

Regional approaches for supporting e-mobility



A Policy Brief from the Policy Learning Platform on Low-carbon economy

February 2022



**Interreg
Europe**



European Union | European Regional Development Fund



Table of Contents

Summary 3

Europe 2050: A low-carbon economy 3

Interreg Europe projects on e-mobility 4

E-mobility in the framework of the wider energy transition..... 5

Electrification of public transport 8

Building awareness and acceptance 10

Subsidies and incentives for e-vehicles 12

Provision of charging infrastructure 13

E-mobility in rural regions 16

Recommendations & key learnings 16

Sources and further information 18

Project Achievements

Achievement 1: Working group and webinar trilogy on e-mobility 5

Achievement 2: EMOBICITY Report on EV Charging Pricing 7

Achievement 3: The eBussed Readiness Indicator Tool 9

Achievement 4: PLP Matchmaking on management of e-busses..... 9

Achievement 5: EV Energy conclusions on charging infrastructure..... 14

Good Practices

Good Practice 1: Pamplona Smart City – Decentralised Renewables and Vehicle-to-Grid..... 7

Good Practice 2: The Protheus Project 8

Good Practice 3: Hamburg Bus Charging Study and Depot Design..... 10

Good Practice 4: The Castilla y León Electromobility Guide 11

Good Practice 5: Provincial guidelines for e-mobility 11

Good Practice 6: EMOV Carsharing..... 12

Good Practice 7: Group purchase of e-vehicles 13

Good Practice 8: Free parking for EVs and electric hybrid cars 13

Good Practice 9: Amsterdam’s demand-driven charging infrastructure..... 15

Good Practice 10: MOBI.E – Portuguese Electric Mobility Network 15

Good Practice 11: FLUGS rural carsharing 16

Cover image source: [EnvatoElements](#)



Summary

Electric mobility (e-mobility) will be an essential part of the low-carbon transition, with short to mid-distance passenger and logistics vehicles ripe for electrification. In the long-term, as energy storage solutions develop further, longer distance technologies will also develop. While technological solutions for passengers and logistics are developing, their market maturity is not yet reached, and public support is further required to make them cost-competitive with fossil fuel technologies through enabling frameworks, incentives and capacity building for uptake. Additionally, consideration must also be taken of the impact of electrification on energy systems and wider regional planning with the low-carbon transition considered as a whole. This policy brief will draw lessons from Interreg Europe projects and activities, providing good practices from across Europe to inform regional and local policy-makers on the actions they can take in their regions to make the e-mobility transition a reality.

Europe 2050: A low-carbon economy

Under the European Green Deal, launched in 2019, the European Union aims to reduce greenhouse gas emissions from transport by 90% (from a 1990 base level), by 2050. This reduction will be met using a variety of solutions, suitable for specific transport requirements, including advanced biofuels, synthetic fuels, and electrification. Electrification will play a major role, particularly for passenger transport and short- to mid-distance freight. Despite great potential, deployment of e-vehicles remains limited, with numerous barriers to face including availability of charging infrastructure, limited range as a result of battery capacity, high costs compared to competing solutions, ongoing subsidies to fossil fuel industries, and the perception of e-vehicles as being inefficient or immature.

Public authorities will therefore need to play a role in supporting uptake, by building public awareness, making necessary infrastructure available, levelling the cost of technologies with fossil-fuel equivalents through subsidies and incentives, and regulating the use of polluting vehicles, all the while considering how e-mobility fits into broader regional and societal frameworks, and decarbonising their own public fleets. The Zero Emissions Vehicles Transition Council, established in November 2020, has set out an [action plan](#) (a main outcome of the COP26 meeting, held in Glasgow, UK, in late 2021), noting that, “road transport accounts for over 10% of GHG emissions, and the total emissions are rising faster than any other sector.” The action plan sees four priority areas for intervention: charging infrastructure, CO₂ or fuel efficiency standards and regulation, zero emission heavy duty vehicles, and ensuring the transition is truly global.

Efforts to decarbonise the transport sector and tackle these priorities will require all levels of governance. At the European level, the European Commission has a key role in this transition, being responsible for steering the EU’s overall alternative fuels policy, developing cross-border infrastructure, enacting common standards, and monitoring and co-ordinating national actions. Additionally, European funds such as the European Structural and Investment Funds (ESIFs),










the Connecting Europe Facility, and the Next Generation EU funds can provide financial support to achieve Europe’s policy goals.

