

Success factors in Electric Vehicle policy: market evolution and EV incentives in selected European countries

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Introduction

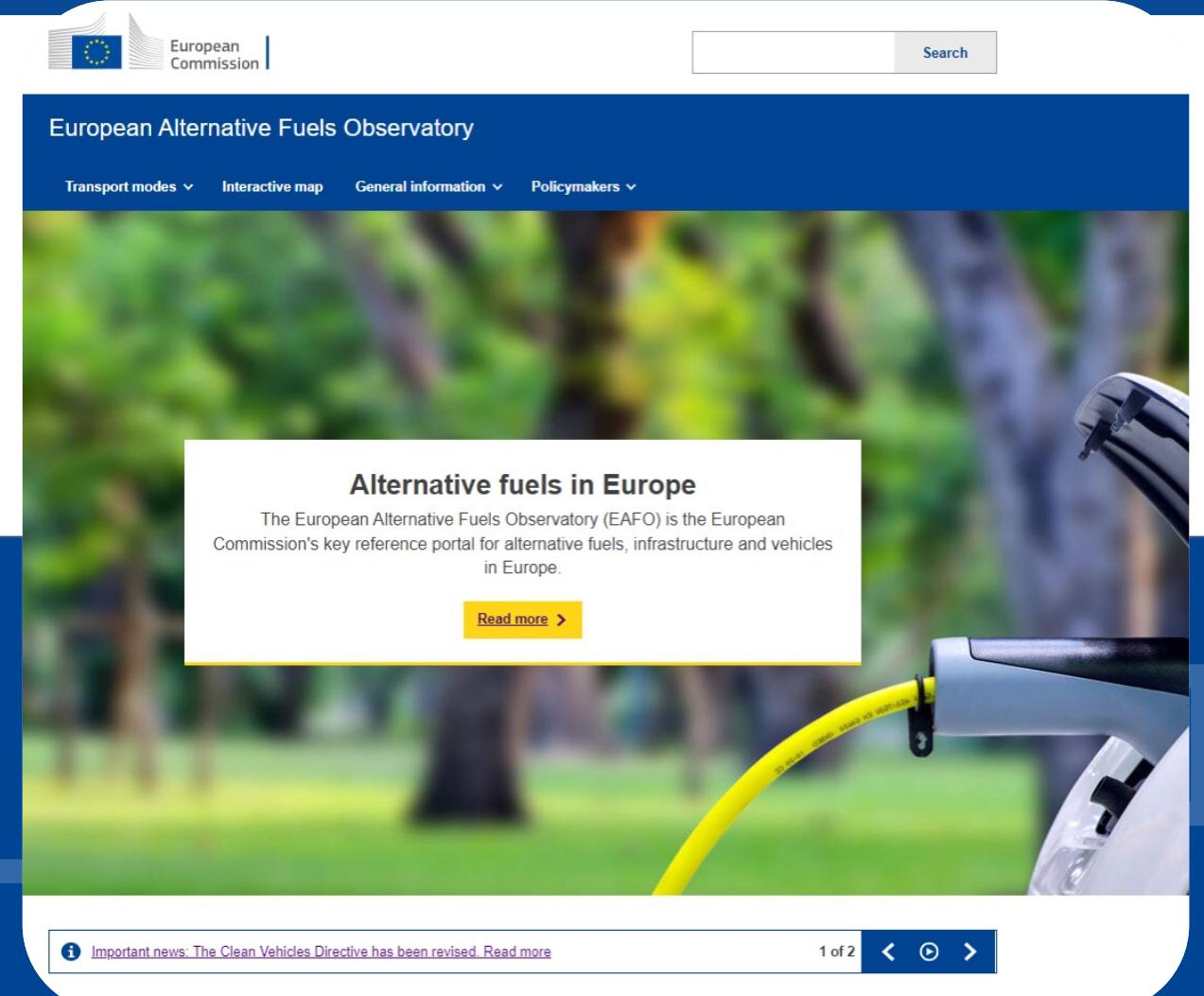
Introduction

The vision of European Alternative Fuels Observatory



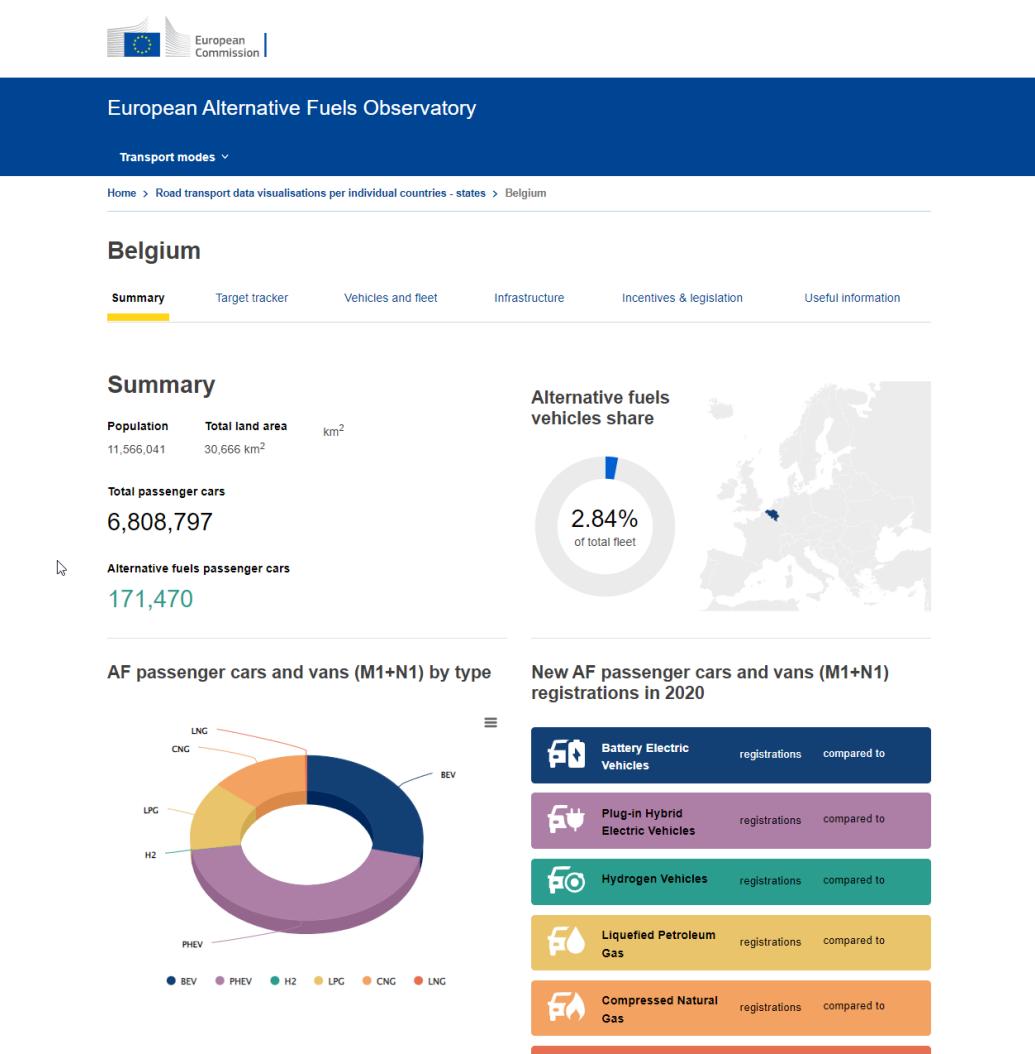
The key reference portal for alternative fuels, infrastructure and vehicles in Europe

Provide openly accessible data at the highest of quality, in an easily accessible way on Alternative Fuels in Europe to Public Authorities, Consumers and the EU.

A screenshot of the European Alternative Fuels Observatory (EAFO) website. The top navigation bar includes the European Commission logo, a search bar, and menu items: Transport modes, Interactive map, General information, and Policymakers. The main content area features a blurred background image of a green landscape and a close-up of an electric vehicle's charging port. A central box contains the text: "Alternative fuels in Europe. The European Alternative Fuels Observatory (EAFO) is the European Commission's key reference portal for alternative fuels, infrastructure and vehicles in Europe." A "Read more >" button is located below this text. At the bottom of the page, there is a footer with a news item: "Important news: The Clean Vehicles Directive has been revised. Read more" and a navigation bar with "1 of 2" and arrows.

European Alternative Fuels Observatory

Monitoring-, policy-, and knowledge platform



European Alternative Fuels Observatory

Transport modes

Home > Road transport data visualisations per individual countries - states > Belgium

