EV Belgium Position

Overcoming Grid Congestion to Enable EV Charging Deployment

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Introduction - Executive Summary

Belgium is at a tipping point when it comes to electrification. The electrification of industry, mobility, and buildings is a crucial lever for both economic competitiveness and climate objectives. However, this evolution is increasingly confronted with the limits of the electricity grid. EV Belgium regrets to see that our members who wish to invest in the electrification of mobility—and thus lower Belgium's dependence on imported and polluting fossil fuels—are currently hindered due to a lack of grid infrastructure. There are huge connection queues in Flanders and Wallonia, which is very problematic for the energy transition. Grid constraints may in no case slow down electrification or EV adoption. On the contrary, continued investment in electrification is essential to reach long-term policy objectives.

The opportunity cost of inaction is staggering: currently, 7 billion euros of renewable energy is wasted every year in Europe due to a lack of electricity demand at moments of high renewable generation[1]. A recent event on Easter Monday 2026, which saw a surplus of 1.4 GW of PV-electricity, highlighted the critical importance of flexibility. Flexible EV charging could have significantly reduced this surplus, resulting in millions of euros in cost savings in just one day. Failing to integrate EVs and other assets as active grid participants will result in extra unnecessary, massive additional capital expenditures on copper and cabling. To solve these challenges and lower the societal costs of the energy transition, EV Belgium strongly urges policymakers, grid operators, and industry stakeholders to acknowledge that electric vehicles (EVs) are not merely consumers of energy; they are the largest untapped flexibility asset within our entire energy ecosystem. They are definitely not a grid burden. Unlike traditional industrial electrical loads, EV charging is inherently flexible. Electric vehicles are "batteries on wheels" and will be a significant part of the solution to our growing flexibility challenge.

By leveraging Smart Charging and Vehicle-to-Grid (V2X/V2G) technologies, we can optimize existing infrastructure and significantly reduce the societal cost of the energy transition. Elia estimates that extra flexibility among end users could save the Belgian electricity system up to €500 million per year. Assuming that 50% of these savings are achieved through the use of V2X, this would represent a saving of around €250 million per year[2].

[1] Beyond Fossil Fuels. (2025, May 13). *Outdated grid planning and weak governance stalling Europe's transition away from fossil fuels.* https://beyondfossilfuels.org/2025/05/13/outdated-grid-planning-and-weak-governance-stalling-europes-transition-away-from-fossil-fuels/

[2] Elia. (2025, June 27). *Key priorities from Belgium adequacy and flexibility study 2026-2036.* https://www.elia.be/en/newsroom/2025/06/20250627-key-priorities-from-belgium-adequacy-and-flexibility-study-2026-2036

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To unlock this immense potential, policymakers and grid operators must fully engage with the e-mobility industry. The regulatory framework must be modernized to reward flexibility, and we must collaboratively establish the right conditions to support both the transition to electric mobility and the broader societal shift toward low-emission energy. Achieving this requires action across five key pillars:

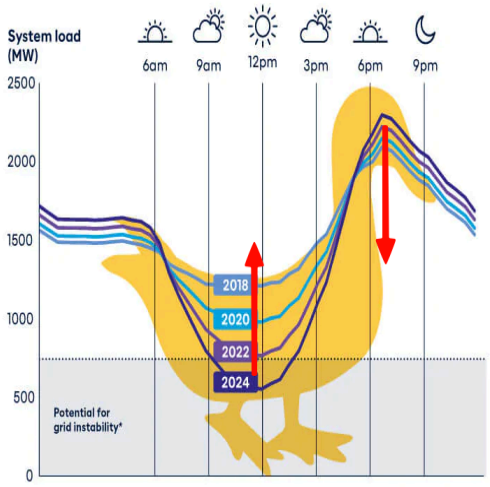
1. **EVs as the Grid's Strongest Ally:** By acknowledging electric vehicles and charging infrastructure as the energy system's largest untapped flexibility asset, policymakers and grid operators can leverage smart charging and Vehicle-to-Grid technologies to balance energy demand.
2. **The Need for Grid Investments:** Smart solutions do not replace physical upgrades; Grid operators (DSO/TSO) must continue investing in transformers and cabling to resolve structural bottlenecks and prevent congestion.
3. **Increase Grid Transparency:** TSOs and DSOs must provide real-time capacity maps and visualize existing capacity allocation to enable strategic planning and reduce sunk costs.
4. **Implement Market Incentives and Unlock Flexibility:** Manage congestion through financially adequate tarification —such as Time of Use tariffs—rather than punitive curtailment. Remove barriers that block access to flexibility markets (B2C/B2B contracts with no or limited flexibility) and focus on digitalisation (smart meters)
5. **Rethink Grid Allocation:** Update the outdated "First-In-First-Out" (FIFO) model and add maturity filters to eliminate "ghost congestion". If this is not sufficient, additional solutions should be considered.

