Winter Outlook 2025–2026

Summer Outlook 2025 Review

Country Comments

entsoe

ENTSO-E Mission Statement

ENTSO-E, the European Network of Transmission System Operators for Electricity, **is the association of the European transmission system operators** (TSOs). The **40 member TSOs, representing 36 countries**, are responsible for the secure and coordinated operation of Europe's electricity system, the **largest interconnected electrical grid in the world**.

Before ENTSO-E was established in 2009, there was a long history of cooperation among European transmission operators, dating back to the creation of the electrical synchronous areas and interconnections which were established in the 1950s.

In its present form, ENTSO-E was founded to fulfil the common mission of the European TSO community: to power our society. At its core, European consumers rely upon a secure and efficient electricity system. Our electricity transmission grid, and its secure operation, is the backbone of the power system, thereby supporting the vitality of our society. ENTSO-E was created **to ensure the efficiency and security of the pan-European interconnected power system** across all time frames within the internal energy market and its extension to the interconnected countries.

ENTSO-E is working to secure a carbon-neutral future. The transition is a shared political objective throughout the continent and necessitates a much more electrified economy where sustainable, efficient and secure electricity becomes even more important. **Our Vision: "a power system for a carbon-neutral Europe"*** shows that this is within our reach, but additional work is necessary to make it a reality.

In its Strategic Roadmap presented in 2024, ENTSO-E has organised its activities around two interlinked pillars, reflecting this dual role:

- "Prepare for the future" to organise a power system for a carbon-neutral Europe; and
- "Manage the present" to ensure a secure and efficient power system for Europe.

ENTSO-E is ready to meet the ambitions of Net Zero, the challenges of today and those of the future for the benefit of consumers, by working together with all stakeholders and policymakers.

* https://vision.entsoe.eu/

Contents

Introduction

This document includes individual country reviews on the supply security situation in their system during the last season. The reviews are accompanied by country comments on the expected adequacy situation or specific operational conditions during the coming season.

The aim of the retrospective reviews is to present the most important events that occurred during the previous season and compare them to the previous Seasonal Outlook study results. Important or unusual events or conditions in the power system and the remedial actions taken by the transmission system operators (TSOs) are also mentioned.

Comments on the expected adequacy situation and additional information are presented to provide more background information about the particular power systems, which might not always be represented in pan-European adequacy models.

Countries only provided comments or reviews if there was relevant information to be reported.

Albania

Winter Outlook 2025-2026

No adequacy issues are expected for Winter 2025-2026.

Summer Review 2025

No adequacy issues were recorded during Summer 2025.

Austria

Winter Outlook 2025-2026

This year's Winter Outlook Report (WOR) indicates no adequacy concerns for Austria. Overall, Austria is well prepared for the coming winter: contracted grid reserve capacity is available, and natural gas storage as well as pump storage hydro plant reservoirs are at high fill levels.

Related to the recent outage of the Austrian hydraulic power plant Limberg I and III begin of Nov. 2025 (640 MW), no relevant impacts on the security of supply situation are expected according to the current estimations.

Summer Review 2025

The summer season of 2025 was marked by contrast in the output of run-of-river hydro, which is the backbone of Austria's energy supply. While, on average, run-of-river hydro generation was below the long-term seasonal average, on several occasions daily low and daily high output records were broken. These were mainly caused by differences in precipitation, which was low in May and June but high later in July. The variations in run-of-river hydro output were also a driver for the country's net trade position, which went from being a net importer in May and June to a net exporter in July. Reservoir levels increased over the summer at a rather normal multi-year average rate until the end of July, but the increase stagnated towards the end of July and August, causing reservoir levels to be lower than in previous years at the end of September. Austria is making good progress towards achieving its photovoltaic expansion goals.

Belgium

Winter Outlook 2025-2026

As part of Belgium's nuclear phase out strategy, nuclear capacity will decrease before Winter 2025-2026 to just above 2GW instead of 4GW during Winter 2024-2025. To compensate for this partial nuclear phase out, it is the first year of Capacity Remuneration Mechanism (CRM) operationally. Around 1 GW of new CRM units are commissioned for the winter (mainly 1 gas unit of about 890 MW). Another single new CRM gas unit of similar capacity will be commissioned in 2026 (planning still uncertain).

In general, Elia expects higher import needs compared to last year:

- 2GW less nuclear (partially compensated by new CRM units)
- Higher demand

Elia expects to face import needs up to 3 ½ GW in severe winter conditions / low wind, which should be covered by Belgian import capacities, so no significant adequacy risks are identified.

Summer Review 2025

During Summer 2025, Elia has observed an overall lower oversupply risk compared to 2024. In general, as we expected, most of the high supply periods were faced during the Spring period (March-June).

Important infrastructure work on the Belgian-French border has generally impacted the export capabilities during a part of the summer, which has resulted in a higher number and amplitude of negatives prices.

As expected, the highest risk observed was due to the relatively high absolute forecasting error of PV production between DA and real-time.

The Hitzeflaute phenomenon has been observed for the first time this summer during the heatwave of July. A high solar production during the day coupled with a high demand in the evening peak because of the heat caused a sudden spike of the DA price (>200€/MWh).

This type of market and weather phenomenon should be further investigated in the future; as the increase in PV installed capacity and the more recurrent heatwaves caused by Global Warming should escalate this type of situation in the coming years.

