

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

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Introduction

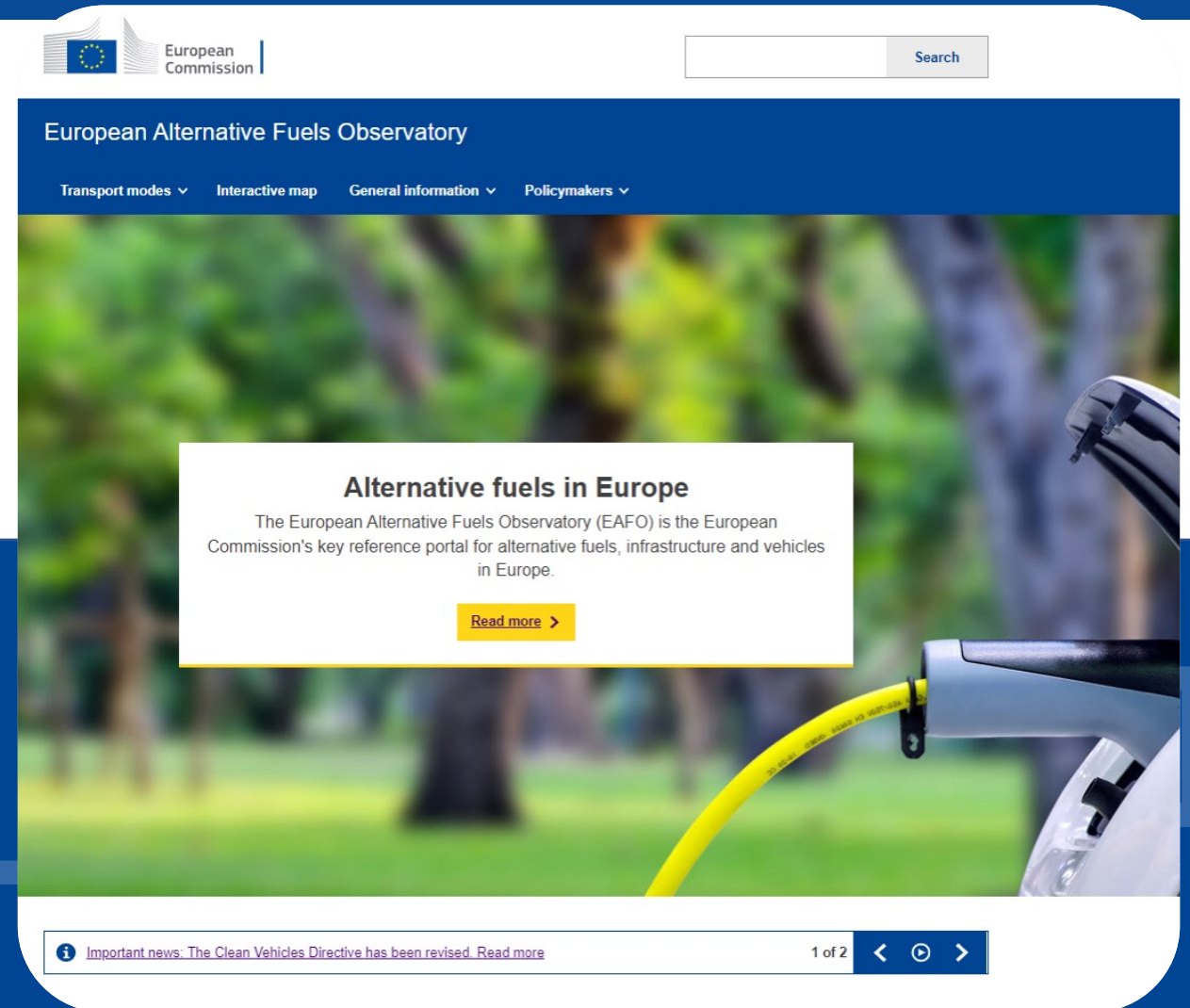
Introduction

The vision of European Alternative Fuels Observatory



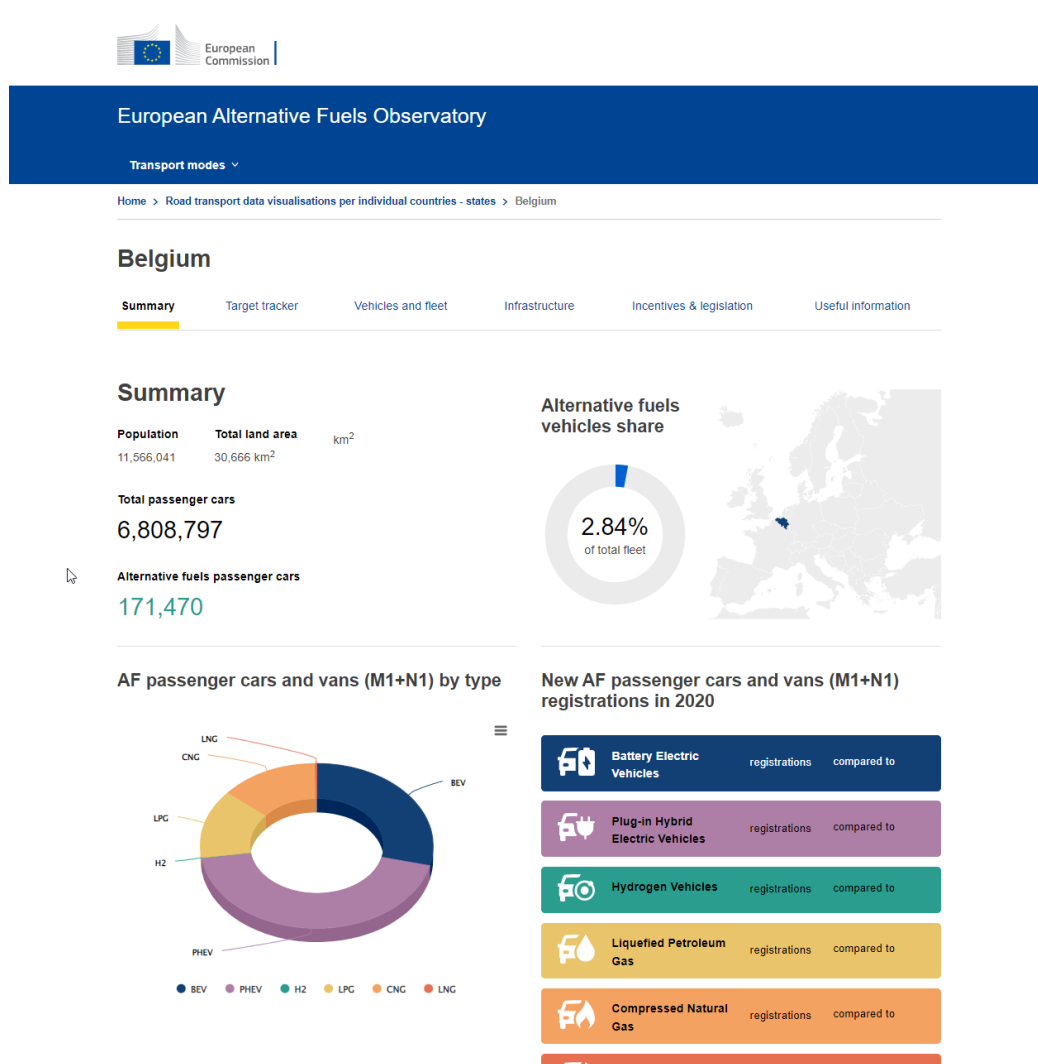
**The key reference portal for
alternative fuels, infrastructure
and vehicles in Europe**

**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.**



European Alternative Fuels Observatory

Monitoring-, policy-, and knowledge platform



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

European Union (EU27)

Summary Country comparison Vehicles and fleet Infrastructure Incentives & legislation Useful information

Summary

Population 447,957,588

Total land area 4,235,127 km²

Highway (km) 155,653 km

Total passenger cars

270,019,415

Alternative fuels passenger cars

13,399,330

Data last updated

22 Feb 2022

[Refresh the data](#)

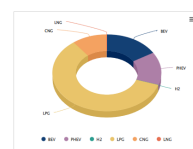
Alternative fuels vehicles share

4.96%

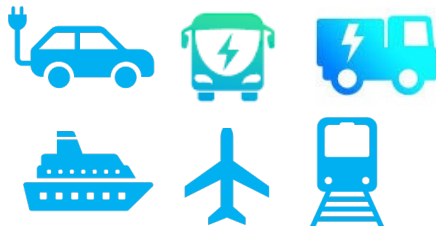
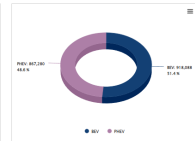
of total fleet



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



New electric passenger cars and vans (M1+N1) registrations in 2021 (YTD)



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 TRIMS, an overview of Frequently Asked Questions (FAQ), a glossary (terminology), and overviews of relevant alternative fuels infrastructure technologies, standards and protocols.



Alternative fuels

Discover all available alternative fuel types.



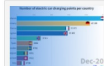
Vehicle types

A comprehensive list of the available vehicle types.



Recharging systems

Information on recharging systems, connectors, infrastructure and standards.



News

Get the latest on alternative fuels in the EU!



Frequently asked questions

Find answers to the most frequently asked questions.



Glossary

A list of key EAFO terms and abbreviations and their meanings.



Data sources

Discover our data sources and providers for each country.



About the European Alternative Fuels Observatory

Get to know EAFO from the start, including its overall objectives and vision.

