

EV PUBLIC CHARGING INFRASTRUCTURE

40 million electric vehicles (both battery EVs and plug-in hybrid EVs) need to hit the road by 2030 for Europe to be on track to meet its climate objectives. Electrification of road transport requires a strategic charging infrastructure build-up, which is already happening in some countries.


EV PUBLIC CHARGING INFRASTRUCTURE AND EV ROLL OUT: STATE OF PLAY



 **Share of EVs in total sales in 2018 > 1.5%**
 (source: ACEA data)

European top

1. Norway (49.1%)
2. Sweden (8%)
3. Netherlands (6.7%)
4. Finland (4.7%)
5. Portugal (3.4%)

 **Availability of EV public charging infrastructure :**
 countries with at least 1 public charging point per 10 EVs in 2018
 (source: EAFO, AFI guidelines)

European top

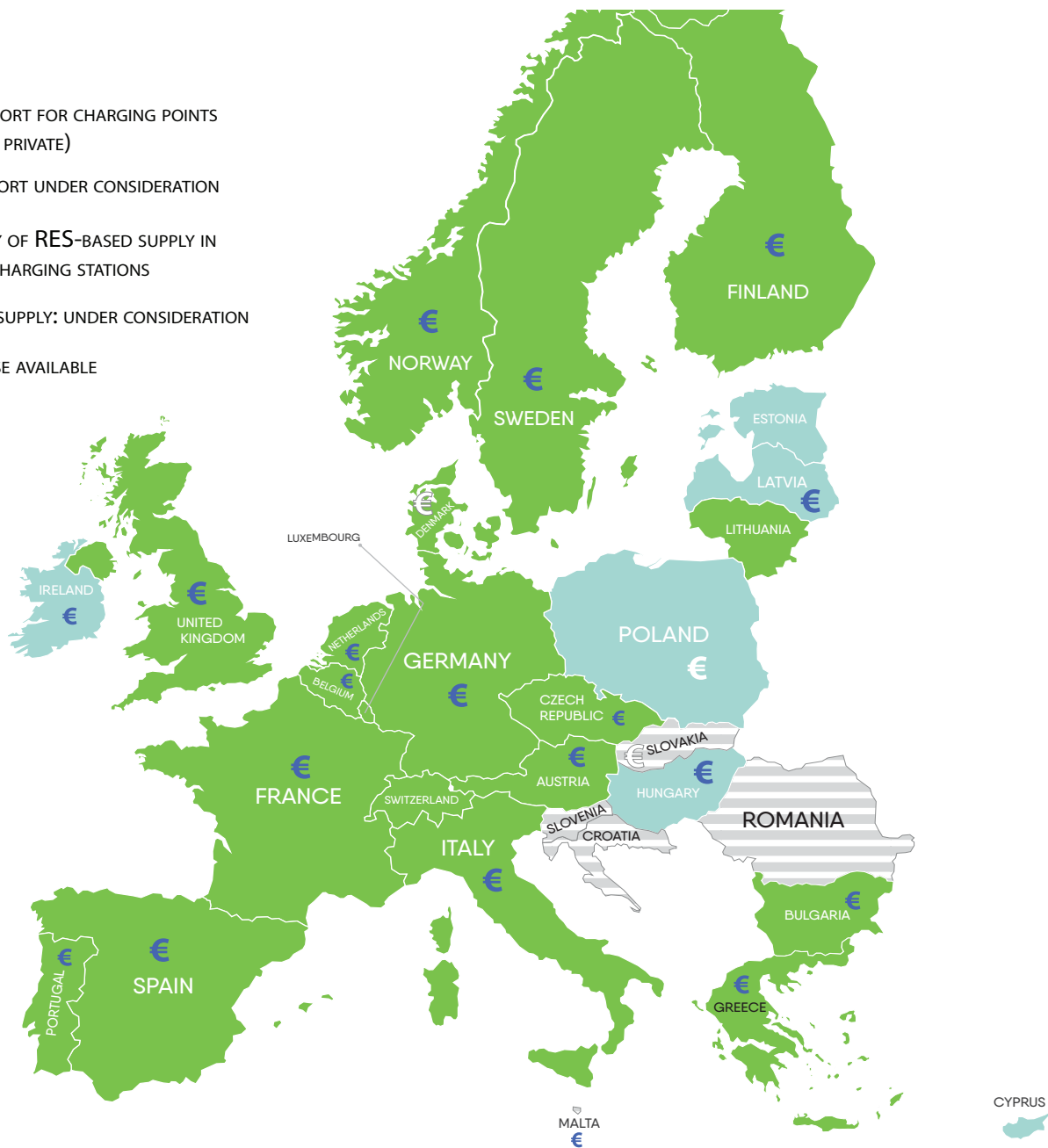
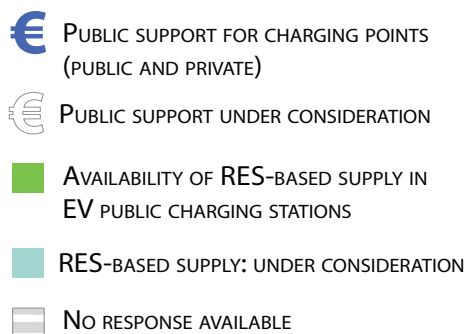
Number of charging points per 1000 inhabitants

