Recharging the batteries: How the electric vehicle revolution is affecting Central, Eastern and South-Eastern Europe

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AGENDA

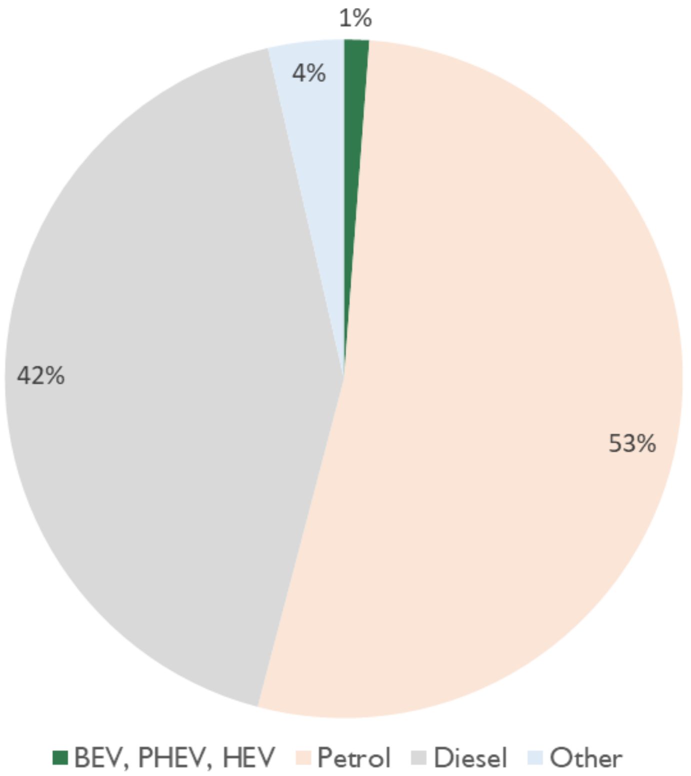
A sector in motion: the electric car revolution

Automotive sector in CESEE: ready for transformation?

The adoption of electric vehicles is taking off rapidly

Vehicles in circulation in Europe

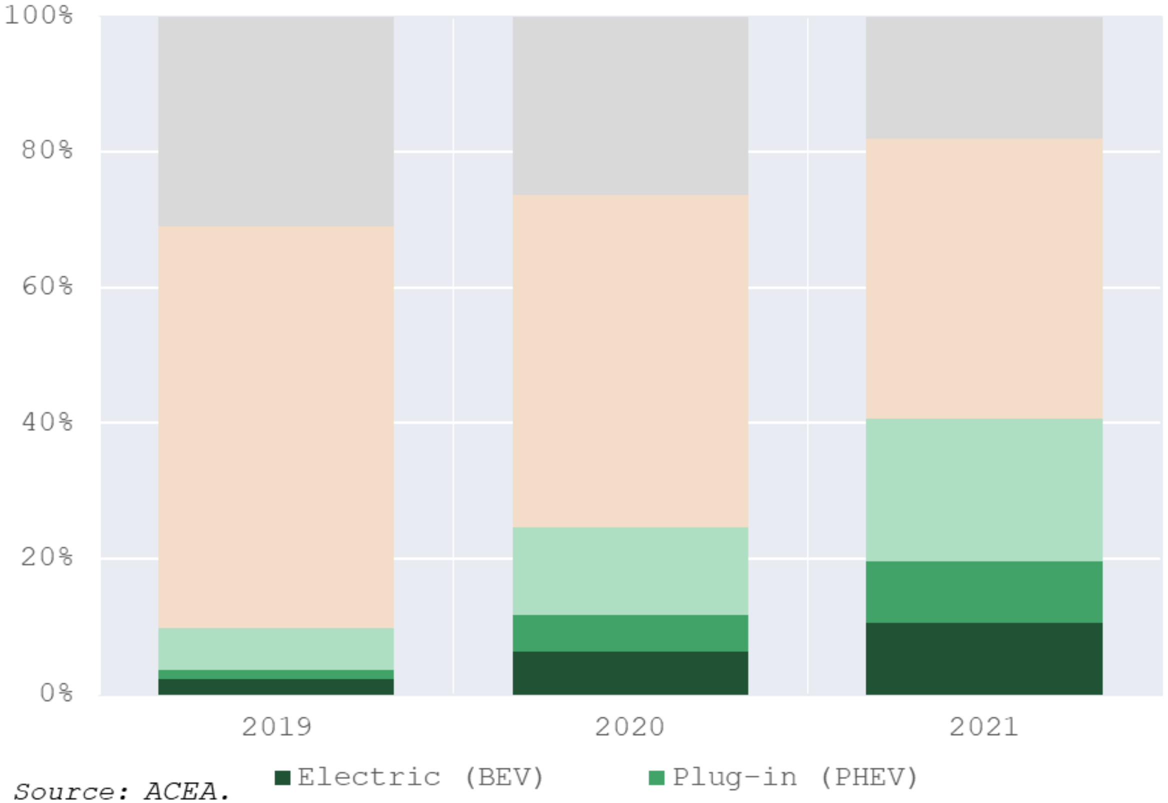
(% on total, 2019)



