

EUROPEAN ELECTRIC VEHICLE FACTBOOK 2019/2020

DALE HALL, SANDRA WAPPELHORST, PETER MOCK, AND NIC LUTSEY

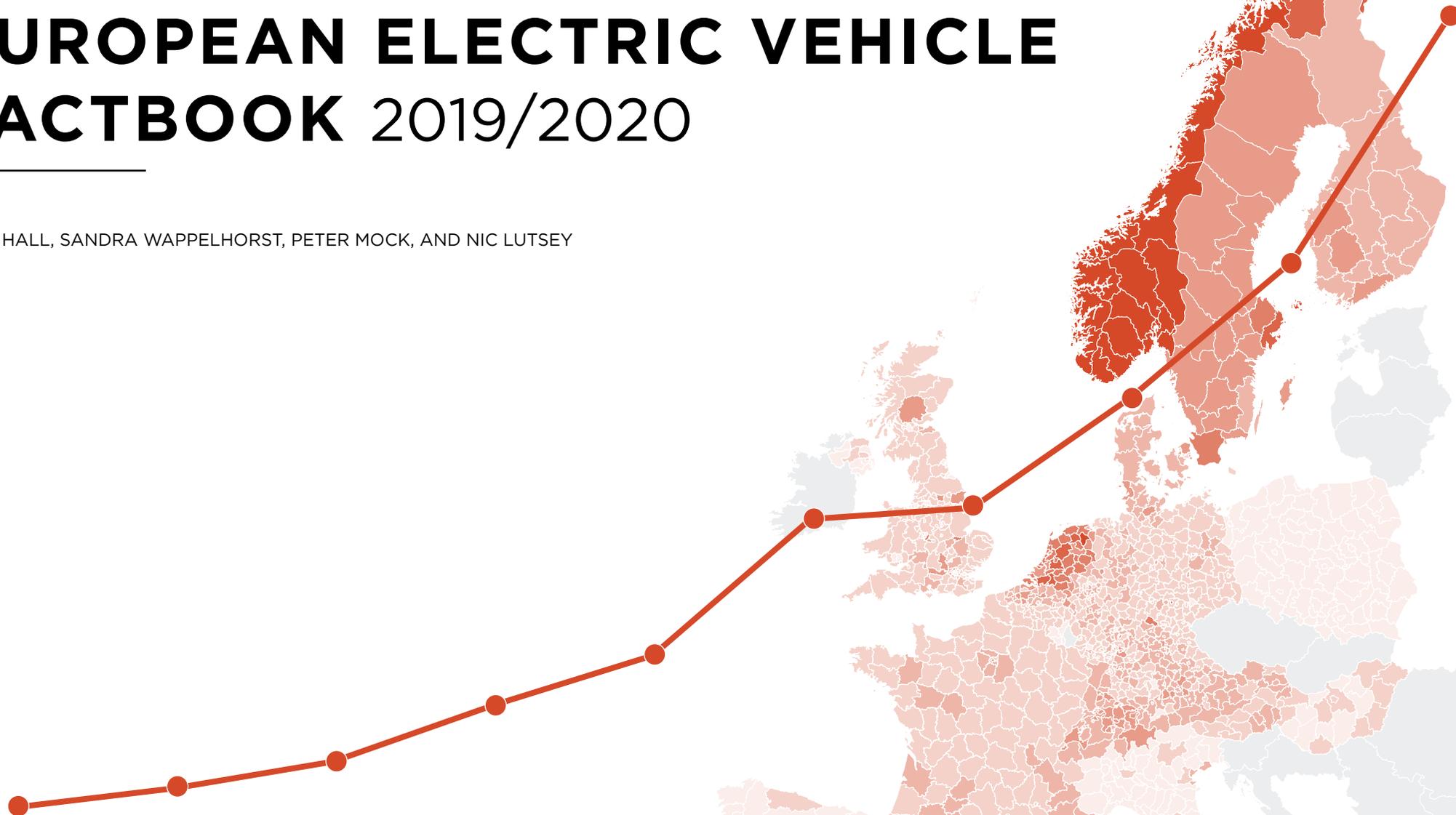


TABLE OF CONTENTS

Introduction	1
Europe	2
Austria	4
Belgium	5
Denmark	6
Finland	7
France	8
Germany	9
Hungary	10
Italy	11
Netherlands	12
Norway	13
Poland	14
Portugal	15
Spain	16
Sweden	17
Switzerland	18
United Kingdom	19

International Council on Clean Transportation
1500 K Street NW, Suite 650,
Washington, DC 20005

communications@theicct.org | www.theicct.org | [@TheICCT](https://twitter.com/TheICCT)

© 2020 International Council on Clean Transportation

INTRODUCTION

Electric vehicles continue to grow in popularity in Europe and around the world as production costs fall, charging infrastructure is deployed, and the urgency to reduce the transport sector's climate emissions grows. Europe has emerged as the second-largest electric vehicle market in the world by volume, behind China and ahead of the United States.¹ The European Union's CO₂ emission standards and investments in infrastructure and manufacturing have spurred growth across the region, but within Europe, electric vehicle progress varies widely from country to country and from region to region. Understanding this variation is important in identifying effective policies and actions to further accelerate electric vehicle adoption.

This report provides an update on the European electric vehicle market through 2019, including a detailed look at 16 of the largest national-level markets in the European Union (EU) and the European Free Trade Area (EFTA). In each country, this work identifies the regions and metropolitan areas with the highest electric vehicle uptake, including battery electric vehicles (BEVs) and plug-in hybrid electric vehicles (PHEVs), and describes market dynamics in terms of the top electric vehicle models and manufacturers. Additionally, the key financial and regulatory policies driving transportation electrification through 2019 are identified, with key 2020 updates noted. The information within this report provides a platform for deeper analysis of electric vehicle promotion actions and future market development.

To provide a holistic update on the state of the European electric vehicle market, the report uses several primary data sources. National electric vehicle sales come from EV-Volumes.² Data on new electric vehicle registrations at the subnational level come from IHS-Markit;³ we consider these registration figures to be a close proxy for vehicle sales. Public charging infrastructure counts come from the European Alternative Fuels Observatory.⁴ Information on incentive and taxation policy comes from Wappelhorst, Hall, Nicholas, and Lutsey⁵ and ACEA⁶ unless otherwise stated. All local-level data is presented using the Nomenclature of Territorial Units for Statistics third level (NUTS 3) jurisdictions. Metropolitan areas throughout the report use the Metropolitan Regions definition, which are made up of one or more NUTS 3 regions.⁷ Throughout this report, all statistics refer to passenger cars only, excluding light commercial vehicles and heavy-duty vehicles.

1 Unless otherwise noted, Europe in this report refers to the 28 European Union member states as of January 1, 2020, plus the European Free Trade Association members Norway, Switzerland, Iceland, and Liechtenstein.

2 EV-Volumes (EV Data Center, 2020), <http://www.ev-volumes.com/datacenter/>.

3 IHS Markit (New vehicle registration data, 2020), <https://ihsmarkit.com/>.

4 European Alternative Fuels Observatory (EAFO) (Charging infrastructure stats, 2020), <https://www.eafo.eu/alternative-fuels/electricity/charging-infra-stats>.

5 Sandra Wappelhorst, Dale Hall, Mike Nicholas, and Nic Lutsey, *Analyzing Policies to Grow the Electric Vehicle Market in European Cities*, (ICCT: Washington, D.C., February 23, 2020), <https://theicct.org/publications/electric-vehicle-policies-eu-cities>.

6 ACEA - European Automobile Manufacturers' Association, "ACEA Tax Guide 2020," April 27, 2020, <https://www.acea.be/publications/article/acea-tax-guide>.

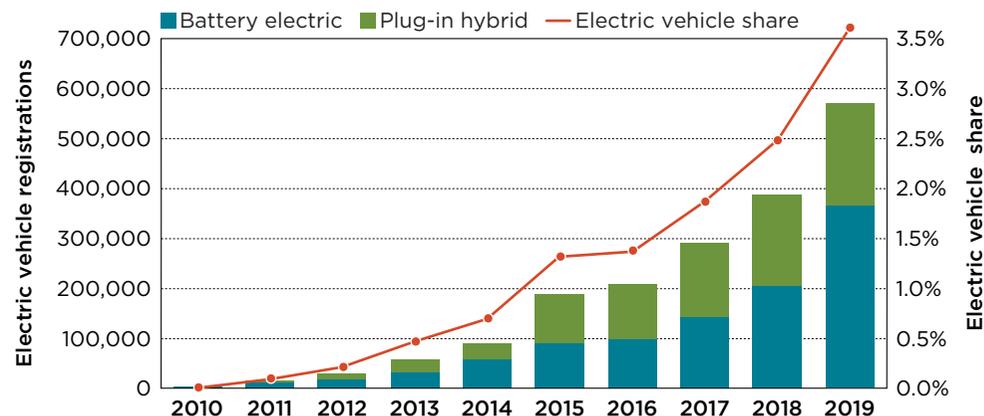
7 See information on Nomenclature of Territorial Units for Statistics (NUTS) classification and Metropolitan regions: "Regions and cities - Overview," Eurostat, accessed February 24, 2020, <https://ec.europa.eu/eurostat/web/regions-and-cities/overview>

EUROPE

2019 EV sales share: 3.6% | 2019 EV sales: 564,000 | Cumulative EV sales: 1,824,000
2019 public charge points: 190,000 regular, 24,200 DC fast | Population: 457 million

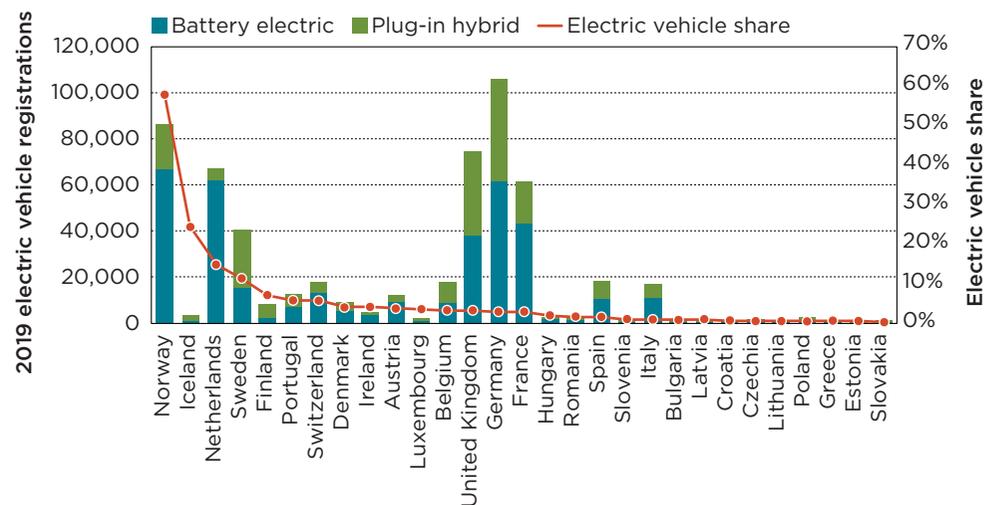
With over 560,000 electric vehicle registrations in 2019 and 1.8 million cumulative registrations through the end of 2019, the European Union and European Free Trade Association members collectively represent the second-largest market for electric vehicles globally. In comparison, China is the largest electric vehicle market with 3.5 million cumulative sales, while the United States is the third-largest market with 1.4 million. Electric vehicle sales have grown steadily since 2010, with annual growth averaging 50% over the past five years. Electric vehicles represented 3.6% of new passenger car registrations in 2019, up from 2.5% just one year earlier.

The European Union's CO₂ emission standards for passenger cars help to drive electric vehicle uptake across the continent. This is supplemented by significant investments at the European level for charging infrastructure and benefits for manufacturing, as well as numerous policies at the member-state and local levels. With more stringent CO₂ standards taking effect in 2020, along with added benefits for automakers with higher electric vehicle sales shares, there are indications that electric vehicle growth will further accelerate in the new decade.⁸



EUROPE FIGURE 01

Electric vehicle sales and share of new passenger vehicle sales in in EU and EFTA member countries, 2010-2019.



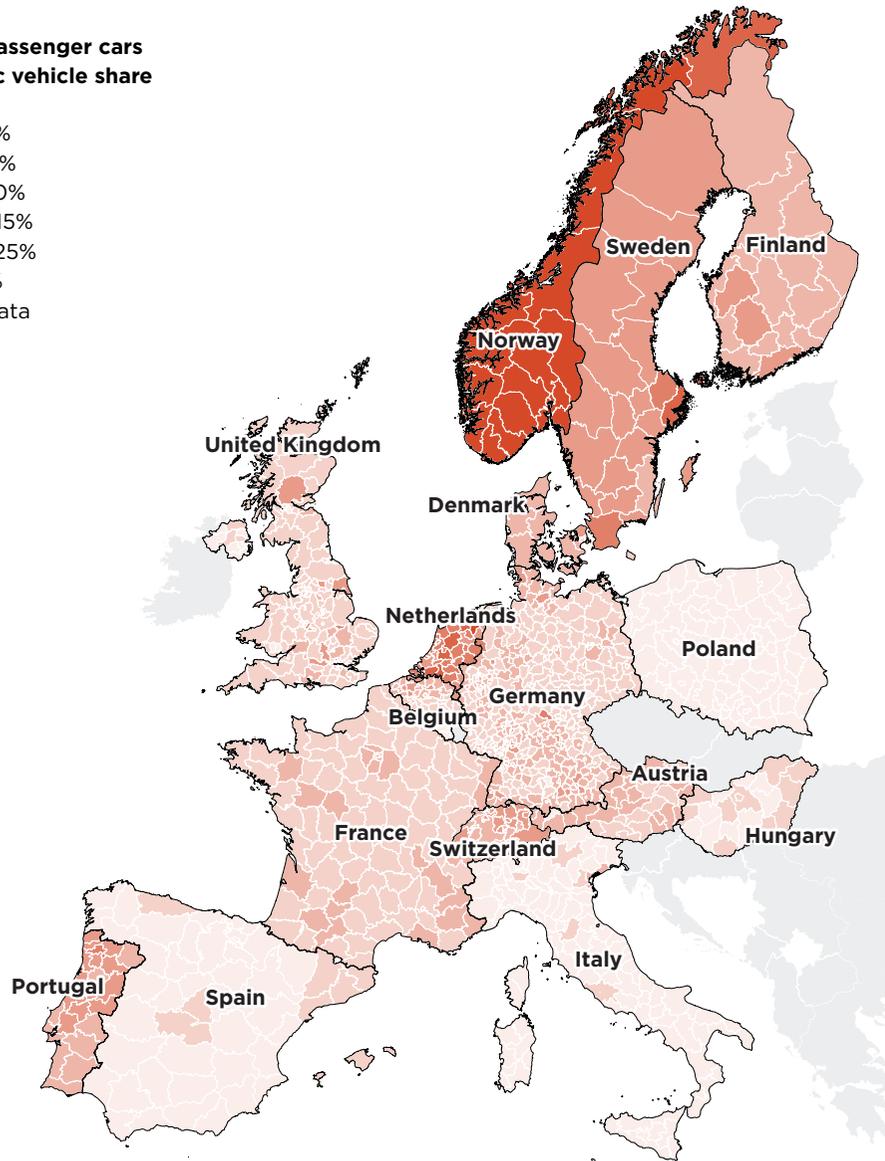
EUROPE FIGURE 02

New electric vehicle sales and electric shares of new passenger car sales in EU and EFTA member countries, 2019.