Belgium

Summary Target tracker Vehicles and fleet Infrastructure Incentives & legislation Useful information

Summary

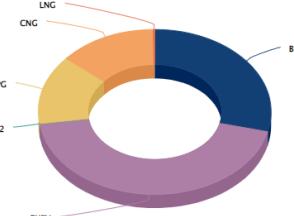
Population	11,566,041	Total land area	30,666 km ²
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Total passenger cars: 6,808,797

Alternative fuels passenger cars: 171,470

Alternative fuels vehicles share: 2.84% of total fleet

AF passenger cars and vans (M1+N1) by type



Vehicle Type	Registration
Battery Electric Vehicles	171,470
Plug-in Hybrid Electric Vehicles	10,000
Hydrogen Vehicles	1,000
Liquefied Petroleum Gas	10,000
Compressed Natural Gas	10,000

New AF passenger cars and vans (M1+N1) registrations in 2020

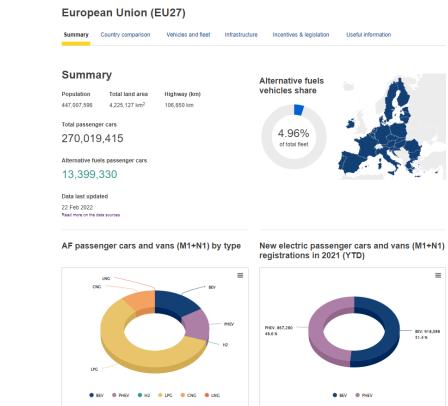
Vehicle Type	Registrations	Compared to
Battery Electric Vehicles	171,470	2019
Plug-in Hybrid Electric Vehicles	10,000	2019
Hydrogen Vehicles	1,000	2019
Liquefied Petroleum Gas	10,000	2019
Compressed Natural Gas	10,000	2019

EAFO offers data insights, a policy overview, consumer section, and more. This way, EAFO supports policy decisions

EAFO main themes

The key pillars of EAFO 3

Transport Modes



Knowledge Centre

General information

The general information section contains general information about alternative fuels, and specific information about the European Alternative Fuels Observatory. It contains, amongst others, a repository of relevant research, links to other important (knowledge) platforms such as TRIMIS, an overview of Frequently Asked Questions (FAQ), a glossary (terminology), and overviews of relevant alternative fuel infrastructure technologies, standards and protocols.