Whilst the overarching framework is defined at European level, Member States are responsible for transposing ambition into national policy and incentives, such as exemptions or discounts for vehicle registration taxes, reduced road taxes, and purchase grants for vehicles and charging infrastructure. However, it is at regional level where implementation happens, guaranteeing that projects meet regional needs and respond to region-specific barriers, and ensuring that resources are correctly and efficiently used in the way that can bring most benefits to the community. But regional and local authorities can lack the knowhow and capacity necessary for such projects, or to develop supportive policies, meaning there is opportunity for regions to exchange experiences and find what works.

Interreg Europe projects on e-mobility

In this vein, sustainable mobility has been a key priority of the Interreg Europe programme for 2014-2021, with several projects supporting regional capacity building in e-mobility to improve policies and supporting instruments by identifying and sharing good practices and experiences to develop regional action plans. Whilst e-mobility practices can be found in many of the programme’s mobility projects, the following are the ones with a specific focus on e-mobility.

	<p>Building capacities for European-wide e-bus deployment Duration: 2019-2023 Website: interregeurope.eu/ebussed</p>
	<p>Integrated actions towards enhanced e-mobility in European regions Duration: 2019-2023 Website: interregeurope.eu/e-mob</p>
	<p>Increase of energy efficiency by electric mobility in the city Duration: 2019-2023 Website: interregeurope.eu/emobicity</p>
	<p>Electro mobility as driver to support policy instruments for sustainable mobility Duration: 2018-2022 Website: interregeurope.eu/e-mopoli</p>
	<p>Electric vehicles for city renewable energy supply Duration: 2017-2021 Website: interregeurope.eu/evenergy</p>
	<p>Promotion of e-mobility in EU regions Duration: 2017-2021 Website: interregeurope.eu/prometeus</p>
	<p>Smart solutions for hydrogen potential awareness enhancing Duration: 2019-2023 Website: interregeurope.eu/smarthyaware</p>



The results of these projects, the good practices they have found, and the lessons they have learned, form the cornerstone of this policy-brief, with both interregional (project level) and inter-project activities resulting in knowledge of interest for other regions.

Achievement 1: Working group and webinar trilogy on e-mobility

The Interreg Europe Policy Learning Platform team set up a working group with the above projects to discover key topics of interest, enable cross-project discussion, and deepen collaboration between partners. The working group committed to proceed with a series of joint webinars to share their results, key lessons, and achievements with each other, but also with a wider audience.

From 30 November to 14 December 2021, the Policy Learning Platform held a trilogy of webinars to examine several aspects of the e-mobility roll-out. The recordings, presentations, and write-ups are available at the links below.

- I: Clean public transport
- II: Roll-out of charging infrastructure
- III: Integrating e-mobility into territorial planning

The working group and webinars revealed a few key themes being considered by regions within Interreg Europe projects:

- E-mobility in the framework of the wider energy transition;
- Electrification of public transport;
- Building awareness and acceptance;
- Subsidies and incentives for e-vehicles;
- Rolling-out of charging infrastructure;
- E-mobility in rural regions;
- Using hydrogen as an energy carrier.

This policy brief will tackle the first six topics to highlight some key messages, good practices, and project achievements which can be of interest for other regions across Europe.

Although hydrogen will not be tackled in this policy brief, the topic has been explored in a separate webinar, held on 8 February 2022, 'Building a regional hydrogen economy'. Visit the link to access the recording, key lessons, and presentations.

E-mobility in the framework of the wider energy transition

The introduction of e-mobility technologies is not as simple as replacing fossil-fuel powered vehicles with electric equivalents but is instead **part of a much broader transition to a citizen-focused, low-carbon economy**. E-mobility needs to be **integrated to optimally contribute to other territorial aims** such as the uptake of low-carbon energy, improving social



inclusion, supporting the local economy, increasing use of public transport, and developing local prosumers and smart grids. As such, e-mobility needs to be considered in relation to energy policy and regional development strategies, in co-operation with all public and private stakeholders. Indeed, e-mobility planning is a cross-sectoral issue, and cannot be tackled by the transport department alone, but requires collaboration with energy, spatial and economic planning.