⁸ Peter Mock, "CO₂ Emission Standards for Passenger Cars and Light-Commercial Vehicles in the European Union," Policy update (The International Council on Clean Transportation (ICCT), January 2019), <https://www.theicct.org/publications/ldv-co2-stds-eu-2030-update-jan2019>.

**2019 passenger cars
Electric vehicle share**

- <1%
- 1%-3%
- 3%-5%
- 5%-10%
- 10%-15%
- 15%-25%
- >25%
- No data

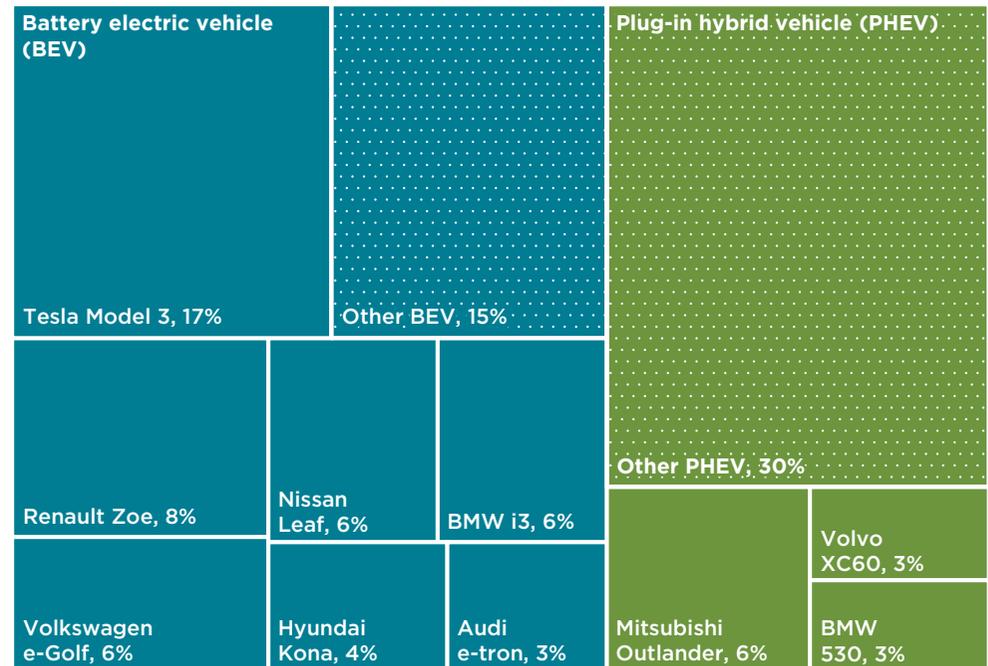


EUROPE FIGURE 03

Electric vehicle share of 2019 new passenger car registrations in 16 countries in Europe, 2019. New vehicle registration data are supplied by IHS Markit; Copyright © IHS Markit, 2020. All rights reserved.

Electric vehicle registrations are unevenly distributed across Europe. The countries with the highest electric vehicle registration shares in 2019 are Norway (56%), the Netherlands (15%), and Sweden (11%). During the same period, many markets in eastern and southern Europe had electric vehicle registration shares below 1%. Germany recorded the highest volume of new electric vehicle registrations in 2019 with 106,000, followed by Norway (80,000) and the United Kingdom (74,000).

Battery electric vehicles (BEVs) represented 64% of electric vehicle sales across the EU and EFTA in 2019, an increase when compared to the relatively even split between BEV and plug-in hybrid electric vehicle (PHEV) sales from 2015 to 2018. This trend was reflected in most of the major markets within Europe: only Sweden, Finland, Iceland, and Greece had more sales of PHEVs than BEVs. Six of the 7 best-selling electric vehicle models were BEVs, led by the Tesla Model 3, which accounted for 17% of electric vehicle sales during its first full year of sales in Europe. The following country-specific pages discuss the variation in electric vehicle sales patterns in greater detail.



EUROPE FIGURE 04

Distribution of models among new electric vehicle registrations in 16 countries in Europe, 2019. New vehicle registration data are supplied by IHS Markit; Copyright © IHS Markit, 2020. All rights reserved.

AUSTRIA

2019 EV sales share: 3.6% | 2019 EV sales: 12,000 | Cumulative EV sales: 40,000
2019 public charge points: 3,742 regular, 594 DC fast | Population: 8.9 million

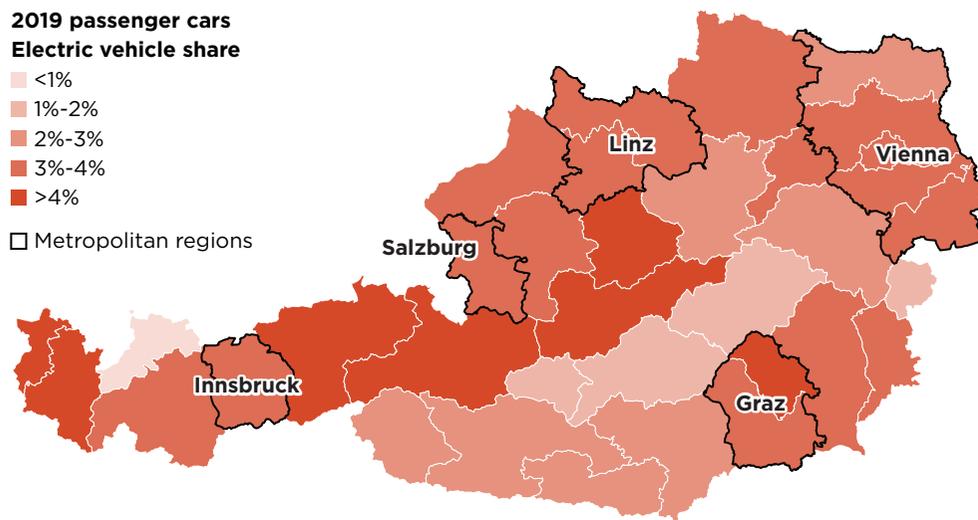
Austria's electric vehicle market has steadily grown to a 3.6% sales share in 2019, equal to the European average. The national government has a full suite of financial support policies, including one-time purchase bonuses of up to €3,000 in 2019 (increased to €5,000 in 2020) and tax incentives for private and company cars. The country also has among the highest number of public chargers per capita. While Vienna had the most electric vehicle registrations, Graz had the highest share of electric registrations, although electric vehicle uptake was generally consistent across the country.

Austria has experienced a consistently BEV-focused market, with BEVs outselling PHEVs for the past three years. The Tesla Model 3 was the most popular electrified model with a 20% sales share in 2019, which is more than twice the market share of the second-best selling BMW i3.

2019 passenger cars Electric vehicle share

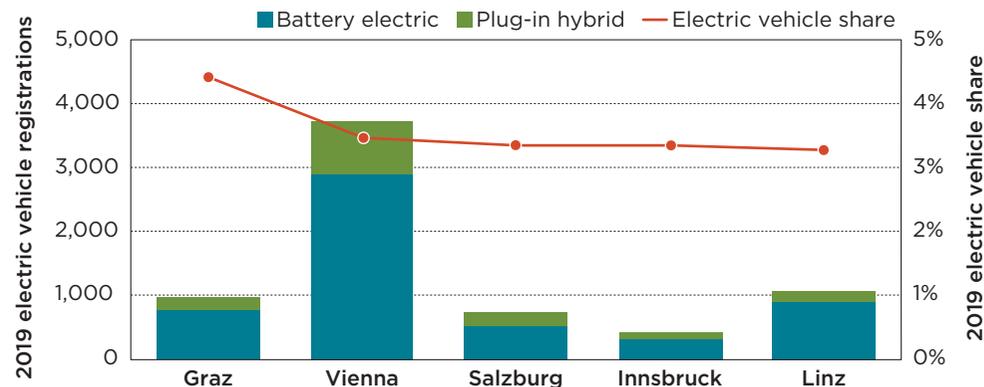
- <1%
- 1%-2%
- 2%-3%
- 3%-4%
- >4%

Metropolitan regions



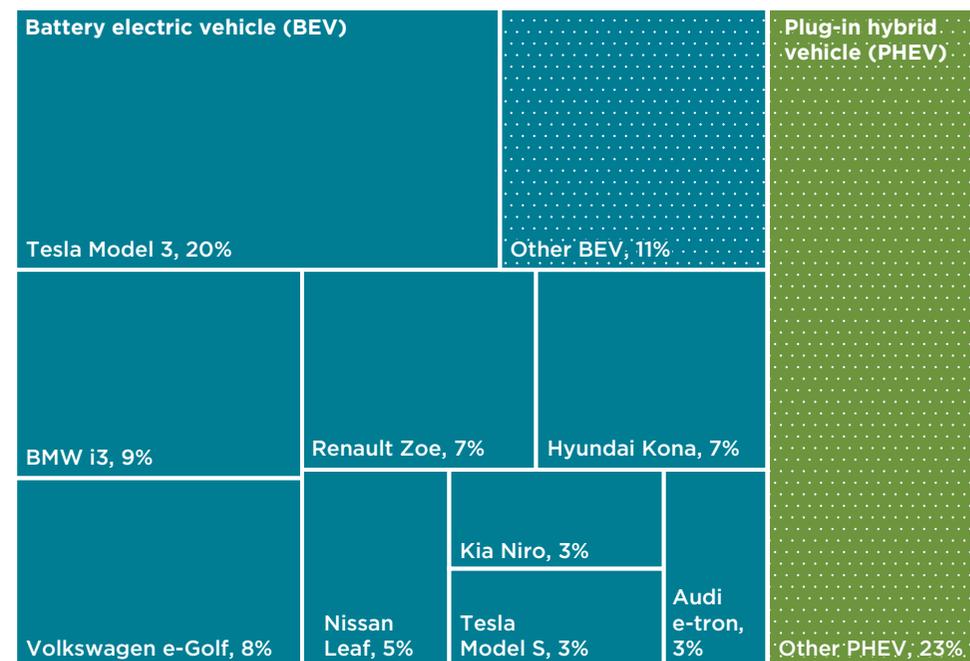
AUSTRIA FIGURE 01

Electric vehicle share of 2019 new vehicle registrations in Austria. New vehicle registration data are from IHS Markit; Copyright © IHS Markit, 2020. All rights reserved.



AUSTRIA FIGURE 02

Electric vehicle registrations and share of new passenger vehicle registrations in the metropolitan regions in Austria, 2019.



AUSTRIA FIGURE 03

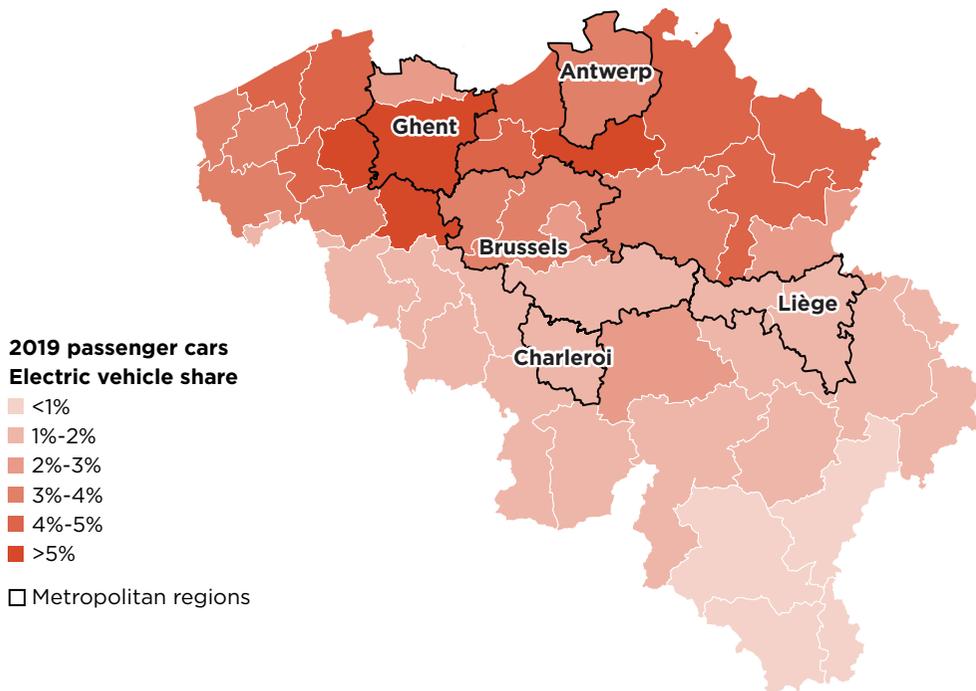
Distribution of models among new electric vehicle registrations in Austria, 2019.

BELGIUM

2019 EV sales share: 3.2% | 2019 EV sales: 17,700 | Cumulative EV sales: 62,600
2019 public charge points: 6,070 regular, 359 DC fast | Population: 11 million

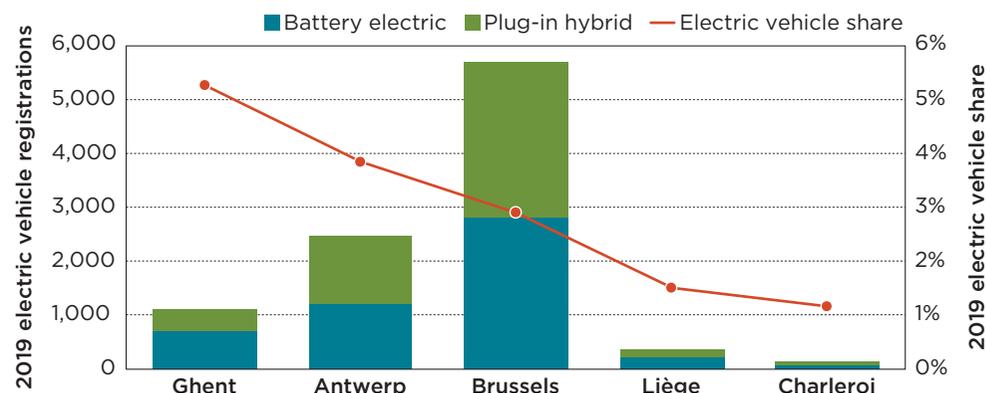
Belgium's electric vehicle sales increased by 30% from 2018 to 2019, reaching an electric sales share of 3.2%. The Flanders and Brussels Capital regions in the north, which both offer tax benefits for electric vehicles, saw higher electric vehicle uptake than the Wallonia region in the southern part of the country. Public charging infrastructure availability was lower on a per-capita and per-vehicle basis than in the neighboring countries of the Netherlands, Germany, and France.

Belgium's electric vehicle sales in 2019 was evenly split between BEVs and PHEVs, following several years of a PHEV-focused market. The market was comprised of a diverse number of models, with 6 BEV and 7 PHEV models each taking at least 3% of the market.



