Winter Outlook 2026–2027

Extraordinary Review of Summer 2026



entsoe

European Network of Transmission System Operators for Electricity

entsoe

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13 November 2026

ENTSO-E Mission Statement

ENTSO-E – the European Network of Transmission System Operators for Electricity – brings together 40 electricity Transmission System Operators (TSOs) from 36 countries. ENTSO-E members are responsible for the secure and coordinated operation of Europe's electricity - system. Together, they operate a system of around 500,000 km of power lines – the largest interconnected electrical grid in the world – and serve about 520 million citizens.

Electricity is not merely a market commodity, it is an essential service, and TSOs are fully regulated public service entities whose work is essential to powering Europe. The grid is the backbone of the electricity system and has extended over the whole Continent, beyond the borders of the EU. TSOs working together guarantee a functioning infrastructure that makes the trade of electricity possible, contributes to decarbonisation goals, and ensures a reliable and efficient power supply for all members of society.

These shared public service responsibilities need close cooperation beyond national borders, which led to the creation of ENTSO-E. Today, the association serves two main complementary purposes:

1. **Cooperation of European TSOs**

   The foundations of this cooperation date back to the 1950s with the creation of electrical synchronous areas and interconnections, which laid the groundwork for today's interconnected European power system. TSOs established associations to work together on their own mandates and missions, that came together into what today is ENTSO-E. The European electricity system is one of the most stable and reliable grids in the world and is supported by the cooperation and coordination of TSOs both within the European Union and closely interconnected European countries. ENTSO-E strives to build consensus for decision-making amongst its member TSOs as this forms the strongest foundation for cooperation.

2. **Fulfilling EU legal mandates**

   With the adoption of the Third Energy Package in 2009, ENTSO-E's role was formally recognised by European institutions. ENTSO-E was granted legally mandated tasks to further develop the European interconnected grid and to facilitate the integration of European electricity markets. These mandates cover a large spectrum of tasks, including system operation, system development, market integration, information technologies, R&D and innovation.

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Executive Summary

Summer 2026 was an exceptional season, characterised by unusually high temperatures and prolonged dry conditions across much of Europe. Given the unprecedented nature of these conditions, this Extraordinary Review of Summer 2026 report reviews their impact on power system adequacy and security of supply.

The report includes reviews of the security of electricity supply in individual countries during the summer. It highlights significant or unusual developments affecting power system operations and describes the remedial actions undertaken by transmission system operators (TSOs) where relevant.

Despite severe weather conditions, no adequacy issues were observed across Europe during summer 2026.

South-East Europe experienced particularly challenging conditions, with extended periods of extreme heat coinciding with below-average hydrological inflows and reduced river water levels. Rising electricity demand, lower hydroelectric generation, and operational constraints affecting thermal and nuclear power plants dependent on river water for cooling combined to create more demanding adequacy conditions across parts of the region.

As a result, several countries in South-East Europe activated measures under Article 14 of Regulation (EU) 2019/941 on Risk Preparedness in the Electricity Sector in response to prolonged heatwave conditions and drought. Hungary, Slovenia, Romania, and Bulgaria declared Early Warning situations on 1, 2, 7, and 17 August 2026, respectively. Romania subsequently escalated its response and declared a Crisis Situation on 10 August 2026. Due to similar unfavourable conditions in Poland, adequacy risks were identified several times during the summer through the short-term adequacy process. However, the adequacy gap was managed either through high imports or by activating resources under the capacity market, a non-market measure that has been in operation in Poland since 2021. The capacity market was activated on 30 June, 4 August, and 6 August.

The impacts varied across countries depending on their generation mix, hydrological conditions, and reliance on imports. In Romania and Hungary, low water levels in the Danube affected the availability of nuclear generation and increased dependence on imports during periods of high demand. In Slovenia, environmental constraints limited nuclear generation output, while in Bulgaria, Danube water levels were closely monitored due to their potential implications for generation availability.

The review also highlights periods of significant oversupply. High renewable and inflexible generation led to strongly negative prices in some countries, underlining the growing need for downward flexibility and storage.

Despite these challenges, security of supply was maintained throughout the summer. National mitigation measures, cross-border electricity exchanges, and regional coordination played a key role in preserving system balance and operational security.

The events of summer 2026 highlighted the growing sensitivity of European electricity systems to extreme weather events and hydrological stress. They also reinforced the importance of continuous adequacy monitoring, regional cooperation, and effective cross-border support mechanisms in safeguarding security of supply under increasingly challenging climatic conditions.