Source: ACEA.

New vehicles sales in Europe

(% on total)



Source: ACEA.

Long-term and new short-term trends at play, on top of electric transformation

LONG-TERM TREND

- Relocation of production to Emerging markets: in triad (EU15+USA+JP) from 70% in 2000 to 33% of world production

MORE RECENT TRENDS

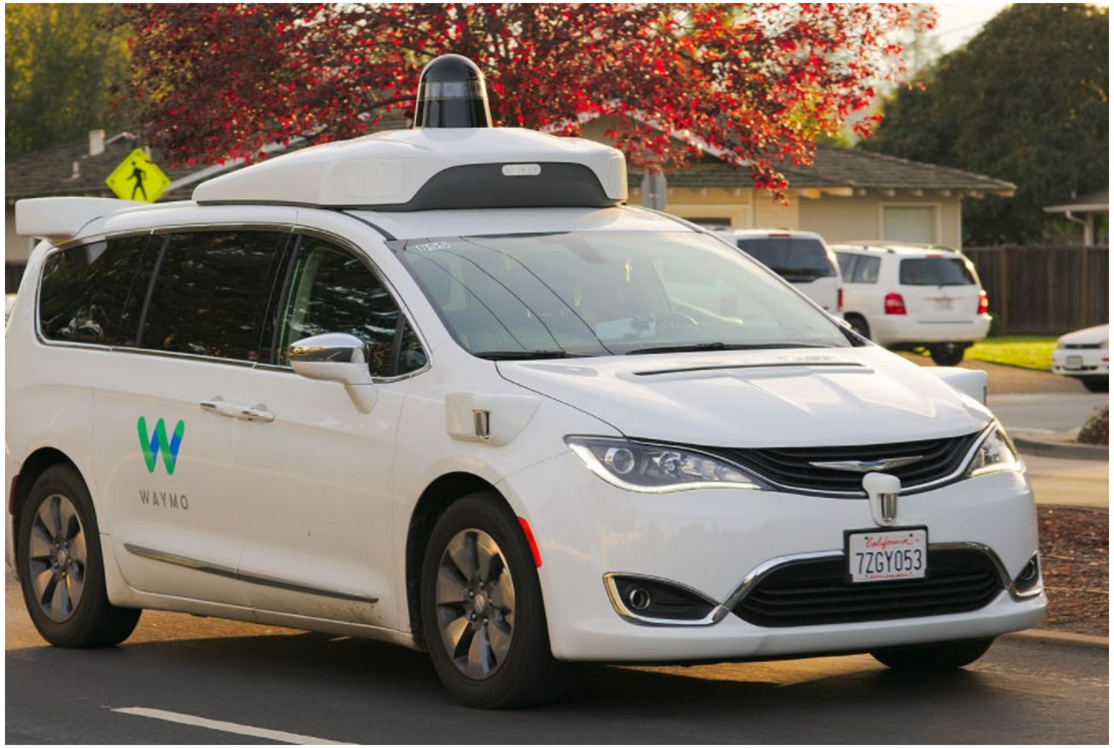
- Autonomous vehicles
- Shared mobility and connectivity

COVID-19 RELATED

- Collapse in sales and production
- Supply bottlenecks (chip shortage)
- Increased teleworking and social distancing

WAR RELATED

- Supply and demand factors



Acceleration of electrification trend in EU largely driven by regulation

European Green Deal

(climate neutrality in 2050)

European Commission "Fit for 55" package (July 2021)

CO_2 Emissions: **-55%** by 2030, **-100%** in 2035

"all new cars registered will be zero emission"

Upcoming Euro 7 targets

100% phase-out of sales of new internal combustion engine cars

Norway (2025), Netherlands, Slovenia, Ireland, Austria (2030), UK, Denmark (2035), France, Spain (2040)