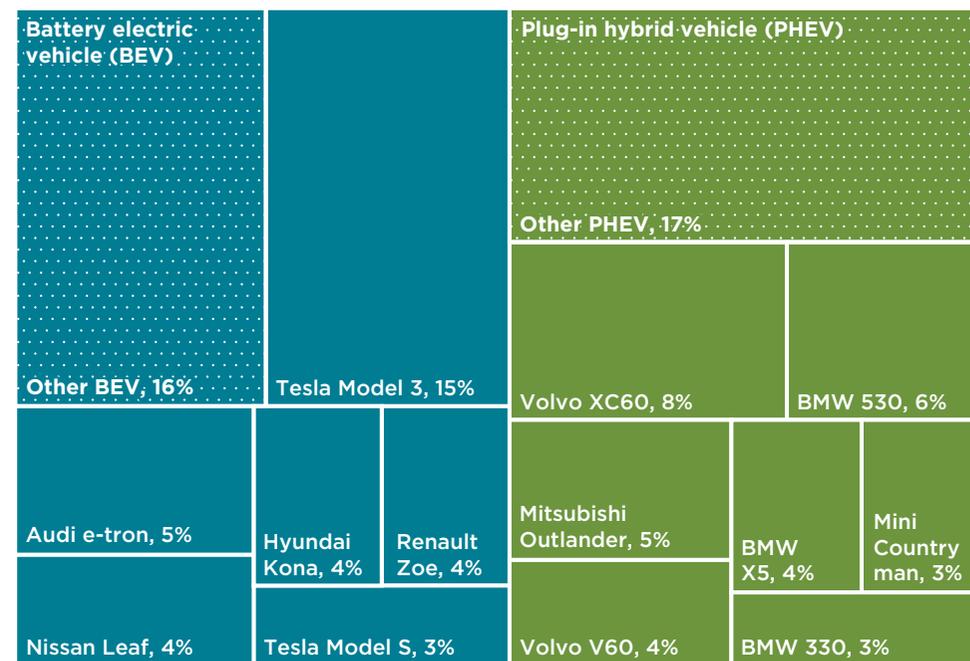
BELGIUM FIGURE 01

Electric vehicle share of 2019 new vehicle registrations in Belgium. New vehicle registration data are from IHS Markit; Copyright © IHS Markit, 2020. All rights reserved.



BELGIUM FIGURE 02

Electric vehicle registrations and share of new passenger vehicle registrations in the metropolitan regions in Belgium, 2019.



BELGIUM FIGURE 03

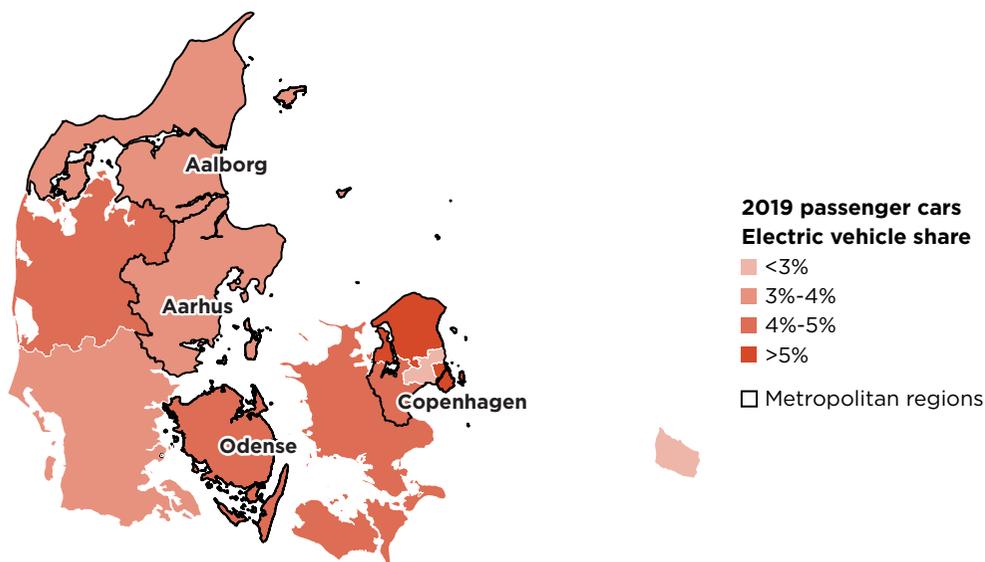
Distribution of models among new electric vehicle registrations in Belgium, 2019.

DENMARK

2019 EV sales share: 4.1% | 2019 EV sales: 9,300 | Cumulative EV sales: 23,600
2019 public charge points: 2,244 regular, 449 DC fast | Population: 5.8 million

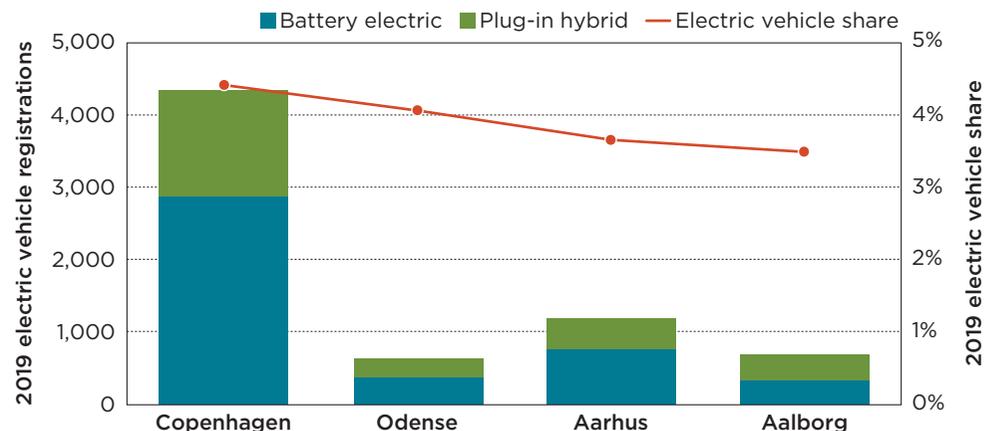
In 2019, Denmark's electric vehicle sales share reached 4.1%, above the European average, and its electric vehicle sales doubled from 2018. Electric vehicle sales in Denmark have been turbulent as a result of shifting taxation policies: the sales share reached 2.1% in 2015, at that time the fourth highest on the continent, before dropping below 1% during the following two years. In 2019, the relatively high vehicle tax was waived for BEVs, representing a substantial financial incentive. In 2020, the policy was changed to an 80% tax reduction. The capital region of Copenhagen had the highest number of electric vehicle registrations in 2019 and the greatest electric registration share of the country's four metropolitan regions.

BEVs represented 59% of the Danish electric vehicle market in 2019, similar to the European average. The Tesla Model 3 accounted for approximately a quarter of all new electric vehicle registrations; electrified models from Hyundai and Kia were also popular in Denmark.



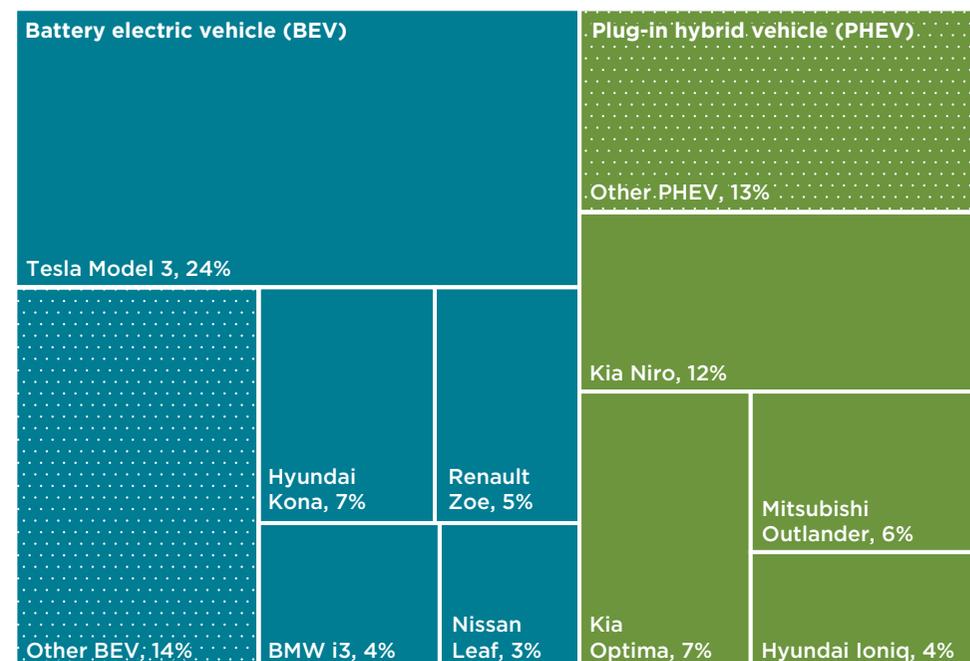
DENMARK FIGURE 01

Electric vehicle share of 2019 new vehicle registrations in Denmark. New vehicle registration data are from IHS Markit; Copyright © IHS Markit, 2020. All rights reserved.



DENMARK FIGURE 02

Electric vehicle registrations and share of new passenger vehicle registrations in the metropolitan regions in Denmark, 2019.



DENMARK FIGURE 03

Distribution of models among new electric vehicle registrations in Denmark, 2019.

FINLAND

2019 EV sales share: 6.9% | 2019 EV sales: 7,900 | Cumulative EV sales: 23,600
2019 public charge points: 1,786 regular, 333 DC fast | Population: 5.5 million

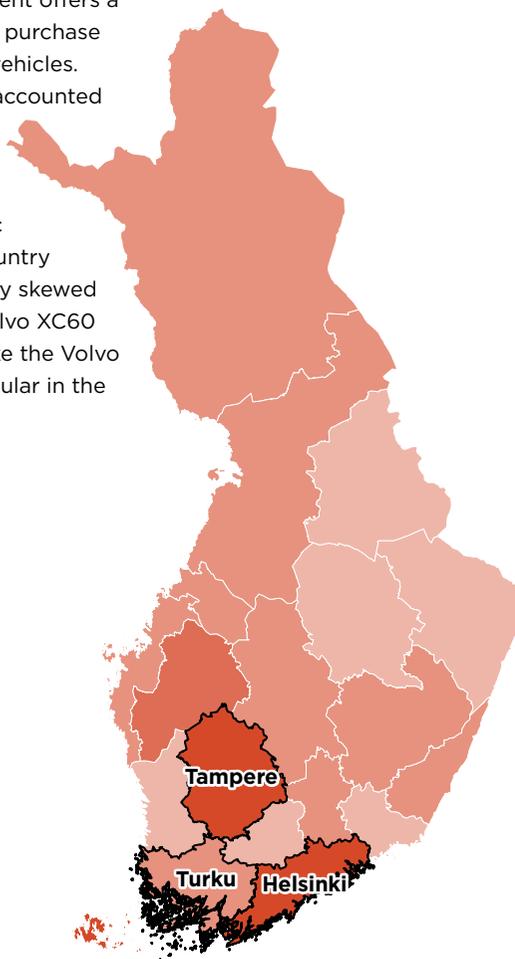
Finland recorded a 6.9% electric vehicle sales share in 2019, the fourth highest on the European continent. The national government offers a €2,000 purchase incentive and substantial purchase and ownership tax reductions for electric vehicles. Helsinki, Finland's capital and largest city, accounted for over half of the country's electric vehicle registrations and recorded a 9% registration share.

PHEVs accounted for 76% of all electric vehicle sales in Finland in 2019, and the country has been the market in Europe most heavily skewed toward PHEVs since 2016. SUVs like the Volvo XC60 and Mitsubishi Outlander, and large cars like the Volvo V60 and BMW 530e, were particularly popular in the Finnish market.

2019 passenger cars Electric vehicle share

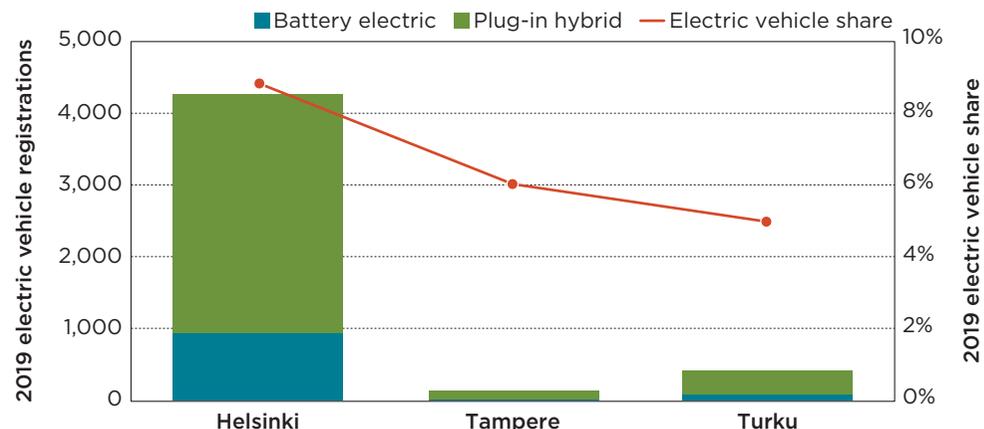
- <4%
- 4%-5%
- 5%-6%
- >6%

Metropolitan regions



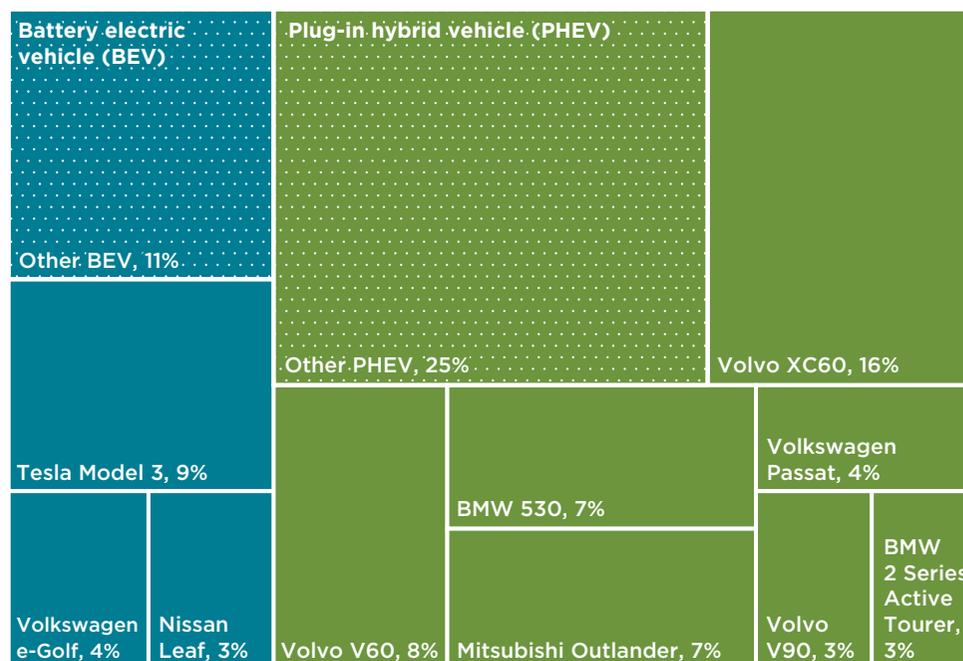
FINLAND FIGURE 01

Electric vehicle share of 2019 new vehicle registrations in Finland. New vehicle registration data are from IHS Markit; Copyright © IHS Markit, 2020. All rights reserved.



FINLAND FIGURE 02

Electric vehicle registrations and share of new passenger vehicle registrations in the metropolitan regions in Finland, 2019.



FINLAND FIGURE 03

Distribution of models among new electric vehicle registrations in Finland, 2019.