Public Authorities section
▪ E.g. Policies per country

Consumer information

- TCO
- Consumer survey
- Recharging pricing
- Models & characteristics of available EV's
- Fuel price comparison

Interactive Map

Interactive maps

View up-to-date information on refueling/recharging stations across the EU, as well as other data visualisations on the interactive map.

Explore



- Recharging and refueling stations map
- Interactive maps on fleet and infrastructure statistics
- Additional TENtec data layers

FIER studies into BEV incentives

International comparison on BEV incentive policies



Method

- Analysis of policies
- Analysis of uptake numbers (*registration and fleet*)
- TCO calculation based on similar methods
(*selection of models, energy prices, maintenance costs, etc.*)
- Effectiveness of measures

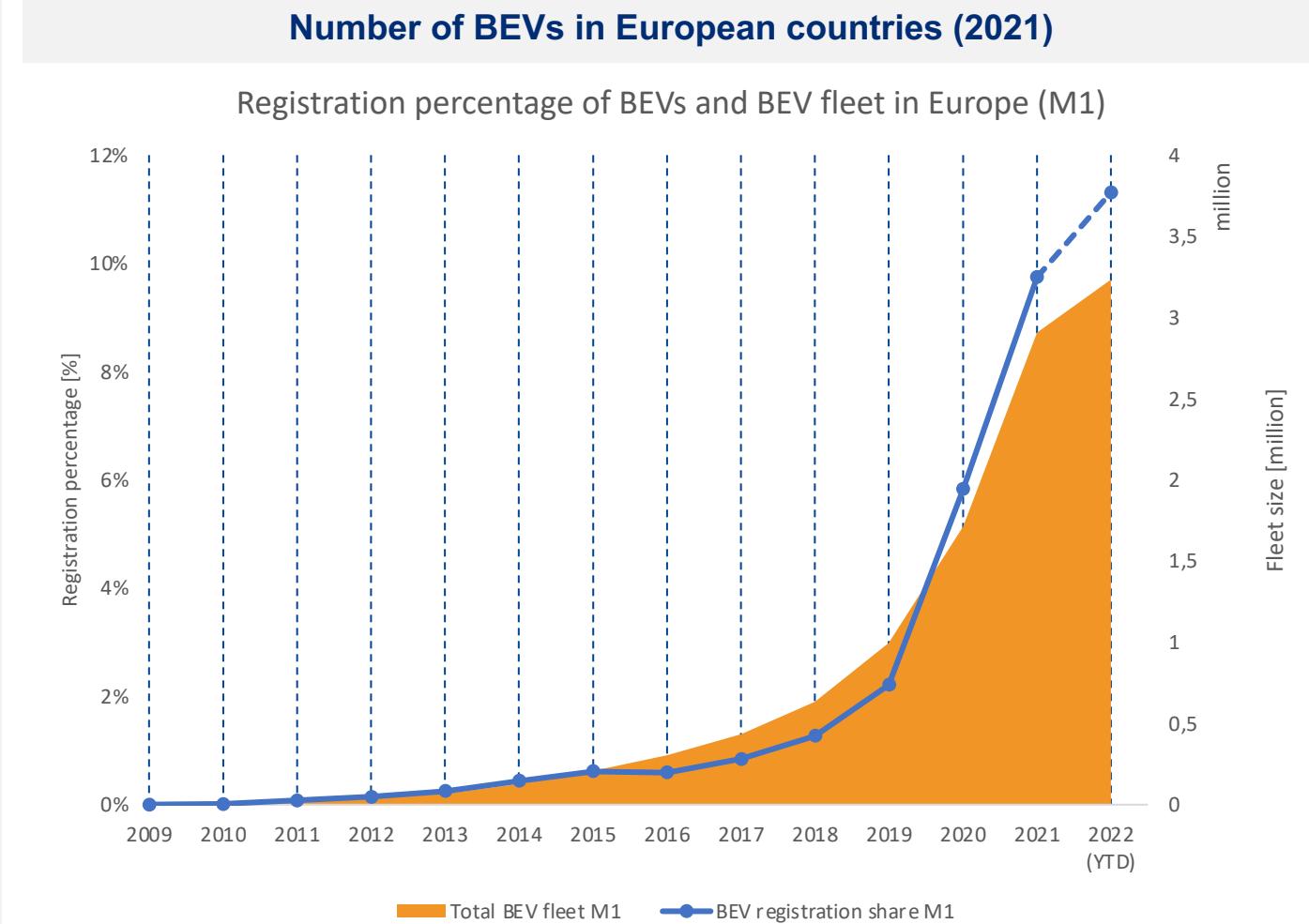
BEV uptake

Current uptake of BEVs in the EU

Total BEVs on the road – EU wide

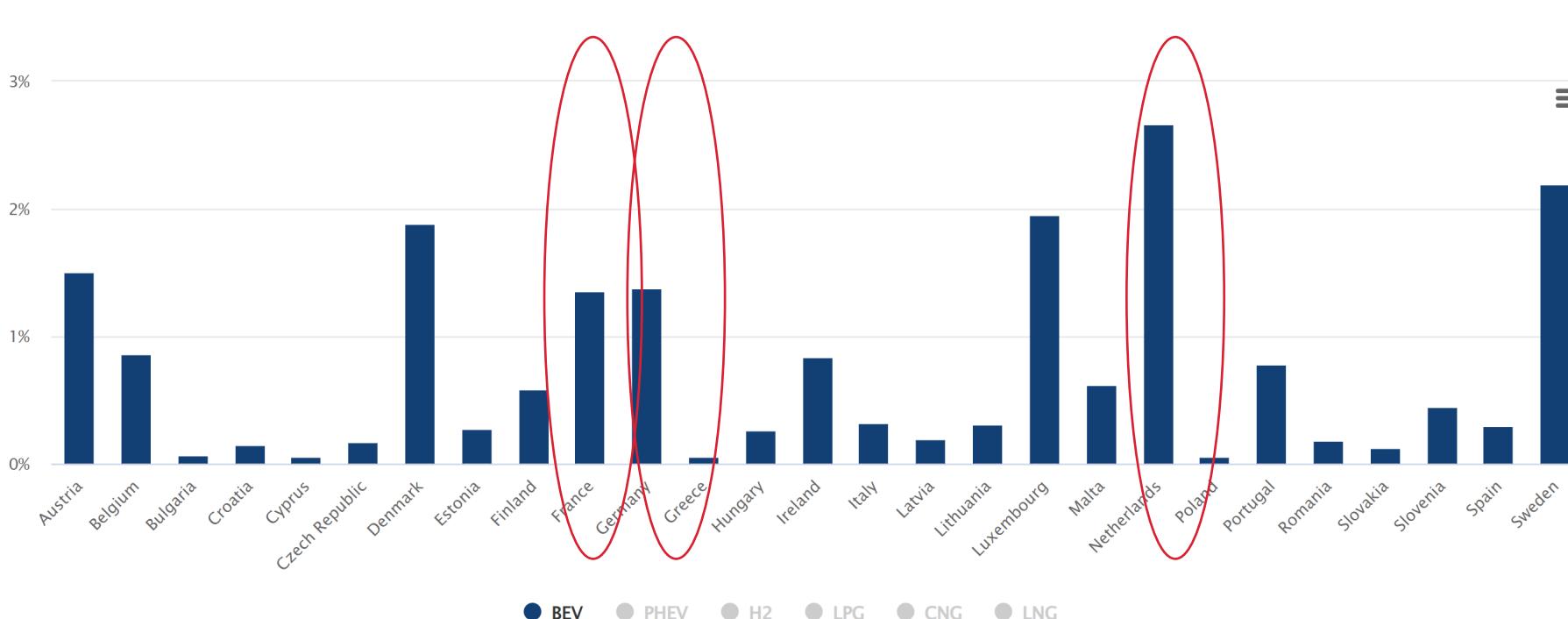
Observations

- BEV sales grew more than sixfold since 2019
- During Covid-19 BEV numbers increased heavily
- The % BEV in sales reached double digit growth until 2022 YTD April.
- But there are big difference between countries in Europe.



Current uptake of BEVs in the EU27

Total BEVs on the road – per country



Observations

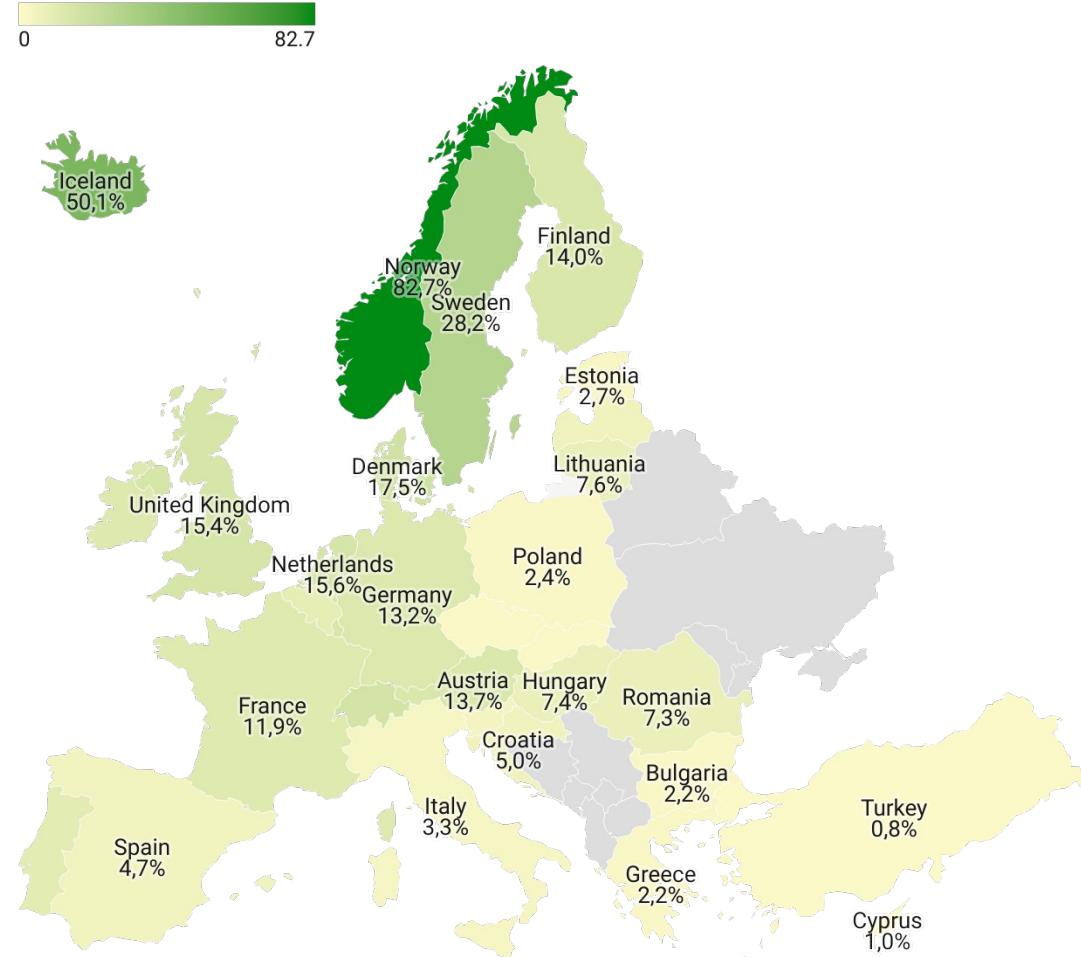
- There are big differences within the EU
- Countries with higher BEV fleet % have had the stronger incentive packages

