



System operators Elia and Fluvius upgrade actions plans for congestion management for businesses

BRUSSELS | In Flanders the number of applications submitted by heavy industry for electricity connections to the distribution network and local transmission network (30-70 kV) have risen sharply in a short period of time. Recent technologies such as data centres and industrial batteries are increasing the pressure on the power grid. In addition, it is a challenge for system operators to accurately estimate when, where and to what extent Flemish businesses want to electrify. These phenomena are causing local grid congestion for the first time. As a result not every application for a heavier industrial connection can be implemented immediately. In order to maximally support industry's investment plans, Elia and Fluvius are upgrading their action plans for congestion management, including offering flexible access to power grids. There is no problem for low-voltage connections, such as those for homes.

The effects of the energy transition are increasingly being felt in the grid. Fossil fuels are being phased out and replaced by alternative, electricity-powered applications. We can see this with private individuals – for example, electric cars and heat pumps – but especially with businesses and industry. For example, (fast-)charging stations for EVs are being installed on industrial estates, and companies are switching from gas-fired boilers to e-boilers to produce steam and hot water. System operators Elia and Fluvius have been taking these anticipated developments into account for several years now and have adjusted their investment plans accordingly. This decade alone they are investing €4.8 and €11 billion respectively in the high-voltage grid and distribution systems in Flanders. But since the number of applications for heavier connections is suddenly rising in Flanders, extra measures are needed.

Pull factor driven by stricter regulations abroad

In addition to the energy transition, Elia and Fluvius are seeing a new trend whereby very high capacities are increasingly being requested for new technologies, such as large data centres and industrial batteries, that do not work flexibly with the grid. One of the potential reasons for a pull factor for data centres and battery parks in Flanders could be that neighbouring countries, such as the Netherlands and Germany, have recently imposed stricter conditions on such projects. In Belgium, such conditions do not (yet) apply, which is why project developers are moving elsewhere. In addition to meeting the needs of industry, this puts extra pressure on the Belgian and Flemish power grid. One data centre developer recently requested 24 MVA – half of the total capacity of a standard transformer between the Elia and Fluvius grids – for just one location.

Who is electrifying how much, where and when?

Another challenge lies in the fact that it is hard to predict the pace and extent of industrial electrification. The investment plans drawn up by Elia and Fluvius are based on substantiated assumptions – including for industry – and include provisions for taking the appropriate actions. Despite these major investments in the Flemish power grid, system operators are not currently able to precisely estimate which business will request a connection on which date, for which location and for which application. This means that in certain places the power grid has not yet been sufficiently upgraded to meet the demand for a heavier connection exceeding 1 MVA.

Fluvius has received around 20 such requests, Elia 15. The high-voltage lines or transformer substations where the Elia high-voltage grid and the Fluvius distribution grid connect to each other do not currently have sufficient capacity to grant these applicants a conventional high-capacity grid connection.

There is no problem for low-voltage connections, such as those for homes.

“Elia’s investment plans factor in the high level of electrification of Belgian industry. Recent years have seen an acceleration in investments in upgrading our networks. For example, investment in the Flemish high-voltage grid in 2020 totalled nearly €200 million. Last year that figure had already doubled and this year we are expecting to see investments totalling €600 million. Due to lengthy permitting procedures and tight supply markets, our projects have a long lead time, meaning we cannot guarantee that the necessary grid upgrades will be ready on time everywhere. For this reason, Fluvius and Elia are proactively working on an action plan to limit the impact of this situation on industrial companies’ electrification ambitions as much as possible.”

