

PRESS RELEASE | 4 April 2025

Summer Outlook: vigilance also needed in spring for unexpected fluctuations in solar generation

- The sharp increase in solar capacity since last year has increased the risk of overproduction of electricity on sunny days with low consumption.
- Elia already foresees challenges this spring if there are unexpectedly high levels of sunshine and little consumption.
- Initially, it is up to market participants (balance responsible parties, BRPs) to ensure the balance between electricity supply and demand. Negative prices will occur on the imbalance market.
- If market participants fail to maintain balance on the grid, Elia has a number of technical tools and market mechanisms that it can use to intervene if necessary.
- It is absolutely vital that more flexibility is deployed to support the system and so encourage consumption or limit generation when necessary.

BRUSSELS | For the second year in a row, there is a real chance in the months ahead that our energy system will come under pressure on days when a lot of renewable energy is produced but consumption levels are low. That is the finding of the newly published Summer Outlook in which Elia maps the export requirements for the months ahead. Approximately 11.4 GW of solar panels are installed on Belgian roofs. That is 4 GW more than two years ago and 1.4 GW more than last year. This increase may result in surpluses of electricity on sunny days with low consumption. The market has been given this information so that it can plan appropriately. Elia calls on market participants to be vigilant. Greater flexibility is urgently needed, enabling us to tailor our consumption to times when a lot of (cheap) energy is available.

A risk to grid stability, not to supply

The Summer Outlook highlights the problem of incompressibility or overproduction. This means that power generation far outstrips demand and we see big surpluses of electricity. This can happen when the weather



conditions (and therefore the availability of renewable energy) have been misjudged, and also when consumption is low and production very high (especially in summer on weekends and public holidays). Last year, vigilance was mainly needed during the summer, but this year it is also required in the spring. The main reason is the increase in the installed capacity of solar panels. We currently have 11.4 GW of solar panels installed in Belgium, most of them decentralised. At peak times, depending on orientation and other technical constraints, these panels can generate up to 9 GW of power. Therefore, even a slight deviation of the weather from the forecasts immediately has a major impact on the supply-demand balance. This can lead to negative prices and, in the case of a prolonged imbalance, may result in a frequency increase in Belgium and neighbouring countries. This has an impact on the whole European system and so must be avoided.

The market plays its role first

Initially, it is up to market participants to ensure balance between supply and demand. Elia provides them with all the information they need in order to plan. This Summer Outlook gives them an initial overview of the challenges. Elia will monitor the situation closely, and once more up-to-date and relevant information is available, it will be immediately shared with them (via market messages and warnings). We also expect periods with negative (or very negative) prices on the imbalance market. In this case, market participants are compensated for shedding production or activating consumption.

Elia can then intervene if necessary

If balance cannot be restored by market participants themselves, Elia can intervene by using all kinds of traditional flexibility products offered by the market, including offshore wind farms. As a backup solution, Elia can seek assistance from transmission system operators abroad. In exceptional circumstances, it could shut down large-scale solar installations or onshore wind farms, including those connected to the networks of the Belgian distribution system operators (but not those of residential customers).

Flexibility as an urgent solution in the long term

With incompressibility set to become increasingly common in the future, it is important to activate enough flexibility in the system. This will help us to deal not only with sudden phenomena (for example, when weather forecasts are wrong) but also with periods of low consumption and high renewable generation (currently mainly on sunny days in the spring and summer). Tailoring our consumption to when a lot of (cheap) renewable energy is available benefits not only the system but also, above all, the consumer.



For example, a dynamic contract rewards consumers who adjust their consumption to the availability of (cheap) renewable energy, but controlling solar panels at such times can also offer opportunities. In addition, Elia sees new products from suppliers and flexibility providers entering the market, which activate decentralised flexibility by influencing consumer behaviour. For instance, it is already possible to charge a car more cheaply during periods when there are high levels of renewable energy availability. Denmark is even working on a system where every device with an electricity meter, such as an EV charger, can have its own electricity supplier (known as 'supply split'). To further support and facilitate these developments, Elia will continue to work closely with distribution system operators, suppliers, regulators, sector organisations and governments to remove existing barriers and implement efficient market design.

"The energy transition and the development in solar power is good news in itself, for our energy independence and for the climate. However, it does pose some challenges for our system, in terms of both grid capacity and grid stability. These challenges can be resolved, but that means enabling and leveraging more flexibility in the system as a matter of urgency. This will benefit both the grid and consumers."

James Matthys-Donnadieu, Chief Customers, Markets & System Officer



About Elia Group

One of Europe's top five TSOs

Elia Group is a key player in electricity transmission. We ensure that production and consumption are balanced around the clock, supplying 30 million end users with electricity. Through our subsidiaries in Belgium (Elia) and the north and east of Germany (50Hertz), we operate 19,460.5 km of high-voltage connections, meaning that we are one of Europe's top 5 transmission system operators. With a reliability level of 99.99%, we provide society with a robust power grid, which is important for socio-economic prosperity. We also aspire to be a catalyst for a successful energy transition, helping to establish a reliable, sustainable and affordable energy system.

We are making the energy transition happen

By expanding international high-voltage connections and incorporating ever-increasing amounts of renewable energy into our grid, we are promoting both the integration of the European energy market and the decarbonisation of society. We also continuously optimise our operational systems and develop new market products so that new technologies and market parties can access our grid, thus further facilitating the energy transition.

In the interest of society

As a key player in the energy system, Elia Group is committed to working in the interest of society. We are responding to the rapid increase in renewable energy by constantly adapting our transmission grid. We also ensure that investments are made on time and within budget, with a maximum focus on safety. In carrying out our projects, we engage in proactive stakeholder management by establishing two-way communication channels between all relevant parties very early on in the development process. We also offer our expertise to different players across the sector in order to build the energy system of the future.

International focus

In addition to its activities as a transmission system operator, Elia Group provides consulting services to international customers through its subsidiary Elia Grid International. In recent years, the Group has launched new non-regulated activities such as re.alto – the first European marketplace for the exchange of energy data via standardised energy APIs – and WindGrid, a subsidiary which will continue to expand the Group's overseas activities, contributing to the development of offshore electricity grids in Europe and beyond.

The legal entity Elia Group is a listed company whose core shareholder is the municipal holding company Publi-T.

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