

Febeliec's reaction on the public consultation by Elia and Fluxys on the scenarios for the 10-year Federal Development Plans Electricity and Hydrogen

Febeliec welcomes the opportunity to provide input on the scenarios for the 10-Year Federal Development Plans for Electricity and Hydrogen. Febeliec also wishes to thank Elia and Fluxys for organizing the preparatory workshops, which were well-prepared, insightful, and allowed ample room for questions and constructive feedback.

Febeliec has three general comments and several specific comments.

General comment - Battery Storage Potential in the Scenarios and its Impact on Grid Investment

First and foremost, Febeliec is of the opinion that the scenarios presented significantly underestimate the potential of battery storage. In Elia's latest "Adequacy and Flexibility" study (June 2025), it was noted that flexibility for balancing purposes remains a true challenge—not because of a lack of flexible assets (which are expected to be sufficient, mainly through batteries in the form of home storage, EVs, and large-scale), but rather because of the difficulty in unlocking this potential and bringing it to the market. Febeliec fully agrees with this analysis and stresses that removing barriers to entry and implementing effective price signals should be treated as top priorities.

However, Elia appears overly cautious regarding the deployment of batteries. By 2035, Elia foresees only 4–5 GW of large-scale 4-hour batteries and 1–2.4 GW of 2-hour home batteries. For EVs, the assumptions are even more conservative: only 1% of EVs are expected to be bidirectionally capable (V2G) by 2035, and just 3% by 2040 (and 4% V2H) —even in the "high flex" scenario. Such assumptions, especially in a "high flex" scenario, are unreasonably low and, in Febeliec's view, unacceptable. At the very least, the high-flex scenario should incorporate assumptions an order of magnitude higher.

This conservatism overlooks the reality that V2G initiatives are already being deployed. For example, in Utrecht, a large-scale V2G project is under way with around 500 EVs participating. In the UK, BYD and Octopus Energy are offering EV leasing in V2G mode for £300 per month. These are not theoretical pilot projects, but pioneering initiatives with immediate impact.

Moreover, Febeliec notes with concern that Elia seems to assume that EVs initially leased as company cars will disappear entirely from the Belgian market once their lease ends. This assumption requires clarification, as it strongly influences the projected evolution of EV penetration.

To illustrate the importance of accurate assumptions on EV numbers and their V2G capabilities, consider the following orders of magnitude. Elia expects about 3 million EVs by 2035. Assuming an average charging/discharging capacity of 5 kW and battery sizes of 80 kWh or more, this represents a distributed storage potential of 15 GW / 240 GWh. If only 20% of these EVs (1 in 5) were used in V2G mode, the available capacity would still amount to 3 GW / 24 GWh for balancing and congestion management. By 2050, with 6 million EVs, this could easily double to 6 GW / 48 GWh—and higher levels of V2G penetration beyond 2035 are entirely feasible.

These figures are staggering, and it is difficult to overstate the positive impact on congestion management and grid optimisation. Yet, Febeliec has the impression that this enormous potential of distributed storage is not sufficiently reflected in the current scenarios. Failing to do so risks leading to massive overinvestment in grid infrastructure—an outcome that is not only inefficient, but also risks slowing down electrification and hindering the energy transition.

Elia should explain how it sees this expected massive uptake of distributed storage will impact congestion management and the need for investments. Also in the case Elia doesn't think this will have a big impact, Elia needs to explain why this is.

Of course, uncertainties remain regarding the speed of battery storage deployment. A scenario with lower uptake should indeed be included in the network development plan. However, the contrast between such a conservative pathway and the immense benefits of high EV/V2G uptake (and distributed storage in general) would then become clear—a potential which Febeliec is strongly convinced will be realised. Febeliec asked that assumptions of flexibility

Febeliec represents corporate energy consumers in Belgium for whom energy is a significant component of production costs and a key factor of competitiveness. Febeliec strives for competitive prices for electricity and natural gas for its members, and for more security of energy supply in the context of the energy transition. Febeliec's members are 5 sector federations and more than 40 companies from various sectors (chemistry and life sciences, petroleum products, glass, pulp & paper and cardboard, mining, textiles and wood processing, brick, non-ferrous metals, steel, transportation, construction materials, data centers, telecommunications). Together they represent some 80% of industrial electricity and natural gas consumption in Belgium and 225.000 jobs (www.febeliec.be).

offering and of the prices in the different scenarios should be revised, so that they reflect realistic scenario's – especially in the high uptake scenario.