FRANCE

2019 EV sales share: 2.8% | 2019 EV sales: 61,500 | Cumulative EV sales: 227,000
2019 public charge points: 27,661 regular, 2,040 DC fast | Population: 67 million

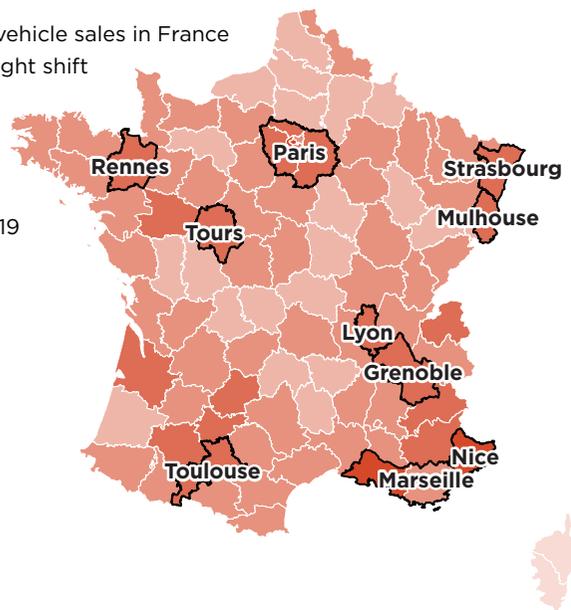
France's electric vehicle market has been characterized by steady growth, with sales increasing 25-35% annually since 2015. Electric vehicle purchases are incentivized by the country's CO₂-based bonus-malus system, which offers up to €6,000 (through mid-2020) for the purchase of a new BEV. In 2020, France announced €8 billion in funding for the auto sector, including increasing the BEV bonus to €7,000, a new €2,000 bonus for PHEVs, charging infrastructure funding, and incentives for companies to manufacture electric vehicles in France.⁹ The capital region of Paris had the most electric vehicle registrations and an electric registration share of 4.1%, while Nice had the highest electric registration share at 4.4%.

BEVs represented 70% of electric vehicle sales in France in 2019, although France has seen a slight shift toward a more even BEV-PHEV split from 2015 through 2019. The Renault Zoe, produced in France, was by far the most popular electric vehicle in the country, accounting for 30% of 2019 electric vehicle registrations.

2019 passenger cars Electric vehicle share

- <1%
- 1%-2%
- 2%-3%
- 3%-4%
- >4%

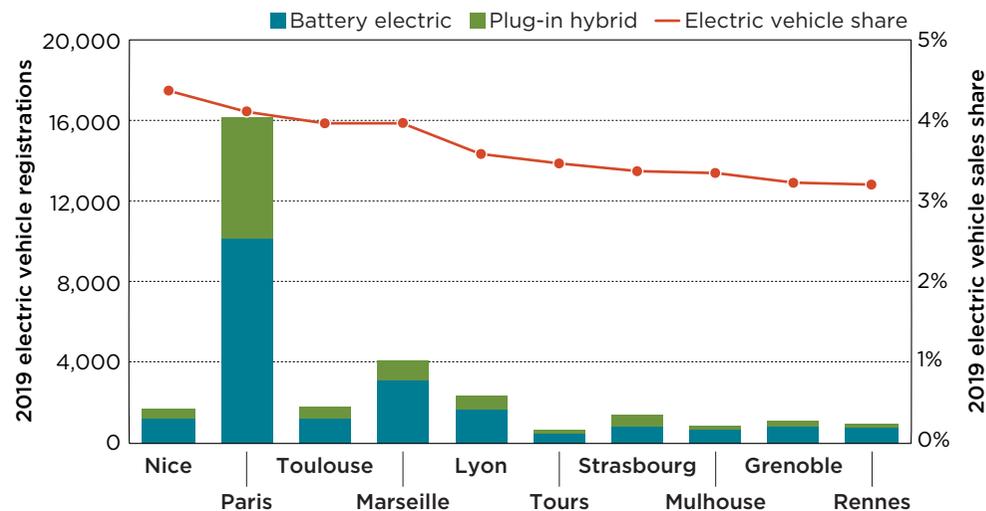
□ Selected metropolitan regions



FRANCE FIGURE 01

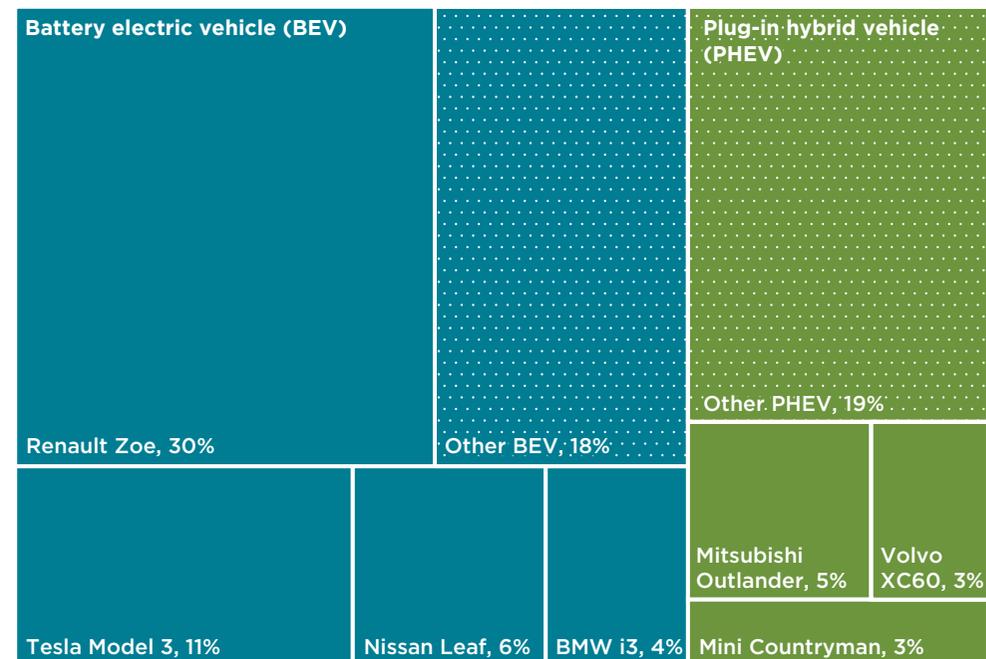
Electric vehicle share of 2019 new vehicle registrations in metropolitan France. New vehicle registration data are from IHS Markit; Copyright © IHS Markit, 2020. All rights reserved.

⁹ Élysée, "Plus verte et plus compétitive : notre plan de soutien à la filière automobile [Greener and more competitive: our support plan for the automotive industry]" May 26, 2020, <https://www.elysee.fr/emmanuel-macron/2020/05/26/plus-verte-et-plus-competitive-notre-plan-de-soutien-a-la-filiere-automobile>



FRANCE FIGURE 02

Electric vehicle registrations and share of new passenger vehicle registrations in the 10 metropolitan regions with the highest electric registration share in France, 2019.



FRANCE FIGURE 03

Distribution of models among new electric vehicle registrations in France, 2019.

GERMANY

2019 EV sales share: 3.0% | 2019 EV sales: 108,000 | Cumulative EV sales: 292,000
2019 public charge points: 47,832 regular, 4,169 DC fast | Population: 83 million

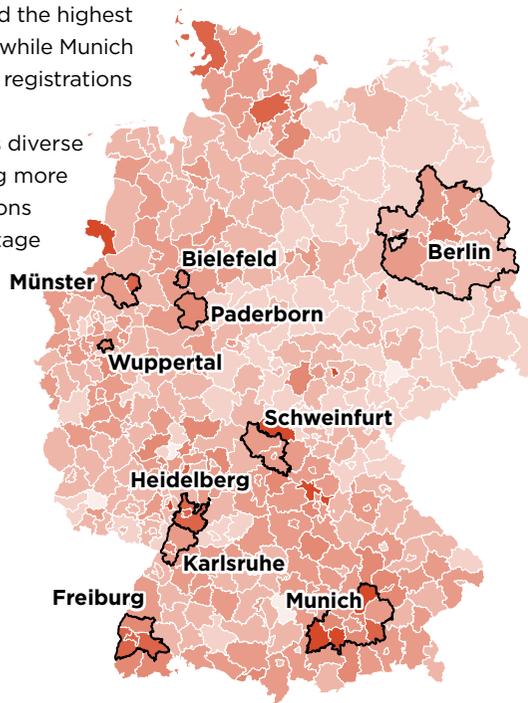
Europe's largest vehicle market, Germany, experienced a 3.0% electric vehicle sales share in 2019, an increase from the 1.9% share in 2018. The federal government has supported the adoption of electric vehicles with a financial subsidy of up to €3,000, as well as an exemption from the annual circulation tax for BEVs and fuel cell vehicles, and tax benefits for electric company cars. As a response to COVID-19, the government extended the bonus through 2025, with the bonus doubled until the end of 2021.¹⁰ Within Germany, electric vehicle uptake was highest in the provinces of Bavaria, Baden-Württemberg, and Schleswig-Holstein. Among the largest metropolitan regions, Berlin had the highest electric vehicle registrations share at 5.1%, while Munich had the highest number of electric vehicle registrations with nearly 12,000 new BEVs and PHEVs.

Germany's electric vehicle market was diverse in 2019, with no single model representing more than 8% of total electric vehicle registrations in 2019. Overall, BEVs held a slight advantage over PHEVs, representing 58% of sales.

2019 passenger cars Electric vehicle share

- <1%
- 1%-2%
- 2%-3%
- 3%-4%
- 4%-5%
- 5%-6%
- >6%

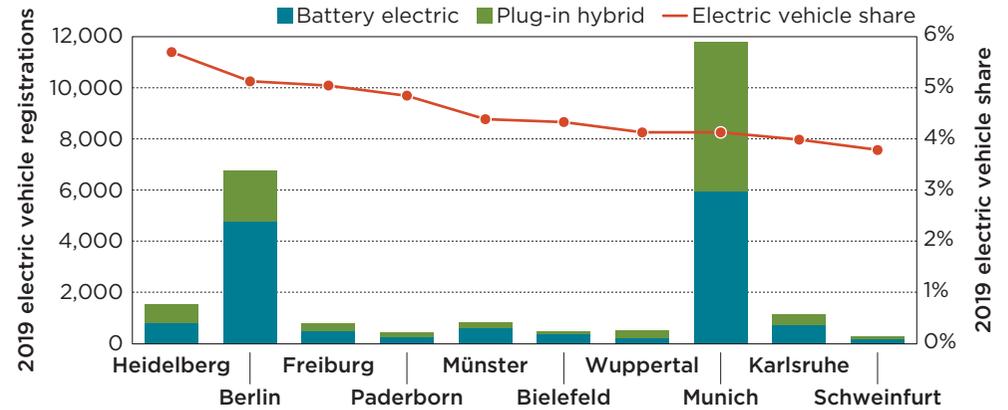
Selected metropolitan regions



GERMANY FIGURE 01

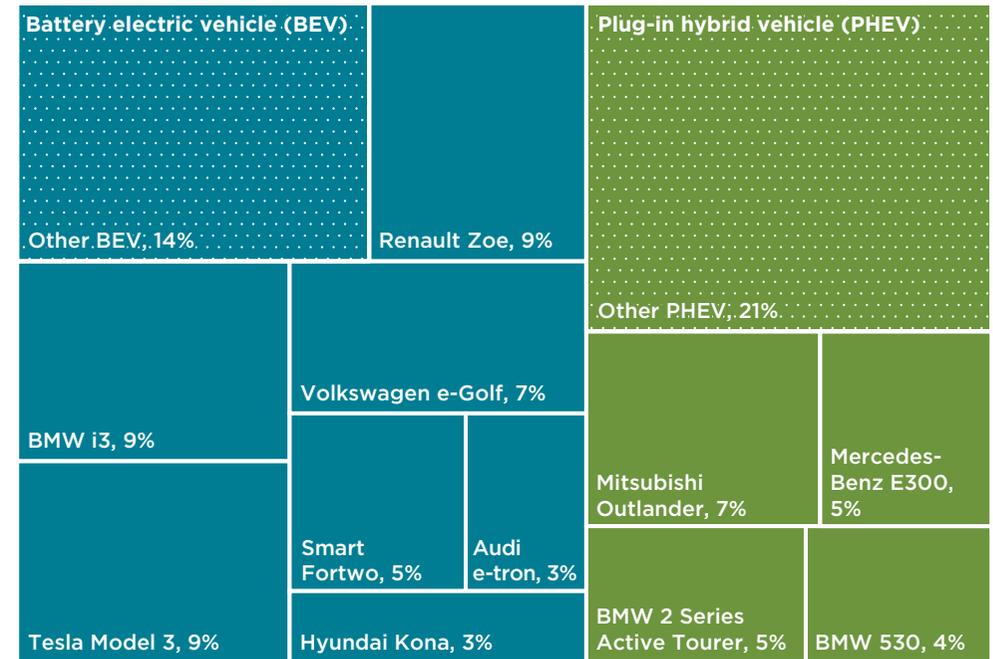
Electric vehicle share of 2019 new vehicle registrations in Germany. New vehicle registration data are from IHS Markit; Copyright © IHS Markit, 2020. All rights reserved.

¹⁰ Federal Ministry for the Economy and Export Control, "Erhöhter Umweltbonus für E-Autos [Increased environmental bonus for E-Autos]", June 1, 2020, https://www.bafa.de/SharedDocs/Kurzmeldungen/DE/Energie/Elektromobilitaet/2020_erhoehter_umweltbonus.html



GERMANY FIGURE 02

Electric vehicle registrations and share of new passenger vehicle registrations in the ten leading metropolitan regions in Germany, 2019.



GERMANY FIGURE 03

Distribution of models among new electric vehicle registrations in Germany, 2019.

HUNGARY

2019 EV sales share: 1.9% | 2019 EV sales: 2,900 | Cumulative EV sales: 6,400
2019 public charge points: 592 regular, 124 DC fast | Population: 9.8 million

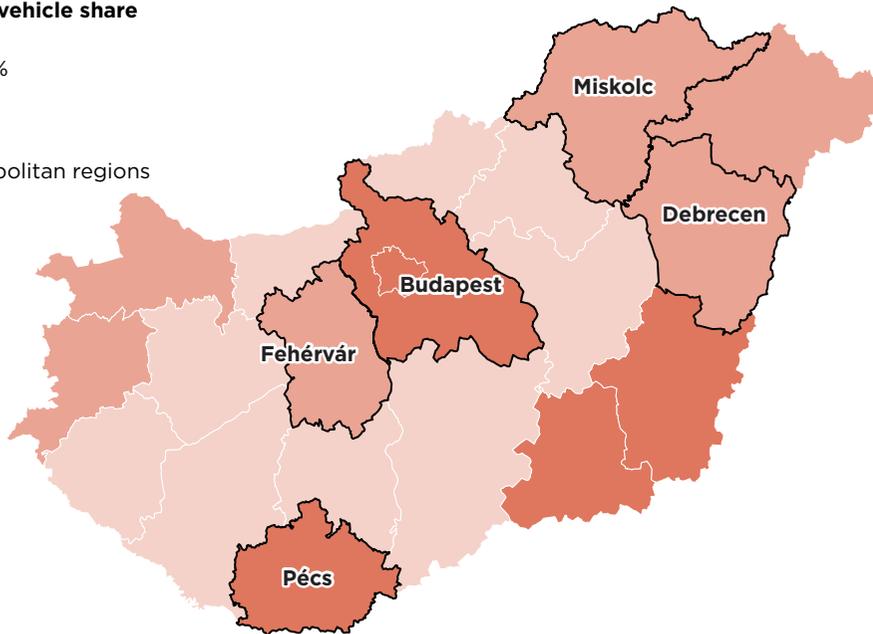
While Hungary's electric vehicle share of 1.9% in 2019 was below the European average, it was the highest among the countries in the eastern part of Europe. The country's electric vehicle sales increased by almost 50% over 2018. Both BEVs and PHEVs are fully exempt from one-time registration tax and annual ownership taxes for privately owned and company cars. The region of Budapest, Hungary's capital and largest city, accounted for over 60% of the country's electric vehicle registrations and had the highest electric registration share at 2.3%.

The Nissan LEAF was the most popular electric model, making up 12% of 2019 electric vehicle registrations; no other models had more than a 9% share. Overall, BEVs were 64% of 2019 electric vehicle registrations, mirroring the dynamic of the broader European market.