Aspects relating to cross-departmental collaboration has been explored in a [webinar](#) and [policy brief on Integrated low-carbon strategies](#).

Perhaps the most pressing issue regarding the integration of e-mobility is the interaction between mobility and energy planning, because of e-mobility's impact on the energy grid. Increased demand for electricity will require new generation capacity, storage technologies, and behaviour change stimuli amongst other interventions. E-vehicles can only be regarded as a sustainable transport solution if they are powered by renewably generated electricity, rather than fossil fuels. While using non-renewable electricity, tailpipe emissions are simply transferred from place of vehicle use to place of generation.

The impact of e-vehicles on the grid must also be considered. The combination of intermittent renewables, and increased electricity consumption, will require new technologies and approaches. To make the transition, countries and regions will need to reinvent their energy systems, investing more into renewable energy capacity, as well as into research and innovation for grid stabilisation, through vehicle-to-grid, smart charging, and energy storage technologies.

Webinar: Counteracting the impact of electrification on the grid

In December 2019, the Policy Learning Platform organised a webinar on the topic of the impacts of transport electrification on the electricity grid, with the [SET-UP](#) and [EV Energy](#) projects. Participants discussed three main ways of balancing out increased demand peaks: investment in new electricity generation capacity and grid reinforcement at sub-station level, smart charging, and local flexibility markets

The latter two options are innovative and still not widely known and understood. However, they are much less expensive than grid investments. Good practices from the Netherlands illustrated that smart charging could turn e-vehicles into a benefit for the grid, using them as electricity storage, while non-managed charging would pose a threat to the grid. Another case study from the UK showed a new approach to load management by an IT and data-fed platform that allows only charging when there is capacity available in the grid.

For more information, see the [event conclusions page](#), and [additional resources](#).

Interreg Europe projects have reported on the importance of tariffs for shifting behaviour and moving charging periods to off-peak times (see Achievement 2; EV Charging Pricing), but also on smart charging strategies, vehicle-to-grid technologies, and comprehensive smart city transformation strategies (see Good Practices 1 and 2) to counteract the impact of e-vehicles.

Social and business model innovation will also help the transition, encouraging a shift to public transport, as well as to shared modes of transport where individuals do not need to own their



own vehicle, but can access them when required, for example, through Mobility as a Service (MaaS) and other shared e-mobility options (see Good Practices 6 and 11). Going with this transition, public authorities can also reconsider land-use – more public transport and shared modes will enable settlements to become less car-focused, use less space for parking, and reorient planning to use by all citizens, including space for active transport, such as cycle lanes.



Achievement 2: EMOBICITY Report on EV Charging Pricing

The EMOBICITY project has performed a study, 'Report on EV charging pricing, regulatory framework and DSO role in the e-mobility development', exploring regulatory barriers to e-mobility, the role of distribution system operators (DSOs) in the transition to electric vehicles, and a comparison of charging tariffs and fee structures in different European countries. The report concludes that charging tariffs are important for stimulating behaviour. Without them, drivers are likely to charge their vehicles whenever is convenient, but with dynamic and smart tariffs, their use can be shifted to off-peak times when impact on the grid will be minimum.



Good Practice 1: Pamplona Smart City – Decentralised Renewables and Vehicle-to-Grid

Pamplona (Spain) is undergoing a transformation to become a Smart City, exploring numerous technological and non-technological innovations to improve its sustainability and increase convenience for its residents and visitors. This has involved exploring the integration of distributed renewable energy generation in the city, with new installations on public buildings, with storage and distribution technologies. As part of the STARDUST project, funded under Horizon 2020, the city has explored vehicle-to-grid technologies, in which e-vehicle batteries can be used for electricity storage and bi-directional energy flow. The results of the test cases will be used to support informed city strategies to ensure the energy and transport transitions go together. As well as these new technologies, Pamplona has already considered electrification of most transport options, investing in charging infrastructure for public use, as well as fast charging for taxis, platforms for monitoring performance of e-buses, and educational campaigns for citizens to teach them about e-mobility and active transport. Small e-mobility (scooters, e-bikes) are also to be introduced, with legislation to limit speed, engine size and parking spots.

For more information, see the [POTEnT website](#).