Norway: BEV fleet 15%!!!

Current uptake of BEVs in the EU

BEV registration – per country

BEV Registration percentage in Europe 2022 (YTD, M1)



Observations

- There are big differences within Europe
- Norway is far ahead with 84.7% BEV sales percentage (apr 2022)
- Northern and Western European countries have higher uptake percentages than Southern- and Eastern countries

Darker blue = higher % BEVs

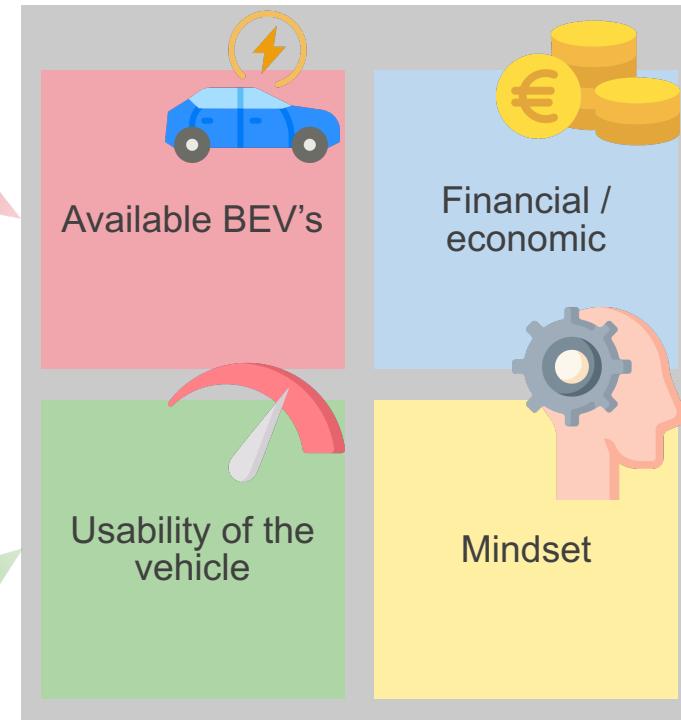
Incentives

Factors influencing BEV uptake

Governments have most power via the factor financial and economic



General factors in purchasing behaviour



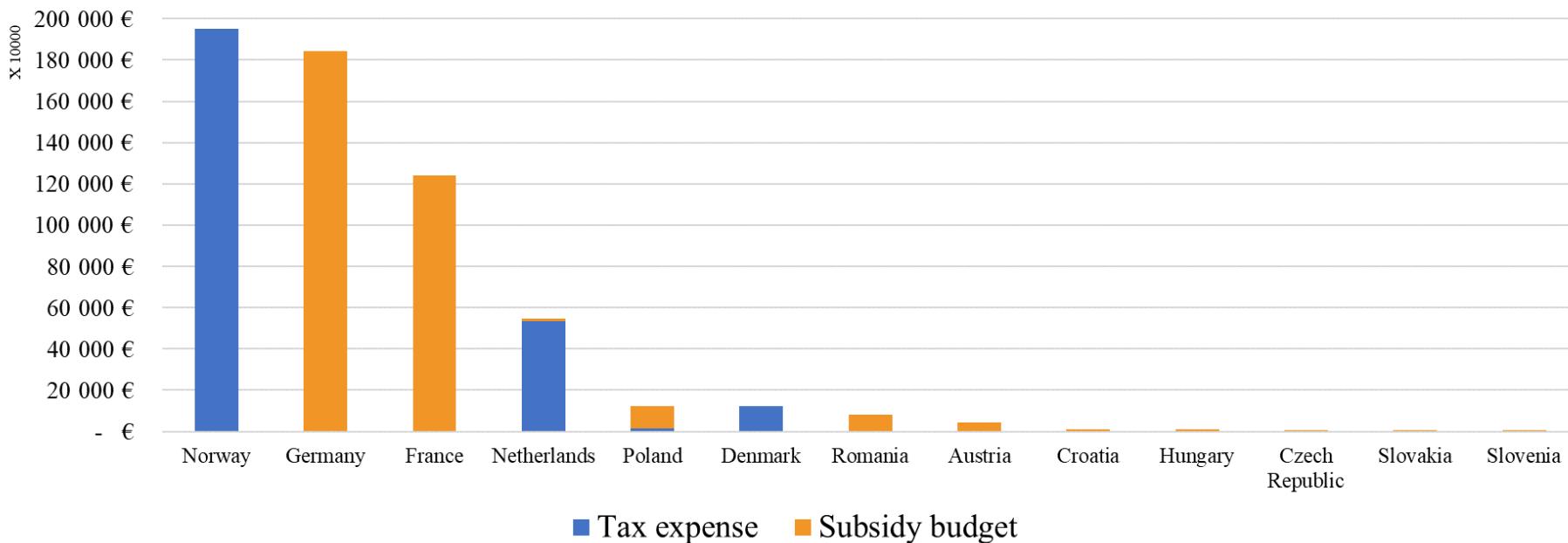
- Purchase price & TCO (*Total Cost of Ownership*)
- Buying power
- BiK taxation