General comment – Mixed sites

Febeliec is of the opinion that in a situation with a scarce resource such as currently connection capacity, it is important to enable all available synergetic effects to use this scarce resource as efficiently as possible. This includes integrating the synergetic effects of mixed sites, where load, generation and/or storage are combined, into grid planning and investment, to make more efficient use of the same reserved grid capacity as compared to standalone projects. Febeliec insists that such mixed sites and their efficiency improvement of grid use and thus reduction of investment costs should duly be taken into account and this on all grid levels, which are both currently not or at least insufficiently the case.

General comment – Grid investment projects

Febeliec wants to underline the importance for the energy transition of already planned and partially allocated backbone grid projects, such as Boucle de Hainaut and Ventilux, not only regarding the connection of more (intermittent) generation capacity, but also for additional connection capacity for consumers, in particular industrial consumers who have highly increased needs for electrification, CCS/U and myriad other project to make the energy transition happen.

Specific Comments

Space Heating

In the Base and Molecules scenarios, 25–40% of space heating in 2050 is provided by gas boilers. If Belgium is to achieve net zero, this implies the use of net-zero molecules for low-temperature heat—a highly inefficient pathway. Electrification offers a far more cost-effective and straightforward decarbonisation option for heating buildings. If these assumptions are maintained, Fluxys should clarify which net-zero molecules are expected to be used, and at what cost.

Febeliec believes that all low-temperature heat should be electrified by 2050, not only in a net-zero scenario but also in a 90% reduction pathway. In the latter case, the residual 10% of emissions should be reserved for truly hard-to-abate sectors such as high-temperature processes and cement.

90% Scenario

Febeliec strongly recommends that, in addition to a net-zero scenario, a 90% emission reduction scenario be included. This would allow stakeholders and policy makers to better understand the marginal costs and system impacts of the final 10% reduction within the grid development plan.

Industrial Production Reference Point

Febeliec supports the use of historical industrial utilisation rates as a reference point. However, an additional scenario assuming partial, permanent demand destruction with limited recovery would provide valuable insight.

Heat Pump Uptake

In the food and beverage sector, Elia and Fluxys present a technology shift across the three scenarios. Yet, even for low-temperature heat (<100°C), the assumed uptake of heat pumps remains minimal. This is highly implausible. Uptake should be increased substantially—not only in the Base scenario but also in the Molecules and Electricity scenarios. If not, Elia and Fluxys should explain why, and how Belgium can credibly achieve net-zero or even a 90% reduction without electrifying low-temperature heat. This observation applies not only to the food and beverage sector, but also to other industries.

Home Batteries

Belgium already has 0.6 GW of home batteries installed. Elia projects this to rise to only 1.1 GW by 2030, assuming a linear trajectory. This appears conservative, especially given falling battery costs which are likely to accelerate uptake. If these assumptions are not revised upwards, Elia should explain why.

Battery Cost Assumptions

In the June 2025 adequacy and flexibility study, Elia assumes battery costs remain largely flat until 2036. This is questionable, as market trends point towards further reductions. These assumptions should be reassessed.

Electric Vehicles (EVs)

Elia's adequacy and flexibility study projects just under 3 million EVs by 2036. This seems underestimated, as it appears to assume that company cars exiting leases do not remain in Belgium as second-hand vehicles. If this assumption is revised, EV numbers could be closer to 4 million by 2036.

Vehicle-to-Grid (V2G)

As noted in Febeliec's general comment (see above), Elia assumes only 1% of EVs are V2G-capable by 2035 and 3% by 2040—even in the high-flex scenario. These figures are far too low. At a minimum, the high-flex scenario should reflect assumptions an order of magnitude higher, with the potential for even greater uptake.

Non-Domestic Offshore Wind

Elia assumes non-domestic offshore wind could be deployed by 2035. This timeline appears unrealistic, particularly given Elia's own estimate of a 10–15 year lead time (BluePrint study). Febeliec would support inclusion of such a scenario if the deployment horizon were shifted to 2040–2045.

Gas Capacity

Plans for additional gas-fired capacity rely on hydrogen. Elia and Fluxys should clarify the source of this hydrogen, the required infrastructure, and expected cost ranges.

Uncertainty of Net-Zero Molecules

Fluxys has openly acknowledged the significant uncertainty regarding which molecules will be available in a net-zero system and at what costs. Febeliec appreciates this transparency and stresses that such uncertainty must be fully accounted for in investment planning. Focus should be on “no-regret” measures, while avoiding premature commitments to infrastructure that may lock in uncertain pathways.

E-Gases and E-Fuels

If scenarios assume the use of e-gases or e-fuels produced with green hydrogen and carbon, the source of the carbon must be specified. Carbon from primary emission sources cannot be considered net-zero, and therefore cannot underpin a net-zero strategy.

ETS Targets

Febeliec underlines that the EU Emissions Trading System (ETS) functions with a European-level cap. Introducing national ETS targets would undermine this efficiency and should be avoided.