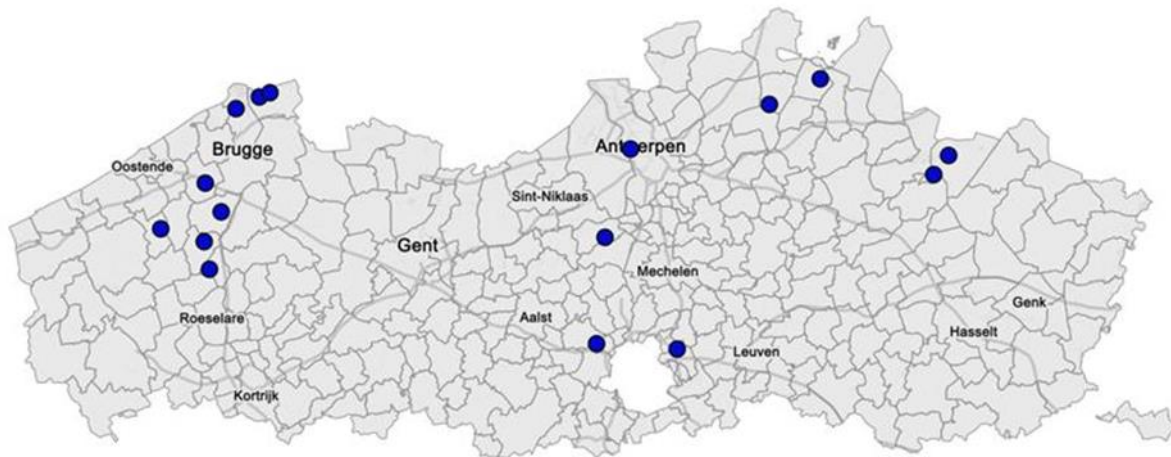
James Matthys-Donnadieu - Chief Customers, Markets and System Officer Elia

“We’ve also noted an additional impact caused by data centres that require particularly high capacities as well as large-scale battery projects that cannot be used flexibly after being connected to the grid. We need to find solutions for this. In addition, as system operators we cannot predict exactly which business will need capacity for which application, on which date and at which location. As a result, power grid investment plans do not always have an immediate effect in places where businesses have already submitted specific applications for higher capacities. In other words, an application cannot simply be approved just like that.”

Raf Bellers - Director Grid Operation Fluvius

Avoiding grid congestion by adjusting consumption

Elia and Fluvius are currently experiencing capacity problems in a limited number of places, specifically 16 of the 235 Flemish transformer substations where the high-voltage network and the distribution network connect to each other.



If additional industrial connections at these specific locations are allowed as was typically done previously, then local congestion may occur at certain times throughout the year. Congestion is like a traffic jam: if all companies make full use of their allocated capacity at the same time, then temporary and local congestion or network saturation can occur.

If Elia and Fluvius do not take action and the social context does not change, the number of high-voltage lines and transformer substations where congestion occurs could increase rapidly. Since upgrading transformer substations, high-voltage networks and distribution networks takes time, Elia and Fluvius have developed a joint action plan so that businesses can continue their economic development while awaiting a definitive solution.

Action plan with five measures for optimising grid capacity

The new action plan includes a series of technical measures for both the short and long term.

- **Short-term measures** are needed to optimally meet the demands of the business community today, optimally map out the problem and, above all, focus on flexibility.
- **Long-term measures** are needed to fully adapt the electricity system to a high level of electrification. They involve investments in the physical networks.

These are the five planned measures:

1. **Short-term measures based on market flexibility** that can be deployed as early as this spring, pending the start of the second measure set out in the action plan.
At Fluvius, this means a new and temporary **fallback flex** market product for the distribution network. This

new product will enable businesses located in a congestion zone to enter a local flexibility market, thereby ensuring that the additional requested capacity can be admitted into the zone. The public consultation for this new application was recently completed. It is now up to the Flemish Utility Regulator to either approve or reject this product.

In any case, *fallback flex* can provide a temporary solution for the current applications that have so far been submitted to Fluvius and Elia. It will help ensure that Flemish companies can continue electrifying their operations in the months and years ahead.

A similar temporary solution is also currently being developed for Elia's network in Flanders (30-70 kV) to enable companies to connect flexibly in the short term.

2. **A flexible connection contract to the distribution network and Elia's network in Flanders (30-70 kV).**

Industrial electricity consumption is highly dependent on a given business's specific processes. A company does not need the full capacity allowed by its connection at all times. It is often possible to switch flexibly between electricity (e.g. e-boilers) and other energy sources (such as gas or combined heat and power generation).

With a flexible connection – which, unlike market flexibility, is determined bilaterally and contractually between the system operator and the business – the business's desired consumption can be matched up, via modulation, with the capacity available at that time. This will mean that more businesses can be allowed to connect to the grid. This principle is already in place for the Elia high-voltage grid (110 kV and above), but it should also be possible for the Flemish distribution system and Elia's Flemish grid (30–70 kV). The Flemish government is working on the relevant regulatory framework, in line with the European EMD5 Directive. Once available, system operators can offer flexible connection contracts.