Bosnia and Herzegovina

Winter Outlook 2025-2026

No adequacy issues are expected for Winter 2025-2026.

Summer Review 2025

During the last summer, the adequacy of the power system of Bosnia and Herzegovina remained at a good level, and no adequacy issues were recorded. Electricity demand was slightly lower than for Summer 2024. Maximum load for the last summer was recorded on July 27 at 19:00 at 1510 MW.

Bulgaria

Winter Outlook 2025-2026

In general, no adequacy issues are expected for winter 2025-2026 in Bulgaria. To describe the situation, some important points are worth making:

- Peak loads during the coming winter are not expected to be higher than the normal – around 6.5 GW.
- There are no planned outages of thermal and large hydro units scheduled during the examined period of the WO 2025-2026.
- Hydro reserves at the beginning of November 2025 are estimated at 53% which is considered below average, but typically inflows are expected in the months of January and February at the Arda hydro cascade.
- However, a growing concern for the BG power system is its continuous reliance on electricity imports during hours of peak demand and low availability of renewables. This, in combination with unforced outages in the nuclear and thermal generation fleet could create a scarcity situation and put a heavy strain on the system.
- Unfavourable weather conditions, especially heavy snowfall, could create small outages of power supply in the remote mountainous areas as it has happened in the past.
- Good news is the rapid penetration of battery storage systems (1000 MW and increasing) that could relieve the burden on the hydro plants in the peaking hours of the day. Hopefully, one more unit in PSHPP Chaira will be put back in operation at the start of 2026.

Summer Review 2025

On May 18 2025, a major disturbance happened in the power system of North Macedonia which led to loss of power supply and stability there. The BG control block did not suffer any major issues except experiencing high voltages in the western part for 8 hours.

No other significant issues in adequacy were present.

Croatia

Winter Outlook 2025-2026

No adequacy issues are expected for Winter 2025-2026.

Summer Review 2025

No adequacy issues were recorded during Summer 2025.

Cyprus

Winter Outlook 2025-2026

As there are no interconnections to rely upon in case of emergency due to Cyprus being an isolated island, there is a small probability that adequacy issues could arise through the coinciding of unplanned outages and unfavourable weather conditions.

Summer Review 2025

During the summer period, there were periods with low replacement reserve availability, due to unplanned outages. In several of these cases, the available replacement reserve was insufficient to cover the loss of the largest synchronised generator.

Moreover, a heat wave, with temperatures of 45ºC, coincided with unplanned outages of old thermal generators, which resulted in tight adequacy conditions in the second week of August. This culminated in a need to conduct cyclic load shedding on the 12th and 13th of August during the time of the peak residual load (18:30 – 20:30). The maximum disconnection time for each affected consumer group did not exceed 21 minutes. More information can be obtained from the TSO's official press release:

Ενημέρωση προς το Κοινό: Εκ περιτροπής Απόρριψη Φορτίου στις 12 & 13 Αυγούστου 2025 – Νεότερη ενημέρωση για σήμερα Πέμπτη 14 Αυγούστου – ΔΣΜΚ

The NRA was formally notified, where required.

Czech Republic

Winter Outlook 2025-2026

No adequacy issues are expected for Winter 2025-2026.

Summer Review 2025

Overall, no adequacy issues were expected since electricity resources were generally available. Demand decrease, observed in recent years, has stabilized (slight increase from 2024). The generation of fossil resources was optimized in order to accommodate RES generation (including imports). Sufficient ancillary services were available.

On July 4th at 11:59 a.m., the Czech Republic experienced a significant incident in the power grid, which caused the disconnection of parts of Czech network, including parts of the capital city Prague, and led to a loss of approximately 20% load. The lost load was fully restored within several hours and the specific causes of the incident are subject to investigation by a dedicated Expert Panel in accordance with the ICS methodology.

Denmark

Winter Outlook 2025-2026

No adequacy issues are expected for Winter 2025-2026.

Summer Review 2025

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

There was a critical outage on 400 kV lines in DK2 during the summer, although this did not cause any operational challenges or impact system adequacy.

Estonia

Winter Outlook 2025-2026

Some adequacy issues were identified during the modelling phase of the outlook. However, Elering does not consider these to pose a significant risk to the seasonal adequacy for the upcoming winter, as more reserves are available compared to the previous winter season.

Summer Review 2025

No adequacy issues were recorded during Summer 2025.

Finland

Winter Outlook 2025-2026

There are few key changes in the Finnish power system when comparing the upcoming winter to the previous one. As in the recent years, wind power continues to grow, with capacity expected to increase by 1200 MW. In contrast, thermal capacity will decrease by approximately 300 MW following the decommissioning of three units. The most notable development in the power system is the commissioning of a new interconnector to northern Sweden in November 2025, which will increase transmission capacity by 700 MW.

Similar to last winter, the Olkiluoto 2 nuclear unit will maintain a 155 MW output reduction to mitigate the risk of generator rotor failure. However, the Olkiluoto 3 unit will not undergo its annual maintenance in March as in previous years. Instead, the maintenance is scheduled for autumn 2026.

The results of Winter Outlook diverge from our own analyses and the adequacy issues appear slightly more severe due to small differences in demand data.

