Electrification Action Plan

Position Paper

ELECTRIFICATION
ALLIANCE

Executive Summary

Electrification is the cornerstone of Europe's path to decarbonisation. It is not just an environmental imperative – it is an economic one. As highlighted by Commission President Ursula von der Leyen in her State of the Union, "the future is electric." Yet, despite its strategic importance, electricity's share in final energy consumption has stagnated at around 23% for over a decade[1] - well below the EU's 2030 target of 32%[2]. Meanwhile, global competitors such as China are advancing rapidly[3], underscoring the urgent need for an ambitious and coordinated **EU Electrification Action Plan**.

This paper outlines a comprehensive set of policy recommendations to accelerate electrification across all sectors (industry, transport, and buildings) while ensuring affordability, social fairness, and economic resilience. The key messages are summarised below:

1. **Implement existing EU legislation:** Proper enforcement of the adopted energy framework will lower the electricity-to-gas price ratio across Member States, enable flexibility markets, accelerate infrastructure roll-out, and strengthen investor confidence.
2. **Establish a robust governance framework on electricity consumption:** Member States should include dedicated electrification sections and indicators in their National Energy and Climate Plans (NECPs), with clear milestones, demand forecasts, and measures for smart electrification.
3. **Develop funding instruments and make the Industrial Decarbonisation Bank a regular instrument:** The Innovation Fund pilot auction on process heat decarbonisation should evolve into a regular financing tool. EU funding instruments should prioritise deployment of smart and industrial electrification, workforce development, and infrastructure modernisation. Fast approval of instruments submitted under the Climate, Energy and Environmental Aid Guidelines (CEEAG) is also essential to accelerate project approvals.
4. **Address permitting and grid connection issues:** Creating and mapping industrial clusters would accelerate the deployment of renewables production and related grid infrastructure.
5. **Promote and expand social leasing for electrification:** To overcome high upfront costs for consumers, the EU should expand social leasing schemes for electric vehicles, heat pumps, and solar PV with storage. Coordinated EU guidance and funding guarantees could scale these programmes across Member States.
6. **Improve information and develop measurable electrification indicators:** Consumers and businesses face complex choices and information gaps about electrification technologies and available incentives. The EU should support one-stop-shop models and streamline information platforms.
7. **Energy taxes & levies – level the playing field for electrification:** The revised Energy Taxation Directive should be adopted. Fossil fuel subsidies must be phased out, VAT reduced for electrification products, and levies limited to grid-related costs.
8. **Adjust the Primary Energy Factor (PEF):** The current PEF penalises electrification by overstating primary energy use. The forthcoming review in 2026 must align the PEF methodology and value with the EU's decarbonisation objectives, turning it into an

[1] Eurelectric, "Eurelectric Electrification Action Plan" , accessible here.
[2] European Commission, "Renewable energy targets", accessible here.
[3] EMBER, "China Energy Transition Review", accessible here.

incentive for electrification rather than a barrier. It should also require Member States to regularly review and update their national methodologies against the EU's.

9. **Address the lack of talent and skills for electrification:** A dedicated Installer Action should fund training, recruitment, and vocational education through the upcoming European Strategy for VET, ensuring Member States assess and meet their workforce needs as part of NECP revisions.
10. **Uphold the CO_2 standards for cars and trucks, and enable the deployment of e-mobility:** Maintaining the CO_2 standards for cars and trucks is crucial for achieving the EU's electrification goals. Rolling out electric mobility and corresponding infrastructure including V2G technology, and depot charging for trucks can unlock up to 9% of Europe's annual power supply by 2040. The Action Plan should build on the expected Regulation on Greening Corporate Fleets to incentivise the deployment of large EV fleets.
11. **Enable smart electrification and develop flexibility in buildings and industry:** Smart and bidirectional charging should be rapidly deployed through supportive regulation and tax incentives. Similarly, unlocking and rewarding heat pump flexibility can reduce energy bills for end-users as well as overall costs for the energy system.

Introduction:

Electrification is a key strategic objective for the EU and its Member States. It is the most cost-efficient decarbonisation path that simultaneously answers the challenging politics of energy security, industrial competitiveness and social fairness by reducing reliance on countries of divergent values and geopolitical interests. In her State of the Union speech, Commission President Ursula von der Leyen recognised that "we know what brings prices down: clean homegrown energy" and that "the future is electric".