Good Practice 2: The Protheus Project

The town of Paks, located in southern Hungary, is home to the country's only nuclear power plant, which is currently being upgraded and expanded, with the construction of new nuclear reactors. As a result, the town was expecting a significant boost in traffic from construction and service transport, and a strategy was drawn up to not only increase the amount of sustainable transport used, but to also consider the overall energy transformation of the town as a unified system. This required rethinking transport provision, but also the integration of renewable energy and smart grid technologies. To enable the transition, Paks prepared the Protheus project under ELENA (European Local Energy Assistance), leading to the creation of a project company and a public transport company to implement a Green City Strategy. The strategy foresees holistic planning between energy and mobility, with integrated planning for carbon-free public transport, a bike sharing scheme, e-vehicles for municipal services, charging infrastructure and support for a local renewable energy community.

For more information see the [E-MOB website](#).

Electrification of public transport

As part of overall regional transformation, the transport system can be rethought, as in Pamplona and Paks, to encourage a move to collective modes of transport which offer several benefits over individual modes, including reduced congestion and fewer carbon emissions. Significant efforts are therefore required to decarbonise **public transport**. Electrification of public transport with modern, comfortable vehicles is one solution, with benefits of zero air pollution and zero CO₂ emissions if the electricity used is produced by renewable energies. The transition requires procurement of new clean vehicles as well as technologies that increase comfort and efficiency for users, new infrastructure development, financial and business model innovations, and skill development for maintenance and operation.

While various forms of e-vehicles are available, including trains and trams, buses were regarded by some project participants as the main electric public transport options. Suburban trains and trams have long been used and are long-term transport investments with heavy investment requirements and, in the case of trams, also high impact on road transport. Though e-buses were recognised for their high potential, partners also recognised that using them is not a drop-in process but instead requires a complete system change and a high level of co-ordination and co-operation between actors (see Achievement 3 for an overview of factors to be considered). Decisions need to be taken not only on vehicle procurement, but also charging strategies, reconsideration of bus routes, driver training, safety considerations and depot infrastructure (see Good Practice 3).



Achievement 3: The eBussed Readiness Indicator Tool

The eBussed partnership has explored the various factors required for e-bus deployment in Europe's regions, covering everything from driver training, procurement and tendering, marketing, charging infrastructure and data management. Drawing from these lessons, the consortium has developed an E-Bus Readiness Indicator Tool, which is available for use by public and private stakeholders to assess conditions in their region and determine where interventions are required to enable e-bus roll-out. The tool looks at indicators in five main categories:

- **Government policies and investment**, such as loans, grants and rebates, public investment, support for R&D, laws and regulations and low-emissions zones;
- **Charging infrastructure construction and operation**, from design to implementation and the development of experience within energy companies;
- **Energy production and distribution**, specifically the installation of renewable energy technologies;
- **Business models and maintenance service system**, exploring issues like fleets, number of electric buses used, and local supply chains;
- **Consumer and other awareness education**, covering educational campaigns, congestion charges, and trials;
- **Operational scope and environmental benefits**, examining emissions reductions, reduced noise pollution and improved air quality.

The tool can be accessed here. For more information on eBussed visit the project website. You can access their Thematic Articles here.

Achievement 4: Policy Learning Platform Matchmaking on management of e-busses

In North-West Romania, many cities have made use of European Structural and Investment Funds to procure electric buses, but public transport operators need to do more to get acquainted with the vehicles and learn to make best use of them. To determine the right interventions, the North-West Development Agency of Romania requested a peer review to learn from other regions what practices have proved effective in other regions. Partners from the eBussed project participated in the exchange to provide their experiences and lessons learned.

Recommendations made for North-West Romania included:

- Provide training to drivers and support staff on the smooth operation of e-buses, specific to the model procured, and provided by an external service provider or by the vehicle providers;
- The data and IT implications of e-bus fleets should not be underestimated. Procurement must include data access or disclosure clauses so data can be used in later operational phases;
- E-buses require specific temperature conditioning before use, which should be automatically programmed to save time for the drivers;
- Depot design needs to take account of the higher fire risk that comes from e-buses and store them away from diesel buses. Specific fire safety provisions are also needed;
- Procurement contracts should include a test phase to demonstrate performance with zero faults.



To read the full recommendations and key lessons, visit the [matchmaking web page](#), or read the [follow-up report](#).