Public Authorities section

- E.g. Policies per country

Consumer information

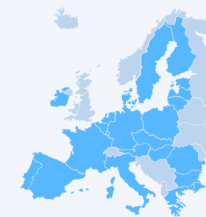
- TCO
- Consumer survey
- Recharging pricing
- Models & characteristics of available EV's
- Fuel price comparison

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

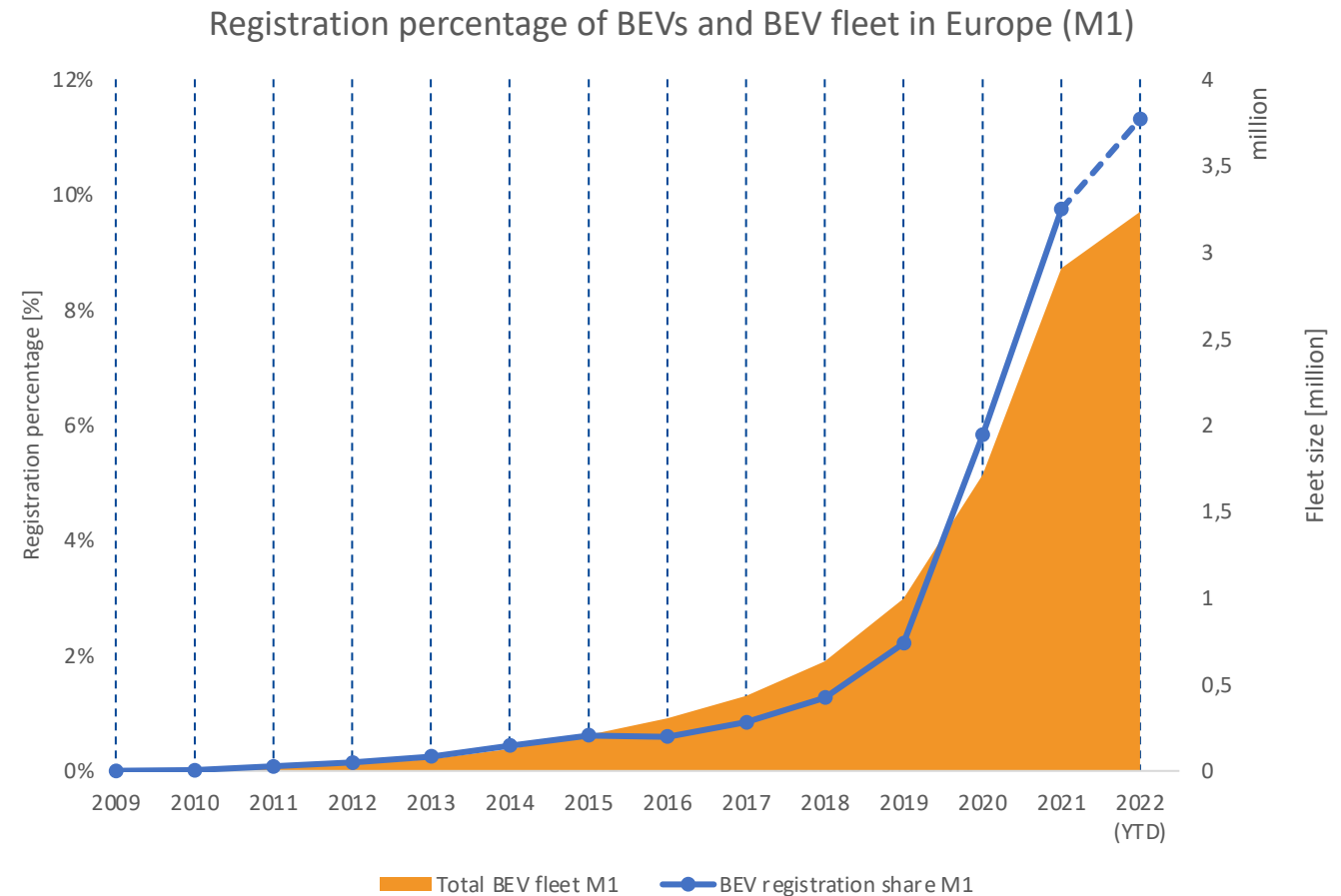
Current uptake of BEVs in the EU

Total BEVs on the road – EU wide

Observations

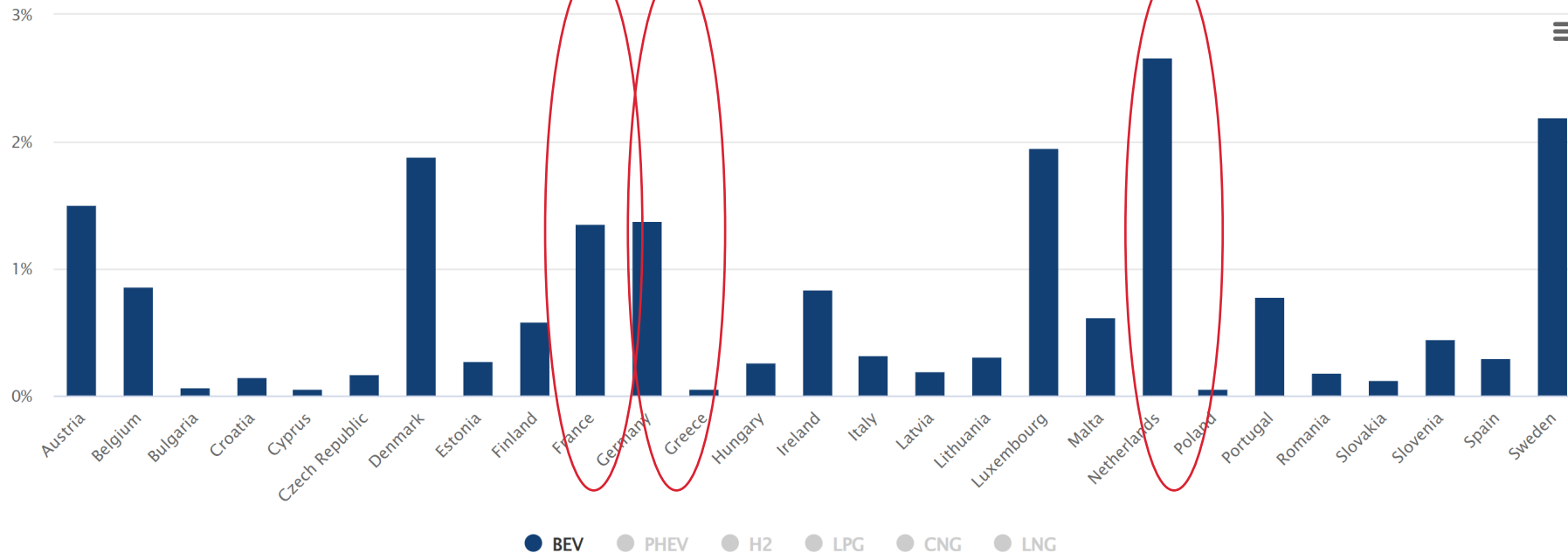
- BEV sales grew more than sixfold since 2019