De facto ban on fossil-fueled engines from 2035

Quick rush of all major automotive producers toward ambitious electrification targets

Share of Battery Electric Vehicles (BEVs) in total sales: producers´ targets

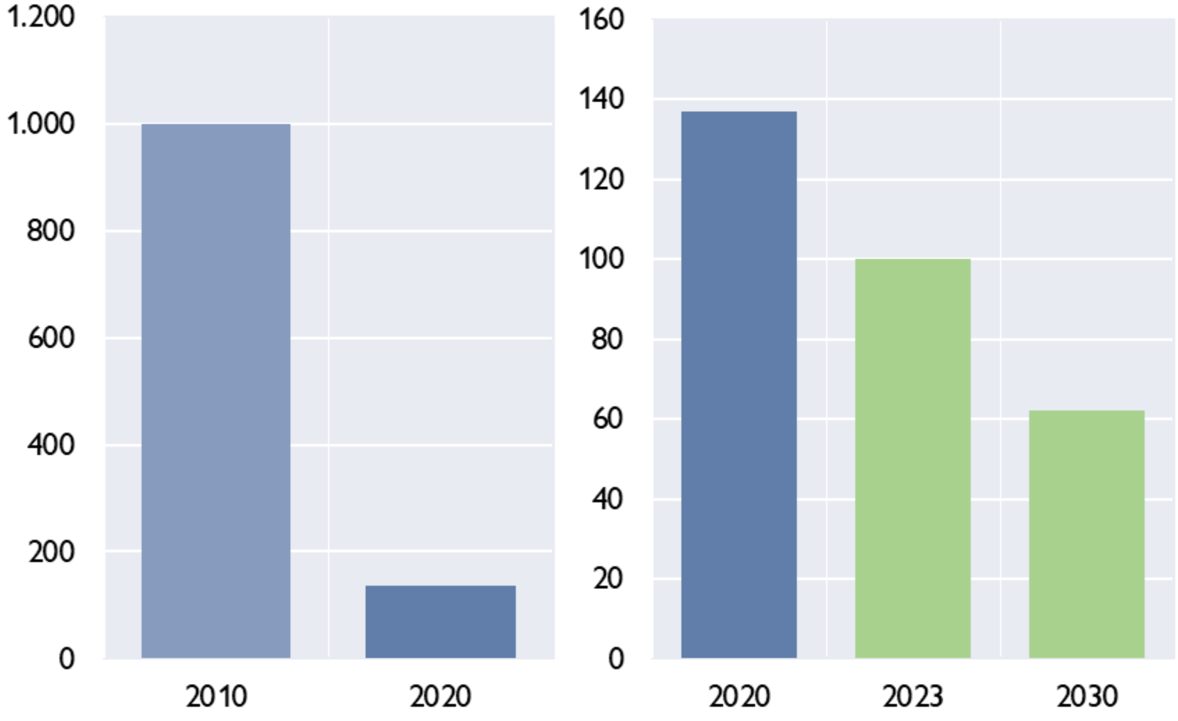
	2025		2030	
	EU	**World**	**EU**	**World**
Toyota				50%
Volkswagen			70%	50%
Skoda (VW Group)		25%		
Audi (VW Group)		**40%**	**100%**	**100%**
Hyundai-KIA		15%		40%
GM*			**100%**	**100%**
Ford			**100%**	**100%**
Renault		30%		90%
Stellantis (PSA, FCA)			70%	
Daimler**	**50%**		**100%**	**100%**
BMW		25%		50%
Jaguar	**100%**	**100%**	**100%**	**100%**
Honda				40%
Nissan			**100%**	**100%**

**by 2035; ** incl. PHEV;*
Source: Companies` plans and announcements.

Batteries play key role in localization of production and vehicle costs

Battery pack costs over time

Pack wholesale cost (USD/kWh)