Temperature and precipitation overview

The temperature and precipitation overview can be seen in **Erreur ! Source du renvoi introuvable.** from the Copernicus Climate Change Service[1], which shows the surface air temperature anomalies in summer 2026 relative to the average for 1991-2.

Record surface air temperatures were observed in Europe during the summer of 2026. Temperatures in June, July, August, and September ranged from 0.66 °C above the 1991–2020 average in July to 1.78 °C in June. August was 1.10 °C above average, and September was 1.54 °C above average. June 2026 was the second-warmest June on record, August 2026 was the fourth-warmest August on record, and September 2026 was the third-warmest September on record, while July 2026 ranked only 11th-warmest, reflecting strong regional contrasts in temperature anomalies.

Temperatures varied significantly across the continent and over the summer months. Western Europe, rather than Southern Europe, experienced its warmest summer (June–August) on record, with a regional average of 21.69 °C, 2.54 °C above the 1991–2020 average. The largest seasonal anomalies, 4–5 °C above average, were observed in France and northeastern Spain, while anomalies across virtually all of England, Wales, Belgium, and most of France, Spain, Italy, Switzerland, and Austria were the highest recorded since at least 1979. Temperatures were slightly below average in parts of Türkiye, northern Norway and Sweden, western Iceland, and areas of Ukraine, Russia, and the Caucasus. September 2026 was the joint warmest September on record for Western Europe, tied with September 2023 at 2.51 °C above average. Slightly below-average temperatures were found only over the southeastern Balkans and western Türkiye.

Parts of Europe saw substantial and prolonged heatwaves during the season. The combined June–July average for Western Europe, 21.62 °C (2.79 °C above the 1991–2020 average), was the highest on record for the region. National meteorological agencies confirmed record-hot summers in France, the UK, Ireland, the Netherlands, Belgium, Spain, and Austria. The heat was linked to persistent high-pressure conditions (atmospheric blocking) that drew hot air northward from North Africa and contributed to extreme wildfire activity and dangerous air pollution levels across Western Europe. In September, the unusual warmth in Western Europe was again associated with persistent high-pressure conditions and was also favoured by record-high September air temperatures over the surrounding ocean areas, particularly the western Mediterranean and eastern North Atlantic.

The record-high June–July temperatures in Western Europe occurred largely in areas already affected by drought. The high temperatures increased water loss from soil and vegetation through evapotranspiration. As soil moisture became depleted and vegetation dried out, reduced evaporative cooling allowed temperatures to rise further, while drier vegetation also increased the risk of wildfires.

[1] *Copernicus Climate Change Service: surface air temperature maps.*

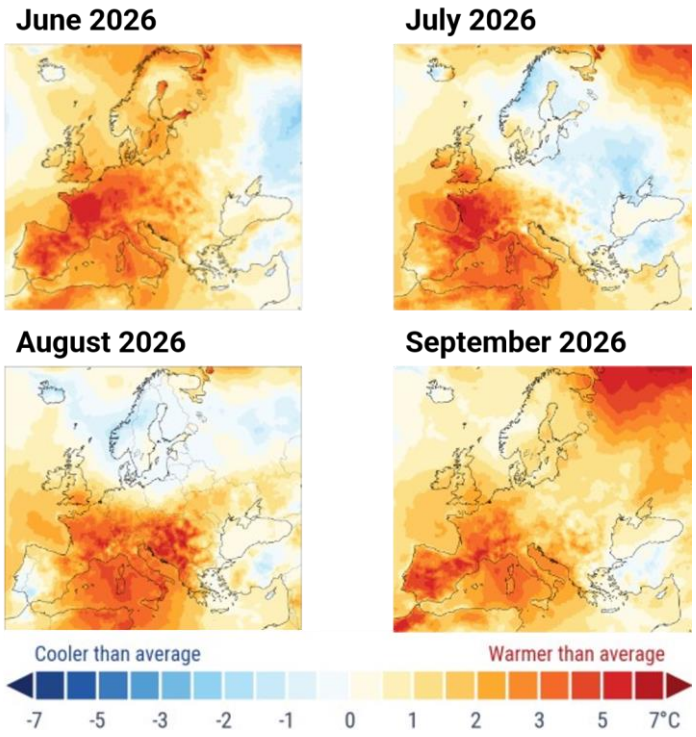

Figure 1 Surface air temperature anomalies in summer 2026 relative to the average for 1991–2020

Albania

During the summer of 2026, Albania experienced prolonged heatwaves, resulting in relatively high electricity demand. At the same time, these conditions contributed to a reduction in water reserves in our hydropower plants.

However, solar power plants and battery storage systems connected to the OST transmission grid made a significant contribution to meeting electricity demand. No adequacy issues were encountered during this period.