Regrettably, electricity's share in final energy across the EU has stagnated at around 23% for over a decade. Meanwhile, competitors are pulling ahead. China is currently reaping the benefits of rapid electrification and has already reached our own 32% target for 2030[4]. Pushing the needle on electrification is a strategic priority. Ahead of the launch of the EU Electrification Action Plan, we propose the following concrete actions:

1. Implementing existing EU legislation

Extensive parts of EU energy policy legislation have been agreed but not implemented at national level. Prominent examples are the Clean Energy Package adopted in 2019 with its revision of both the Electricity Regulation and Directive – proper implementation of this legislation alone would enable the uptake of flexibility procurement and related market facilitation at European scale, which is still only happening in a piecemeal approach in a few Member States[5]. Another case in point is the entire Green Deal package which was negotiated during the past five years – implementation of important pieces of legislation such as the EMD and the RED (among others) has been only patchy so far. Equally important, the EU should remain committed to the current as well as the new Emission Trading System for heating in

[4] EMBER, "China Energy Transition Review", accessible here.
[5] SmartEn, "Implementing EU laws: A guide to activate demand-side flexibility in the EU 27 Member States", accessible here.

buildings and road transport. It should also uphold CO_2 standards for cars and trucks to maintain demand for electrification of transport, and ensure timely development of enabling infrastructure, including through the implementation of the Action Plan for Grids and the European Grids Package. Overall, identifying synergies across different policies and addressing overlaps early on can reduce administrative burdens, shorten timelines, as well as increase planning certainty and predictability for relevant stakeholders.

2. Establish a robust governance framework on electricity consumption

The Clean Industrial Deal sets a long overdue trajectory of electrification rates reaching 32% by 2030, up from 23% today. The European Commission's Impact Assessment for the 2040 Climate Target estimates that they should reach 50% by 2040. However, progress must be monitored and credibly outlined by Member States; also to ensure investment confidence and required planning horizons.

Direct electrification should stand out as a no-regret pathway when setting and implementing the 2040 targets as part of the ongoing revision of the European Climate Law and the upcoming revision of the Governance Regulation. The revision of the Governance Regulation should be leveraged to require Member States to integrate a dedicated electrification section into their NECPs and set corresponding milestones for smart electrification. Moreover, embedding structured cross-border coordination mechanisms in NECPs, including regarding ambition and timing, would allow planners and decision-makers to design infrastructure efficiently and provide greater long-term certainty. This section should include harmonised forecasts of electricity demand by sector (transport, industry, buildings), measures to incentivise demand response, and a clear roadmap of measures to boost electricity uptake and outline implementation timelines.

3. New financing tools and frameworks

The first Industrial Decarbonisation Bank pilot auction — backed by EUR 1 billion from the Innovation Fund — was announced as part of the Clean Industrial Deal. We welcome the Commission's aim to improve the business case for the electrification of industrial heat processes, which today largely rely on fossil fuels. This initiative sends a crucial signal to businesses to consider electrifying their industrial heat processes (both above and below 400°C) and supports the wider electrification agenda. It helps close the funding gap between electrified and fossil-based technologies, allowing project developers to apply for subsidies covering both CAPEX and OPEX. It also recognises the key role of flexibility solutions in ensuring the smart electrification of industrial processes while minimising adverse impacts on peak demand.

This Innovation Fund pilot auction scheme should be institutionalised with an increased annual budget, drawing from experiences in this first pilot auction, and should have a targeted scope for electrification technologies, which miss dedicated funding compared to other alternatives. The current terms & conditions indicate a pragmatic outline which should be maintained, avoiding any need for complex carbon accounting for applicants when choosing electricity as an energy vector.

Furthermore, existing EU funding such as the Innovation Fund, the Connecting Europe Facility, and the Recovery and Resilience Facility should prioritise direct and smart electrification where possible, alongside enabling infrastructure, and research and innovation. The forthcoming 2027–2034 Multiannual Financial Framework should launch a new funding instrument dedicated to the necessary workforce development, expansion, modernisation and digitalisation of infrastructure drawing from ETS revenues in addition to significantly increasing the Innovation Fund and CEF-Energy envelopes.