- During Covid-19 BEV numbers increased heavily
- The % BEV in sales reached double digit growth until 2022 YTD April.
- But there are big difference between countries in Europe.

Number of BEVs in European countries (2021)



Current uptake of BEVs in the EU27

Total BEVs on the road – per country



Observations

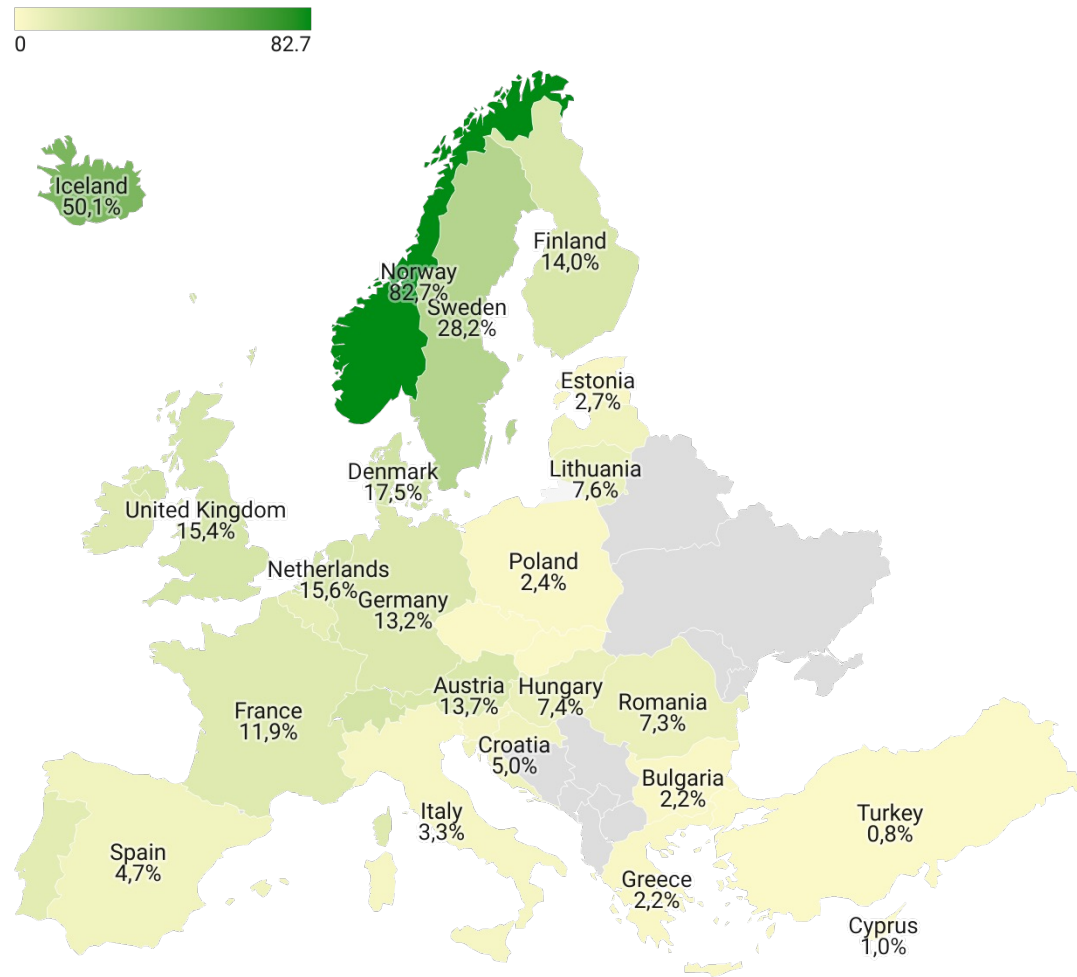
- There are big differences within the EU
- Countries with higher BEV fleet % have had the stronger incentive packages

Norway: BEV fleet 15%!!!