Summer Review 2025

During last summer, the adequacy of the Finnish power system remained at a good level. Electricity demand was seasonally low, but flexibility was reduced due to transmission limitations and annual maintenance of the power plants. The transmission capacity was reduced by both maintenance related to construction activities and unexpected failures. Estlink 2, which was damaged in December 2024, was successfully repaired, restoring transmission capacity to normal levels in late June. Furthermore, Estlink 1 and Fenno-Skan 2 experienced brief outages lasting some hours during the summer and early autumn.

France

Winter Outlook 2025-2026

A very low risk of adequacy issues is expected in France for Winter 2025-2026. The balance between electricity supply and demand is considered very favorable. Throughout 2025, France continues to benefit from a favorable energy context, following the positive trends already observed in 2024.

The continuous improvement in nuclear availability since the end of the stress corrosion period has led EDF to revise upward its nuclear generation estimates for 2025 several times during the year, the improvement of which is mainly due to better control of unit outages.

The forecast for this winter therefore appears more favorable than last year's, with projected nuclear availability for January reaching levels close to historical standards.

Renewable capacities continue to expand. Increases in wind and solar capacity in 2025 further enhance security of supply. By the end of summer, hydro reservoir levels were around the historical average, despite less favorable weather compared to the previous year. Gas stocks in France also remain within the seasonal average, providing an additional buffer even in case of local tensions.

Moreover, energy prices in France have returned to their pre-crisis levels.

Given these factors, the risk for security of supply in France remains very low for the incoming winter. While situations requiring emergency or backup resources cannot be entirely excluded, they are highly unlikely. Only extremely adverse scenarios such as a rapid rise in demand, delays in nuclear unit restarts, a severe cold snap, or significant import restrictions, could trigger the need for such measures.

RTE is closely monitoring all parameters contributing to security of supply in France and remains specifically focused on the evolution of French power demand and planned outages of nuclear power plants.

Summer Review 2025

No adequacy issues were recorded during Summer 2025, supported by strong nuclear availability, sufficient hydro and gas stocks, and the continued growth of installed wind and solar capacity. Electricity production from renewables recorded a sharp increase, with wind output rising by +22.6% in Summer 2025 compared to Summer 2024, and solar generation up by +23%, largely driven by the expansion of installed capacity.

The exceptionally dry summer (−15% rainfall compared to the national seasonal average) significantly reduced hydro stocks, which stood well below the levels observed in previous years, and markedly lower than the exceptionally high levels of August 2024.

Nuclear availability remained at the upper end of the historical range throughout the month, although slightly below 2024 levels in the first half of August. The summer was also marked by further delay in the commissioning of Flamanville-3, mainly for technical reasons, with testing resumed in mid-October, with full power operation now expected at the end of the autumn.

On the demand side, despite Summer 2025 being ranked as the third warmest since 1900, electricity consumption from January to July remained stable compared to 2024, yet the country's overall consumption continues to stand below pre-crisis averages of 2014-2019.

On the export side, with available generation consistently exceeding consumption levels, France kept a robust export position on the European market.

Due to moderate consumption level and high distributed renewable generation, some situations of high voltages were experienced, still manageable with available remedial actions.

Moreover, the generation surplus occurring during the last summer implied more negative prices episodes - especially on the afternoons and the week-ends - with generation curtailment volumes historically high (up to 8 GW) because of no export possibilities. These situations are not new, but their frequency and scale are increasing, leading to a change in the rules of power system balancing coordination. Starting on January 1, 2026, following « loi Daddue » statement, a new operational process will be put in place by RTE on the balancing market to reduce the renewable generation in case of an unbalance. Other measures to adapt the regulatory framework and the operation of the power system in situations of renewable oversupply are currently being considered.

Germany

Winter Outlook 2025-2026

Non-market resources

Based on the knowledge at the time of data collection, the German non-market resources contain:

- Capacity reserve: Since 1 October 2024 and until 30 September 2026, a total contracted capacity of 1.2 GW of power plants is available for unforeseeable demand balancing events. These power plants must be available within 12 hours and can also partially be used to resolve grid congestion.

- Grid reserve: This is used to resolve congestion and contains different types of power plants in Southern and Western Germany. It comprises a total capacity of 7.9 GW. Secondary to capacity reserve, it can also maintain generation adequacy.

- Special network equipment power plants: These are fast-starting gas-fired power plants with an overall capacity of 1.2 GW, primarily intended to restore grid stability after a disturbance in the transmission grid. Secondary to the grid reserve, they can also maintain generation adequacy.

Parts of the aforementioned non-market resources primarily have a different purpose than coping with resource adequacy risks, such as congestion management. Therefore, non-market resources might already be partly exhausted for their primary purpose and unavailable for resource adequacy purposes.

Load

The forecasted gross electricity consumption for 2025 and 2026 in Germany was estimated at 518 TWh. This represents a slight increase compared to the 515 TWh in 2024, as reported (at the time of data collection) in preliminary publications by the German Association of Energy and Water Industries (BDEW). The peak demand is 85.8 GW for winter 2025/26. The load can therefore be classified as relatively moderate, and no critical load-driven deterioration of the resource adequacy situation is expected. The ongoing unstable economic situation and the resulting slower growth in new consumers (e.g. heat pumps and electric vehicles) are seen as contributing factors.

Additional remarks on the German data collection

The pumped-storage power plants (PSPs) of the Kraftwerksgruppe Obere Ill-Lünersee (turbine capacity: 2.2 GW; pumping capacity: 1.4 GW) – which are installed in Austria but assigned to the German control block, remain in the German dataset. For the same reason, the Kühtai pumped-storage power plant and Silz storage power plant (total turbine capacity: 0.8 GW; total pumping capacity: 0.25 GW) are also included in the German dataset.