Financing should be directed not only towards manufacturing clean technologies and electricity grids, but also towards the electrification of industrial processes. The future Competitiveness Fund and the next MFF should direct more investment towards electrification of production processes in energy-intensive industries (research and innovation as well as deployment at scale). The EU should also allow Member States to subsidise temporarily OPEX costs of energy intensive companies for the electrification of carbon intensive production processes. Measures should similarly be taken to facilitate the access and uptake of PPAs and other long-term contracts by energy-intensive industry.

State aid for industrial electrification will be crucial to support such projects which often face both high upfront costs and long payback periods. The European Commission should enable rapid approval of national schemes under the CEEAG to help close the cost gap. Finally, public procurement tools should be harnessed under the Industrial Accelerator Act to boost demand for electrification-based products and maintain EU's global competitiveness in clean technology manufacturing.

4. Address permitting and grid connection issues for industrial clusters

System operators face a massive increase in applications for connection requests, often from projects that lack technical, financial, or permitting maturity. Considering the long lead times for electricity grid development, compared to renewables and industrial assets, long waiting times for grid connection pose a significant obstacle for industrial customers in their electrification journey. At the same time, permitting remains one of the key bottlenecks for grid operators across all voltage levels.

As envisaged in the upcoming EU grids package, permitting procedures can be optimised. Integration of new electrification and industrial demand - for instance stemming from the implementation of the Net-Zero Industry Act (NZIA) provisions and projects supported by the Clean Industrial Deal State Aid Framework (CISAF) - into national and European electricity grid planning, would ensure that system needs more accurately reflect decarbonisation-driven growth.

Moreover, effective locational signals, including grid hosting-capacity maps, can drive demand to locations that maximise system benefits and can create dedicated electrified industrial clusters, within which electricity grid infrastructure development can be anticipated.

These industrial clusters can be an efficient way to overcome this issue. Such clusters would provide reliably plannable locations for new loads based on available grid capacity and benefit from facilitated grid connection processes. This approach would remove speculative projects, prioritise those that are ready to connect (first-ready, first-served) and provide flexibility to the system. Individual connection requests could be evaluated and clustered by the grid operator, based on transparent criteria and milestones, speeding up the entire investment process. Grid

connections for mature, flex-ready consumers i.e., consumers who can provide flexibility to the network rather than burdening it, should also be prioritised. The upcoming EC guidance on grid connections should provide clear recommendations for policy makers and regulators to support this.

5. Promoting and expanding the concept of social leasing for electrification

Relatively high upfront costs, even with existing support mechanisms, still pose a challenge for citizens and businesses to electrify, in particular in the middle to low-income segment. This is particularly true of rural areas and could be addressed with targeted policies. Social leasing can make EVs and other cleantech products such as heat pumps[6] and solar PV combined with batteries accessible to lower- and middle-income groups by offering affordable monthly leasing options at subsidised rates. Successfully proven for EVs in France, the social leasing concept has the potential to become an innovative tool for achieving social objectives and increased electrification.

The concept of social leasing provides an easily accessible offer for EVs and heat pumps with attractive financing conditions which could be further promoted across the EU. This should be offered in conjunction with existing grants and direct subsidies for heat pump and/or EV purchases, making clear to the household eligible for social leasing what other incentives can be combined with the offer. Consolidating information on social leasing and related subsidies would simplify access for households, eliminating the need for multiple applications, while allowing suppliers to provide affordable rates. Importantly, public support should be predictable and stable over the long term, providing certainty for both consumers and providers. While the concept would be rolled out at national and/or local level to cater for tailor-made eligibility criteria, the EU could help its expansion with financial guarantees and guidelines – such as the guidance on social leasing announced under the Clean Industrial Deal - also with a potential role of existing EU funds to play such as the ERDF.

6. Providing credible information and comparison points about electrification solutions and existing funding opportunities

A large range and variety of available technologies lead to complex information and lack of awareness for consumers. Organisational, as well as cultural barriers which imply complex and long decision-making processes (in co-owned buildings for example) prevail when investing in electrified solutions. Habits, low acceptance levels and sheer lack of knowledge of possible cost-savings including available funding are common obstacles. Existing options such as online cost-comparison platforms can turn out to be unreliable, partial or only used by certain user segments. Generally, there seems to be a lack of information and promotion of available and efficient electric solutions for both transport and heating and cooling solutions.