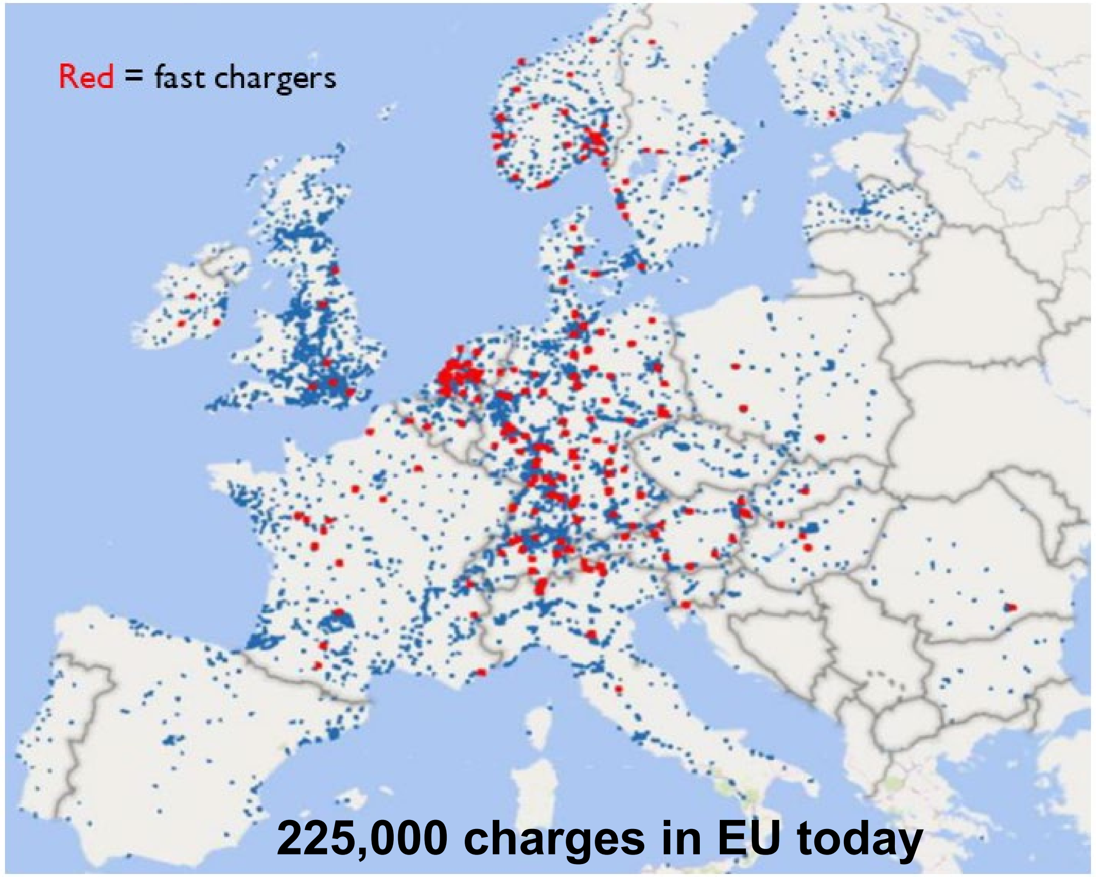
Note: the newest generation of the Li-ion battery pack.
Source: BNEF, LMC automotive.

Planned and realized gigafactories

Source: Deloitte, 2021.

Charging infrastructures a key prerequisite, but actually with very uneven distribution across Europe

Publicly accessible charging points



Source: T&E, 2020.

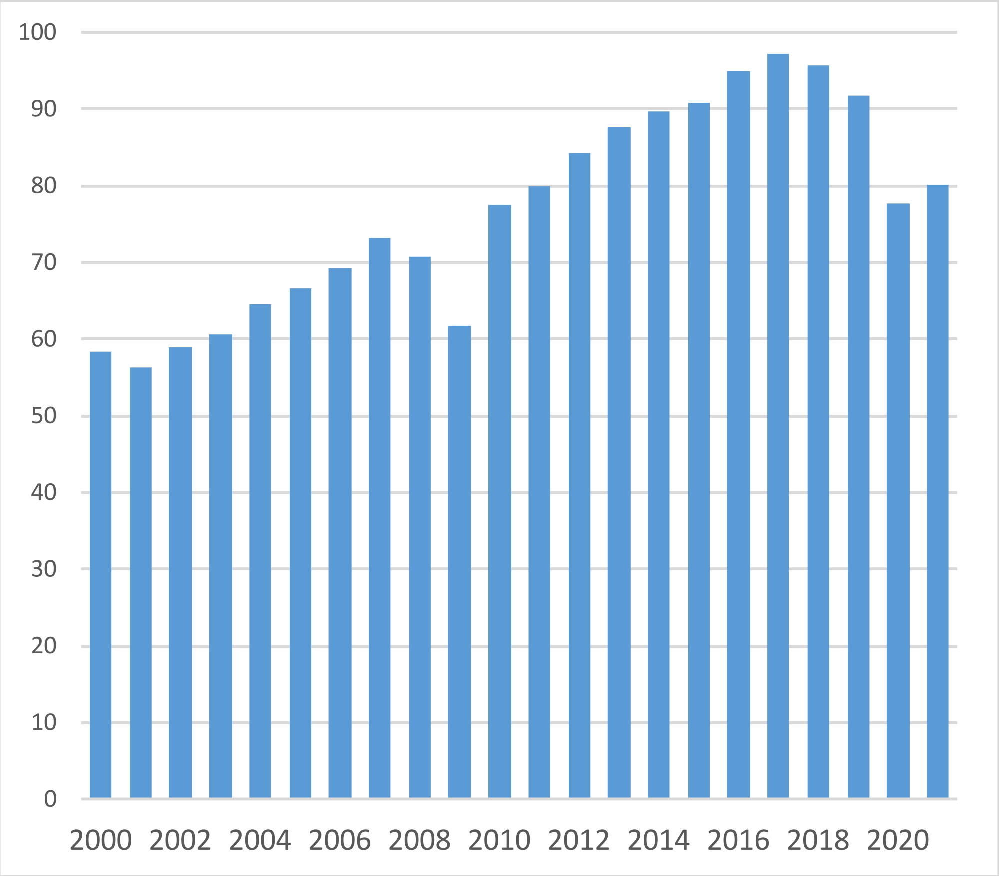
At least **1 mn publicly accessible recharging** stations are expected to be in place **by 2025** (European Green Deal) and **3.5 mn by 2030** ("Fit for 55" package), one **every 60 km**