2019 passenger cars Electric vehicle share

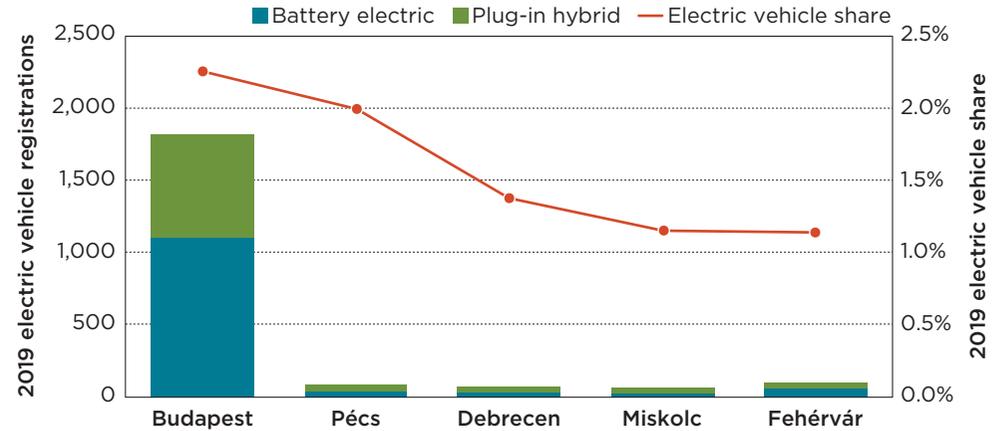
- <1%
- 1%-1.5%
- 1.5-2%
- >2%

□ Metropolitan regions



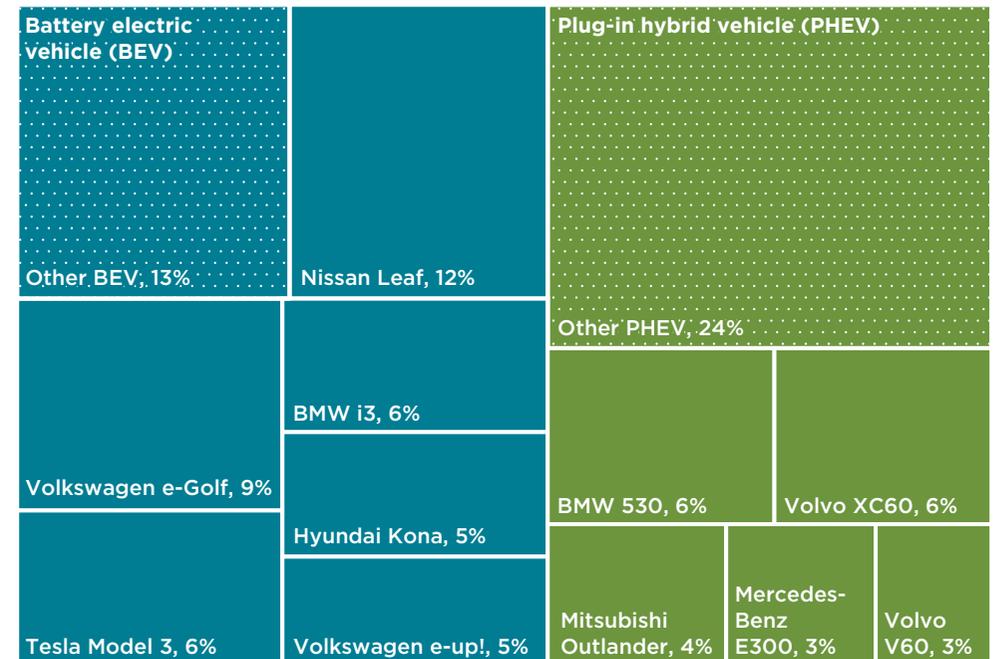
HUNGARY FIGURE 01

Electric vehicle share of 2019 new vehicle registrations in Hungary. New vehicle registration data are from IHS Markit; Copyright © IHS Markit, 2020. All rights reserved.



HUNGARY FIGURE 02

Electric vehicle registrations and share of new passenger vehicle registrations in the metropolitan regions in Hungary, 2019.



HUNGARY FIGURE 03

Distribution of models among new electric vehicle registrations in Hungary, 2019.

ITALY

2019 EV sales share: 0.9% | 2019 EV sales: 17,200 | Cumulative EV sales: 39,900
2019 public charge points: 8,312 regular, 864 DC fast | Population: 60 million

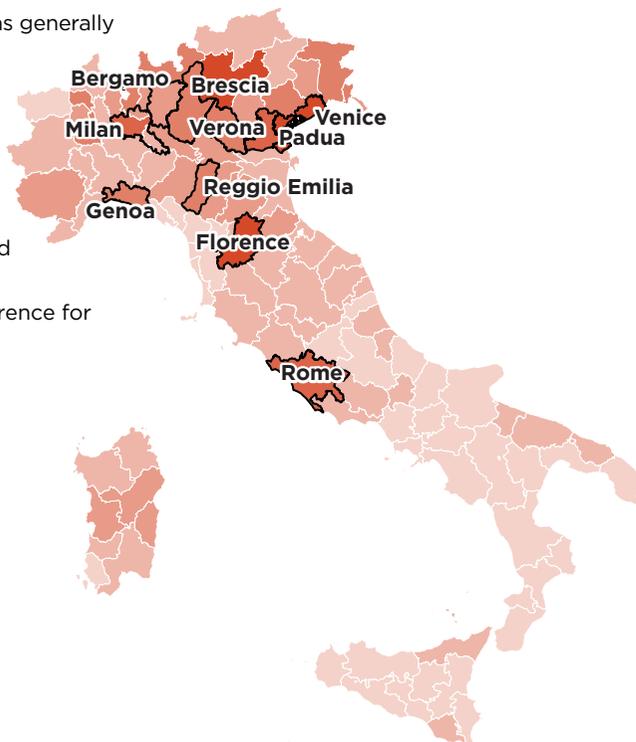
Despite being Europe's fourth-largest vehicle market, Italy's consumers have been slow to adopt electric vehicles, resulting in the country having a sales share below 1% in 2019. Nonetheless, electric vehicle sales increased by 75% from 2018 to 2019, indicating that a transition to electric may be in progress. The national government provides bonus purchase payments of €4,000 for BEVs and €2,500 for most PHEVs. The country also exempts electric vehicles from annual ownership tax, and some regions offering additional tax incentives. The electric vehicle registration share in Venice was over 3%, triple the national average; the Florence region, with the second highest registration share, had the most electric registrations on an absolute basis. The electric share in the northern regions of the country was generally higher than in the south.

Similar to the European market overall, BEVs made up 62% of Italy's electric vehicle sales in 2019. The Smart Fortwo, Renault Zoe, Tesla Model 3, and Mini Countryman each represented 11-12% of new electric vehicle registrations, illustrating the preference for smaller cars in the Italian market.

2019 passenger cars Electric vehicle share

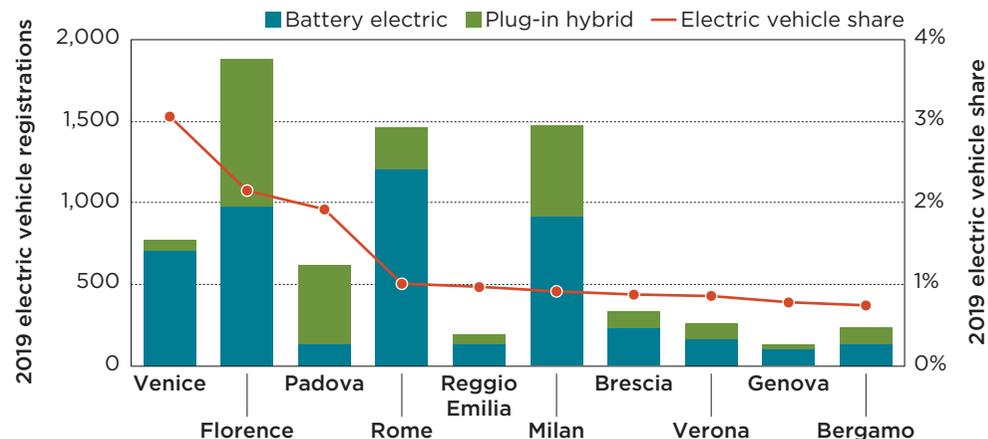
- <0.25%
- 0.25%-0.5%
- 0.5%-0.75%
- 0.75%-1%
- 1%-2%
- >2%

□ Selected metropolitan regions



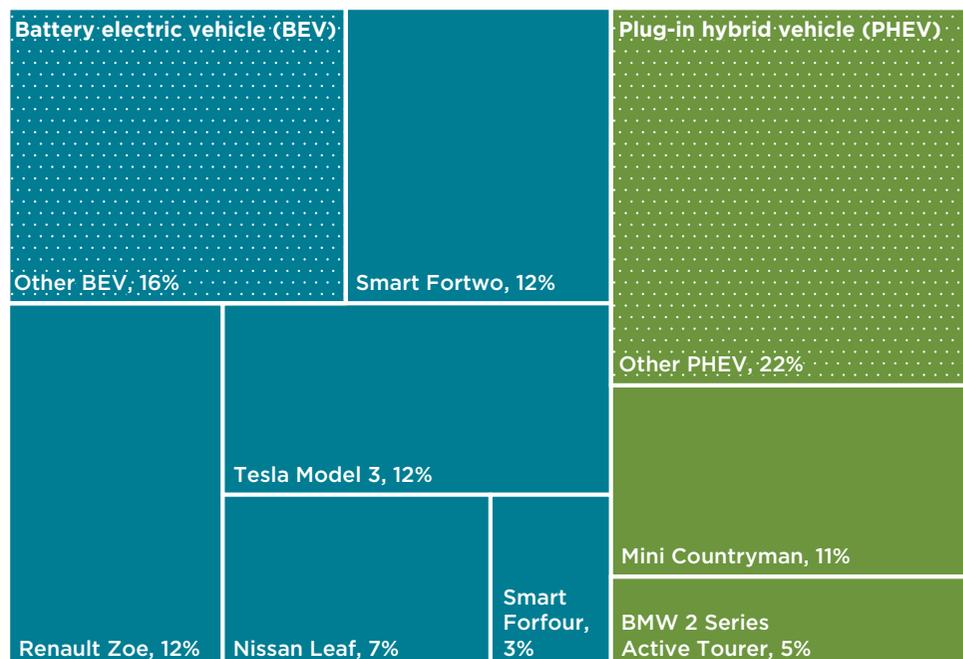
ITALY FIGURE 01

Electric vehicle share of 2019 new vehicle registrations in Italy. New vehicle registration data are from IHS Markit; Copyright © IHS Markit, 2020. All rights reserved.



ITALY FIGURE 02

Electric vehicle registrations and share of new passenger vehicle registrations in the 10 metropolitan regions with the highest electric registration share in Italy, 2019.



ITALY FIGURE 03

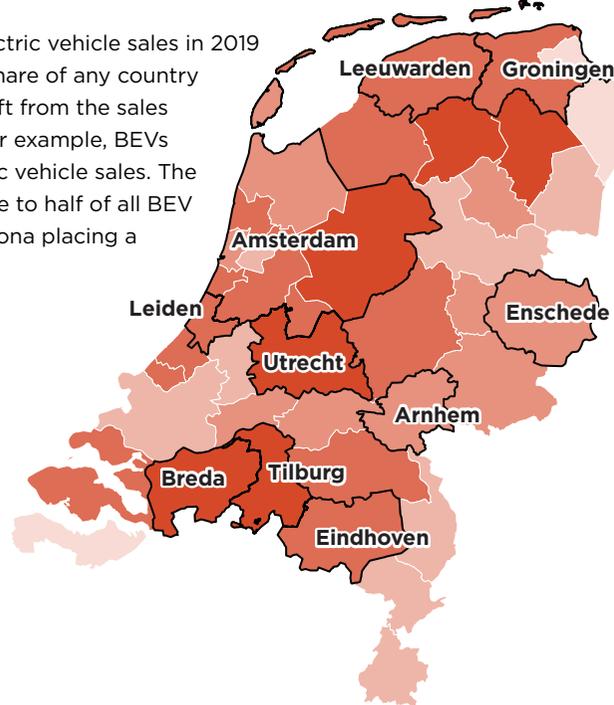
Distribution of models among new electric vehicle registrations in Italy, 2019.

NETHERLANDS

2019 EV sales share: 15% | 2019 EV sales: 67,600 | Cumulative EV sales: 212,000
2019 public charge points: 49,520 regular, 1,072 DC fast | Population: 17 million

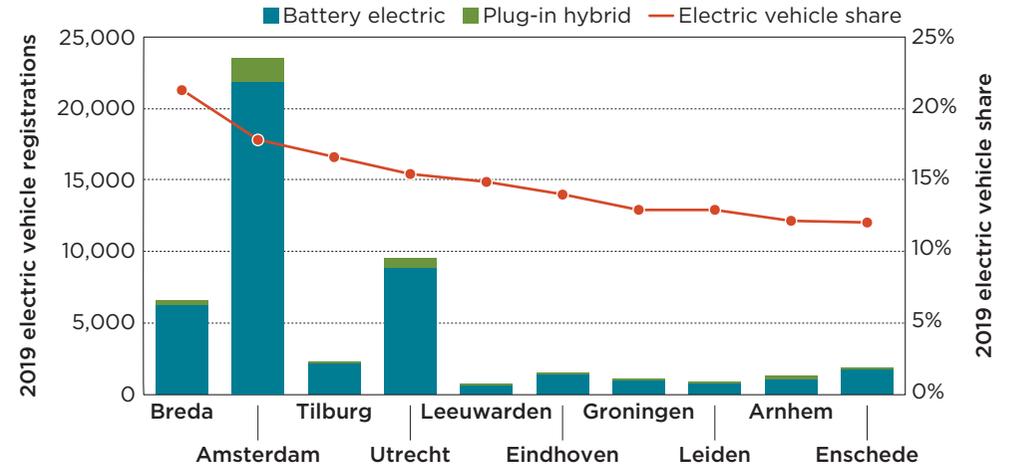
The Netherlands has the third-highest electric vehicle sales share of any country in Europe. Electric vehicle sales in the country increased by 150% from 2018 to 2019 following several turbulent years in which changing taxation rates led to fluctuating electric vehicle sales patterns. BEVs are fully exempted from registration tax and, in 2020, company BEVs used privately receive a 64% discount on the benefit tax rate. Electric vehicles in the Netherlands also benefit from a comprehensive charging network, as the Netherlands has the most public chargers of any country in Europe on an absolute, per capita, and per electric vehicle basis. The national government has set a target of all electric vehicle sales by 2030, while the largest city, Amsterdam, plans to require that all transport be emissions-free by the same year.

BEVs represented 93% of electric vehicle sales in 2019 in the Netherlands, the highest share of any country in Europe. This marks a sharp shift from the sales patterns in years past; in 2016, for example, BEVs accounted for only 18% of electric vehicle sales. The Tesla Model 3 accounted for close to half of all BEV registrations, with the Hyundai Kona placing a distant second.