Member States' good practices have led the way in terms of trusted one-stop-shops for customers which can help overcome the information and awareness gap and should be also considered across the EU. In Germany, the role of the "Verbraucherzentrale" or consumer advice centres are a case in point – established as a result of the oil crises in the 1970s they

[6] EHPA, "EHPA position on social leasing for heat pumps", accessible here.

are a trusted and face-to-face advice option available to all consumers. They are publicly funded and offer independent information including legal advice and information campaigns. Creation of EU and national-level bodies to monitor electrification uptake, coordinate knowledge, and support implementation of EU legislation would bridge this knowledge gap.

7. Energy taxes & levies: level the playing field for electrification

To accelerate electrification and ensure fair competition between clean electricity and fossil fuels, Europe must overhaul its system of energy taxes and levies. Electricity bills remain burdened by non-energy-related charges that inflate costs for households and industries - household electricity charges in Europe are nearly 15 times as high, and industrial charges 4 times as high, as in China[7]. In Spain, regulated charges on electricity are 19 times higher than for gas. In Portugal, regulated charges on electricity for households remain significantly more expensive than fossil gas. Daily fixed charges are still 4 times higher for electricity than fossil gas[8]. Such imbalances weaken the business case for clean electrification and distort investment decisions.

A comprehensive reform should reduce regulated and non-energy-related charges on electricity, making electricity bills more transparent and removing non-electricity related taxes, retaining only grid-related costs to promote efficient system use. Decarbonisation and energy security measures should be funded through general taxation rather than electricity bills, and charges should be lowered for industries and consumers that electrify, even if they are not energy intensive.

The EU should adopt the revised Energy Taxation Directive to establish a level playing field, ensuring that electricity is amongst the least taxed types of energy to incentivise industry and households to continue their shift towards electrification. This includes phasing out fossil fuel subsidies, aligning taxes with carbon content, and allowing VAT reductions on electricity to improve competitiveness. Moreover, the Commission should publish swiftly its announced recommendations on electricity taxes and levies, providing Member States clear guidance, as well as its roadmap on phasing out fossil fuels subsidies.

In addition, targeted tax incentives, such as VAT reductions to 0% for electrification-based products (e.g. heat pumps), should complement clear EU-wide definitions, labelling, and certification for green industrial production.

8. Adjust the Primary Energy Factor (PEF) value and methodology to better reflect the efficiency of direct electrification

Make the PEF work for electrification, rather than against it. The PEF currently works as a disincentive to electrification. The PEF, set at 1.9 for the EU default value, is applied to electricity consumption to account for the primary energy consumed to produce electricity. However, the value and the methodology to set the PEF and the way it is applied is based on some choices which make electrification less appealing in energy policies.

The Commission is set to review the default EU PEF by the end of 2026. This presents a timely opportunity for the Commission to use secondary legislation to increase demand for

[7] WindEurope, “Revamping electricity bills for a competitive and secure Europe”, accessible here.
[8] Zero, “Electricity much more expensive than fossil gas in the residential sector”, accessible here.

electricity and promote direct electrification. The Electrification Action Plan must ensure the revision of the PEF for electricity works as an incentive for electrification rather than as an obstacle, by aligning the underpinning value and methodology with the Commission's aim to increase electrification. Additionally, Member States should be required to review their PEF on a regular basis.

9. Addressing the lack of talent and skill for electrification

The Call for Evidence that was run for the Electrification Action Plan identifies "lack of talent and skills in the installation sector" as one of the factors at play in the stagnating rate of electrification in Europe. Electrical installers are in short supply across Europe, and their numbers must increase to enable all energy consumers to electrify at the pace needed to deliver on the EU's objectives. In Germany, electrical installation companies could already hire an extra 80k professionals[9] (about 15% of their current workforce) if qualified workers were on the market. That also represents an opportunity to create 80k new green jobs across the country.

The upcoming European Strategy for Vocational Education and Training (VET) should align its action with the shortcoming identified in the Call for Evidence for the Electrification Action Plan and better support VET systems (schools, equipment, teachers, etc.), deploy easily accessible upskilling, and increase the share of students enrolled in VET to secure the electrification workforce the EU needs. At the same time, the Commission should expand the scope of the Net-Zero Academies, notably by establishing a dedicated academy for heat pumps.