What Russia and Ukraine represent for the automotive sector?

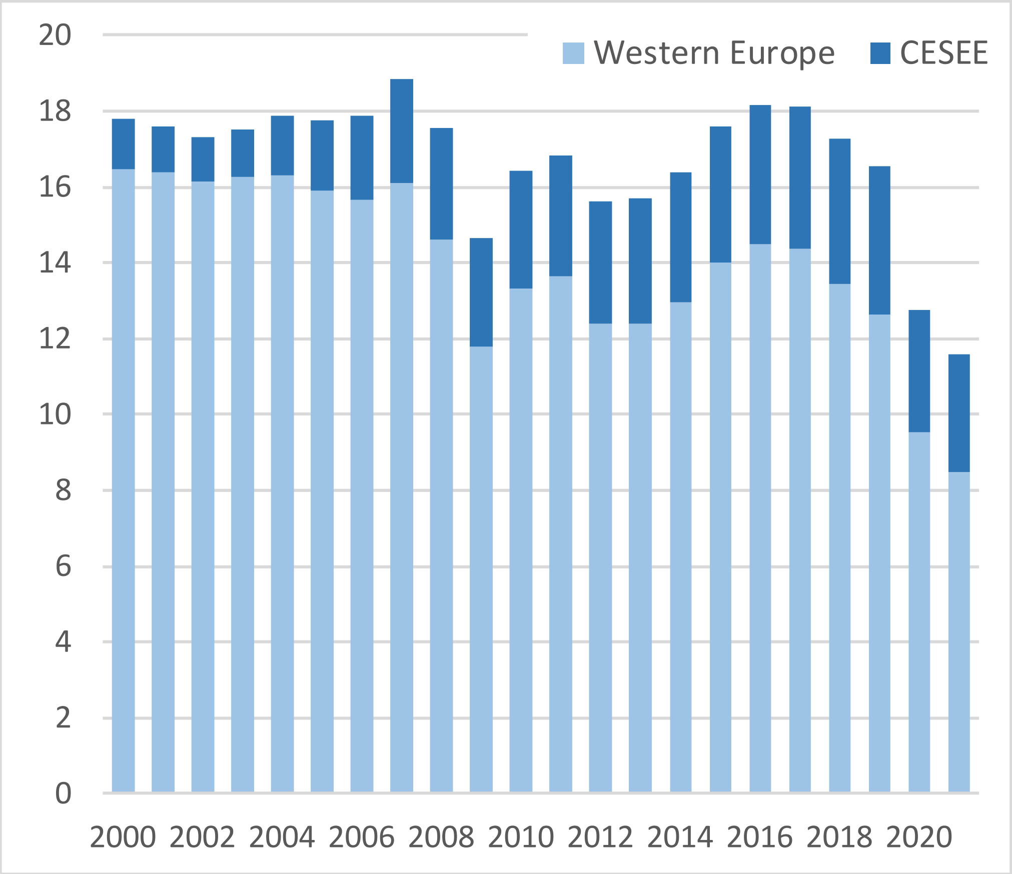
Demand	1.7 mn cars sold in Russia in 2021. USD 6.6 bn of import
Production	1.6 mn vehicles produced in Russia in 2021 (with Renault having a majority stake in Avtovaz)
Further disruption to supply chains	Ukraine providing wiring harnesses, neon gas (used to make chips), both Russia and Ukraine providing palladium, nickel (for batteries), aluminum – production stopped in various sites, shortages, price increases