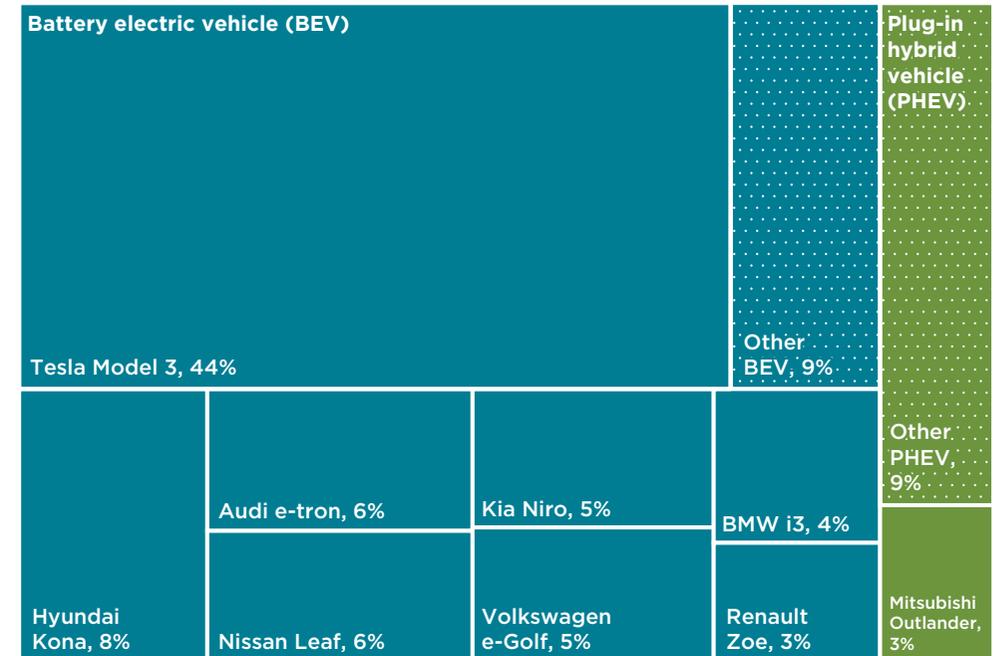
NETHERLANDS FIGURE 01

Electric vehicle share of 2019 new vehicle registrations in the European Netherlands. New vehicle registration data are from IHS Markit; Copyright © IHS Markit, 2020. All rights reserved.



NETHERLANDS FIGURE 02

Electric vehicle registrations and share of new passenger vehicle registrations in the 10 metropolitan regions with the highest electric registration share in the Netherlands, 2019.



NETHERLANDS FIGURE 03

Distribution of models among new electric vehicle registrations in the Netherlands, 2019.

NORWAY

2019 EV sales share: 58% | 2019 EV sales: 86,200 | Cumulative EV sales: 334,000
2019 public charge points: 10,337 regular, 3,426 DC fast | Population: 5.4 million

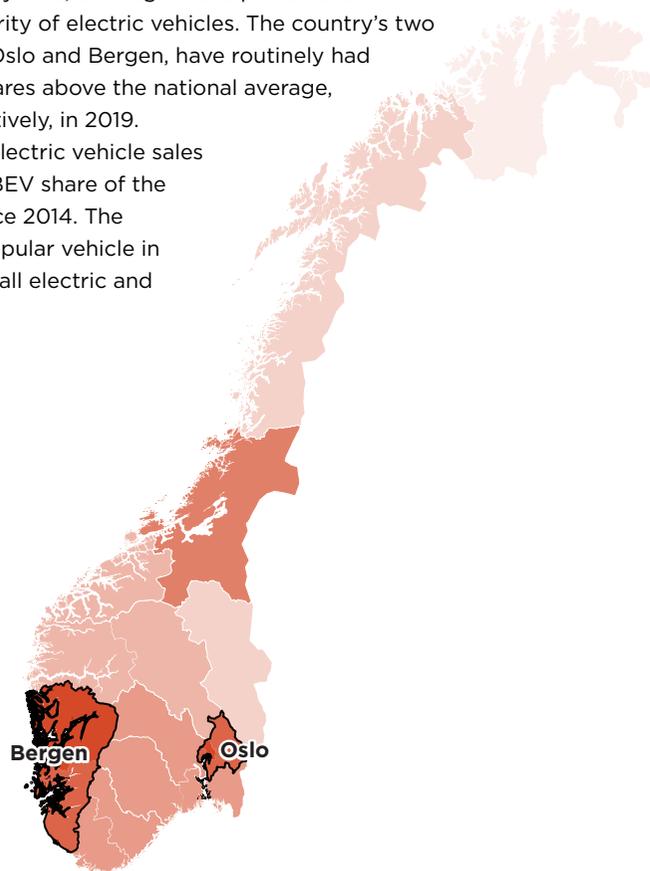
Norway is the only country in the world with a majority of new vehicle sales being electric in 2019. In order to support its goal of all zero-emission vehicle sales by 2025, the country has pioneered many incentive programs, including exempting BEVs from the 25% VAT and import taxes. The country also allows BEVs to travel in bus lanes and offers reduced or free tunnel and ferry tolls, although these perks have since scaled back due to the popularity of electric vehicles. The country's two largest metropolitan regions, Oslo and Bergen, have routinely had electric vehicle registration shares above the national average, reaching 64% and 67% respectively, in 2019.

BEVs represented 76% of electric vehicle sales in 2019; this was the greatest BEV share of the Norwegian electric market since 2014. The Tesla Model 3 was the most popular vehicle in the Norwegian market among all electric and combustion-engine models.

2019 passenger cars Electric vehicle share

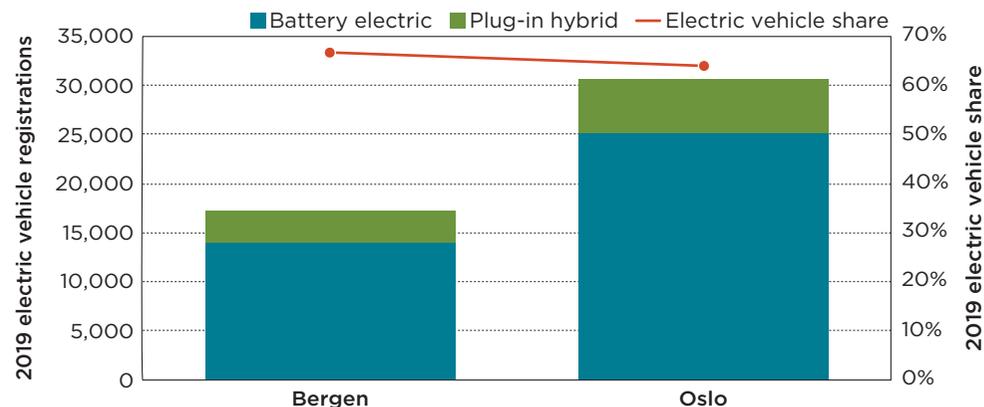
- <40%
- 40%-45%
- 45%-50%
- 50%-55%
- 55%-60%
- 60%-65%
- >65%

□ Metropolitan regions



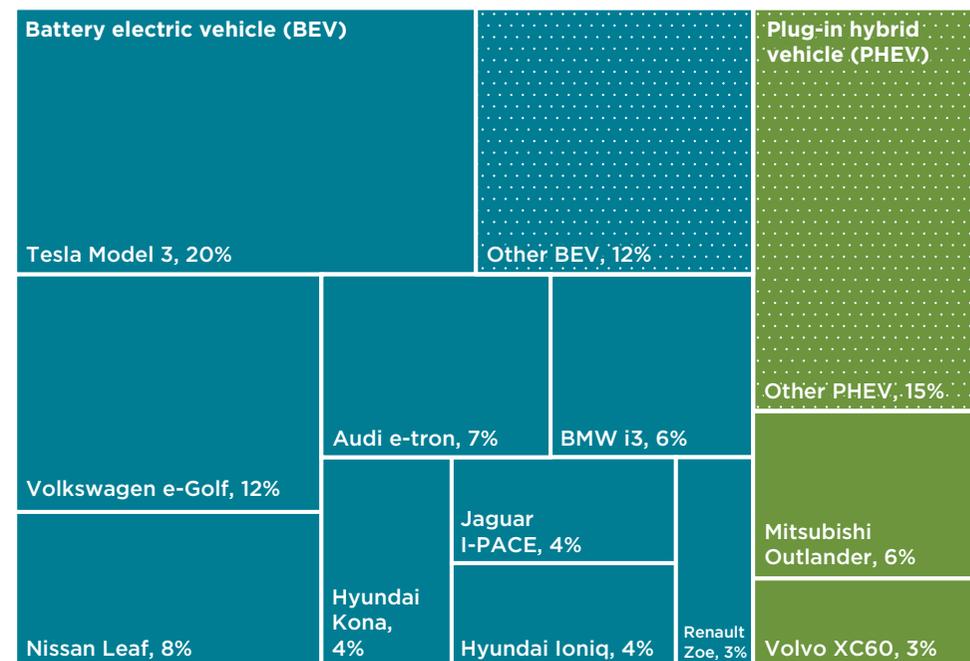
NORWAY FIGURE 01

Electric vehicle share of 2019 new vehicle registrations in Norway. New vehicle registration data are from IHS Markit; Copyright © IHS Markit, 2020. All rights reserved.



NORWAY FIGURE 02

Electric vehicle registrations and share of new passenger vehicle registrations in the metropolitan regions in Norway, 2019.



NORWAY FIGURE 03

Distribution of models among new electric vehicle registrations in Norway, 2019.

POLAND

2019 EV sales share: 0.5% | 2019 EV sales: 2,600 | Cumulative EV sales: 5,600
2019 public charge points: 529 regular, 308 DC fast | Population: 38 million

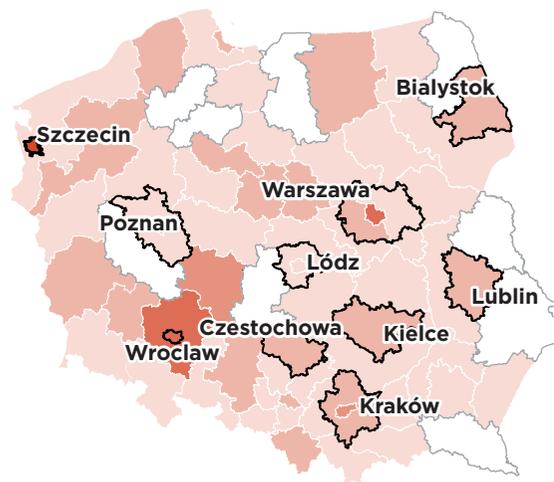
Poland is in the early stages of its transition to electric vehicles, with a 2019 sales share of 0.5%, more than double that of 2018. The government has announced incentives to support this target, which were implemented in June 2020. Additionally, the government intends to create new economic growth around electric vehicles, particularly battery manufacturing.¹¹ For example, the LG Chem battery factory, already one of the largest battery plants in Europe, is set to be more than doubled in capacity.¹²

BEVs held only a slight edge over PHEVs in 2019 at 56% of electric vehicle sales. The BMW i3 was the single most popular model and accounted for over a quarter of the market; BMW also produced the two most popular plug-in hybrids, the Mini Countryman and the 530.

2019 passenger cars Electric vehicle share

- 0
- <0.2%
- 0.2%-0.5%
- 0.5%-0.75%
- 0.75%-1%
- >1%

Selected metropolitan regions

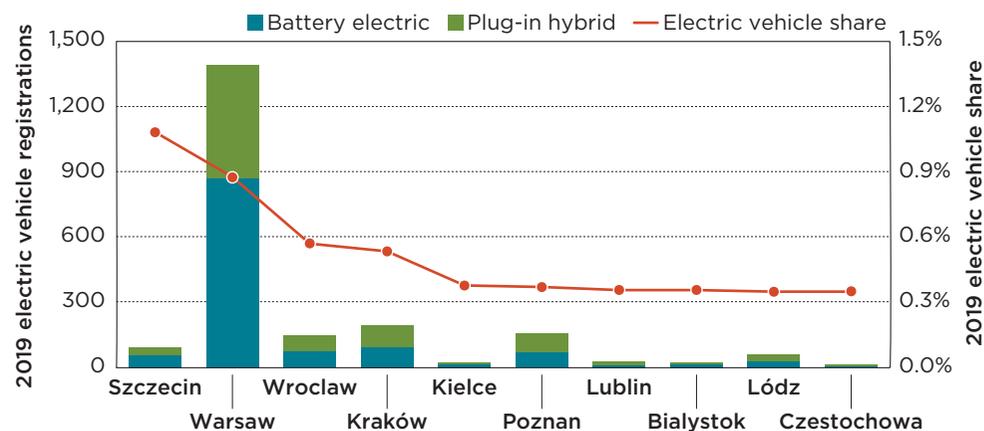


POLAND FIGURE 01

Electric vehicle share of 2019 new vehicle registrations in Poland. New vehicle registration data are from IHS Markit; Copyright © IHS Markit, 2020. All rights reserved.

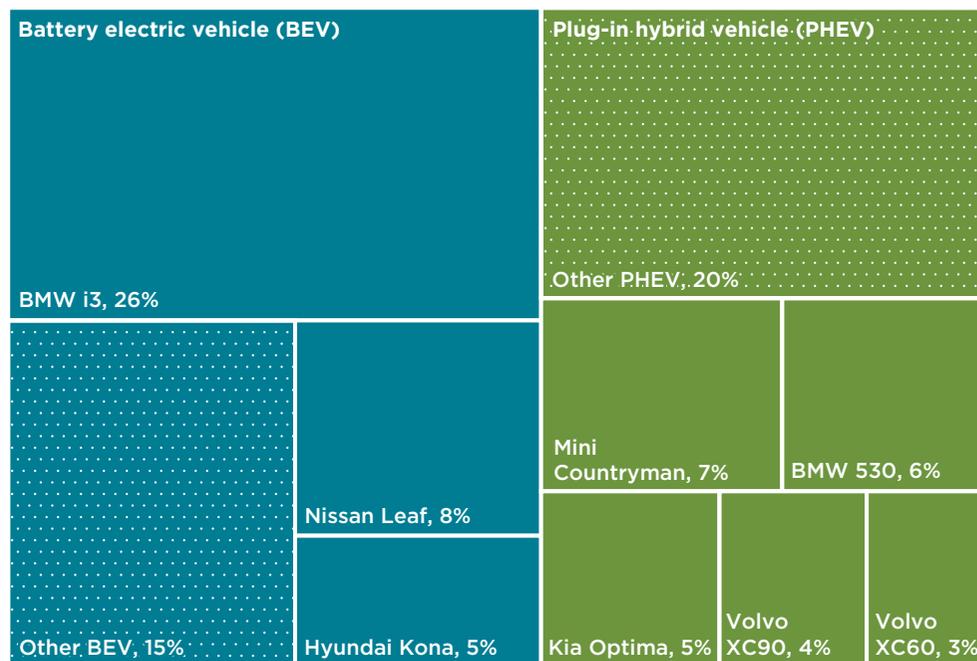
11 Ministry of Enterprise and Technology, "Zaproszenie do składania projektów wpisujących się w łańcuch wartości pełnego cyklu życia baterii nowej generacji dla pojazdów oraz stacjonarnych systemów magazynowania energii [Invitation to submit projects that fit into the new generation full life cycle value chain for vehicles and stationary energy storage systems]," April 16, 2019, <https://www.gov.pl/web/rozwoj/zaproszenie-do-skladania-projektow-wpisujacych-sie-w-lancuch-wartosci-pelnego-cyklu-zycia-baterii-nowej-generacji-dla-pojazdow-oraz-stacjonarnych-systemow-magazynowania-energii>

12 Soo-hwan Lee, "'더 많이 더 빠르게'...LG화학, 폴란드 공장 생산성 70% 확대 [LG Chem expands Poland plant productivity by 70%]," 전자부품 전문 미디어 디일렉, March 25, 2020, <http://www.thelec.kr/news/articleView.html?idxno=5444>.



POLAND FIGURE 02

Electric vehicle registrations and share of new passenger vehicle registrations in the 10 metropolitan regions with the highest electric registration share in Poland, 2019.