1. Netherlands
2. Norway
3. Luxembourg
4. Switzerland
5. Austria

Findings:

- In already developed markets, such as Norway, most charging happens at home and at work. The publicly accessible network is sufficient based on the charging behaviour.
- In rapidly growing, large markets, such as France, Germany and the UK, which represent almost half of all new vehicle registrations, electric vehicles are integrated easily.
- In rapidly growing, smaller markets, such as Austria, Denmark, the Netherlands and Sweden the business case for EV charging is clearly in place with high demand for both vehicles and charging infrastructure, which brings positive business models.
- In smaller, less developed markets, such as Central and Eastern Europe, charging infrastructure deployment has not significantly grown in absolute numbers due to the low number of EVs but is sufficient to address the first influx of vehicles.

AVAILABILITY OF RENEWABLES (RES) BASED SUPPLY IN PUBLIC EV CHARGING STATIONS AND OF PUBLIC SUPPORT FOR CHARGING POINTS



Source: Based on a Eurelectric survey

Findings:

- 93% of the EU population has the option to charge their electric vehicle on a 100% RES basis.
- 18 Member States actively support the charging infrastructure build-out through dedicated measures.
- While fiscal incentives prove effective to kickstart markets, direct subsidies to users and on-demand installation of public charging points are observed in more mature markets.

Companies that responded to our survey serve more than 120 million grid users in EU, Norway and Switzerland

Respondents are energy sector integrated utilities, DSOs, generators, national associations, charging service providers, suppliers and service providers, platforms for charging infrastructure, innovation centres

A survey conducted throughout the European charging infrastructure value chain¹ reveals the need to address several key aspects of charging for EVs as the EU just passed legislation aimed at bringing about 40 million EVs on European roads by 2030. Eurelectric encourages policymakers to consider these carefully notably in view of the upcoming revision of the Alternative Fuels Infrastructure Directive:

PROMOTE COMMON EU STANDARDS FOR INTEROPERABILITY OF PUBLIC CHARGING INFRASTRUCTURE

Citizens must be able to drive their EVs seamlessly throughout Europe. While European standards are a must, the current situation where EV charging actors develop various, incompatible solutions especially for data and payment as well as for plugs should be addressed.

Policy recommendations:

- ✓ Promote standards and protocols to ensure efficient data exchange and facilitate charging, as a consequence shifting consumers behaviour;
- ✓ Support the development of guidelines and use of existing standards for information exchange (e.g. ISO 15118) when implementing infrastructure and vehicle connections.

FOSTER SMART CHARGING SOLUTIONS

EV charging may create constraints on distribution grid capacity at certain times, which can be largely alleviated via smart charging.

Policy recommendations:

- ✓ Incentivise market parties to invest in smart charging solutions and services, including ICT infrastructure financial models as well as new types of network tariffs reflecting grid costs more effectively to incentivise efficient network use;
- ✓ Provide political and financial support for the development of smart charging and services.

ADAPT CHARGING NETWORK PLANNING FOR EV USERS' NEEDS

Europe must ensure the sufficient deployment of EV public charging infrastructure to meet the growing demand, especially in a number of strategic areas, such as cities and densely populated areas.

Policy recommendations:

- ✓ Take into account demographic criteria, traffic growth, vehicle sales and charging power profiles;
- ✓ Establish planning criteria on network capabilities at EU level (e.g. visibility, accessibility, electricity capacity, grid connection, available services) on network capabilities with the advice of DSOs as early as possible;
- ✓ Direct funding (from the Connecting Europe Facility or European Investment Bank) in the first place to the strategic locations defined by public authorities.

ASSESS THOROUGHLY THE NEED FOR PUBLIC SUPPORT

Various subsidy schemes for EV are in place in Member States. As the market matures, a thorough assessment of these should take place to check their efficiency and a series of additional policies should be considered to complement the fiscal measures.

Policy recommendations:

- ✓ Translate the ambition of the Alternative Fuels Infrastructure Directive into the operating plans of public transport and network companies, while simplifying administrative procedures;
- ✓ Allocate funding to the TEN-T Comprehensive Network alongside the Core Network with a focus on high power charging;
- ✓ Provide clarity on national incentive plans to improve investors certainty.

ENABLE RES-BASED CHARGING

EV drivers must be able to fuel their cars with carbon neutral and renewable electricity. This possibility is becoming a reality as operators of charging points largely select 100% renewable energy suppliers, but it must be further encouraged.

Policy recommendation:

- ✓ Encourage measures ensuring that EV drivers can opt for decarbonised electricity charging, especially in the Member States where CO₂ intensity of the energy mix remains relatively high. This can be done through specific requirements in public tenders, guarantees of origin, specific green tariff plans etc.

¹ Eurelectric members' survey, November–December 2018