Current uptake of BEVs in the EU

BEV registration – per country

BEV Registration percentage in Europe 2022 (YTD, M1)



Source: EAFO • Created with Datawrapper

Observations

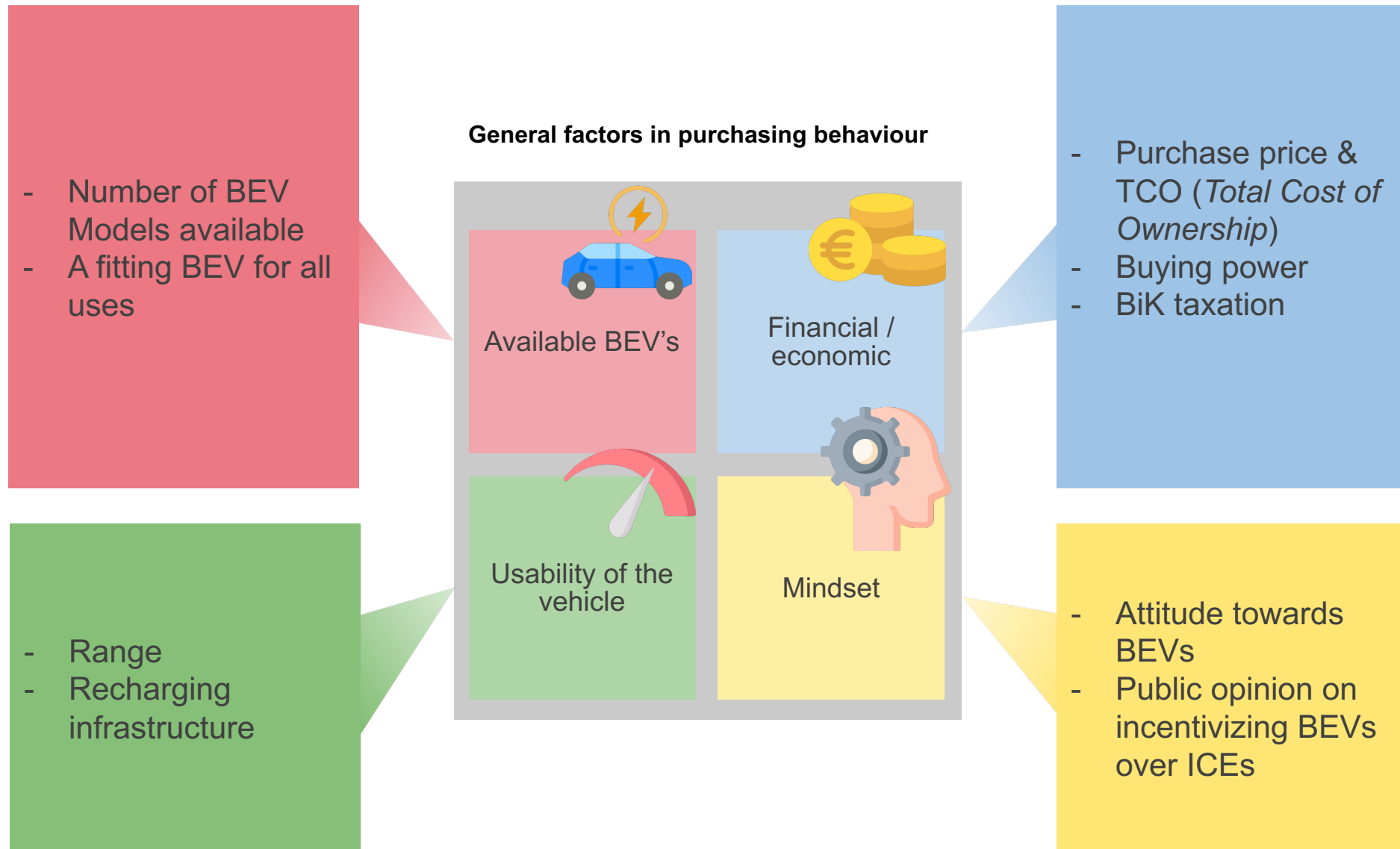
- There are big differences within Europe
- Norway is far ahead with 84.7% BEV sales percentage (apr 2022)
- Northern and Western European countries have higher uptake percentages than Southern- and Eastern countries