Ultimately, the transition must be economically viable for all participants. Through positive reinforcement, dynamic pricing models, and the empowerment of System Operators to purchase flexibility services, we can incentivize smart behavior rather than resorting to punitive measures. EV Belgium wants to support the new governments in driving forward their vision to power Belgium through affordable, locally produced, and clean electricity, enhancing our energy security and supply for all.

1. EVs as the Grid's Strongest Ally

As we accelerate towards a zero-emission future, the electrification of transport is often merely viewed through the lens of "increased load." EV Belgium invites stakeholders to rethink this perspective. This outdated narrative suggests that the rapid uptake of EVs and EV infrastructure poses a threat to grid stability and enhances grid congestion. Like many, we firmly believe the opposite: EVs are a critical part of the solution for all grid-related questions as these help to flatten out the electricity duck curve:

1) During times of high energy production and relatively low demand (for example, noon), EV batteries can store energy. Thereby increasing the "valley" of the curve and help prevent curtailing of renewable power generation.
2) During times of low energy production and high demand (for example, morning and evening), charging can be postponed or EV batteries can even provide energy (**see paper V2X**). Thereby reducing the peak during high demand periods.
3) Both effects provide a combined benefit: the quick transition from low valley (overproduction) to high peak (overdemand) is diminished.



Unlike traditional industrial loads, EV charging is therefore inherently flexible. With the average car parked 95% of the time, EVs represent a massive, distributed battery network capable of absorbing excess renewable energy (solar/wind), and to deliver it back to the network during peak demand periods. It is thus important that policymakers and grid operators fully engage with our industry in order to unlock this potential to the maximum.

In addition, a resilient EV ecosystem consists of a balanced mix of home charging and (semi-)public (AC and high-power DC) charging. User needs vary significantly for each charging modality, and may contribute differently to capacity and balancing issues and thus to the overall grid constraints. Public AC charging mainly offers time-flexible demand, while DC hubs are mission-critical mobility infrastructure that must deliver high power, high uptime and short dwell times at predictable quality levels. Yet, even DC charging flexibility can be enabled through smart organisation structure, local buffering and fit-for-purpose grid access rules.

The Role of Batteries

Integrating batteries with (fast) charging infrastructure behind the meter is a powerful tool for grid stability and rollout acceleration. Batteries can ensure a reliable charging experience for consumers, without putting pressure on the grid during congestion periods. Charging combined with batteries and EMS should therefore be explicitly recognized by regulations and grid actors as grid-enabling assets which provide predictable and controllable site behavior (see also chapter 5). In the overwhelming majority of cases related to charging, batteries will be deployed exclusively for on-site flexibility management and optimization (downsizing) of grid connections.

2. The Need for Grid Investments

While targeted amendments to the grid allocation schemes are key, it is crucial to underline that these can't in any way substitute for necessary infrastructure upgrades. Therefore, we call on all relevant stakeholders (TSO's, DSO's, Regulators, Policymakers, …) to consider the need to uphold an ambitious and continuous push for "hard" investments in transformers and cabling, with a specific focus on those locations where bottlenecks are structural.

The Federal Development Plan (FDP), based on a broad market consultation, should be implemented as agreed upon. Following the standard set by most TSOs and DSOs, a 'no-regret' strategy should remain in place. As current events demonstrate, any grid investments guided by the FDP will undoubtedly become necessary over time. In addition, we plead for a national strategy reflecting both TSO and DSO plans - which should then be better aligned - in a simultaneous and transparent manner. Close consultation of the different representative associations can play a crucial role in identifying the future needs.

In addition and in order to not slow down the energy transition, EV Belgium calls on policy stakeholders to implement fast-track permitting procedures to ensure the timely realisation of critical grid projects (e.g. Ventilus). These initiatives are considered vital for the broader benefit of society and should therefore be prioritised consistently across all levels of governance as currently defined by the European Grid Package.

3. Increase Grid Transparency

As stated in the Grid Package, TSO's and DSO's must urgently work on developing clear and transparent capacity maps at the substation level, providing the needed information for economic actors who want to consider investing time and effort. We welcome the recent efforts already undertaken by Elia and the DSO's to increase transparency in this area. Real-time data availability regarding grid capacity is more than ever crucial for economic actors to take the right decision with the best result for both society and the grid operators. CPOs (Charge Point Operators) and fleet managers need to know where ample power is available to plan infrastructure strategically. Moreover, transparent capacity data should not only show where power is scarce, but also help identify where flexible charging infrastructure can deliver added value.

In addition, EV Belgium pleads for maximum transparency into the grid allocation queue, providing an additional set of tools which should help to make the best choices and investments, and limit unnecessary sunk costs as much as possible.