While it is essential that electrical professionals have a full skillset, enabling the installation and integration of electric technologies, the Electrification Action Plan should first aim to attract more people to the electricity sector, and especially in the identified installation segment. A dedicated Installer Action should be launched to provide financing to attract more workers to this sector, as was already done with the Nursing Action[10].

Further, the Commission should set the framework for Member States to assess their workforce needs and act accordingly. The Energy Efficiency Directive's workforce provisions, and especially the obligation to assess workforce gaps, should be duly implemented. Additionally, the revision of the NECPs should ensure that Member States assess the feasibility of their Plans in terms of workforce availability, by reporting on the necessary workforce development

10. Uphold the CO_2 standards for cars and trucks, and enable the deployment of e-mobility

Road transport accounts for 32% of EU final energy demand but remains 93.5% fossil dependent. Currently, only 1.7% of the EU car fleet is electrified (4.5 million EVs out of 256 million cars - with only 870k battery electric vehicles). Reaching 30 million battery electric

[9] Central Association of German Electrical and Information Technology Crafts, "E-crafts: skilled workers still in demand, but companies are more cautious than in previous years", accessible here.
[10] European Commission, "Launch of the first EU action to address nurse shortages shows positive impact of European Health Union", accessible here.

vehicles by 2030 will enable approximately 10% fleet electrification, delivering 1.2% toward the 32-33% target - over 10% of the required increase[11].

Battery Electric Vehicles (BEV) sales have reached 25% market share (18% in H1 2025), demonstrating technology readiness with sub-€25k models entering the market. The 2035 ICE phase-out for cars/vans provides investment certainty. Weakening these targets would undermine goals while China extends its lead[12], having already reached 32% economy-wide electrification in 2023. Recent T&E analysis[13] shows loopholes in the 2035 phase-out would cut EV sales in half.

The Electrification Action Plan should empower the deployment of electric mobility and corresponding infrastructure. EVs could contribute 9% of Europe's annual power supply by 2040, becoming the EU's 4th largest supplier. To harness the flexible potential of e-mobility, the Action plan should encourage vehicles to grid (V2G) technology. To incentivise V2G, the Electrification Action Plan should mandate the European Commission to assess with relevant stakeholders next steps regarding bi-directional charging readiness assessment in vehicles type approval, as announced in the Action Plan for the Automotive industry. It should also ensure the ETD exempts V2G from taxation as suggested in the current compromise and create an adequate regulatory framework for V2G.

The Action Plan should also incentivise electrification of depots for electric heavy duty (e-HDVs) vehicles. Depot charging is sufficient for most of the truck fleet, as daily driving distances can be covered without the need for public charging infrastructure if facilities are installed at truck depots. One major enabler for depot charging is the swift implementation of credit mechanisms under the Renewable Energy Directive (RED) III. By providing an opportunity to sell credits originating from charging of EVs, these credit mechanisms can lower charging costs of e-HDVs, accelerating the transition to e-mobility.

The Action Plan should build on the expected Regulation on Greening of Corporate Fleets to incentivise the deployment of large EV fleets.

11. Unleashing flexibility in buildings and industry

Persistent barriers at the national level for unlocking the flexibility of smart appliances like heat pumps and the mass deployment of smart and bidirectional charging, such as double taxation, should be avoided. EU network codes on demand response and on requirements for generators should be adopted swiftly to enable mass deployment of demand side flexibility technologies.

At the industrial level, in addition to promoting the integration of electrical technologies, such as low- and mid-temperature heat, for industrial processes into the system, industrial flexibility

[11] T&E, "EV market", accessible here
[12] EMBER, "Broadening demand – electrification's expanding frontier", accessible here.
[13] T&E, "Leaked car industry paper: carmakers' EU demands would cut EV sales in half", accessible here.

should be incentivised by, for example, enabling value optimisation in different electricity markets and an adequate grid tariff design.
At the consumer level, it is essential that citizens are empowered to participate in electrification: Member States should be encouraged to ensure that smart meters are installed within four months of request, as already provided under Directive (EU) 2019/944.

Moreover, developing a stable price signal that correctly reflects system needs, ensuring interoperable access to data at pan-EU level and the adoption of a new framework which allows the use of data from dedicated measurement devices for billing flexible assets behind the meter are needed to unlock consumer flexibility and to ensure that flexible assets contribute to system stability and reliability.