Figure 2 of the outlook report depicts the total German battery expansion for 2026. This means that the level of expansion considered in the analysis' study period is above the actual achieved value. From the German TSOs perspective, the overestimation of the actual available potential has no relevant effect on the results of the Seasonal Outlook, considering that no direct European neighbouring countries have LOLE hours.

Summer Review 2025

No adequacy issues were recorded during Summer 2025.

Due to typically low demand and high supply of solar energy, no upward regulation events occurred. In some cases, however, price peaks of 200 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 price minimums of 0 EUR/MWh or less (467 hours in the day-ahead auction from May to September). In particular, negative prices did not only make thermal power plants, but also renewable energy units reduce infeed.

Occasionally low water levels and high temperatures in the rivers Rhine and Neckar occurred, but their effects on power plant cooling and fuel supply were negligible.

Great Britain

Winter Outlook 2025-2026

Great Britain's National Energy System Operator (NESO) published the Electricity *Winter Outlook 2025/26 Report* on 9 October 2025. Our analysis indicates that margins will be adequate and within the Reliability Standard. The base case margin for Winter 2025-2026 is 6.1 GW (representing 10.0% of average cold spell peak demand), with an associated loss of load expectation (LOLE) below 0.1 hours. This is an increase from the 5.2 GW forecast in last year's Winter Outlook.

Our planning, preparations and balancing tools will enable the reliable operation of the system under varied supply and demand conditions. We expect a sufficient operational surplus throughout winter, although there may still be tight days that require us to use our standard operating tools, including system notices. Current market submissions suggest such days are most likely in early December or mid-January. Our analysis suggests that imports will be available when required and prices suggest Great Britain will typically be a net importer across electricity interconnectors this winter, although flows may be more sensitive to prevailing conditions.

Summer Review 2025

No adequacy issues were recorded during Summer 2025.

Greece

Winter Outlook 2025-2026

For the upcoming Winter, there is no scheduled maintenance of generation units during high demand periods (15 December to 15 February). The possibility of extension of scheduled unit maintenances within high demand period is low.

The new thermal (gas) unit with installed capacity 850 MW continues its commissioning operation.

The Greek TSO IPTO is in continuous contact with the Gas Transmission System Operator to be able to initiate the switch fuel procedure in some bi-fuel units (gas to oil) in case of emergency. The operation with alternative fuel is limited to a few days and is only considered as an urgent countermeasure in case of lack of gas supply and not a continuous operation mode.

Water reservoir levels are lower than the previous years (decade low) due to the drought during Spring and Summer and the absence of inflows. The continuing absence of rain and drought conditions raises concerns about the level of availability of hydro power plants during Winter.

There is no scheduled maintenance or capacity limitations on any of the interconnection lines for the upcoming high demand period.

A small increase on consumption during the upcoming winter is expected in comparison with Winter 2024-2025 which was mild regarding environmental conditions.

New 150kV and 400kV OHL and HVSS came into operation or expected to be in operation, strengthening the stability and reliability of the transmission system.

The expected generation, the increase of RES installed capacity, and import capacity are sufficient to cover Greek energy needs under normal conditions and any adequacy issues are not expected, given that gas supplies will be continuous and redundant to cover domestic demand.

However, the Greek system will be highly depended on import transfers during high demand periods in combination with low-RES generation, in order not to face any adequacy issues in high demand peaks.

On the contrary, due to the high penetration of RES in both the transmission system and the distribution network, during low demand days (weekends and bank holidays), it is likely that there will be RES production restraints for balancing purposes and thus the control of the distribution network for RES is of utmost importance.

Regarding the DC connection line between mainland Greece transmission system and Crete Island transmission system, the testing-commissioning mode is expected to be completed within 2025 and start full operation mode within the forthcoming Winter.

Summer Review 2025

In context, during last summer period (May 2025 to September 2025) the average electricity demand decreased by 4% compared to the corresponding period on Summer 2024, when consecutive heat waves observed.

Temperature during all Summer period was comparable to previous years. There were 2 heat waves during in July which caused very high electricity demand and stressed the Transmission System.

During June, the average load decreased by 6.8% and in August decreased by 8.3% in comparison with the corresponding months of 2024 while in July the average load increased by 1.6% in comparison with July 2024.

The heat waves were combined with fires in all Greek territory. The impact of fires was insignificant and only caused limited outages on the local electricity systems (lines under which the fire occurred).

No adequacy issues recorded during Summer 2025.

Hungary

Winter Outlook 2025-2026

Based on previous years' system loads and observed typical trends, such as the spread of electrification, we might reach a new peak, especially in extreme weather condition. The continuously increasing PV generation in the Hungarian system can cause higher uncertainty in operational planning periods and real time system operation as well, which causes a higher level of reserve requirement – even in the winter period. Furthermore, the level of maintenance is generally low and, according to our expectations, the almost constantly required import will be available over the period under review. In addition, network developments are made continuously to manage higher voltage levels as well as to improve operational security.

Altogether, the Hungarian power system is expected to be safe during this winter period. However, it is important to note that the oil embargo and a possible natural gas crisis could have unforeseen effects.