Darker blue = higher % BEVs

Incentives

Factors influencing BEV uptake

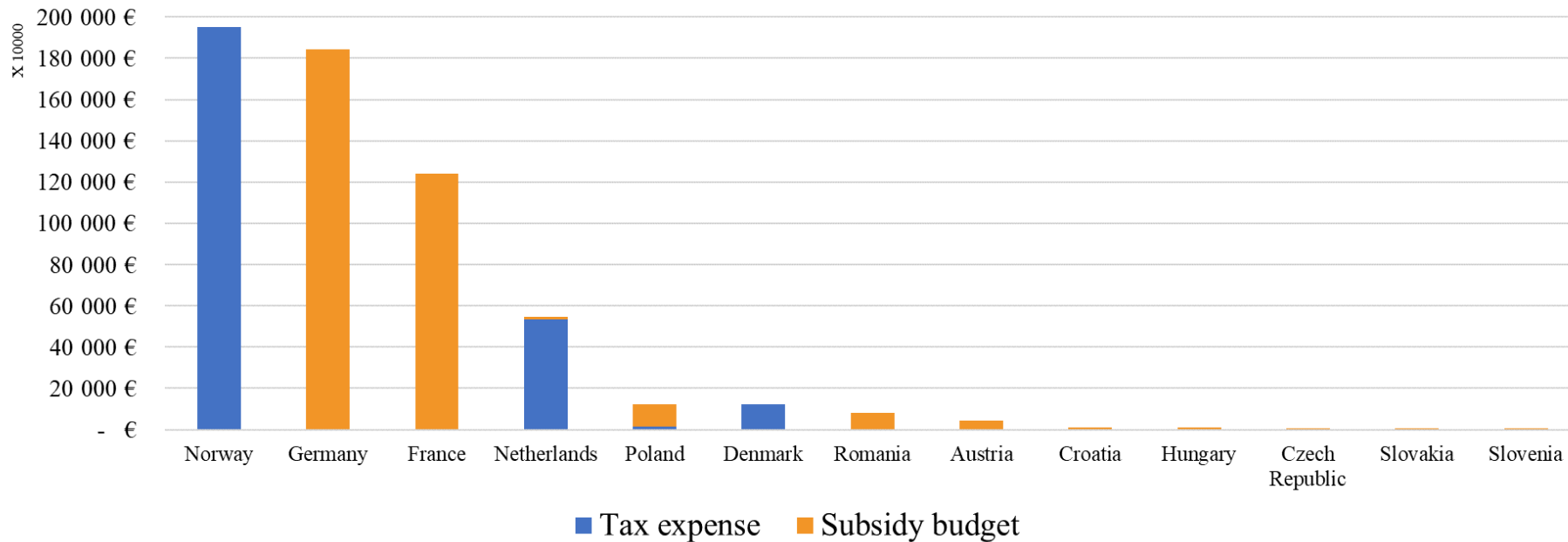
Governments have most power via the factor financial and economic