- Attitude towards BEVs
- Public opinion on incentivizing BEVs over ICEs

Incentive budgets per country

Available budgets differ highly across the EU

Tax incentives and subsidy budget in selected European countries (2020)



Data not available for all EU countries

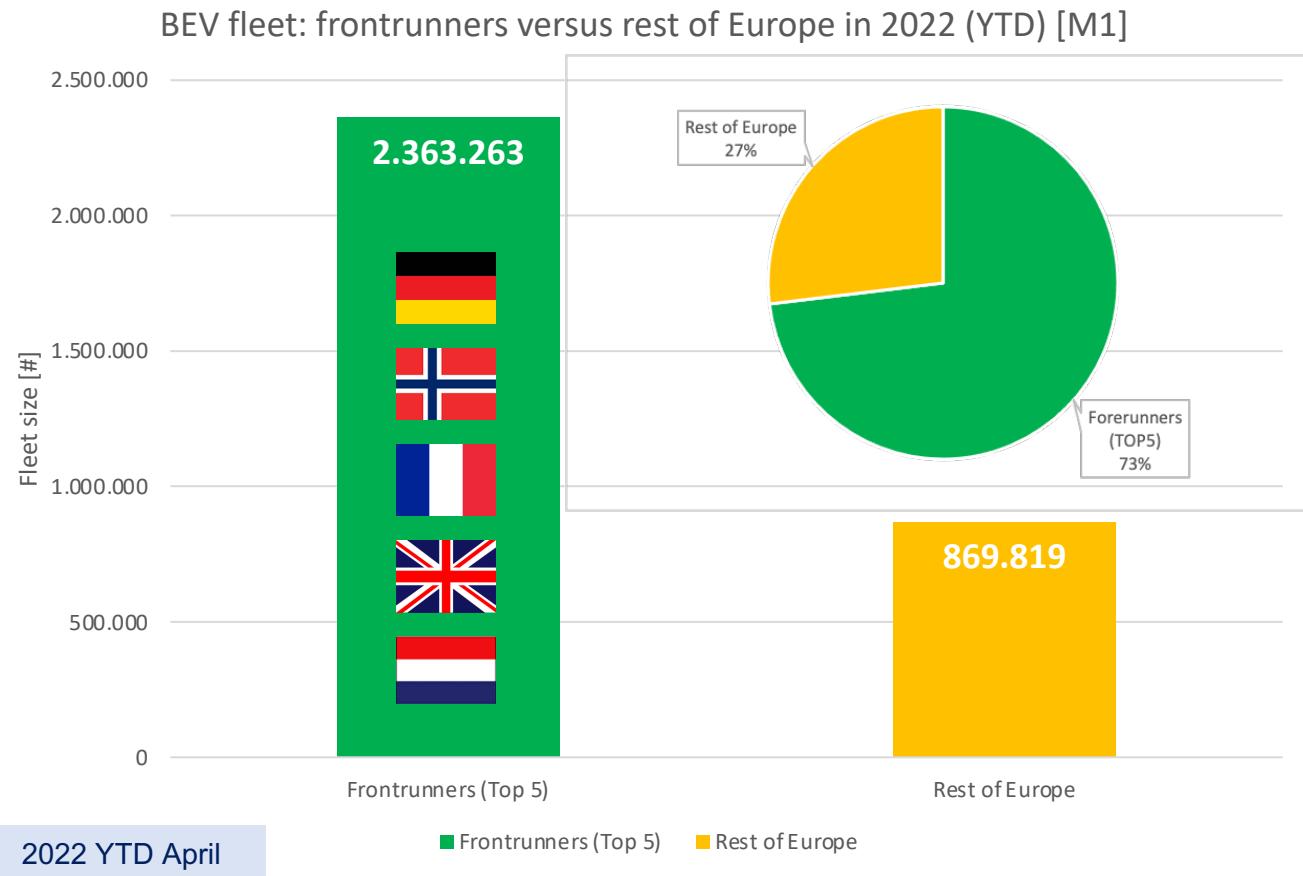
Observations

- There are two main incentive manners:
 1. Tax incentives
 2. Purchase subsidies

Effectiveness of incentives

BEV uptake differences between countries

The five biggest fleets are 2.7X the size the BEV fleets of the rest of Europe



Observations

All countries with current big BEV fleets use(d) incentives with impact to increase the uptake of BEVs.