One important challenge worth highlighting is the level of transit power flows through our transmission network. High power flows from south to north placed the Albanian transmission grid under continuous stress throughout the summer season.

Austria

The extreme weather conditions in summer 2026 had a significant impact on Austria's electricity system, highlighting the importance of a resilient and diversified energy supply. While renewable energy sources remain the foundation of Austria's energy transition, the situation demonstrated the challenges posed by weather-dependent power generation.

A particularly hot and dry summer led to a 25% decline in renewable electricity production compared with July 2025. As a result, renewable sources covered only about 83% of electricity demand, down from 100% in the previous year. Hydropower was most severely affected, with generation falling by 46%. Its share of renewable electricity production dropped from nearly 70% in July 2025 to around 50% in July 2026. In contrast, PV generation increased by more than 54% compared to last year, partially offsetting the losses from hydropower.

The hot and dry summer also affected cross-border electricity trade. Compared with the previous year, Austria had to import an additional 3.7 TWh during the period from January through August 2026 to offset the shortfall in hydropower generation (reservoir and run-of-river plants)—despite increased generation from wind and solar. Imports from the European electricity market, particularly during evening and nighttime hours, played a key role in maintaining system stability and supply security.

Belgium

In 2026, the Belgian electricity system faced two very different challenges. In spring, high renewable generation, especially solar power across Europe, led to periods of oversupply and historically low electricity prices. In Belgium, the total PV installed capacity exceeded 12 GW in Spring with about 65% of residential PV offering very limited price reaction and flexibility. On 1 May, Belgium recorded a **day-ahead price low of -500 €/MWh**, driven by abundant renewable output and low holiday demand. Similar negative prices were observed across Europe, highlighting the growing impact of renewables on market dynamics.

At the same time, the temporary shutdown of Doel 4 and Tihange 3 for lifetime extension works significantly altered Belgium's generation mix. The loss of around 2 GW of nuclear capacity reduced the risk of overproduction but increased Belgium's structural reliance on electricity imports, particularly during demand peaks.

Summer was marked by several intense heatwaves in Western Europe. High temperatures drove electricity consumption sharply higher, mainly due to increased use of air conditioning. Belgian summer demand reached a **record peak of around 12,6 GW** on 26 June. Heatwave conditions were also accompanied by low wind generation, creating a classic **Hitzeflaute** situation characterized by high demand and limited renewable output.

As a result, scarcity conditions emerged during evening hours when solar production declined rapidly while demand remained high. **Day-ahead prices exceeded 1,000 €/MWh during some peaks**, while balancing prices also increased due to limited generation margins and reduced import opportunities. The combination of high demand, low renewable output, reduced nuclear availability and thermal constraints created one of the most challenging summer operating periods in recent years.

Overall, 2026 highlighted the growing contrasts of the energy transition, with extreme negative prices during periods of renewable abundance and extreme positive prices during scarcity events. The impact of heat waves in Europe is also leading to new challenges to ensure operational security during summer period. The year also underlined the structural and increasing importance of flexibility and storage, as well as Belgium's continued dependence on cross-border exchanges to ensure security of supply. Unlocking flexibility at scale will realistically take several years, whereas incompressibility risks are materializing today and will grow in the next years. Markets should remain the primary means of unlocking flexibility, but Elia also looks for a technical safeguard if market flexibility would be insufficient at a certain moment.

Bosnia and Herzegovina

Electric power system in Bosnia and Herzegovina maintained secure operation during the summer season.

Maximum load was recorded on August 6 at 21h, and it was 1522 MW, while minimum load was recorded on June 1 at 6h, and it was 661 MW.

Bulgaria

The summer of 2026 was characterized by prolonged periods of high temperatures across Europe, resulting in increased electricity consumption for cooling purposes and challenging operating conditions in several power systems. In Bulgaria, the maximum system peak demand this summer reached 4.8 GW which is short of the already registered record of 5.3 GW. However, the Bulgarian power system traditionally experiences its annual peak demand during the winter season.

During the summer of 2026, installed photovoltaic and battery storage capacities reached record levels, providing the Bulgarian power system with significant flexibility and balancing capabilities. These resources contributed to maintaining system adequacy and supported Bulgaria's position as a major net exporter of electricity during this period, with record breaking exports sometimes reaching hourly net values exceeding 4 GW.

Low Danube River water levels observed during this summer, following an extended period of drought, led to a reduction of power generation of one of the two units of Kozloduy Nuclear Power Plant by approximately 120 MW. Nevertheless, this limitation did not create any critical situations regarding security of supply or the ability of the power system to meet electricity demand during the summer period.