Good Practice 3: Hamburg Bus Charging Study and Depot Design

The City of Hamburg, Germany, is in the process of electrifying its bus fleet and has [implemented a study](#) into different charging methods in order to determine the optimal approach. The options explored were overnight plug-in charging at a bus depot, or opportunity charging using superchargers along the bus routes. The study examined operational flexibility, price, impact on bus drivers, availability of public space, and public acceptance, amongst other factors. Ultimately, the city decided upon depot charging as there was insufficient space for opportunity charging technologies, which also required higher investment costs. Assessment of the bus network and bus routes showed that centralised charging was feasible, without an impact on service delivery. Such assessments will be vital for regions, to ensure that a cost-effective strategy is chosen. After performing this study, the [city's bus depot layout had to be redesigned](#) to make it e-bus compatible. As more e-buses were required to provide transport services (due to shorter range than fossil fuel buses), the terminal needed more space, and the installation of the charging infrastructure. The charging cables were integrated into a grid above the buses so that charging points would not take up additional space on the ground. The power modules were integrated into a wall that also acts as a barrier in the event of fire.

For more good practices from Hamburg, visit the [eBussed website](#).

Building awareness and acceptance

While e-mobility technologies are getting ever more mature, awareness and understanding of e-mobility remains quite low amongst many citizens and local policy-makers, meaning awareness raising campaigns and educational efforts are essential for technology uptake, by explaining how e-mobility works and its potential benefits compared to other transport solutions. Interventions may include communications campaigns, making use of local media or advertising, info days and fairs where people can try e-vehicles and discuss directly with experts and providers, or websites which provide easy to understand advice to consumers. Additional efforts are required to train and inform policy makers and mobility professionals, helping to build capacity for operating new policy instruments and supporting frameworks (see Good Practices 4 and 5).



A number of approaches are available for changing behaviour by increasing the attractiveness and use of public transport. For more, see the Interreg Europe Policy Brief on '[Improving the convenience of public transport](#)'.



Good Practice 4: The Castilla y León Electromobility Guide

The Region of Castilla y León, Spain, has published an electro-mobility guide, in the framework of its regional strategy for EVs, to raise awareness amongst regional stakeholders, particularly the general public and policy-makers. The guide has two parts: one for the public, introducing e-mobility, describing how electric vehicles function, and explaining their advantages compared to conventional vehicles. The second is aimed at educating local policy-makers and includes examples of municipal-level regulatory measures to promote e-mobility. The guide was promoted with public presentations, as well as specific meetings for policy-makers. As a result of the guidelines, several municipalities expressed an interest in installing charging infrastructure and introducing measures to promote e-mobility, such as tax reductions, access to bus lanes, and reduced vehicle licence fees.

For more information, see the [PROMETEUS website](#).



Good Practice 5: Provincial guidelines for e-mobility

Sustainable mobility and energy policy are set at European, national, and regional level, leaving several frameworks that public authorities need to follow. This can be challenging for small municipalities, charged with supporting the roll-out of e-mobility. The city of Brescia, in Italy, developed guidelines for its municipalities to guide them through the legislative framework. The guidelines integrate regulations from all policy-levels, as well as presenting the state of play for e-mobility and charging infrastructure in the province, a database of technical requirements for charging infrastructure, a description of possible e-mobility service users, interviews with stakeholders, scenarios of e-mobility diffusion and a communication plan. To promote the guidelines, more than 20 events have been held, with more than 100 stakeholders reached. The process revealed the importance of developing synergies between all political levels, as well as engaging all stakeholders, especially from the private sector, and considering different fleets, from public transport to freight vehicles.

For more information, see the [e-MOPOLI website](#).



Good Practice 6: EMOV Carsharing

The EMOV electric vehicle sharing scheme in Madrid, Spain, is one of many emerging sharing economy practices to encourage a shift to sustainable transport. Many people across the continent are realising that they do not need to own a car, and rather than paying for ownership, they pay for access to the vehicle when needed. The benefit of such systems is that fewer vehicles need to be purchased and those that are purchased can be more optimally used. By removing the investment burden from users, one of the major barriers to e-mobility use is avoided, and users will also get used to e-mobility through hands-on experience. EMOV has operated since 2016, and unlike other schemes it is not 'station-based', meaning they do not need to be returned to a designated depot. Users can access vehicles wherever they are parked using a smart phone app and leave vehicles in any parking bay across the city, paying only for the mileage used. The scheme has 550 vehicles available, with 130,000 users in the first year alone, with around 150 employees servicing the vehicles, including returning to charging hubs.