POLAND FIGURE 03

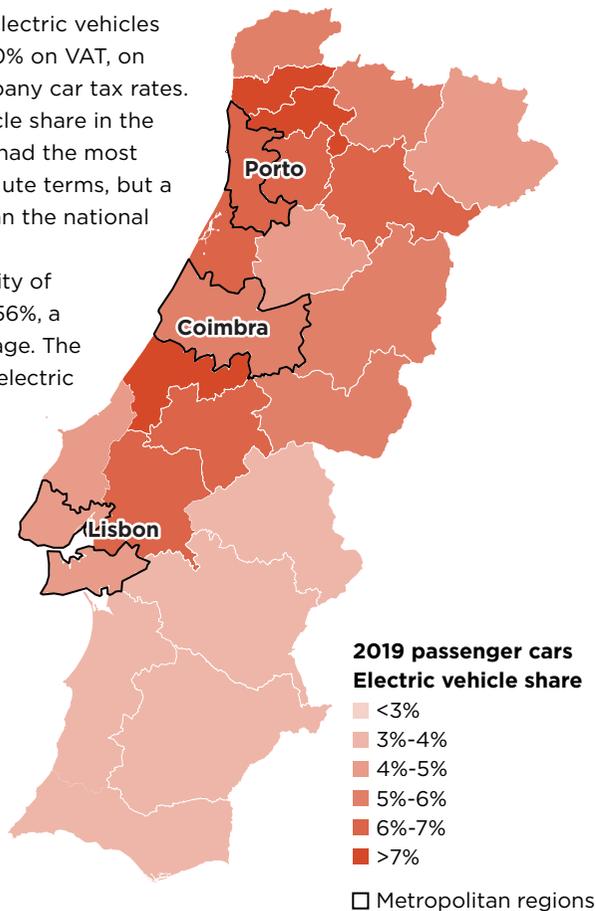
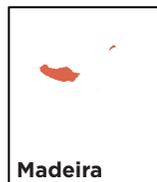
Distribution of models among new electric vehicle registrations in Poland, 2019.

PORTUGAL

2019 EV sales share: 5.7% | 2019 EV sales: 12,700 | Cumulative EV sales: 28,900
2019 public charge points: 1,471 regular, 236 DC fast | Population: 10 million

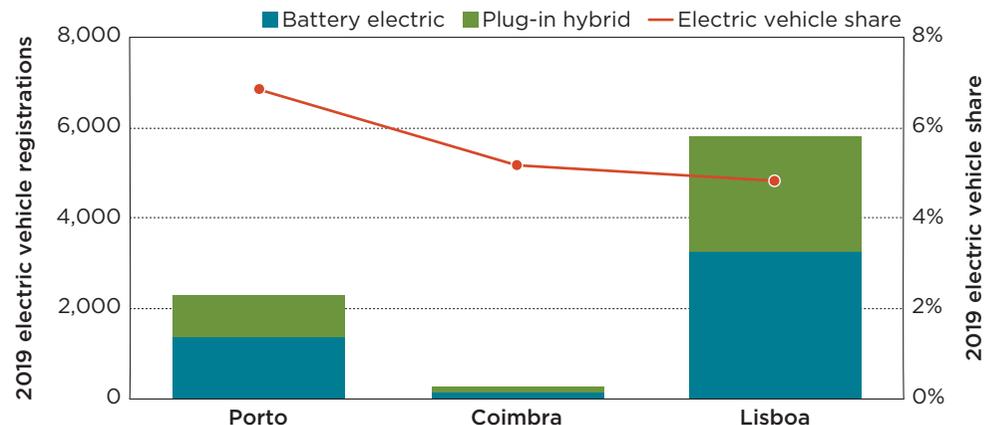
Portugal is the most advanced electric vehicle market in southern parts of Europe with an electric vehicle sales share of almost 6% in 2019, up from 3.5% one year earlier. The government fully exempts BEVs from its car tax and offers PHEVs a 75% discount; electric vehicles also receive discounts of at least 50% on VAT, on annual circulation tax, and on company car tax rates. Porto had the highest electric vehicle share in the country at 7%. The capital, Lisbon, had the most electric vehicle registration in absolute terms, but a lower electric registration share than the national average at 4.8%.

BEVs represented a slight majority of electric vehicle sales in Portugal at 56%, a share just below the European average. The Nissan LEAF was the most popular electric model, but no model commanded more than a 14% market share.



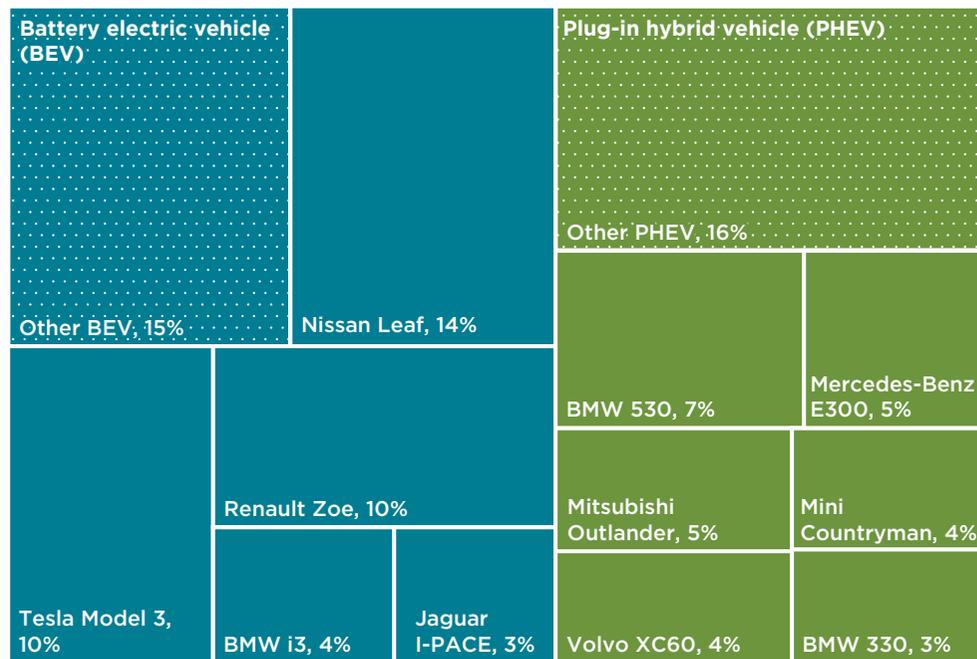
PORTUGAL FIGURE 01

Electric vehicle share of 2019 new vehicle registrations in Portugal. New vehicle registration data are from IHS Markit; Copyright © IHS Markit, 2020. All rights reserved.



PORTUGAL FIGURE 02

Electric vehicle registrations and share of new passenger vehicle registrations in the metropolitan regions in Portugal, 2019.



PORTUGAL FIGURE 03

Distribution of models among new electric vehicle registrations in Portugal, 2019.

SPAIN

2019 EV sales share: 1.4% | 2019 EV sales: 17,900 | Cumulative EV sales: 46,400
2019 public charge points: 4,500 regular, 1,003 DC fast | Population: 47 million

Spain has steadily increased its electric vehicle share, reaching 1% for the first time in 2019. The country's MOVES (Programa de Incentivos a la Movilidad Eficiente y Sostenible) incentive program, instituted in 2019, provides up to €5,500 as part of a vehicle scrappage scheme. In June 2020, the MOVES program was extended, providing up to €4,000 for the purchase of a BEV while continuing the scrappage scheme. In addition, battery electric, plug-in hybrid, and conventional hybrid cars pay no vehicle registration taxes and have reduced company car taxation. The autonomous communities of Catalonia, Madrid, and the Canary Islands had the highest electric vehicle uptake. Spain's capital, Madrid, accounted for over half of the country's electric vehicle registrations by volume.

BEVs held a slight advantage over PHEVs in 2019 registrations. Although the Tesla Model 3 narrowly led the Nissan LEAF and Mini Countryman PHEV as the most popular model, no single model accounted for over 9% of the electric vehicle market.

2019 passenger cars Electric vehicle share

- <0.5%
- 0.5%-1.0%
- 1.0%-1.5%
- 1.5%-2.0%
- >2.0%

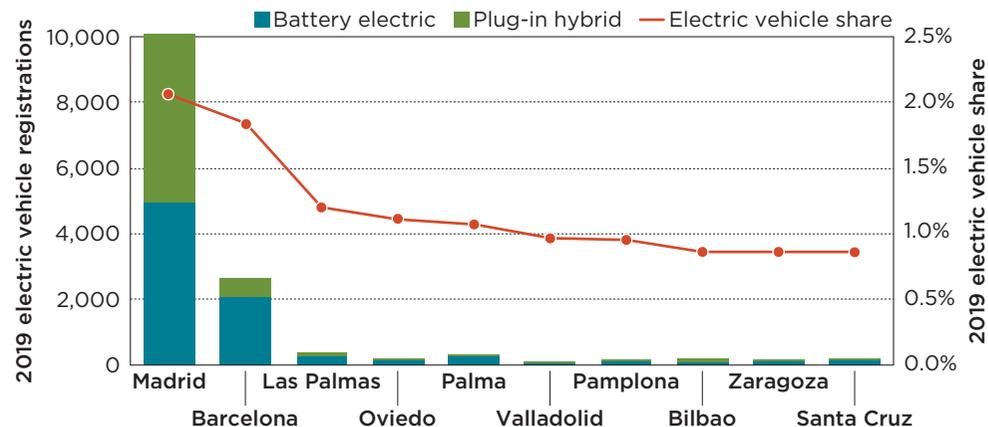
Selected metropolitan regions

Canary Islands



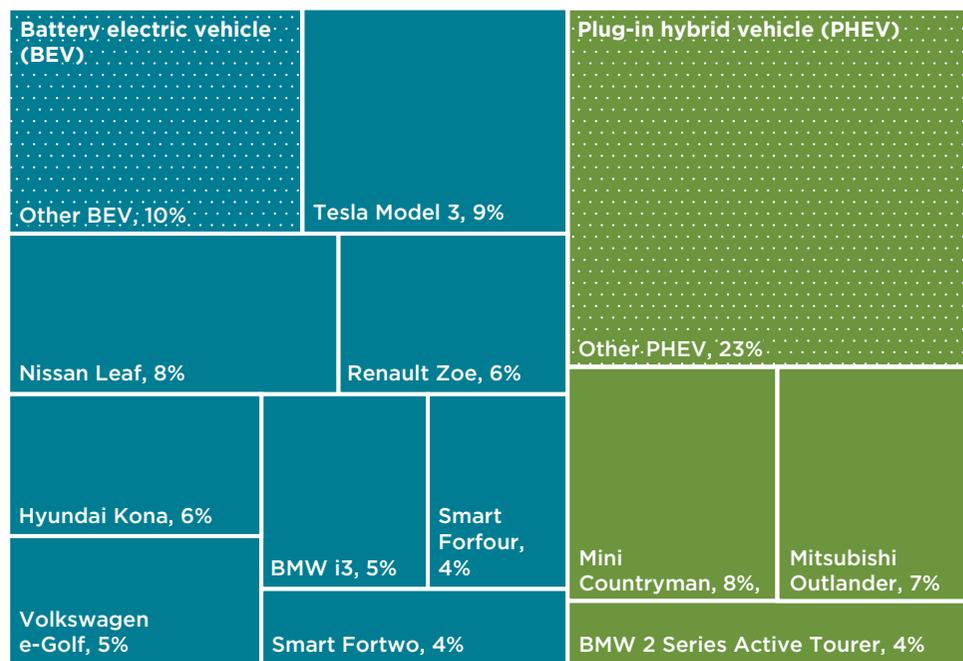
SPAIN FIGURE 01

Electric vehicle share of 2019 new vehicle registrations in Spain. New vehicle registration data are from IHS Markit; Copyright © IHS Markit, 2020. All rights reserved.



SPAIN FIGURE 02

Electric vehicle registrations and share of new passenger vehicle registrations in the 10 metropolitan regions with the highest electric registration share in Spain, 2019.



SPAIN FIGURE 03

Distribution of models among new electric vehicle registrations in Spain, 2019.

SWEDEN

2019 EV sales share: 11% | 2019 EV sales: 40,000 | Cumulative EV sales: 118,000
2019 public charge points: 4,036 regular, 1,030 DC fast | Population: 10 million

Sweden had the fourth highest electric vehicle sales share of any country in Europe in 2019, at 11%, and has seen steady growth since crossing the 1% sales share in 2014. After a series of unstable incentive programs since 2014, the national government introduced a bonus-malus taxation system in 2018 with bonus payments of up to 60,000 SEK (€5,700) and offers tax breaks for company cars. The country's capital of Stockholm, which had the highest registration share of any region at 17%, has created numerous programs to support public and private charging infrastructure. The city has also required the electrification of the municipal fleet.

Sweden is one of the few markets in Europe that saw more PHEV sales (61%) than BEV sales (39%) in 2019. The Mitsubishi Outlander PHEV was the most popular electric model, although Kia sold the most electric vehicles in total, followed by Tesla and Volvo.

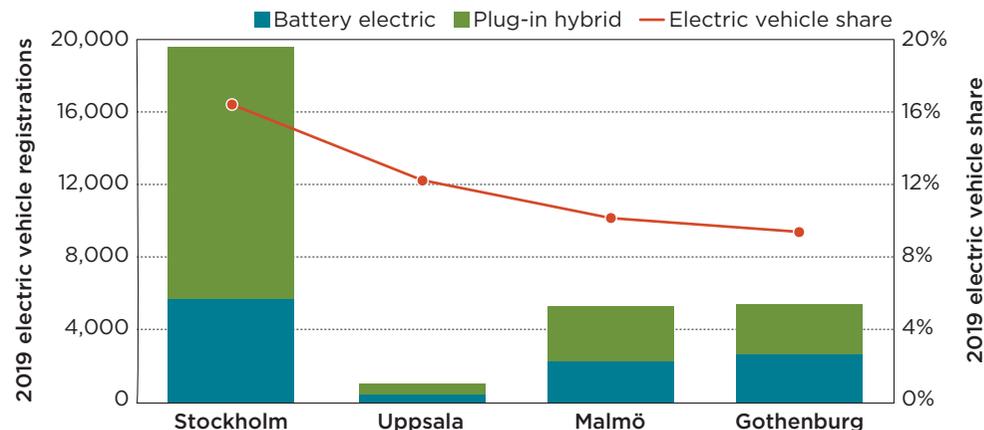


2019 passenger cars Electric vehicle share

- <5%
- 5%-7%
- 7%-9%
- 9%-11%
- >11%
- Metropolitan regions

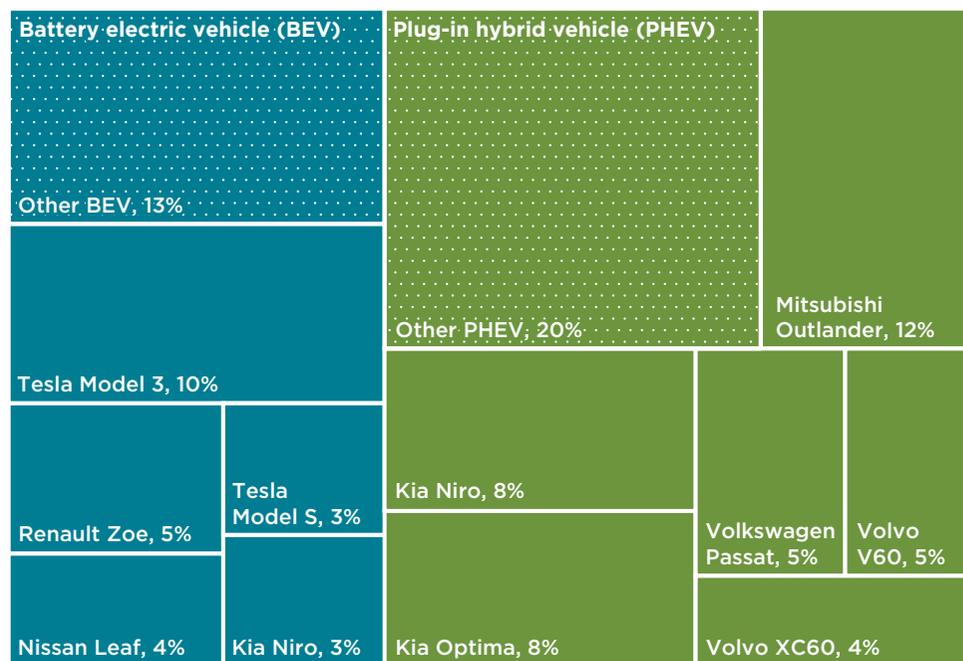
SWEDEN FIGURE 01

Electric vehicle share of 2019 new vehicle registrations in Sweden. New vehicle registration data are from IHS Markit; Copyright © IHS Markit, 2020. All rights reserved.