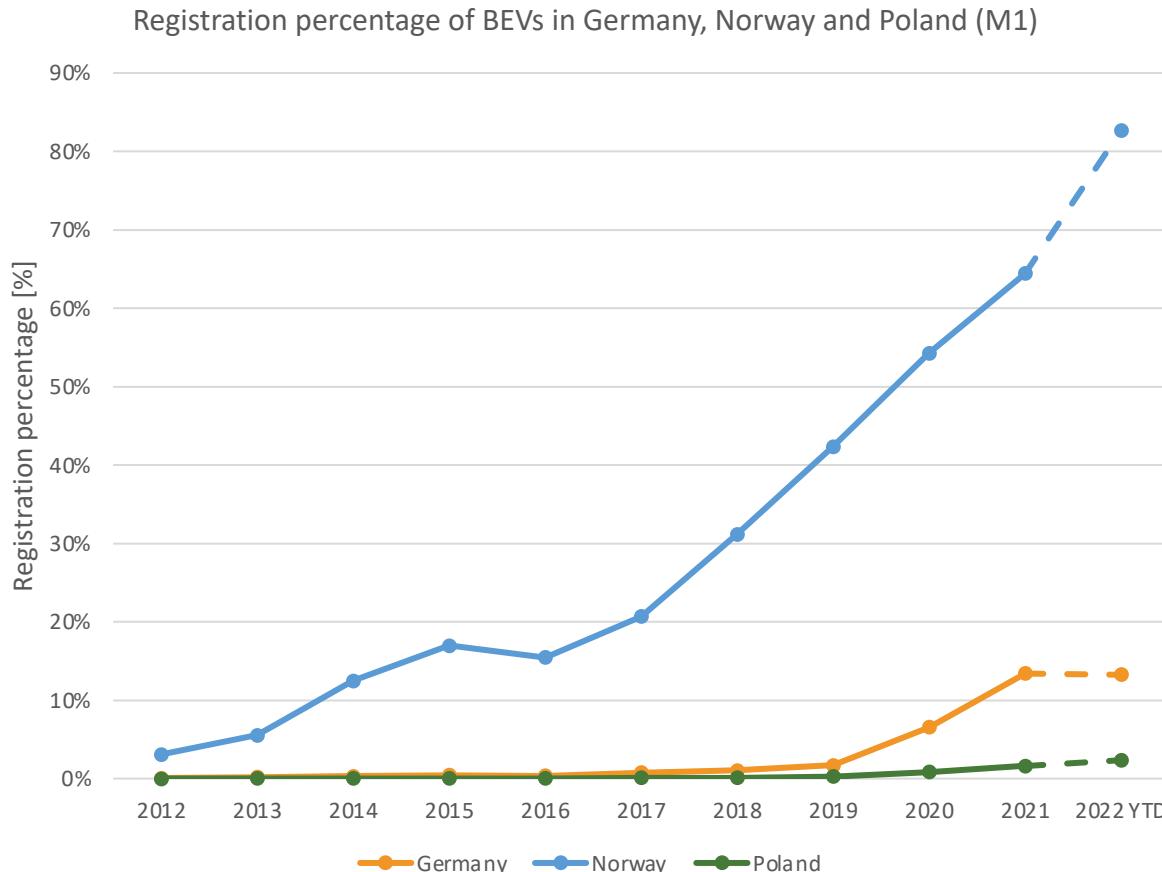
- BiK (*Benefit in Kind*) benefits for BEV
- Subsidies for BEV purchase
- Higher taxes on ICE vehicles

Important:

What sets these countries apart is not the number or amount of the incentives, it is how interesting a BEV is compared to an ICE.

Comparing countries

Financial aspects are important factors in BEV uptake



Purchase Price

Poland	- 13 518 €
Germany	- 1 318 €
Norway	6 177 €

TCO

Poland	- 8 068 €
Germany	5 576 €
Norway	16 598 €

Period of 4 years. Average of B-, C- and D segment in the business & private market.

Decisive for the uptake of BEVs. Taxes (ICE's) and supporting subsidies (purchasing & operational) make the difference.

Purchase price has more influence in private market. TCO in business market. Taxes on private use (BiK) for company cars

TCO deep dive

Thorough analysis shows the different effects of the different policies

Germany

Low taxation on ICE cars

Subsidies for BEVs

- Subsidy has a cap

Conclusion:

relatively high support for smaller segments

Norway

High taxation on ICE cars

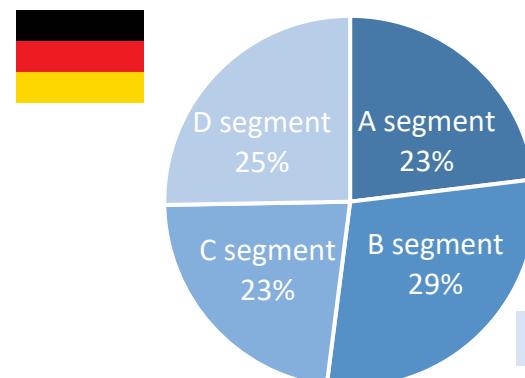
No taxation (even VAT) for BEVs

Conclusion:

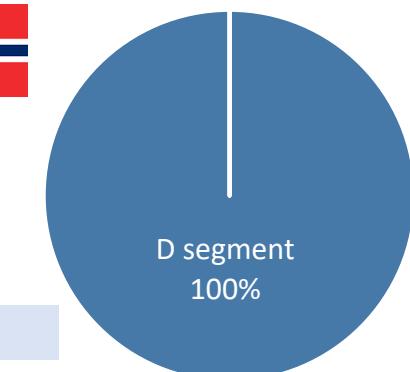
relatively high support for larger segments