Following the above-average precipitation levels recorded during the spring season, the current level of water resources in Bulgaria remains satisfactory. As a result, no shortages of water for energy production purposes were observed, and hydro-related constraints on power system operation remained limited.

No adequacy or downward regulation issues were observed during the summer 2026 period. Overall, the Bulgarian power system maintained secure operation throughout the season despite the challenging meteorological conditions, high renewable generation levels, reduced nuclear output, and the ongoing transformation of the generation mix.

Croatia

During summer 2026 Croatian power system was confronted with high demand and lack of domestic generation.

Unfavourable weather and conditions in grid caused that hydro and specially wind power plants generated less electricity compared with summer 2025.

On average around 50 percent of demand had to be covered by imports in June and around 40 percent in period from July till September.

Historically highest demand (3400 MW) was recorded at 9 pm on 11th August 2026.

There was not any significant interruption of supply.

Cyprus

During Summer 2026, system adequacy was marginal but generally maintained. More specifically, during certain periods, replacement reserve availability was low due to unplanned outages. Moreover, on some occasions, the available replacement reserve was insufficient to cover the loss of the largest conventional generating unit in the system.

However, on 22 July 2026, simultaneous outages of conventional generating units at the Vassilikos and Dhekelia Power Plants, combined with high temperatures (over 40°C) across the island and increased electricity demand, led the TSO of Cyprus to activate the Cyclic Load Shedding Scheme to maintain balance, stability and security of the electricity system. Specifically, five Cyclic Load Shedding Groups consisted of medium-voltage feeders were disconnected on a rotational basis. The supply interruption for each group lasted between 18 and 22 minutes, after which the affected feeders were progressively restored as system conditions permitted. More information can be obtained from the TSO's official press release here.

The National Regulatory Authority (NRA) was formally notified, as required.

Czech Republic

No adequacy issues were observed during Summer 2026.

Denmark

In general, it was a very relaxed summer. No major disturbances were recorded, therefore assuring a satisfactory power situation.

There were planned outages for key lines during the summer. However, these did not cause any operational challenges or impact system adequacy.

Estonia

No adequacy issues occurred in Summer 2026.

Finland

Adequacy conditions during summer 2026 remained stable. As expected, electricity demand, generation availability, and transmission capacities were reduced due to seasonal patterns and planned annual maintenance. No significant outages or operational events occurred that would have posed a risk to the electricity supply.

France

No adequacy issues were recorded during Summer 2026, despite exceptionally early, intense and long heatwaves combined with a persistent drought, in France.

- Electricity demand increased compared to summer 2025, between 4 and 5% in June and July, and reached back the 2014–2019 pre-crisis reference levels for the first time during summer period. Peak consumption reached around 60 GW, a comparable level to the one observed in 2019.
- Nuclear generation remained at comparable levels than previous years, at 83.7 TWh between June and August, as a particularly high availability outside heatwaves compensated important unavailabilities of reactors due to heat and drought, which reached 13.4 GW at the peak and represented around 10 TWh of non-produced energy for the summer, a level that largely exceeds the ones observed historically (6 TWh in 2003). These "climatic" unavailabilities of the nuclear fleet, occurring during a period of lower consumption and in a French electric system that remains marked by an abundance of low-carbon production, did not generate particular issues for the security of electricity supply at the national scale.
- Hydraulic production decreased to 10.8 TWh in June, July and August, the second lowest level observed for this period since 50 years, with hydraulic stocks at historically low levels (2.1 TWh) at the end of August, due to an intense drought that prevails in Western Europe since June.
- Wind and solar production continued to increase: wind generation reached 8.9 TWh between June and August, with higher load factors than last year, while solar generation reached 15.1 TWh (+21%), thanks to the development of installed capacities and a particularly sunny month of July.
- Fossil fuel generation increased to 4.1 TWh between June and August, compared to 2.6 TWh in 2025 and 2.1 TWh in 2024, due to higher demand, environmental constraints on the nuclear fleet and lower hydraulic production. This level remains low in absolute terms and relies almost exclusively on gas, as coal generation stayed close to zero.
- France remained a large exporter, with an export balance of 23.7 TWh
- Prices increased strongly, notably due to the important rise of gas prices linked the blockage of the Ormuz strait, with French spot prices reaching in average 95.2 €/MWh in July and 122.8 €/MWh in August, the second highest levels ever observed for these months.
- Gas storage levels reached 83% at end of September 2026, slightly below the levels observed in recent years (91% in 2025, 92% in 2024, 91% in 2023), reflecting the tighter gas market conditions over the summer.

Germany

No problems regarding adequacy were identified during the summer period.