SWEDEN FIGURE 02

Electric vehicle registrations and share of new passenger vehicle registrations in the metropolitan regions in Sweden, 2019.



SWEDEN FIGURE 03

Distribution of models among new electric vehicle registrations in Sweden, 2019.

SWITZERLAND

2019 EV sales share: 5.6% | 2019 EV sales: 17,400 | Cumulative EV sales: 51,100
2019 public charge points: 5,414 regular, 786 DC fast | Population: 8.6 million

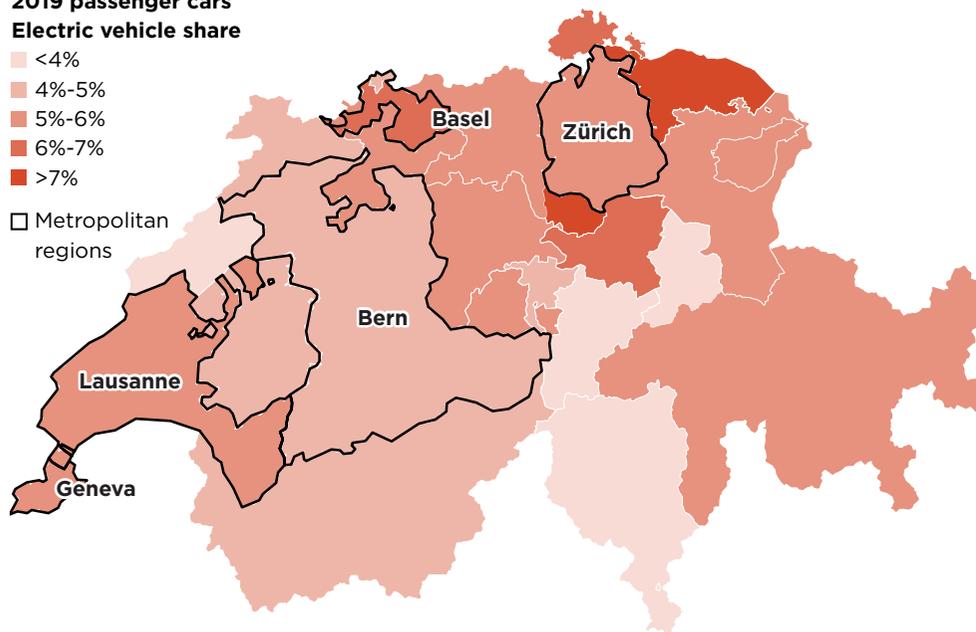
Switzerland's electric vehicle share of 5.6% in 2019 was above the European average and its electric vehicle sales increased 84% from 2018. This success has come despite a lack of national-level incentives or tax benefits for electric vehicles; however, several cantons, such as Zurich, do provide tax benefits. Public charging infrastructure in Switzerland is more developed than in neighboring countries, supported by the country's hydropower industry. While Lausanne had the highest electric vehicle share at 5.8%, uptake was generally similar across the country's major cities.

The Tesla Model 3 was by far the most popular electric model in Switzerland, with the Model S and Model X also placing in the top 10. Overall, the Swiss market strongly favored BEVs, which accounted for 13,100, or 76% of the country's 17,400 total electric vehicle sales.

2019 passenger cars Electric vehicle share

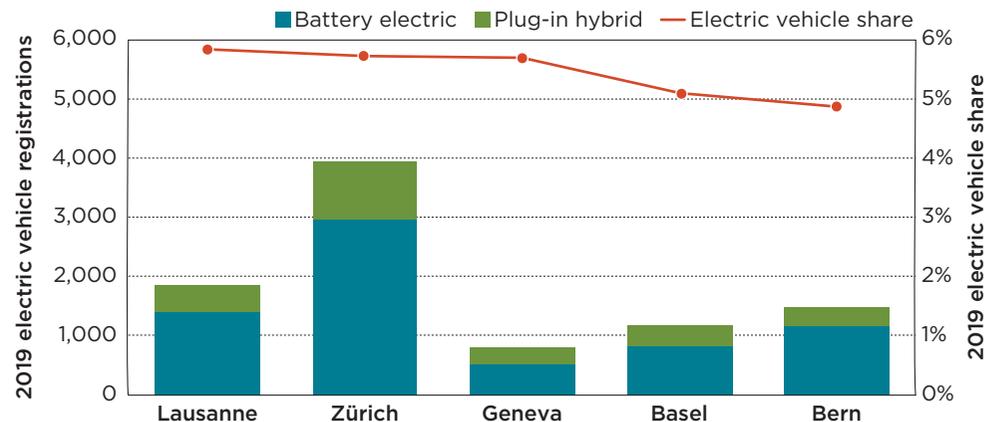
- <4%
- 4%-5%
- 5%-6%
- 6%-7%
- >7%

Metropolitan regions



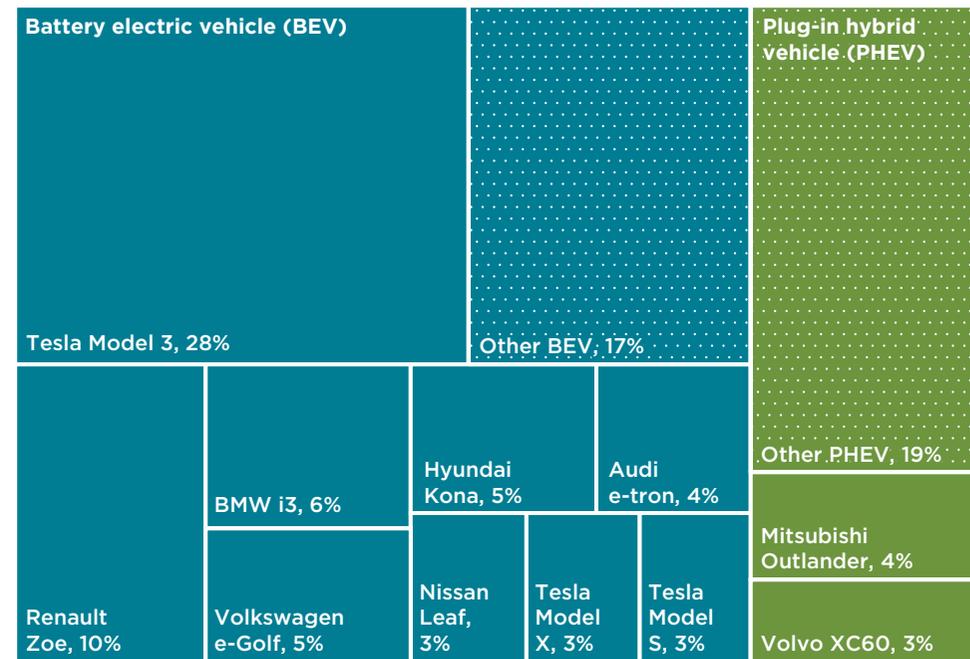
SWITZERLAND FIGURE 01

Electric vehicle share of 2019 new vehicle registrations in Switzerland. New vehicle registration data are from IHS Markit; Copyright © IHS Markit, 2020. All rights reserved.



SWITZERLAND FIGURE 02

Electric vehicle registrations and share of new passenger vehicle registrations in the metropolitan regions in Switzerland, 2019.



SWITZERLAND FIGURE 03

Distribution of models among new electric vehicle registrations in Switzerland, 2019.

UNITED KINGDOM

2019 EV sales share: 3.2% | 2019 EV sales: 74,400 | Cumulative EV sales: 270,700
2019 public charge points: 22,359 regular, 4,735 DC fast | Population: 67 million

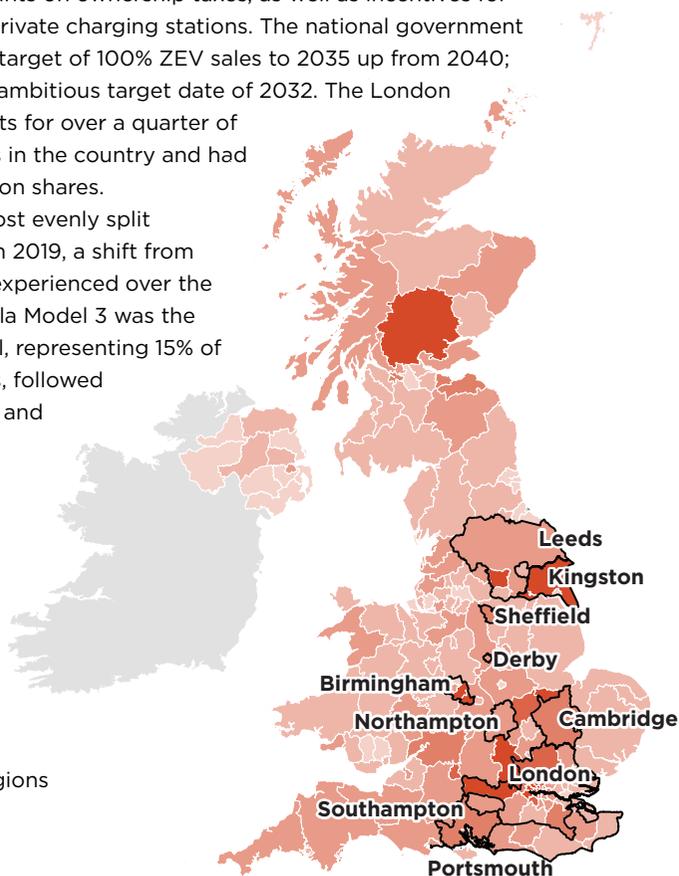
The United Kingdom (UK) is Europe's third-largest electric vehicle market by sales volume, with a sales share just below the European average. The government has supported electric vehicle adoption with plug-in car grants of up to £3,000 (€3,350) and discounts on ownership taxes, as well as incentives for the buildout of public and private charging stations. The national government is considering moving their target of 100% ZEV sales to 2035 up from 2040; Scotland has an even more ambitious target date of 2032. The London metropolitan region accounts for over a quarter of electric vehicle registrations in the country and had one of the highest registration shares.

The UK market was almost evenly split between BEVs and PHEVs in 2019, a shift from the majority-PHEV market experienced over the previous four years. The Tesla Model 3 was the most popular electric model, representing 15% of electric vehicle registrations, followed by the Mitsubishi Outlander and Nissan LEAF.

2019 passenger cars Electric vehicle share

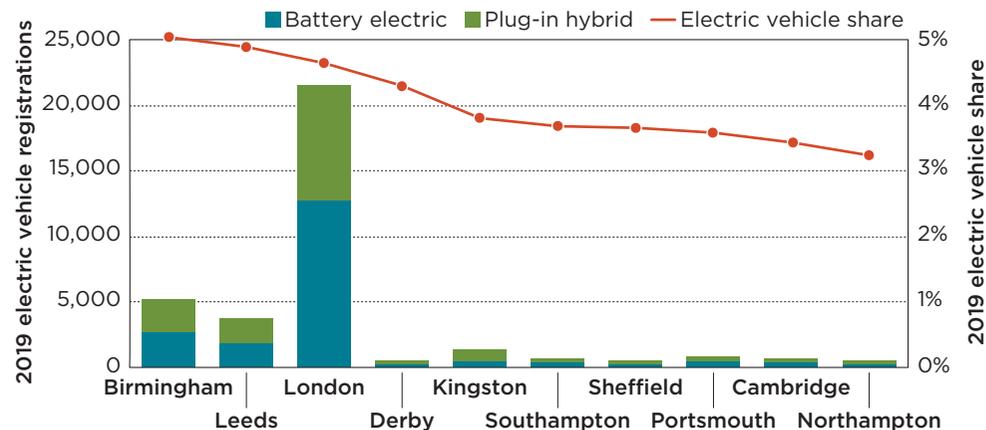
- <1%
- 1%-2%
- 2%-3%
- 3%-4%
- 4%-5%
- >5%

□ Selected metropolitan regions



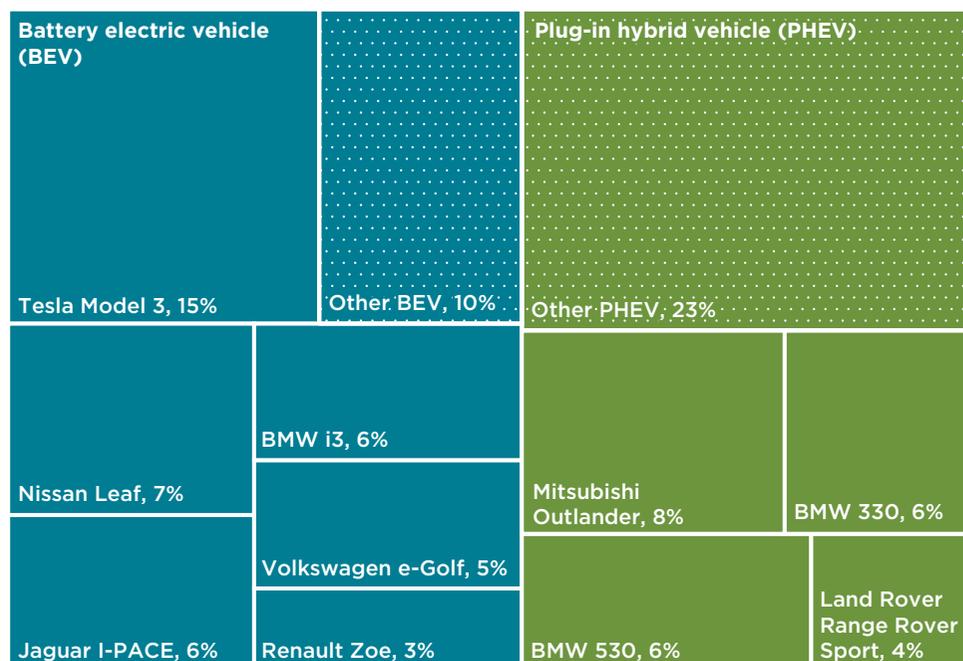
UNITED KINGDOM FIGURE 01

Electric vehicle share of 2019 new vehicle registrations in the UK. New vehicle registration data are from IHS Markit; Copyright © IHS Markit, 2020. All rights reserved.



UNITED KINGDOM FIGURE 02

Electric vehicle registrations and share of new passenger vehicle registrations in the 10 metropolitan regions with the highest electric registration share in the UK, 2019.



UNITED KINGDOM FIGURE 03

Distribution of models among new electric vehicle registrations in the UK, 2019.

