Austrian Power Grid (APG) is in charge of ensuring the security of electricity supply in Austria. With our high-performance and digital electricity infrastructure and the use of state-of-the-art technologies we integrate renewable energies, we are the platform for the electricity market, and we provide access to reasonably priced electricity for Austria's consumers and thus create the basis for Austria as supply-secure and future-oriented industrial and business location and place to live. The APG grid totals a length of about 3,400 km and is operated, maintained and continuously adapted to the increasing challenges of the electrification of businesses, industry and society by a team of approximately 850 specialists. 67 substations are distributed all over Austria and the majority is operated remotely from APG's control center in Vienna's 10th district. Thanks to our committed employees Austria had a security of supply of 99.99 percent also in 2023 and thus ranks among the top countries worldwide. Our investments of 445 million euros in 2024 (2023: 490 million euros, 2022: 370 million euros) are a motor for the Austrian economy and a crucial factor in reaching Austria's climate and energy targets. Until 2034 APG will invest a total of approximately 9 billion euros in grid expansion and renovation projects.

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