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

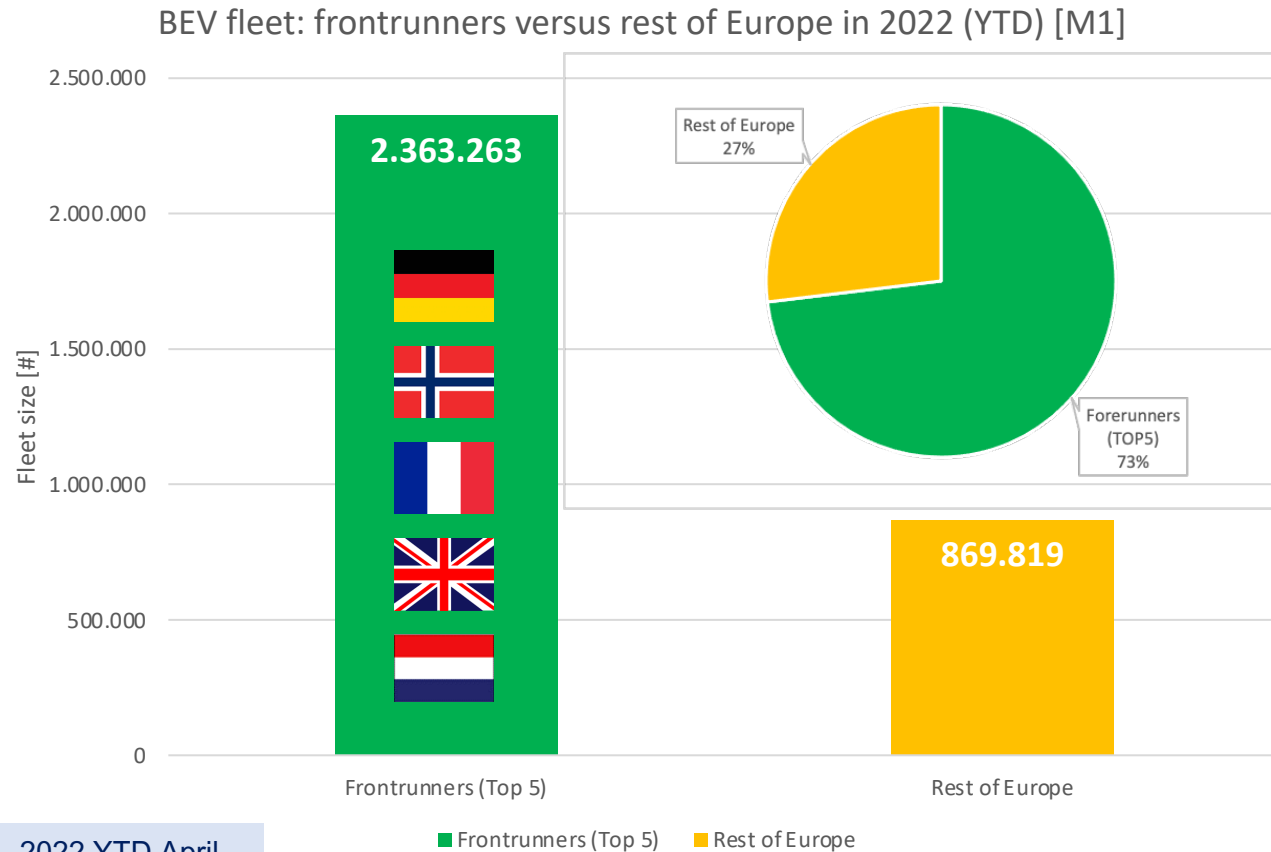
Observations

- 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



Europe = EU27 + EFTA + UK

Observations

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

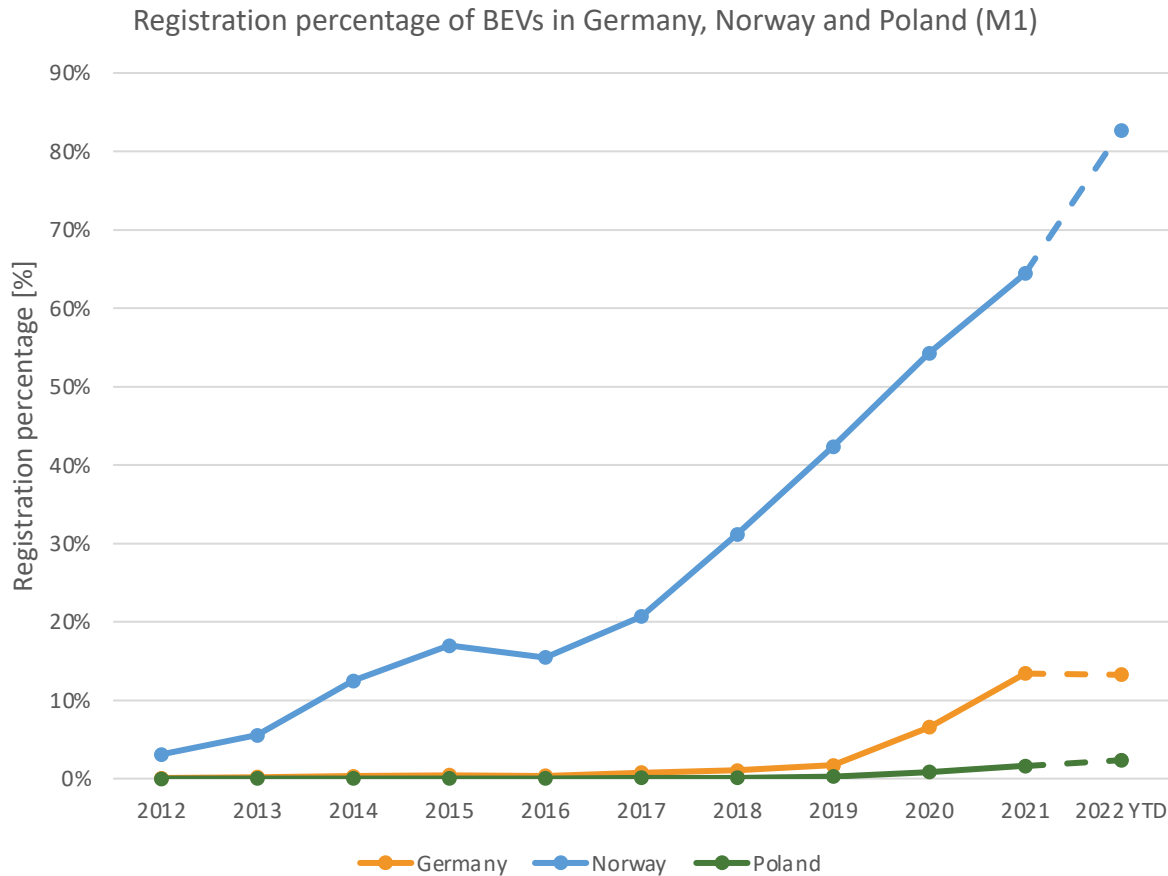
- BiK (*Benefit in Kind*) benefits for BEV
- Subsidies for BEV purchase
- Higher taxes on ICE vehicles