4. Implement Market Incentives and Unlock Flexibility

EV Belgium supports the vision on flexibility as presented by the Flemish energy regulator. It is clear that market based flexibility and well designed grid tariffs (Time of Use) or dynamic contracts must play an vital role in the overall framework. On top of, and complementary to, investments in hardware (infrastructure).

Crucially (as shown by the small top of the pyramid) it should be obvious that "top down" technical curtailment can only be used in case of very last resort, to solve grid issues that require immediate intervention and to avoid potential damages to the infrastructure.

Flexibility as a Market Product

Congestion should not be managed primarily by curtailment (cutting off power), but through a market-based system of incentives and compensation. DSOs should look into how they can benefit from flexibility services offered by market parties such as Suppliers, BRPs, CPOs and aggregators. If a charging hub can help to alleviate congestion, that service should be valued and compensated (but needs to remain optional). Innovative initiatives, such as the recently launched pilot projects by Fluvius and ORES can help identify untapped flexibility within the existing market, such as the positive contribution of charging assets.

At the same time, the CREG can further clarify the market roles through which Suppliers, BRPs, CPOs and Aggregators can participate in balancing and congestion management markets and be compensated for doing so. Neighbouring markets have shown the way (eg. NEBCO, P415, …).EV Belgium calls on the CREG to research and create dedicated market roles and thinks there are interesting solutions for EV flexibility which can be found abroad already.

Remove Barriers to Flexibility

The transition must be economically viable for all. The Total Cost of Ownership (TCO) of an EV is heavily influenced by energy costs. When an EV user allows their charging to be managed to help the grid (e.g., pausing charging during a winter peak evening), they are providing a service. Such services should be valued, adequately compensated and incentivized.

Firstly, EV Belgium is not in favor of purely punitive measures from TSO/DSO's on market players. We must move away from static capacity tariffs towards dynamic models that financially reward users who shift their consumption to times of high energy production. We advocate for positive reinforcement (incentives) through rebates and lower rates in case of proactive and smart behavior. Such actions have proven to be more effective in driving behavioral change. As the first step, we keep pleading for the introduction of a Time of Use Tariff which should incentivise users to shift and spread their load based on the needs of the grid.

Secondly, green energy stored in batteries, which in certain cases can lead to the loss of the 'guarantee of origin' should be tackled, which today clearly disadvantages certain actors.

Thirdly, to fully unlock this potential of the charging projects combined with batteries and EMS and ensure that these projects remain bankable, additional measures that reduce administrative burdensome procedures are needed for the installation of batteries behind the meter.

Finally, for these benefits to effectively reach the end consumer, the underlying metering infrastructure must be modernised and aligned with the obligations that are set forward with the Electricity Market Design Directive[3] and the Energy and Performance Building Directive[4]. Today, the EV charging point and the household load share a single meter. Because household load is generally not sufficiently flexible, households are typically reluctant to opt for dynamic pricing contracts, with the result that the dynamic price signal does not reach the EV load. EV Belgium therefore supports Elia and the relevant DSOs to implement solutions which allow the EV charging point to be assigned to a separate contract or dynamic tariff, for also at the residential level. TSOs and DSOs should investigate how dedicated measurement devices for flexibility services can be allowed in the market while making sure to not discriminate against any market actors. The expansion of flexibility services should not result in structural advantages for specific market participants. Any future framework must preserve market neutrality, ensure a level playing field and allow all relevant actors to compete on equal terms for value creation and customer engagement.

5. Rethink Grid Allocation

Rethink the "First-In-First-Out" principle (FIFO)

The grid connection capacity is largely being allocated on a FIFO basis. If a project applies for capacity, it reserves that power, blocking subsequent applicants, even if the first project is delayed for years and/or is at an early/underdeveloped stage. This creates "ghost congestion," where the grid appears full on paper, but in reality capacity is still available. TSO's and DSO's should thus consider adding "filters" or milestones to check the maturity of projects, for example the land ownership from the project, when allocating power. Nevertheless, it should remain possible to review these milestones if the project makes significant progress but is confronted with delays due to unforeseen circumstances (e.g. permit appeals). In addition, one can consider penalties for projects that are experiencing excessive delays (unless a situation of Force Majeure can be identified).

If these measures don't provide sufficient solutions, TSO/DSO's and policymakers should think in collaboration with industry and federation about grid access rules that allow priority or accelerated treatment for infrastructure that directly contributes to decarbonisation and system efficiency. In any case, TSO's and DSO's must apply fair and transparent criteria whenever they deviate from the FIFO principle, in line with the requirements of the EU Electricity Market Design.

