EV Belgium position on energy flexibility:
ensuring electric vehicles can help balance energy markets & grids

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Summary of recommendations and priorities

I. Establish an overarching vision and improve the legal framework to unlock and foster EV based grid flexibility in Belgium and its Regions. Technical flexibility imposed by the grid operator, is only a last resort solution. Focus on dynamic prices and commercial flexibility.

II. Enforce a rapid and full roll-out of smart meters across all of Belgium, with automatic SMR3 activation

III. Stimulate dynamic and smart Time-of-Use (ToU) contracts. Introduce Time of Use based grid tariffs within 2 years in all regions.

IV. Enhance competition through price transparency and data availability: regulators should ensure that contract information from energy suppliers and data/tariffs from grid operators are more easily available, according to a standardized data protocol. They should work on a CREG-test or V-test based on real consumption data, taking into account local specificities.

V. Work on solutions behind the meter, and simultaneously realize the supply split to facilitate quicker EV adoption by providing legal clarity and reducing energy costs for businesses.

VI. On the EU level, finalize the technical framework for electrical energy smart appliances and label them “Flex ready”, and implement this framework in the member states.

VII. Create an independent market platform for flexibility settlement, install a “flex supervisory authority” and impose open data requirements.

VIII. Vehicle to home/grid charging: establish an overarching vision and improve the legal framework consulting with involved stakeholders (e.g. leasing companies, tax authorities, …), verify their feasibility in “play grounds” and avoid double taxation.

Introduction

Belgium's (and the EU's) energy landscape is undergoing a significant transformation driven by our ambition to transition to renewable energy sources, enhance energy efficiency, and reduce greenhouse gas emissions. A rise in weather-dependant technologies is increasing the supply-side volatility of electricity. In parallel, the demand side of the energy landscape is electrifying, increasing the decentralised or user demand for electricity.

Electric vehicles (EV) are an important driver of "steerable" electricity demand, with relatively high consumption (the EV is often the single biggest source of electricity demand in the home) and long idle periods. The growth in green electricity production requires more flexibility, and EVs, which are basically batteries on wheels, can and will be a significant part of the solution to this growing flexibility challenge, if we do it right and work together.

In this context, energy flexibility – and more specifically demand side flexibility – has emerged as a critical component for ensuring the reliability and stability of the energy system. Demand side flexibility can help match the volatility of electricity supply and minimise electricity demand peaks as well as avoid issues of over-supply and incompressibility. This is also advocated by the TSO and DSOs in Belgium. The total demand for EVs will reach 3 TWh in Belgium within the coming years, and about 6 TWh by 2030[1]. If these EVs are used in a flexible manner, 1 GW or more of flexible capacity can be unlocked. In the longer run, considering the full electrification of the total Belgian car park, these numbers could even triple.

Electrifying our energy system will require investments in the different grids as well as flexibility behind the meter. EV's can lower the societal costs of the energy transition by avoiding high capital investments (for grid reinforcements) and focus on cost-effective alternatives. Why spend excessive amounts of money on copper in the ground when more cost-effective ways exist through creating a flexible and dynamic electricity market?

EV Belgium wants to support the new governments in driving forward their vision to power Belgium through affordable, locally produced and clean electricity: reducing costs for consumers and enhancing our energy security and supply. Through the quick electrification of the vehicle parc, Belgium can play a leading role in Europe in these new technology markets and developments.

This position paper highlights the critical role Electric Vehicles (EVs) should play in balancing Belgium's energy markets and grids and explores the policy levers to ensure this is possible.

[1] EV Belgium forecast 1.8-2 mio EV's by 2030.

Increasing supply-side energy volatility

Belgium and Europe have set ambitious decarbonisation goals, with targets to reduce carbon emissions. An important part of meeting these targets will be the electrification of transport to help decarbonise this important sector. Doing so will require major upgrades to our electricity networks to handle the increased power generation and demand.

Belgium, along with most other developed countries, faces technical and commercial challenges in balancing the supply and demand of electricity, particularly during winter peak periods when renewable generation is low, or during summer when renewable generation is high (as stressed by Elia in the press recently). Enhanced energy flexibility can mitigate these challenges by providing additional tools to manage and stabilize the grid. By enabling flexibility with the right price signals, EV's we will be able to reduce the societal cost as well as the cost for end-users.

EV Belgium's work is at the heart of this exciting transformation.

Enable a smart and secure electricity system through demand-side response

Demand Side Response (also often "DSR") refers to measures implemented by residential consumers or businesses to adjust the timing of their electricity usage without impacting their comfort. DSR involves shifting non-essential electricity consumption from peak (or constrained) periods to times of lower demand or when renewable energy supply is abundant.

These shifts help "smooth out" the typical peaks and troughs in electricity usage, thereby alleviating stress on the grid and markets. Some considerations:

- While most residential appliances are becoming more energy-efficient, overall electricity consumption per capita is set to increase over the next decade as we electrify transport as well as heating and industrial processes.
- Smart devices like EV chargers have a naturally high potential for DSR. Subject to the primacy of customer requirements, devices' charging regimes can be automated and remotely managed to minimise their impact on the electricity system – and even shift charging time into off-peak pricing (cheap) or low grid congestion (accessible) periods.
- Shifting EV charging can not only help to balance the load on the grid but also directly reduces the need for peaking power plants - which are often the least efficient (incl. GHG emissions) and expensive to operate – further reducing overall power system emissions and system cost. Moreover, EV flexibility helps to avoid import and export of energy from and to neighbouring countries at high societal cost.