Purchase price	Business			Private		
	B segment	C segment	D segment	B segment	C segment	D segment
Germany	-€ 1.488	€ 2.486	€ 151	-€ 3.690	€ 1.248	-€ 1.513
Norway	-€ 6.852	-€ 1.081	€ 7.039	-€ 1.919	€ 5.083	€ 15.366
TCO	Business			Private		
	B segment	C segment	D segment	B segment	C segment	D segment
Germany	€ 6.158	€ 8.810	€ 5.963	€ 2.493	€ 5.232	€ 2.211
Norway	€ 9.651	€ 10.405	€ 18.259	€ 8.517	€ 11.039	€ 19.657

Segments of the BEV sales top 5 (2021)



2021

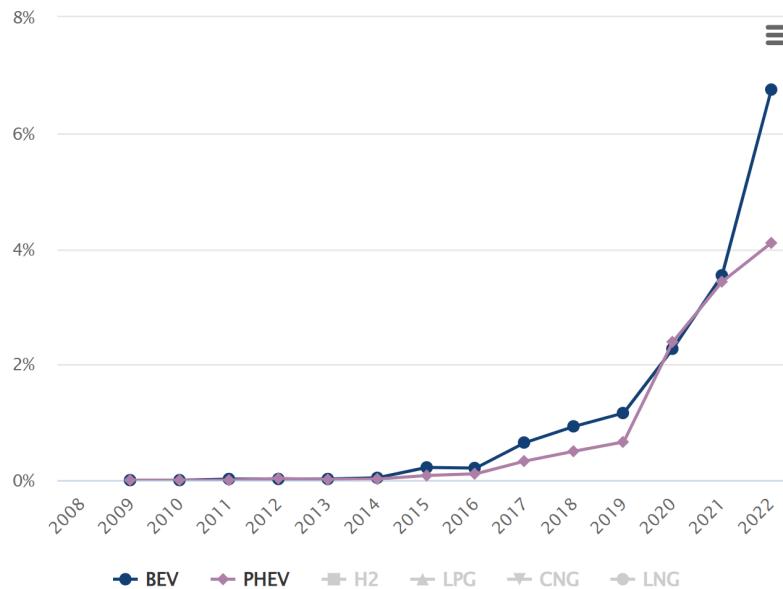


Eastern Europe

Market shares and TCO in some Eastern European countries

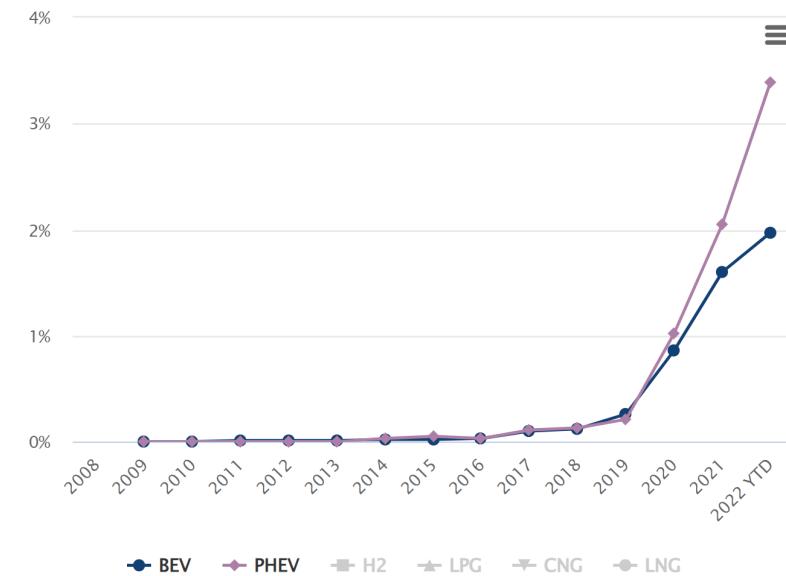
Market shares Hungary

AF passenger car sales relative to total car sales (including ICE)



Market shares Poland

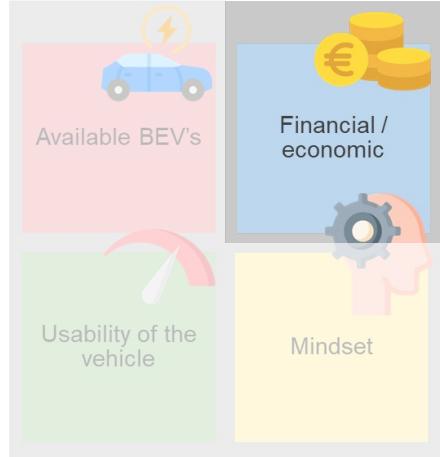
AF passenger car sales relative to total car sales (including ICE)



	Business			Private		
	B segment	C segment	D segment	B segment	C segment	D segment
Hungary	€ 1 518	€ 4 351	-€ 11 001	-€ 4 357	-€ 849	-€ 18 267
Romania	€ 4 412	€ 10 530	-€ 370	-€ 3 373	€ 5 283	-€ 16 484
Poland	-€ 1 249	€ 6 350	-€ 10 827	-€ 7 840	€ 351	-€ 20 655

Conclusions

Different incentive system have different impacts



Financial factors are important in determining the uptake of BEVs

Governments can steer the uptake of BEVs with incentives



If it results in a lower TCO for a BEV a higher uptake will be shown





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