The general uncertainty, weakening of economic growth and higher inflation will weight on the sector

World Production (number of vehicles, mn)



European Production (number of vehicles, mn)



Source: OICA

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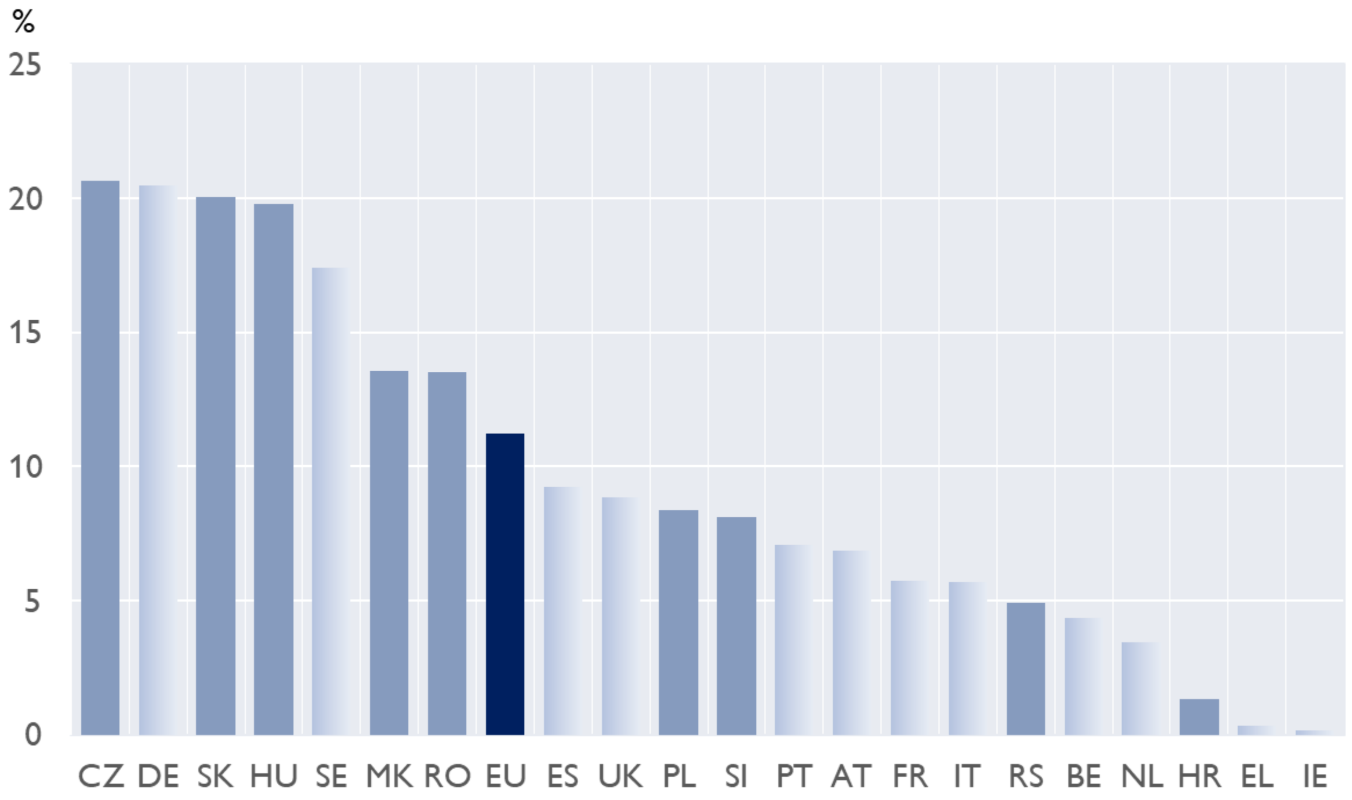
Strong specialization on the automotive industry in CESEE

Automotive sector value added (in % of manufacturing)