[3] Electricity market design https://energy.ec.europa.eu/topics/markets-and-consumers/electricity-market-design_en

[4] Energy Performance of Buildings Directive
https://energy.ec.europa.eu/topics/energy-efficiency/energy-performance-buildings/energy-performance-buildings-directive_en

Considering Swimming Lanes

EV Belgium believes that the potential idea of including swimming lanes in the grid allocation process might be considered, but only if and when these are done in a temporary and transparent manner and serve the grid and society. We can accept the use of swimming lanes if specific types of grid requests become recurrent at a critical mass, leading to them "grabbing" most of the grid capacity. If this option is being considered, we plead for a recognition of the flexibility potential and societal value of charging infrastructure by providing a sufficiently large swimming lane for these assets.

Considering Prioritization

If any kind of prioritization would be considered for granting grid connections in congested areas, EV charging projects should be given priority. As already mentioned above, they should be fully recognized as assets that have the ability to lower the burden on the grid, e.g. through smart charging capabilities or on-site battery storage. This is particularly relevant for DC hubs, where intelligent energy orchestration can transform a site with a high energy demand into a predictable, grid-supportive asset. Prioritizing EV charging would sustain Belgium's e-mobility development by enabling the deployment of charging hubs which are a critical infrastructure lever. While they are limiting their impact on the grid,unfortunately grid congestion is increasingly slowing down project delivery. Moreover, the current situation prevents legal obligations to be met, for example as laid down in the AFIR and EPBD legislation.

Flexible Connection Agreements

The development of Flexible Connection Agreements is a good starting point and intermediary solution that allows projects to move forward, but should remain a fallback and temporary option that does not slow down grid investments. The current implementation of FCAs by the TSO & DSO's in Belgium recognize this principle.

Consider Use-it-or-Lose-it Principle as Last Resort

If a project does not materialise within a defined timeframe for no apparent reason, the reserved capacity could be released back into the pool (use-it-or-lose-it). This prevents capacity hoarding and ensures efficient use of scarce grid resources. If a project does not materialize within a set timeframe, capacity is released back to the grid and/or the waiting line (Use it or Lose it). This mechanism should only be used as a last resort and must not hinder the construction of more complex, high-quality infrastructure in favor of "easily deployable" infrastructure, as this could negatively impact overall quality.

6. Conclusion

The successful electrification of mobility is an economic and environmental imperative, but it cannot be achieved within the confines of outdated grid management philosophies. Fully embracing the capabilities of Smart Charging and Vehicle-to-Grid (V2G) technologies allows us to optimize the flexibility of our grid infrastructure and enable the further deployment of the charging infrastructure which is critical for our society.

Belgium's electrification of mobility, industry, and buildings has reached a critical tipping point. As emphasized in our introduction, we must abandon the outdated idea that electric vehicles (EVs) are a burden to the grid. Instead, policymakers and grid operators must recognize that EVs represent the largest untapped flexibility asset in our energy ecosystem. To bridge the gap between our current infrastructure limits and our long-term climate objectives, energy independence and competitiveness, EV Belgium urges governments, regulators, and system operators (TSOs/DSOs) to urgently implement the following policy actions:

1. Smart solutions will not replace all the need for physical infrastructure upgrades. Grid operators must **maintain an ambitious, continuous push for investments** in transformers and cabling to resolve structural bottlenecks, implementing the Federal Development Plan as agreed upon.

2. TSOs and DSOs must urgently develop **real-time, transparent capacity maps at the substation level,** alongside clear visualizations of existing capacity allocation queues. This is vital for fleet managers and Charge Point Operators (CPOs) to strategically plan infrastructure and minimize sunk costs.

3. Congestion must be managed through adequate mechanisms, such as Time of Use tariffs, rather than punitive technical curtailment. We call for the creation of a **real dedicated congestion and flexibility market** and support the deployment of residential meter splitting, ensuring dynamic pricing signals directly reach drivers to incentivize smart charging.
4. The rigid "First-In-First-Out" (FIFO) model creates "ghost congestion" by allowing delayed projects to block the queue. Policymakers and **grid operators must update this allocation model** by adding maturity filters or other grid management solutions if necessary.

Finally, EV Belgium calls on regional policymakers and regulators to ensure alignment of policies, technical frameworks, and practical rulebooks across the different Belgian regions. For market players operating nationwide, fragmented regional requirements create

unnecessary administrative hurdles and investment barriers. It is imperative to establish a harmonized, similar, and directly applicable set of rules across Belgium, Flanders, Wallonia, and Brussels. Only through such regional synchronization can we guarantee a predictable deployment environment, streamline grid integration, and unlock the full potential of a coherent, country-wide EV charging network.

The successful electrification of mobility is an economic and environmental imperative. Grid constraints must not be allowed to slow down EV adoption. EV Belgium stands ready to collaborate with all stakeholders to establish a robust, economically viable framework—one that leverages positive reinforcement and smart technology to protect our grid while securing a clean, locally produced energy future for all.

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