Due to typically low demand and high supply of solar energy, no upward regulation events occurred. In some cases, however, price peaks of 500 EUR/MWh and above were observed in the day-ahead and intraday auctions for the evening hours because of increasing demand combined with decreasing solar power.

In contrast, midday hours often reached negative prices (more than 1000 quarter-hours in the day-ahead auction from May to August). In particular, negative prices did not only make thermal power plants, but also renewable energy units reduce infeed.

Periods of low water levels and elevated river temperatures occasionally occurred in the Rhine, Neckar, and Danube rivers. However, their impact on power plant cooling and fuel supply was negligible.

Great Britain

There is an ongoing review, commissioned by Ofgem, into how Great Britain's electricity system and market operating during the period of extreme heat between 22 and 26 June 2026. The review is examining how Great Britain's electricity system and market operated during that period, including system conditions, operational decisions and market activity

A preliminary report was published on 19 October 2026 and is available here: https://www.neso.energy/document/388826/download.

The preliminary report sets out the evidence reviewed and the chronology established to date. It confirms frequency did not deviate outside statutory limits at any point. The review remains ongoing, with final conclusions, recommendations and lessons learned due to be set out in a final report.

Greece

In context, during last summer period (May 2026 to September 2026) the average electricity demand decreased by 1% compared to the corresponding period on Summer 2025, when 2 heat waves observed. Temperature during all Summer period was comparable to previous years. There was 1 heat wave in July which caused high electricity demand and stressed the Transmission System.

During June, the average load decreased 5.7% and during July decreased 7.7% in comparison with the corresponding months of 2025 while in August the average load increased 7.8% in comparison with July 2025.

The impact of usual summer period fires on Transmission System was insignificant and only caused limited outages on the local electricity systems (lines under which the fire occurred).

The Crete System has been integrated (connected) with the mainland System, increasing total peak-hour demand by 700 MW. In the summer period, the number of connections linking the Cyclades islands to the mainland System increased.

No adequacy issues recorded during summer period.

Hungary

On average, higher system load was observed in the summer period of 2026 compared to the previous year. The maximum load (7488 MW) was reached on 29th June, which is above the previous historical peak load for the summer period (7036 MW), but still below the all-time peak load (8182 MW). This is mainly because there were prolonged extreme heatwaves, compared to last summer. Besides, the industrial PV output as well as the overall PV output have been exceeded, both peaking on 08th August with a value of 4447 MW and 7117 MW. This can be explained by the high level of PV integration and the beneficial weather conditions. In addition, on several occasions significant downward regulation was necessary, once approaching 885 MW.

The level of maintenance was generally low and carefully distributed in time in order to guarantee the system adequacy. Overall, the amount of balancing capacity available was sufficient to secure the occurring reserve requirement. However, the Hungarian system entered the Alert state three times due to IT and network problems, but these have all been withdrawn within a few hours.

Hungary experienced two extreme heat waves during this summer. The highest system load occurred during the first heat wave at the end of June. During the second heat wave, due to the extreme drought, the water level of the Danube fell to a historic low, resulting in the gradual shutdown of almost all the units at the Paks Nuclear Power Plant. This process began on 27th July and ultimately seven of the eight units have been shut down by 2nd August. MAVIR informed the relevant organizations about the possible risks as required. An early warning notification was submitted to the European Commission by the Ministry of the Energy and Economy. A national Crisis Working Committee was also established to manage the situation. The weather conditions as well as the operation of power plants resulted in higher import volumes, but partly thanks to the consumers' voluntary reduction in electricity consumption, we did not reach another summer historical peak load during the second heatwave. To ensure the supply of the increased electricity imports, the maintenance schedules for international and domestic transmission lines were modified or rescheduled in cooperation with neighbouring TSOs. On 10th August, the restart of the reactors at the Paks Nuclear Power Plant began. By 27th August, the entire power plant was back in operation.

Even though we have faced some unprecedented difficulties, fortunately last summer passed without any major adequacy issues thanks to the careful planning beforehand and collaboration among market participants.

Ireland

During summer 2026, the dispatchable generation margin in Ireland remained tight, resulting in nine margin warnings. Two of these events, on 24 June and 12 August, required the dispatch of Temporary Emergency Generation to avoid entry into the Alert state.

A new grid-scale solar generation record was set on 24 August, with output reaching 1.3 GW at 11:43 am.

Italy

Last summer, electricity demand increased by 7.7% compared to the same period of the previous year. This growth was driven by both higher consumption levels and warmer weather conditions. Excluding temperature effects, demand recorded an increase of 4.3%. In August 2026, average temperatures were 2.8°C higher than in August 2025, contributing to the observed demand trend. In July 2026, the peak load was recorded on Wednesday, 15 July, reaching 58 GW, up 4.5% year-on-year.