For more information, see the [OptiTrans website](#).

Subsidies and incentives for e-vehicles

One of the challenges for e-mobility is the higher cost compared to fossil-fuel vehicles. However, since they do not have as many externalities such as pollution and carbon emissions, and they contribute to public policy goals, they are recognised as ripe for public financial support to level costs with non-electric vehicles. A range of direct and indirect incentives can be introduced by public authorities to promote e-mobility use by citizens.

This can include direct subsidies for purchasing vehicles and infrastructure, discounts and deals organised directly with providers, or public-private partnerships to offer additional benefits (see Good Practice 7). Otherwise, authorities can alter traffic rules to give preference to e-vehicles to free parking and closed off low-emissions zones or it can include reduced road tax and registration rates (see Good Practice 8).



Good Practice 7: Group purchase of e-vehicles

One of the barriers to uptake of e-vehicles is the higher price compared to fossil-fuel powered vehicles. In Flanders, Belgium, the regional government has organised a group purchase scheme to negotiate discounts with suppliers for e-vehicles. The scheme was outsourced to a group purchase organisation, Bobex, which set up the 'Electric Together' platform, where individuals could register their interest, choose their vehicle and benefit from a discount of up to 10,000 EUR as negotiated by the group purchase organisation. More than 2,500 registrations of interest were made, with eighty car sales. The scheme was set up for less than 50,000 EUR and 0.3 full time equivalent staffing. The main costs related to promotion of the scheme, also contributing to general awareness raising and generating debate.

For more information, see the [e-MOPOLI website](#).



Good Practice 8: Free parking for EVs and electric hybrid cars

Tartu, Estonia, is looking to reduce its carbon emissions and the environmental impact of vehicles and looks to e-mobility as a key solution. Since 2009, the city has allowed free parking for electric cars and hybrids in paid car parks. In 2017, the scheme was reformed, reducing the number of paid parking spaces for non-electric vehicles, and increasing parking fees. This led to an increase in application in free electric parking permits. As well as reducing the number of vehicles overall and encouraging an overall shift to clean mobility. The practice also contributed to cleaner air and reduced noise pollution.

For more information, see the [OptiTrans website](#).

Provision of charging infrastructure

Widespread development of the e-vehicle market will rely on overcoming 'range anxiety' – the concern that battery charge is low, that vehicles cannot travel far without recharging, and that there is insufficient charging infrastructure for charging between uses. Whilst technological development will continue to improve the battery capacity and vehicle range, there is a significant need to roll-out charging infrastructure to increase user confidence. This, however,



is often regarded as a chicken and egg problem – there is a reluctance to invest in infrastructure without the users, and a reluctance to invest in vehicles without the infrastructure.

Interreg Europe projects have argued that if regions wish to see greater use of electric vehicles, they need to make the first move and play an active role in deployment of charge points. Public authorities need to take a lead, working with the private sector, to stimulate market development if we are to meet our climate targets. Several approaches, however, have demonstrated ways in which this can be done in a cost-effective and practical way, making best use of public resources, meeting consumer needs and making wise decision on how to choose locations (see Good Practice 9). E-mobility providers also need to consider how to make charging efficient for customers, with users able to use any available infrastructure (see Good Practice 10).



Achievement 5: EV Energy conclusions on charging infrastructure

In 2018, the EV Energy project held a Regional Stakeholder Event to discuss charging infrastructure and smart grid solutions, drawing up a set of conclusions and recommendations:

1. Increasing the number of public charging stations is essential. As a rule of thumb, regions should offer one public charging point per ten registered electric vehicles;
2. Standardised and more user-friendly rules are required for parking and payment at public charging stations;
3. More research is needed to develop smart charging systems for Vehicle2Grid (V2G) – This can balance irregular local production of electricity and reduce grid imbalances in general;
4. More test and demonstration projects are required for smart charging systems. Such efforts must comply with the real needs of users and energy providers;
5. Early involvement of electricity companies in planning and construction of charging infrastructure is crucial for guaranteeing power supply;
6. E-mobility must be better integrated into urban planning. As noise and emission levels from traffic decrease considerably, possibilities for housing projects arise in areas where it was previously restricted by law;
7. Behaviour change is important for the transition towards e-mobility. Electrification may give the user the experience of 100% sustainability, but in total the changes may lead to unwanted consequences depending on individual behaviours.