3. **Allowing more capacity on the high-voltage grid.** Elia is currently investigating how the transformer substations between the Elia high-voltage grid and the Fluvius distribution grid can be managed in such a way that they can temporarily and safely exceed their current limits. This will allow them to carry more of a power load, meaning that we can maximise their potential.

4. **Precautions when operating the distribution system.** This will spread the 'pressure' on the electricity grid over more transformer substations by redistributing the load among them. This creates a little more scope at the location where additional power is required at the moment it is needed. However, this principle can have an impact on voltage quality. Long-term power outages in the event of incidents must also be avoided, so this must be handled with all due care and consideration.

5. **Investments in transformer substations, the high-voltage grid and the distribution system.** Steps in this direction have already been included in the investment plans drawn up by Elia and Fluvius. This decade alone they have already invested €4.8 and €11 billion respectively in the high-voltage grid and distribution systems in Flanders. Fluvius will present the latest version of its investment plan for the distribution systems in early June 2025, and Elia will do the same with its regional development plan for Flanders in summer 2025.

As well as the technical action plan, relations with the business community must be further consolidated in order to gain a quicker insight into how medium-sized and large Flemish businesses view their specific energy transition plans. Last year, a pilot project called **energieGRIP** – bringing together Elia, Fluxys, Fluvius and the Flemish data company Athumi – was tested out in the municipalities of Bornem and Puurs-Sint-Amands.

The partners involved will be further expanding the project in 2025 and setting up a joint team of experts, who will proactively consult with the largest Flemish businesses on the distribution network in the year ahead to clearly map out these companies' energy requirements.

New web pages

Elia and Fluvius are launching new web pages for businesses on their websites today. Interested parties can find more information about what the new situation and the congestion action plan might mean for them at www.elia.be/netcongestie and www.fluvius.be/netcongestie. They can also find more detailed information about the capacity of the Elia and Fluvius networks and the contact details for the system operators if they require more information.

In consultation with the Flemish government

As well as all the initiatives planned by Fluvius and Elia themselves, some starker choices affecting society will need to be made when it comes to access to the electricity grid in the years ahead. Currently, system operators are legally obliged to apply the 'first come, first served' principle: whoever is first to submit an application that is acceptable from a technical perspective will be assigned the requested capacity on the electricity grid.

Elia and Fluvius are currently in consultation with the Flemish government to jointly consider how we should deal with this in Flanders, and thus arrive at an optimal spatial layout of data centres, battery parks and other heavy connections in the Flemish electricity system.

"More and more companies are switching from polluting fossil fuels to clean, sustainable energy like electricity. And that's a good thing for our planet and our wallet. This way, we become less dependent on old polluting energy from dubious countries like Russia. We find that the pace at which our companies are electrifying is sometimes faster than the pace at which the electricity grid can be adapted. And that increases the pressure on our electricity grid. It is a good thing that the grid operators are already taking proactive measures to avoid possible saturation, including strengthening the grid. In addition, we will also have to take extra measures from Flanders. We are working on a legal framework that allows grid operators and companies to work with flexible connection contracts. Not all companies need full electricity capacity at the same time. Sometimes a lower capacity is sufficient, which is not possible today. By making this possible, more companies can connect. In addition, we will also map the demand from companies so that we can better estimate the demand for energy in the future."

Melissa Depraetere, Flemish Minister of Energy



Elia press contact:

Marie-Laure Vanwanseele, Spokesperson
marielaure.vanwanseele@elia.be
0499 86 51 58

Fluvius press contact:

Lara Lammens, Corporate Spokesperson
lara.lammens@fluvius.be
0475 29 86 63

More information about congestion:

<https://www.fluvius.be/netcongestie>

<https://www.elia.be/netcongestie>

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.

eliagroup.eu

For further information, please contact:

Corporate Communication

Marie-Laure Vanwanseele (NDL) | M +32 (0)499 86 51 58 | marielaure.vanwanseele@elia.be

Elia Transmission Belgium SA/NV

Boulevard de l'Empereur 20 | Keizerslaan 20 | 1000 Brussels | Belgium