Summer Review 2025

On average, lower system load was observed in Summer 2025 compared to the previous year. The maximum load (6766 MW) was reached on 26 June, which is also below the previous historical peak load for the summer period (7036 MW) and the all-time peak load (7663 MW). This is mainly because there were no prolonged heatwaves, compared to the last summer. Besides the industrial PV output as well as the overall PV output have been exceeded several times, both peaking on 1 July with a value of 4074 MW and 6425 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 1058 MW.

Maintenances were carefully distributed in time in order to guarantee the system adequacy. Furthermore, our reserve procurement methodology has been renewed not so long ago to match current challenges and conditions, so the amount of balancing capacity was sufficient to secure the occurring reserve requirement.

The Hungarian system entered the Emergency state two times due to IT and network problems, but these have all been withdrawn within a few hours. Despite the fact that we have faced some difficulties due to summer storms among other things, fortunately last summer passed without any major adequacy issues thanks to the careful planning beforehand and the milder weather.

Ireland

Winter Outlook 2025-2026

The outlook for this winter in Ireland is much improved compared to the last four winters. In the last year, a new 500 MW interconnector between Ireland and Great Britain (Greenlink) became operational, as well as 108 MW of new gas plant, 45 MW of new batteries and 110 MW of new utility-scale wind and solar plant. In addition, 649 MW of non-market Temporary Emergency Generation and 750 MW of Retained Existing Units (units that left the market but were retained as non-market resources) are also available. While the peak demand is forecast to increase this winter, it is outweighed by the increase on the generation side. The system may enter the Alert state at times, most likely at periods of low wind and low interconnector imports. There is a low probability of the system entering the Emergency state due to insufficient generation being available to meet demand. Emergency protocols are in place with large energy users that would mitigate the impact on homes and businesses in such an event, where sufficient notice of an event can be provided (minimum of 1 hour).

Summer Review 2025

There were no system alerts in Ireland during Summer 2025. While the dispatchable generation margin in Ireland was sometimes negative over the period, strong imports from Great Britain and Northern Ireland coupled with wind and solar power meant that margins were always sufficient.

Italy

Winter Outlook 2025-2026

Upward adequacy assessment
Import from neighbouring countries is still expected to be necessary to restore adequacy margins and to cover consumption in critical hours, but with lower needs compared to last winter and close to zero.
This improvement is mainly due to the full availability of new thermal power plants since last winter.

Analyses estimate that the risk for adequacy is within standard levels.

Critical situations could happen in the unlikely case of high demand due to cold spell, low renewables and low import from neighbouring countries (or even export conditions), or if unplanned outages rate of generation units is higher than the typical values.

Postponement and/or cancellation of maintenances could be used as countermeasures together with demand response measures and additional market interventions.

In addition, improved regional coordination processes (including regional weekly adequacy assessment - STA project - and Critical Grid Situation process) will support the definition of proper and efficient countermeasures in case the risk of incurring critical situations will be detected at short term horizon.

Over time, the Capacity Market mechanism has contributed to enhancing adequacy margins. However, if this mechanism does not continue in the future, a decline in thermal capacity could be expected, with potential consequences for adequacy.

Generation capacity in Italy
In the last year renewable generation capacity increased by nearly 5 GW. There was also an increase in thermal power capacity, due to new power plants selected in capacity market auctions and repowering of existing power plants.

Currently the total amount of installed renewable (wind, solar and hydro generation) is around 77 GW and has exceeded thermal capacity, that stands at 62 GW. Moreover, since last year, new utility-scale storages for almost 1 GW were installed, bringing the total capacity to about 1,8 GW.

Downward regulation assessment

The worst weeks for downward regulation are expected to be the last week of December and the first week of January, characterized by several public holidays, and the end of the winter period, due to typical decrease of load and increase of renewables. In order to guarantee system security, Terna could adopt enhanced coordination with neighboring TSOs and special remedial actions, such as the curtailment of inflexible generation. Further special actions, such as application of allocation constraints to transmission capacity, could be planned in cooperation with neighboring TSOs.

Summer Review 2025

Last summer, electricity demand decreased (-1.4%) compared to the same period of the previous year. The decrease in demand was partly due to lower consumption. Furthermore, the decrease in demand, excluding temperature effects, was -2.3%. Temperatures influenced demand trends, as the summer of 2025 was on average cooler than that of 2024. Furthermore, in July 2025, peak power recorded on Tuesday, July 1, was 56.1 GW (-2.4% year-on-year). Finally, during these months of analysis, no critical issues regarding load coverage adequacy emerged.

Latvia

Winter Outlook 2025-2026

No adequacy issues are expected for Winter 2025-2026.

Summer Review 2025

No adequacy issues were recorded during Summer 2025.

Lithuania

Winter Outlook 2025-2026

At the beginning of this winter season? net generating capacity in Lithuania will be 8324 MW. Most noticeable changes can be seen in renewable energy sources generation. Wind net generating capacity has increased by 57% and for solar by 34%, compared to last year winter season. These numbers will be rising through winter and all the way to the beginning of the next year, due to the rapid growth of solar power and additions of new wind parks. From November 3 until December 17, Lithuanian PP CCGT (371 MW) will be in maintenance. Also, during the winter season, Lithuanian PP G7 (287 MW) will continue to be in maintenance up until early April 2026.

In order to ensure isolated operation in 2025, if necessary, Litgrid has production availability reserve of 1280 MW.