[Click here to access the full article.](#)



Good Practice 9: Amsterdam's demand-driven charging infrastructure

Public authorities looking to roll-out charging infrastructure often face the challenge of deciding where is most optimal to meet the necessities of e-vehicle users. Amsterdam has developed a novel, demand-driven approach, whereby infrastructure is installed at the request of users where there are otherwise no existing charging points, or where the existing charging points are heavily used (more than 50% of the time). In this way, Amsterdam can ensure that resources are used efficiently and only spent where they will be used, whilst also giving confidence to citizens that they can purchase an e-vehicle and be guaranteed access to a nearby charging point. Charging points funded by the city can only be installed in public spaces where multiple users can access them. Citizens can submit their request online, with installation typically implemented within two months of receipt if positively assessed. By 2018, Amsterdam had installed more than 3,800 charging points and the model is being replicated in cities across the Netherlands, including Almere, Haarlem, Amstelveen and Zaanstad.

For more information, see the [EV Energy website](#).



Good Practice 10: MOBI.E – Portuguese Electric Mobility Network

In Portugal, the national electric mobility network [MOBI.E](#) has created a nation-wide, interoperable network of charging stations where users can use all available infrastructure regardless of which company they hold a contract with. Users have access to more than 2,000 charging points, using a card or mobile application to sign in and make payments. MOBI.E then distributes payments to the infrastructure owners. The network was established in the national Electric Mobility Programme, with a pilot funded by the Portuguese Innovation Fund. Later expansion was financed from Cohesion Funds and the Portuguese Environmental Fund. By streamlining the connection and use of infrastructure, MOBI.E makes charging as easy as possible for users, while also helping businesses to develop. There are no size limits to adhering companies, so even small companies are eligible to join and to benefit. As well as supporting companies, the network also advocates for e-mobility, with communication campaigns and participation in policy development.

For more information, visit the [EMOBICITY website](#).



E-mobility in rural regions

E-mobility is often considered as an urban solution, but the potential for electric transportation in rural regions is also significant, though specific considerations are needed. Specific sustainable mobility solutions are available for rural regions, such as shared e-mobility and on-demand systems (see Good Practice 11). Mountain and rural areas also, often have the potential to be net-producers of sustainable energy, with green communities and smart villages having high potential for e-mobility. In future, there may be great potential for rural regions to make use of micro-grids and decentralised energy generation to empower their communities to play a role in the low-carbon transition.



Good Practice 11: FLUGS rural carsharing

Lienz, Austria, a town of some 12,000 people, has introduced the FLUGS carsharing scheme as a flexibility mobility offer to replace the second car of households in rural areas. The main goal was to provide an innovative and affordable mobility offer in the region, where people are highly reliant on personal mobility, with limited public transport options. The scheme was initiated by Energy ImPulse East Tyrol, with support of the Regional Management. The system is easy to use, with users registering online, downloading an app, and providing driving licence details. Cars are then booked and paid for via an app or website, and the fees for the service include membership fee, per-kilometre fee, and hourly costs. In the first year, around 30 users were acquired the scheme. It has since been expanded into seven new municipalities, now with some 60 regular users.

For more information, see the [LAST MILE website](#).

The opportunities of e-mobility in rural regions can be accessed via energy communities and prosumers, with decentralised grids and local resources. Find out more in the Interreg Europe Policy Briefs on '[Renewable energy self-consumption](#)', '[Renewable Energy Communities](#)', and '[Supporting local bioenergy development](#)'.