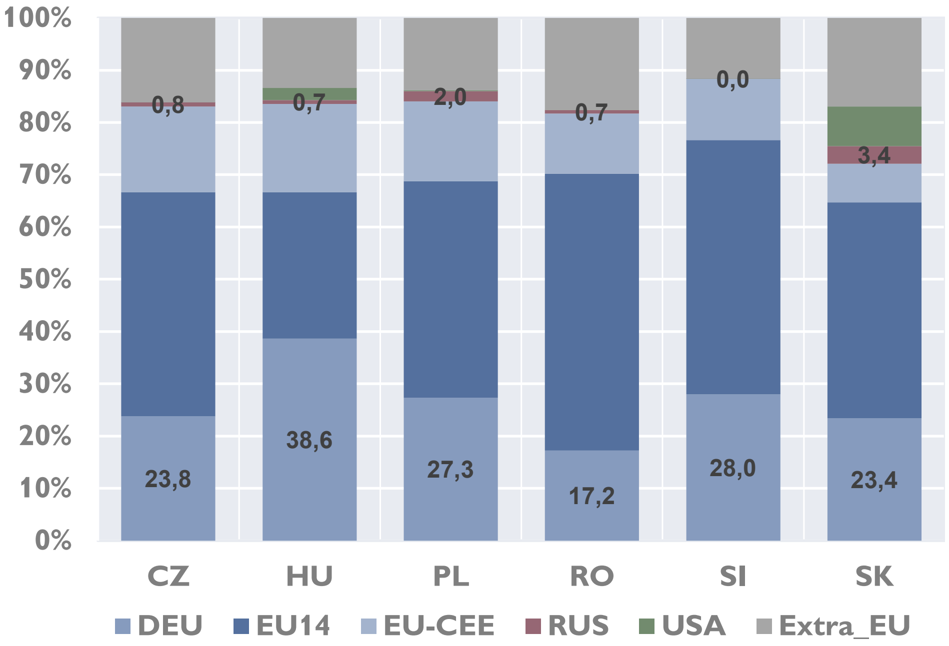
Note: Automotive sector defined as NACE rev. 2 C29 'Motor vehicles, trailers and semi-trailers'.
Note: EU includes the EU27+UK.
Source: OeNB.

Exports heading towards Germany and the EU

Automotive exports (in % of total exports)

Note: Automotive sector defined as NACE rev. 2 C29 'Motor vehicles, trailers and semi-trailers'.
Source: UN Comtrade.