Some adequacy issues were observed during the modelling phase of the outlook. However, the Lithuanian TSO does not see this as big risk for this winter's seasonal adequacy and no downward regulation issues are expected for the coming season.

Summer Review 2025

In Summer 2025, national consumption was 1.3% lower than in Summer 2024. Maximum total load (1653 MW) was reached on 30 July, 2025.

The summer balance portfolio consisted of 80% local generation and 20% imports from neighbouring countries. The largest import provider this summer was Sweden. Solar generation increased by 29% and wind generation by 65% compared with last year's summer. The 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 41% (by 535 MW) and solar of 31% (by 497 MW), compared to the beginning of last year summer season.

Imports contributed significantly to adequacy in Lithuania.

Luxembourg

Winter Outlook 2025-2026

No adequacy issues are expected for Winter 2025-2026.

Summer Review 2025

No adequacy issues were recorded during Summer 2025.

Malta

Winter Outlook 2025-2026

No significant adequacy issues are expected in Malta for the Winter Outlook 2025–2026, with the additional 235 MW of non-market resources in the form of emergency gasoil-fired back-up plants available for dispatch at any time to meet local demand and/or abrupt scenarios which may arise.

Summer Review 2025

No adequacy issues were recorded during Summer 2025.

Moldova

Winter Outlook 2025-2026

Due to difficulties in natural gas supply, the gas power plant MGRES, which had covered most of Moldova's electricity needs, now has in operation only one unit generating hourly approx. 80-120 MWh.

Since electricity purchases from MGRES will not be possible during Winter 2025–2026 period, Moldova is expected to face challenges in covering its demand of up to 600 MW during peak hours. This deficit is planned to be addressed through imports via the RO–MD and UA–MD interconnections (when possible from the UA side). The granted NTC on the direction RO-MD is around 315 MW, in case of lack of import possibilities from UA and no reallocation of capacities from other borders of UA/MD Control block, Moldova can face issues in demand coverage.

Summer Review 2025

No adequacy issues were recorded during Summer 2025.

Montenegro

Winter Outlook 2025-2026

No adequacy issues are expected for Winter 2025-2026.

Summer Review 2025

No adequacy issues were recorded during Summer 2025.

Netherlands

Winter Outlook 2025-2026

No adequacy issues are expected for Winter 2025-2026.

Summer Review 2025

No adequacy issues were recorded during Summer 2025.

Northern Ireland

Winter Outlook 2025-2026

Due to a number of prolonged forced generator outages in Northern Ireland, generation subject to Annual Run Hour Limitations was required to operate in excess of expectations year to date.

Should Northern Ireland run hour restricted generation remain available for dispatch throughout the Winter period, there is expected to be sufficient margin to meet consumer demand throughout the winter period in normal operating conditions.

In the event that run hour restricted generation becomes unavailable for dispatch, there is a high risk of there being insufficient generation to meet demand plus reserve requirements.

Summer Review 2025

The Northern Ireland system has experienced a number of prolonged forced generator outages and extensions to scheduled outages. This has led to tight margins at times and has impacted the system's ability to accommodate planned generator and transmission maintenance. Due to these outages, generators with Annual Run Hour Limitations were utilised more than anticipated.

There have been four system Alerts in Northern Ireland over the summer period for the following issues. One of these, 17/06/25 09:30 – 17/06/205 11:00, was issued due to issues with communication equipment. The remaining three alerts: 01/09/2025 10:14 – 08/09/25 16:45; 15/09/2025 22:15 – 19/09/25 12:30 and; 22/09/25 08:38 – 23/09/25 06:35 were issued as the system was operating outside the normal operating constraints.

North Macedonia

Winter Outlook 2025-2026

No adequacy issues are expected for Winter 2025-2026.

Summer Review 2025

No adequacy issues were recorded during Summer 2025.

Norway

Winter Outlook 2025-2026

No adequacy issues are expected for Winter 2025-2026.

Summer Review 2025

No adequacy issues were recorded during Summer 2025.

Poland

Winter Outlook 2025-2026

Input data

For the Winter Outlook 2025-2026, no constraints on hard coal availability are expected in Poland. However, there are some limitations with regards to lignite availability, which under certain conditions, may cause restrictions on generating capacity of some units. Nevertheless, these should not be critical in terms of adequacy at the national level.

As done for previous outlooks, in order to avoid an incorrect picture of the situation with possible level of Polish export / import, the Polish TSO PSE provided an estimate of allocation constraints for the analysed time period. The actual allocation constraints are calculated daily, based on best available up-to-date information. For a detailed description of the allocation constraints and the reasons for its application, see Polish country comments from Winter Outlook 2022-2023.[1]

Adequacy situation

There is no risk of ENS / LOLE recorded in Winter Outlook simulations in Poland for the coming winter. However, risk may occur in case of rare coincidence of unfavourable weather conditions with a high level of outages of thermal units. Winter Outlook simulations are probabilistic, so that such extreme worst-case scenario may not be considered.

Nevertheless, in case of scarcity periods, PSE can activate a number of remedial measures to manage such shortages. One such measure is the activation of resources contracted under the Polish Capacity Market, which includes generating units and DSR. When PSE announces a system stress event and calls upon the resources contracted under the capacity market to be activated, all these resources are obliged to deliver their obligations. These obligations are applicable for all contracted resources, meaning that all generators and all DSR units must react adequately (it is thus non-selective).