Recommendations & key learnings

- The uptake of e-mobility in Europe's regions is underway, but more effort is needed if we are to meet 2050 targets. Many options are available for regional and local



authorities, from communication campaigns, to incentives, public procurement, but interventions need to come as a package as part of an overarching regional strategy;

- E-mobility planning cannot be tackled by the transport departments alone, but also requires collaboration with energy planning and spatial planning. Setting-up cross-departmental teams, with a clear lead department, can help to bring all actors together to work towards common goals;
- The grid impact of e-mobility will be a major challenge to be faced, and local authorities will need to plan ahead and be aware of power-use patterns. Technological solutions like smart grids and vehicle-to-grid will help, but smart tariffs and communication campaigns are two behaviour change practices that can also have significant impact;
- As recognised in Pamplona and Paks, opportunities are created from local renewable energy generation, prosumers, and energy communities. This can contribute to grid stability but also motivate citizens as part of the broader transition;
- Public transport will play an essential part in the transition, and a modal shift is needed away from private vehicles. Electric public transport, particularly buses, will be suitable for most regions, but specific considerations will be required for charging infrastructure, depots, and organisation of stakeholders. The eBussed indicators can help to guide regions in their roll-out;
- Other forms of shared mobility, such as car rental services, will also help to bring electric vehicles onto the road, while reducing the overall number of vehicles. These systems can work in both urban and rural settings (see both Madrid and Liemz);
- Public authorities need to take the lead in infrastructure roll-out, but this can be done in a way to make best use of public resources, whilst also efficient for users. See the examples of Amsterdam and Portugal for two public-facing schemes that both develop the e-mobility market and enable convenience of access;
- Rural and remote regions face specific challenges, but also have high potential for installation of renewables and micro-grids. The opportunities for rural regions will be further explored in a future policy brief;
- There is a strong need for regional and local authorities to make their voices heard to governance levels above, helping to influence policy frameworks and ensure they meet their needs. These include the Operational Programmes for the European Structural and Investment Funds;
- Support is available from many resources, such as the European Structural and Investment Funds, with an ever-growing focus on combatting climate change and supporting the energy transition;
- Regions have much to learn from each other. Public authorities should take advantage of opportunities to learn from other regions which have already begun the transition, through Interreg Europe projects and the Policy Learning Platform which can offer on-demand expert support through peer reviews and matchmakings.

Does your region need support in defining new strategies?

Interreg Europe, through its Policy Learning Platform, provides a number of services to both ongoing projects and the wider regional policy Community. As well as operating the Good Practice Database, drawing together the best of the good practices identified by projects, and providing a Knowledge



Hub of policy briefs and articles, the platform offers on-demand Expert Support, including a helpdesk, matchmaking service and peer reviews to assist regions in their transition:

- Via the Policy Helpdesk, Policy-makers may submit their questions to our helpdesk to receive a set of resources ranging from inspiring good practices from across Europe, policy briefs, webinar recordings, information about upcoming events, available European support and contacts of relevant people, as well as recommendations on matchmaking and peer review opportunities.
- A Matchmaking session is a thematic discussion hosted and moderated by the Policy Learning Platform and designed around the policy needs and questions put forward by the requesting public authority or agency. It brings together peers from other regions in Europe to present their experiences and successes, to provide inspiration on overcoming regional challenges.
- Peer Reviews are the most deep and intensive of the on-demand services, bringing together peers from several organisations for a two-day working session to examine the specific territorial and thematic context of the requesting public authority or agency, discuss with stakeholders, and devise recommendations.

Sources and further information

Policy Learning Platform

- Policy Briefs:
 - E-mobility
 - Integrated Low-carbon Strategies
 - Improving the convenience of public transport
 - Renewable Energy Communities
 - Renewable energy self-consumption
 - Supporting local bioenergy development
- Webinars:
 - Counteracting the impact of electrification on the grid
 - Building a regional hydrogen economy
 - Clean public transport
 - Roll-out of charging infrastructure
 - Integrating e-mobility into territorial planning
- Matchmaking on management of e-buses

Other Resources

- European Commission – European Green Deal



- European Commission – [A European Strategy for Low-Emission Mobility](#) (2016)
- European Court of Auditors – [Infrastructure for charging electric vehicles](#) (2021)
- European Committee of the Regions – [Electromobility Guide for Local and Regional Authorities](#) (2015)
- European Environment Agency – [Electric vehicles from life cycle and circular economy perspectives](#) (2018)
- Zero Emissions Vehicles Transition Council – [2022 Action Plan](#)

*#LowCarbon #Emobility
#Cities #Strategy
#EnergyTransition*



Interreg Europe Policy Learning Platform on
Low-carbon economy

Thematic experts:

Simon Hunkin, Katharina Krell

s.hunkin@policylearning.eu k.krell@policylearning.eu

<https://interregeurope.eu>

February 2022



**Interreg
Europe**



European Union | European Regional Development Fund