Policy Recommendations

EV Belgium believes the governments and regulators should cooperate with all involved stakeholders to work on policy interventions which will facilitate EV-drivers flexibility and market integration and thus help the Belgium as a whole to achieve energy security and meet climate goals. Continued support for electric transport adoption should in any case, and crucially, be at the forefront of this effort.

In addition, we propose following specific policy measures to enhance energy security, reduce customers' bills and achieve climate objectives through DSR:

1. In all the Regions and on the Federal level, work out a **vision** to foster DSR and energy flexibility and create an **overarching legal framework** based on the following principles:
    - Make the grids fully intelligent (digital) with clear guidelines on cybersecurity, privacy, interoperability and market interaction as soon as possible, as this is a pre-requisite for the development of new (data driven) flexibility services in the electricity market.
    - Stimulate the uptake of behind the meter solutions as they increase auto-consumption from local RE sources, which will help avoid over-investment in the grids and reduce energy bills for consumers.
    - Enable the gradual uptake of ToU or dynamic contracts (offered by energy suppliers) and stimulate the DSOs to introduce in all regions, within 2 years, ToU based grid tariffs.
    - DSOs and Elia should prioritize the development of market driven, commercial flexibility with specific incentives for end-user flexibility (e.g. EV's). Commercial flexibility should always be preferred over technical flexibility, which should be a "solution of last resort".
    - Include V2X in this framework (Vehicle to home, vehicle to grid), with a high focus on tax (in concreto: double tax due to the battery mechanism, which is also addressed by the EU)
2. **Push for a swift and full roll out of smart meters across Belgium, this should be an absolute priority.** Transfer these meters automatically to the SMR3 regime, to enable the adoption of dynamic contracts or specific EV contracts or ToU supply contracts that facilitate the use of implicit flexibility from electricity suppliers.
3. Increase market participation and trust by creating (EU level) and implementing (BE) a **technical framework for electrical energy smart appliances**. The technical framework should establish a set of minimum standards for energy smart appliances (including EV chargers) that ensure manufacturers and controllers adhere to interoperability, cybersecurity, data privacy and grid stability principles. Label them "Flex ready". Compliant actors (suppliers, flex-providers) should then have the right to deliver flexibility services to the grid operators.
4. Increase market participation, trust and competition though open data on flex value and a "**flex supervisory authority**" that also foresees in a certified training program (as is done for energy traders, and in financial markets).

5. Create an **independent platform** that can act as a **clearing house** for financial settlements and is responsible for the processing of charging data and the sharing of other relevant market messages (eg. a supplier switch, product switch, metering configuration changes, …).
6. Stimulate the use of **dynamic and ToU energy contracts,** also in the residential market, as this provides a first layer of flexibility.
7. Enhance competition by increasing **price transparency** and **data availability.** Regulators should provide more transparency regarding contracts of energy suppliers and tariffs of grid operators. Consumers and market actors need transparency on prices/tariffs according to a standardized data protocol and uniform for different regions. This could enable the use of new market models, based on an automatic and local "transfer of energy" which can trace the flexibility offered and delivered to the market. Introduce a V-test based on the (real) consumption profile of the user, in all regions.
8. **Reform the DSO tariffs** to stimulate smart charging. Ensure that the tariffs provide an incentive to charge as much as possible (in a safe manner) when there is an abundance of electricity, and to motivate drivers to not charge the EVs when prices are high (avoid peak moments). We ask the DSOs to come up with an aligned **"Time of Use tariffs**" design in Belgium in 2025. Potentially in a first phase, offer two different tariffs, static and dynamic, and hereby reward the dynamic customer. Suppliers could offer specific TuO energy contracts which are aligned with such tariffs, to enable a customer to benefit even more. However, it should be allowed for public charging to "opt out" of such a ToU regime as these public chargers are aimed at providing 'public services' for as many consumers as possible and cannot be operated in a very flexible manner.
9. Providing a solution to **split the supply** behind the meter (multiple contracts on one access point) will facilitate flexibility and enable new business models. A **swift implementation** of the EU electricity market design (EMD5) requirement for multiple contracts on one access point (supplier split), is crucial.
10. Currently, given the big share of EV Company cars, the fleet market is the ideal platform for innovation. Introduce **legislation for V2X-charging** and make Belgium a **pilot region** for V2X applications.

In parallel we ask the policymakers to be cautious about decisions that could hamper this transition and the integration of EV's in the energy system. EV Belgium is the representative federation of an innovative and willing sector, open to discuss the different opportunities and barriers with all relevant stakeholders.

Conclusion

Belgium can tackle the challenges posed by renewable energy intermittency and ensure a stable, reliable, and sustainable energy future by leveraging EVs' capabilities for demand response. Proactive policy measures and strategic investments are essential to realize this potential and position Belgium as a leader in the transition to a flexible and resilient energy system. The adoption of these policy recommendations will help ensure EV charging can be flexible and will help balance energy markets and grids, allowing for a more effective and efficient integration of EVs, to lower the bills for all consumers.

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