In Sicily, the conditions observed on few days in August were consistent with the forecast assessments, with high sea temperatures and reduced thermal generation availability requiring modulation of Italy-Malta link.

Latvia

No adequacy issues occurred in Summer 2026

Lithuania

In summer 2026, national consumption was 5,8% higher than in summer 2025. Maximum total load (2113 MW) was reached on 1st of July 2026.
The summer balance portfolio consisted of 85% local generation and 15% imports from neighboring countries. Largest import provider this summer was Sweden. Solar generation increased by 45% and wind generation by 18% compared with last year's summer. Main reason why local generation this summer season was higher than usual summer seasons was growth of renewable energy sources, with an increase in wind net generating capacity of 39% (by 712 MW) and solar of 32% (by 672 MW), compared to the beginning of last year summer season.
Imports contributed significantly to adequacy in Lithuania.

Luxembourg

No adequacy issues occurred in Summer 2026

Malta

The Summer peak load has increased from 637MW last year to 741MW this year – previous record was 663MW in 2023. The longer than usual heat wave, that lasted between 20th July and 31st August, has contributed to the drastic increase in demand. According to information received by Enemalta, Sicily suffered unplanned outages of some generation plant during the summer, leading its TSO, Terna, to request a decrease in our imports from Italy during the evening peak hours on a few days, provided that this would not have an adverse effect on security of supply in Malta. To meet demand, an emergency generation plant was dispatched throughout the days of the heat wave, mainly to supply the evening peak when PV generation is not available.

Additionally, failures occurred in the distribution network due to the increased load and temperature, mainly failures in the cable joints of 33kV and11kV feeders, and failures of 11kV substation fuses.

Moldova

During summer 2026 Moldova's power system continued to face challenges in covering evening peak demand. The increasing share of renewable generation, mainly photovoltaic, significantly improved the overall balance of the system compared with the previous summer. During daylight hours, domestic renewable generation was able to cover a big part of demand and even periods of excess renewable generation were observed during high solar irradiation.

The integration of BESS as part of PV plants contributed to system balancing. Although the currently installed storage capacity remains small, it helped reduce the amount of additional capacity required during evening peak hours by shifting part of the excess daytime renewable generation towards the evening.
The reallocation mechanism remained essential for covering the evening peak, but it was required only for a limited number of hours per day. The combination of increasing renewable generation and the integration of BESS significantly reduced the volume of capacity that had to be obtained through reallocation compared with the previous summer.

This improvement was particularly important due to limited import possibilities from Romania as a result a regional deficit in Romania in the second half of this summer due to low water levels in the Danube River caused by drought.
Moreover, the dependency on imports from a neighboring TSO via a single tie-line led to problems with disconnection of this tie-line for maintenance.

Overall, summer 2026 demonstrated that further integration of renewable generation, combined with the integration of BESS, can improve the flexibility of Moldova's power system. Further expansion of storage capacity will remain important to fully utilize the increasing amount of daytime renewable generation and to provide additional flexibility during evening peak periods.

Montenegro

No comments received from the TSO.

Netherlands

No adequacy issues occurred in Summer 2026.

Northern Ireland

Dispatchable generation margins were predominantly adequate over the Summer 2026 period.

There was one local system alert issued in Northern Ireland over the Summer 2026 Period. This alert, 30/07/2026 10:50 – 01/08/2026 16:15, was issued as the system was operating outside the normal operating constraints. This was due to the unplanned outage extension of two large generators at one station, and the trip of another large generator. Following this another large generator tripped, but there were sufficient resources all-island to manage this.

North Macedonia

No comments received from the TSO.

Norway

Following a dry and relatively cold winter in the previous season, as well as a dry and warm summer, the reservoir levels in Southern Norway have been low throughout the present year. Neither this situation nor scheduled maintenance of power stations and grid infrastructure has resulted in adequacy issues during the summer. Power stations in mid-Norway (NO3) are now required to report reservoir levels to regulatory authorities.

Poland

Since March 2026 a hydrological draught has been lasting in Poland, so hydrological conditions during main summer period was exceptionally unfavorable. Some rivers reached historically low levels, with the water level in the Vistula River being particularly important for the Polish generation adequacy.

The low water level of the Vistula River had a negative impact on the generation adequacy in two ways, both of which were linked to environmental constraints:

- constraints relating to the minimum required river flow

- constraints relating to the maximum permissible river temperature

Both constraints drastically influenced on capacity limitations at some large thermal power plants equipped with open-circuit cooling systems, located in the Central-East / South-East part of Poland. This leads to a considerable lower availability from their installed capacity of 4.6 GW.