Summer Review 2025

RES integration issues

Due to a continuation of high RES development, especially PV sources, PSE experienced significant downward regulation problems during Summer 2025 (also during Spring). This happened on days with high RES infeed, PV in particular, and days with low demand both during the weekends and on working days. PSE used the following countermeasures to balance the power system:

[1] *Link to country comments for WOR 2023-2024*

1. Centrally Dispatched Units reduction (temporarily below technical minimum – power plant or unit)
2. Pumped Storage PP manual activation (if no market contracts)
3. Non-Centrally Dispatched Units reduction order (below thermal production required programme)
4. Emergency Exchange (export)

Unfortunately, in a lot of cases, the countermeasures applied were not sufficient to balance the system and non-market redispatching of RES was necessary in order to recover downward regulation. During the period June-September 2025, the volume of redispatched RES energy was almost doubled when compared with Summer 2024, and amounted to almost 500 GWh of which 75% referred to PV.

It is worth saying that switching off PV has become a big challenge as disconnection from most capacity (from the 110 kV and medium voltage network) can sometimes only be performed manually.

Portugal

Winter Outlook 2025-2026

No adequacy issues are expected for Winter 2025-2026.

Summer Review 2025

No adequacy issues were recorded during Summer 2025.

Romania

Winter Outlook 2025-2026

The simulations for the Winter Outlook 2025-2026 capture the effect of decommissioning of 6 units of lignite, amounting to about 1.7 GW, on January 1, 2026, in line with the original coal phase-out timeline provided within Romania's National Recovery and Resilience Plan (NRRP) and CE Oltenia Restructuring Plan.

Some potential adequacy risks (depleted margins) were observed during the results analysis, that confirmed Transelectrica's concerns regarding the energy security challenges for at least the next winter period, related to the lower reserve margins than in the past seasons and an increased dependence on imports compared to previous years, particularly under extreme weather conditions or during periods of high demand combined with low renewable generation availability. Moreover, the results show that under high shortages the system is on the edge, facing the depletion of reserves risk in some critical hours.

The results of the simulations should be treated with caution, as they may overestimate the overall system flexibility, electricity imports availability and gas reserves and thus underestimating the adequacy challenges that would result from lignite decommissioning. Due to model complexity at European level, the simulations did not include specific operational constraints related to hydro power plants (such as weekly reservoir constraints) or thermal units (start-up time, minimum up and minimum down time), and thus assuming an overestimated flexibility of the existing capacity to compensate for the decommissioned lignite-based capacity. The effect of such model simplification can lead to a progressive drawdown of either water or gas reserves occurring after January 1, 2026 to cover the deficit.

In addition, the assumption that increased wind generation could offset the reduced lignite contribution is not supported by Romanian historical data. Over recent years, Romania's wind production has registered an annual natural downward trend of approximately 1 TWh for the same capacity, primarily driven by changing climate and wind pattern conditions, as no curtailment or system restrictions were imposed. Consequently, future wind generation output for Winter 2025-2026 is uncertain and may not be a reliable source of power to mitigate adequacy risks.

The historical operational situations proved that during the winter evening peak load, with no solar and wind generation and under natural cold spell conditions, the adequacy issue is extended at the regional or EU level and the generation resources over all the region are no more available, being used by each TSO for its own load covering. Despite available interconnection capacity, the import (exchange) energy at the regional (European) level has a high degree of uncertainty.

The model default simplifications, as above mentioned, does not capture all features of operational planning and real time operations, which may lead to additional operational stress and some critical situations of power system. For instance, under such conditions, in real time operation, the Romanian power system may face a power deficit before imports of up to 4000 MW, which represents its maximum import capacity thus, jeopardizing country's security of supply that relies on availability of capacity to be exported by neighboring countries.

In addition to this background, Romanian power system may be required (as recently observed) to provide emergency energy support to Republic of Moldova and Ukraine, especially during peak demand hours.

In the following years, in the context of potential withdrawing of lignite power generation units, Romanian power system is expected to be exposed to additional challenges, driven by the planned retirement of one nuclear unit in Cernavoda for lifetime extension, combined with delays in commissioning of new gas fired power generation units.

Summer Review 2025

No adequacy issues were recorded during summer 2025.

Serbia

Winter Outlook 2025-2026

For the upcoming winter season, no adequacy issues are expected under normal operating conditions. The transmission system will operate at full capacity, with all planned maintenance activities on the 400 kV and 220 kV networks completed before the winter period. Although hydro reservoir levels are slightly below expected values, the available thermal, hydro, and wind generation capacities, supported by interconnections, are expected to ensure a stable and adequate supply even in the event of lower temperatures. By the end of 2025, two new wind power plants with a total installed capacity of around 220 MW are expected to be commissioned, further increasing the share of wind generation in the national generation mix. The transmission grid is fully available, with no capacity limitations on interconnections, and no operational or adequacy challenges are anticipated during Winter 2025-2026.

Summer Review 2025

During Summer 2025, the Serbian transmission system operated reliably, with no recorded adequacy issues or constraints in the 400 kV and 220 kV networks. The summer was somewhat milder compared to 2024, with only a few short heatwave periods. Consequently, overall electricity demand was lower than in the previous year, and the peak load reached around 4.8 GW. Hydrological conditions were less favourable than average, resulting in lower reservoir levels and reduced hydro generation. Wind generation remained at a typical level for the summer period, occasionally contributing to demand coverage during days with favourable wind conditions. Despite reduced hydro inflows, the combination of domestic generation (thermal, hydro, and wind) and imports through interconnections fully covered electricity demand. No major incidents, grid congestions, or remedial actions were reported during the summer period.