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

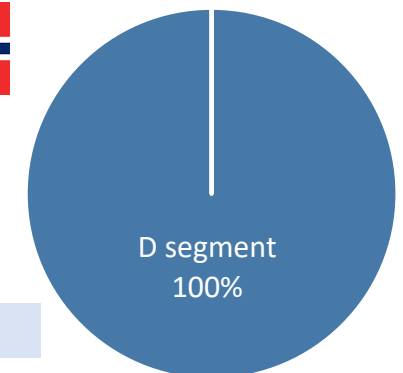
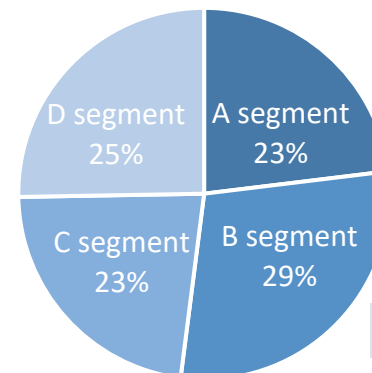
Conclusion:

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)



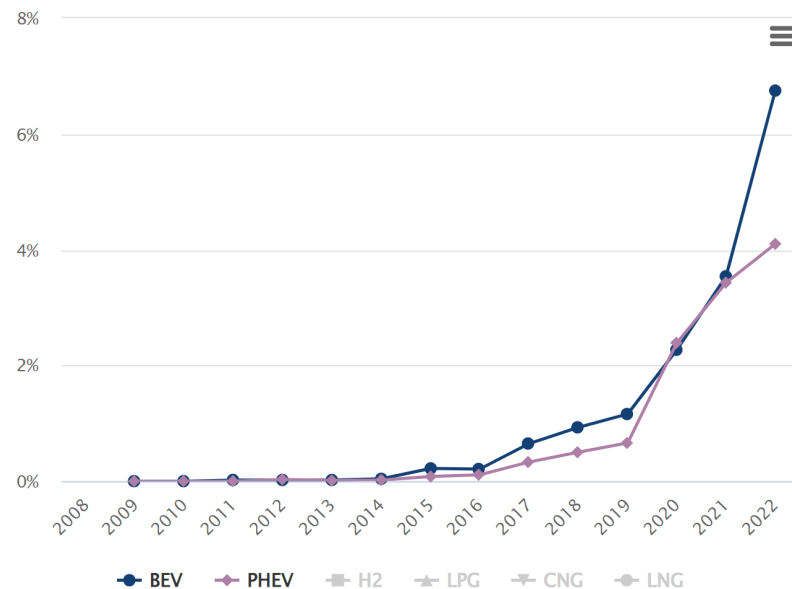
2021

Eastern Europe

Market shares and TCO in some Eastern European countries

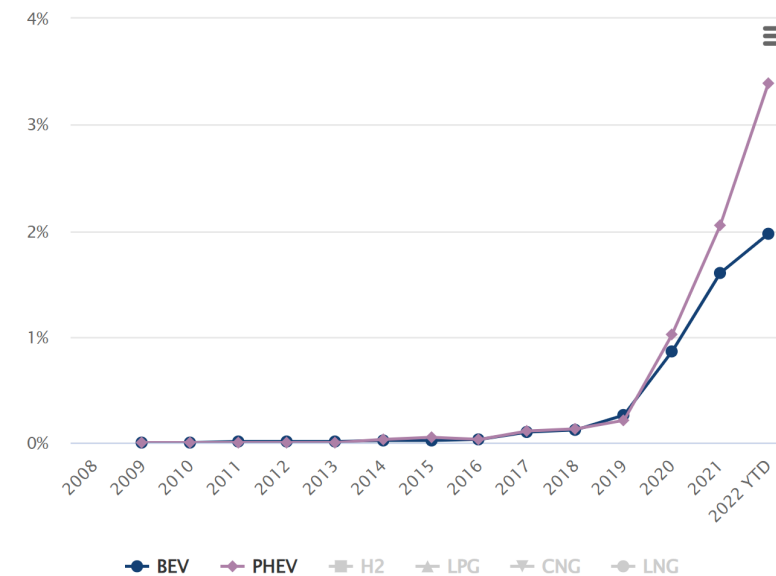
• Market shares Hungary

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



Market shares Poland

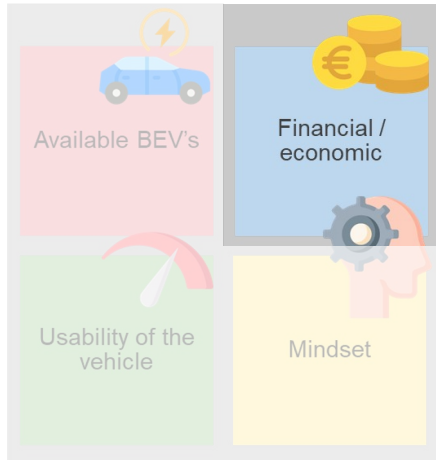
AF passenger car sales relative to total car sales (including ICE)



	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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