During periods of low wind generation and high demand, imports became crucial for maintaining generation adequacy, particularly in the evening hours, when PV infeed is negligible. On three days during the summer season (30 June, 4 and 6 August), day ahead market contracts on import direction and other remedial measures proved to be insufficient restore the power balance. Therefore PSE had to announce the “scarcity event”, obliging all parties with contracted obligations on Capacity Market to provide their resources to the power system. These obligations are applicable for all contracted resources, meaning that all generators and all DSR units must react adequately (it is thus non-selective). This non-market measure let PSE maintain power balance.

Difficult Polish power balance situation was reported on a regular basis during Short Term Adequacy process, performed by RCCs.

Portugal

No comments received from the TSO.

Romania

During August, both nuclear units, representing approximately 1,400 MW of generation capacity, were shut down as a result of insufficient cooling-water conditions. Water-management measures were implemented in coordination with the relevant national authorities to improve the conditions for nuclear generation and support security of supply, although their impact remained limited.

Hydropower generation was also affected by the prolonged drought and low water inflows. The use of water stored in reservoirs provided important short-term support during peak-demand periods. Nevertheless, reservoir operation had to be carefully managed in order to avoid excessive drawdown that could negatively affect adequacy during the following winter. As the unfavourable hydrological conditions persisted, the need to preserve sufficient reservoir levels for the winter period became an increasingly important operational constraint.

The most critical conditions occurred during the evening peak hours. Electricity demand exceeded 8,000 MW, while photovoltaic generation decreased rapidly towards sunset and wind generation was also very limited. In this context, the Romanian power system relied significantly on electricity imports. The net import balance frequently exceeded 2,000 MW during the evening peak hours and temporarily exceeded 3,000 MW. Imports provided important support in the context of reduced nuclear and hydropower generation.

However, the ability to rely on high import levels depended not only on the physical availability of cross-border transmission capacity, but also on the availability of sufficient energy in neighbouring systems. This became particularly relevant during periods when several countries in the region were simultaneously experiencing high demand, reduced renewable generation or other generation constraints.

Several planned network outages were postponed during July and August in order to preserve cross-border transmission capacity and support secure system operation. While this measure contributed to maximising import capability during the most critical summer periods, the postponed maintenance had to be rescheduled, potentially reducing cross-border capacity and increasing operational constraints in the subsequent period.

Additional measures included enhanced operational monitoring, close regional coordination and communications encouraging consumers and large industrial users to reduce or shift consumption during critical hours. These communications contributed to voluntary demand reductions.

The Romanian authorities also introduced a crisis situation framework allowing additional measures to be implemented if necessary. However, no mandatory consumption-limitation measures were activated, and electricity demand was supplied throughout the assessed summer period.

Overall, system adequacy was maintained despite the reduction in nuclear and hydropower generation, the limited contribution of photovoltaic and wind generation during critical evening peak hours and the high level of imports. The prolonged nature of the hydrological conditions also demonstrated that adequacy risks cannot be assessed independently for each season, as intensive use of reservoir resources during summer may reduce the margins available for the following winter.

Serbia

No resource adequacy issues were recorded in Serbia during summer 2026. Demand was covered throughout the season. High temperatures led to higher demand in some periods, while changes in generation and cross-border exchanges in the region affected flows through the Serbian transmission network.

Significant transit flows were recorded during the summer. Loading of some network elements required close monitoring, especially during periods of high demand and changing regional exchanges. No measures affecting consumer supply were required.

Slovakia

No adequacy issues were observed during Summer 2026.

Slovenia

During the last summer we faced several very challenging hydrological and meteorological conditions. Precipitation was significantly below the long-term average, with a national precipitation indicator of only 72%, making summer 2026 approximately the seventh driest summer in Slovenia since 1950.
These conditions had a direct impact on hydropower generation. After a relatively solid June, when Slovenian hydro generation reached 338 GWh, production dropped to 195 GWh in July, 35% below July 2025 and 42% below June 2026. The situation subsequently developed into a period of hydrological drought, with river flows below the levels normally expected for the season.
The low water levels and high river temperatures also affected the operation of the Krško Nuclear Power Plant (NEK). On 6 August, NEK reduced reactor output to 80% as a planned and controlled measure to comply with environmental limits related to the temperature of the Sava River. Output was increased to 90% on 14 August and returned to 100% on 18 August as conditions improved.
At the same time, the regional electricity market experienced periods of very high prices, particularly during the evening peak, typically between 17:00 and 21:00. During these periods, demand remained high while solar production declined rapidly, creating additional pressure on the regional supply-demand balance.
The situation was further aggravated by the extremely low water level of the Danube and its impact on the Paks Nuclear Power Plant in Hungary. At the beginning of August, Paks was reduced to a small fraction of its normal output and approached a complete shutdown due to insufficient cooling water. This significantly increased Hungary's need for imports during the critical period, adding further pressure to the regional electricity market.
In these conditions, we performed daily generation adequacy analyses, monitoring generation availability, demand, cross-border capacities, market conditions and potential risks for the Slovenian system.
Despite the challenging conditions, all customers remained continuously supplied with electricity throughout the period. The available cross-border import capacities were sufficient to support the Slovenian system when required.