Slovakia

Winter Outlook 2025-2026

No adequacy issues are expected for Winter 2025-2026.

Summer Review 2025

No adequacy issues were recorded during Summer 2025.

Slovenia

Winter Outlook 2025-2026

We do not anticipate any specific issues in meeting electricity supply demand during the upcoming winter. Our largest unit, the Krško Nuclear Power Plant (700 MW), is scheduled for maintenance in October, a period when electricity consumption is typically low.

As we enter the colder months, the available water resources appear sufficient to support hydropower generation. Our second-largest facility, Unit 6 of the Šoštanj Thermal Power Plant (TEŠ6), is subject to new national legislation. While its primary role is to provide district heating for the nearby city of Velenje, the coal stockpile at the site is currently at full capacity. In the event of electricity shortages, TEŠ6 is capable of operating at full output to support the grid.

Additionally, our electricity import capacities are robust and sufficient to cover potential shortfalls, further strengthening the reliability of supply throughout the winter season.

Summer Review 2025

No adequacy issues were recorded during Summer 2025.

Spain

Winter Outlook 2025-2026

There is a moderate risk to experience near-scarcity events during the next winter period. There is a high level of uncertainty associated to that risk, though.

A combination of various aspects could develop into tight adequacy margins:

- Spanish load is increasing compared to 2024 and is also foreseen to increase in the winter period.
- The planned outages of thermal power plants that are taking place from November to February in combination with several long-duration forced outages in place, affecting to CCGT plants.
- There is an increasing concern about long periods with low renewable infeed and low temperatures (i.e. dunkelflaute), which can affect to big areas in Europe, as occurred last winter.
- Hydro reserves (53% at mid-October) are at a higher level than the mean reference value of the last ten years. However, dry weather conditions have been observed during the last months, and hydro reserves could drop if that situation continues.

On the other hand, no concerns about gas supply are projected for the upcoming winter.

If tight adequacy margins are met, Red Eléctrica may activate the Active Demand Response Service, which is a specific balancing product for demand, designed to be applied to tackle shortages of balancing reserves. For 2025, a demand capacity of 1,148 MW is participating in this balancing product.

Summer Review 2025

No adequacy issues were recorded during Summer 2025.

In Summer 2025 – June to September – the Spanish Peninsular's electrical demand increased by 4% with respect to the same period of 2024. Month per month, June, July and September registered growths of 11%, 2% and 4% respectively, while demand in August decreased by 1% in comparison to 2024. The main factor for these increments was the high temperatures reached across the whole summer. According to AEMET – Spanish national agency of meteorology – the period from June to August was the warmest since the beginning of the measurements in 1961.

Maximum peak demand occurred on the 2 July, amid one of the three heat waves declared in the season. This peak of consumption was bigger than in 2024 and 2023, despite the increase of PV self-consumption capacity.

Regarding hydro reserves, reservoir capacity decreased from a record high of 83% at the beginning of June to 56% at the end of September, due to the dry season. Nevertheless, hydro reserves at the end of summer were higher than the mean value of the last ten years.

Sweden

Winter Outlook 2025-2026

No adequacy issues are expected for Winter 2025-2026.

The contract for the old strategic reserve expired in March 2025. No new reserve was procured during the tender held in 2025, as no bid complied with the cost efficiency requirement set out in the state aid approval.

Summer Review 2025

No adequacy issues were recorded during Summer 2025. Frequency quality has been improved compared to previous summers due to automatization of the market of mFRR.

Switzerland

Winter Outlook 2025-2026

No adequacy issues are expected for Winter 2025-2026.

Summer Review 2025

In Switzerland, Summer 2025 was one of the seventh warmest summers since the beginning of the measurements in 1864. The heat in June and in August was interrupted by a humid and rather cool July. Levels of precipitation were above average in Northern, Southern and Eastern Switzerland and below average in Western Switzerland. Insolation was above average.

Low snow reserves led to reduced production of hydro plants in the summer months, while nuclear power was faced with partially extended revision outages (e.g., the revision of the Gösgen nuclear power plant will last until the end of February 2026, i.e. 8 months more than expected). Hence, net exports were on a lower level than usual. PV infeed was at record level.

Ukraine

Winter Outlook 2025-2026

No significant adequacy issues were foreseen for the upcoming winter of 2025–2026. However, the continuous barbaric attacks by Russia on Ukraine's energy infrastructure, which began in 2022, already have caused temporary outages in electricity generation as well as in transmission and distribution systems, leading to load shedding. Despite these devastating circumstances, the Ukrainian power system is expected to remain adequately robust. Thanks to the Ukrainian Armed Forces and the dedicated efforts of Ukrainian power engineers, the system continues to meet demand. With its integration into the Continental European Power System, Ukraine's grid demonstrates strong resilience and is likely to face adequacy challenges only as a result of unlawful missile strikes by Russia.

Summer Review 2025

During the summer of 2025, the Ukrainian power system did not experience adequacy issues, despite the barbaric attacks by Russia on Ukraine's energy infrastructure. These attacks, which began in 2022, have periodically disrupted electricity generation and grid operations. Nevertheless, the system was remained stable and capable of meeting demand throughout the season.