Overall, the summer of 2026 represented a significant operational challenge for the Slovenian and regional electricity systems. Nevertheless, through continuous monitoring, daily adequacy assessments and sufficient cross-border capacity, security of supply in Slovenia was maintained throughout the period.

Spain

The Spanish power system remained secure throughout the summer period, although there have been tight margins which were reached several times in July and August, due mainly to the following reasons:

- the high demands related to extreme heatwaves that took place during almost all the period. The peak demand was reached the 6th of July with 39.429 MW, and it was 4% higher than the peak demand from July 2025 and 10% higher than July 2024.

- The low availability of thermal generation. CCGTs were specially affected by forced outages and several limitations of their maximum power capacity due to high temperatures.

Sweden

No adequacy issued was recorded during the summer of 2026.

Peak summer demand reached 14,547 MW on 15 June and the lowest demand was 7,883 MW on 12 July. Despite the lower share of dispatchable generation typically associated with summer conditions, the availability of downward regulation resources remained adequate throughout the period.

High temperatures temporarily reduced transmission capacity on certain lines, requiring some redispatch.

Day-ahead electricity prices were lower than during winter due to seasonally lower demand, and imbalance price volatility decreased as a result of measures to improve balancing market efficiency and increased market participation.

Switzerland

In Switzerland, Summer 2026 was characterised by unprecedented heat and severe drought conditions. According to MeteoSwiss, it was the warmest summer since the beginning of measurements in 1864, surpassing the previous record of 2003. Prolonged heatwaves, exceptionally high numbers of hot days and tropical nights, and significantly below-average precipitation affected large parts of the country. In many regions north of the Alps, summer precipitation remained below 60% of the long-term average, while sunshine duration reached around 110-150% of normal levels.

The combination of low precipitation and high evaporation led to reduced river discharges and below-normal inflows to hydro reservoirs, resulting in lower hydro generation availability during parts of the summer. At the same time, photovoltaic generation benefited from the exceptionally sunny conditions and reached very high output levels. Low water levels also affected Rhine navigation and contributed to elevated river water temperatures.

The exceptionally high river water temperatures also affected thermal generation. On 24 June 2026, the Aare temperature downstream of the Beznau nuclear power plant reached 25 °C, leading the operator to reduce the output of both units to 50% in compliance with environmental requirements aimed at protecting the river ecosystem. Temporary shutdowns followed during subsequent heat episodes. No comparable heat-related production restrictions had to be taken for the nuclear power plants Gösgen and Leibstadt, which are equipped with cooling towers.

For selected key transmission lines, Swissgrid applies temperature-dependent maximum current ratings. During periods of exceptionally high ambient temperatures, the applicable current limits were lower, thereby reducing the available operational transmission margins on these lines.

Owing to the sustained period of elevated wildfire risk, exceptional contingencies were temporarily considered in addition to standard N-1 contingencies to reflect the possible unavailability of transmission lines in the event of wildfires.

Overall, the Swiss power system remained secure throughout the summer period, although the exceptionally dry and hot conditions reduced the usual hydro supply surplus and contributed to lower net exports than in a typical summer season.

Ukraine

Besides the sufficient availability of generation capacity and the satisfactory condition of grid infrastructure, the key external factors supporting the security of electricity supply during the summer of 2026 were favorable weather conditions, which prevented extreme demand peaks, and the effective operation of air defense systems employed by the Armed Forces of Ukraine, which helped minimize damage to critical energy infrastructure.

These factors enabled the timely execution of scheduled maintenance outages at conventional power plants and supported above-average commercial electricity exports to neighboring countries during July-September 2026.

The situation began to deteriorate in late September, when Russia intensified large-scale aerial attacks employing advanced unmanned aerial vehicles and ballistic missiles. These attacks resulted in partial damage to energy infrastructure and necessitated renewed efforts to restore affected facilities.