Motor vehicles exports (291), by region

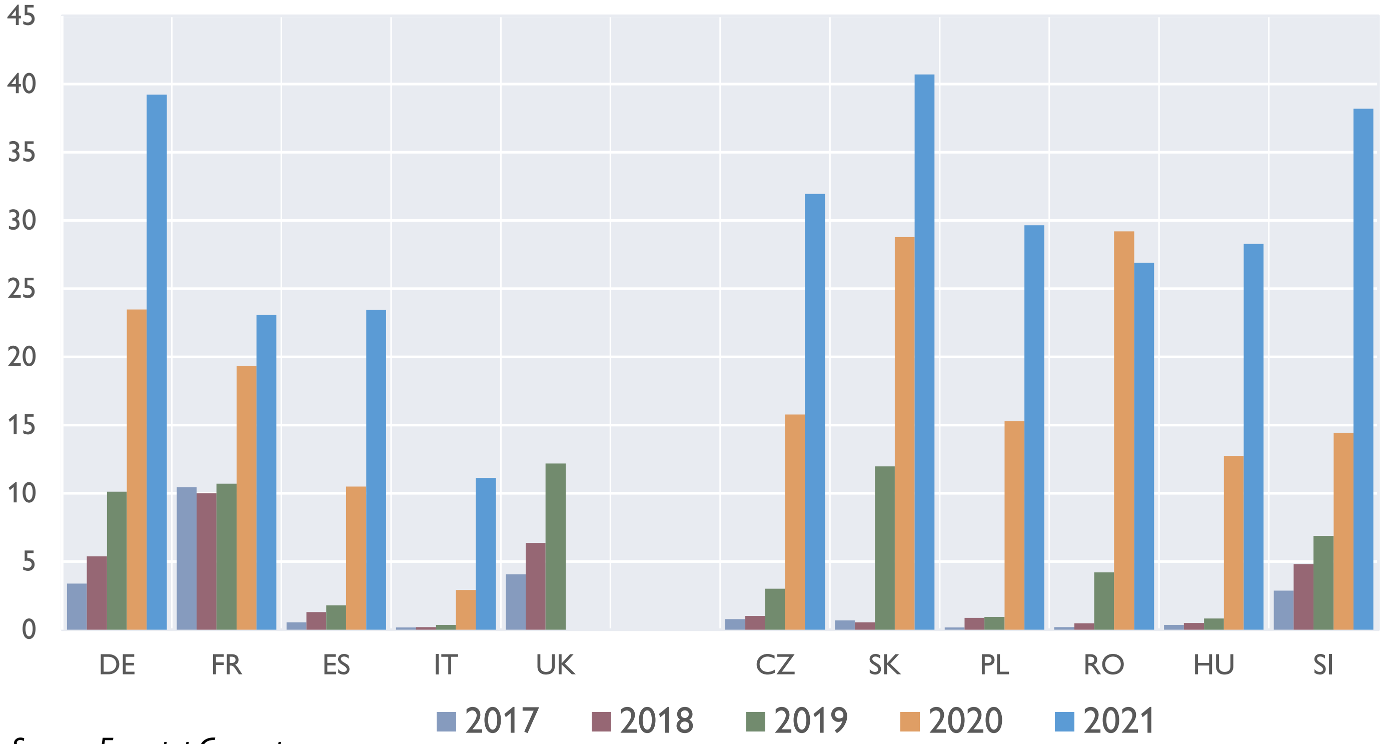


Source: UN COMTRADE.

Transition to electric vehicle production taking off in 2020

Exports of electric and hybrid cars

(share in % of total exported cars, 2017-2021)



Source: Eurostat Comext.

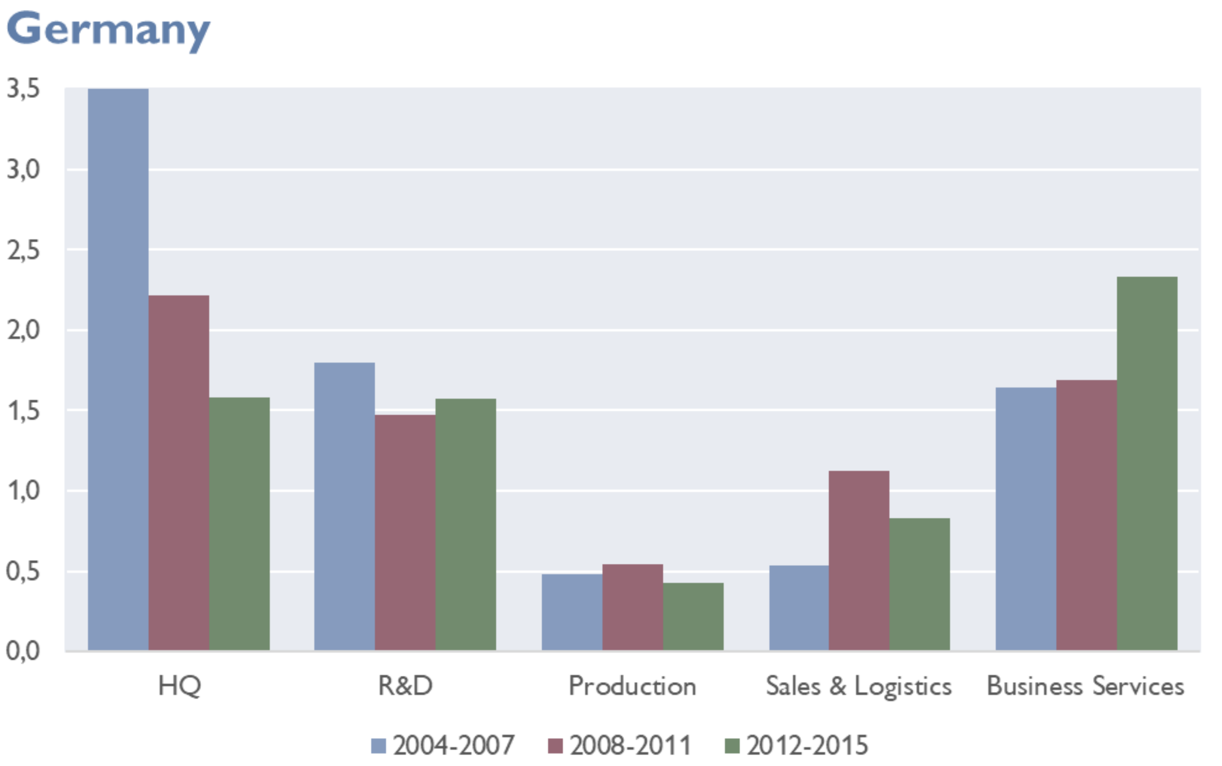
Not only major automotive producers: Rimac and other innovators

https://www.dreamstime.com/photos-images/rimac-car.html

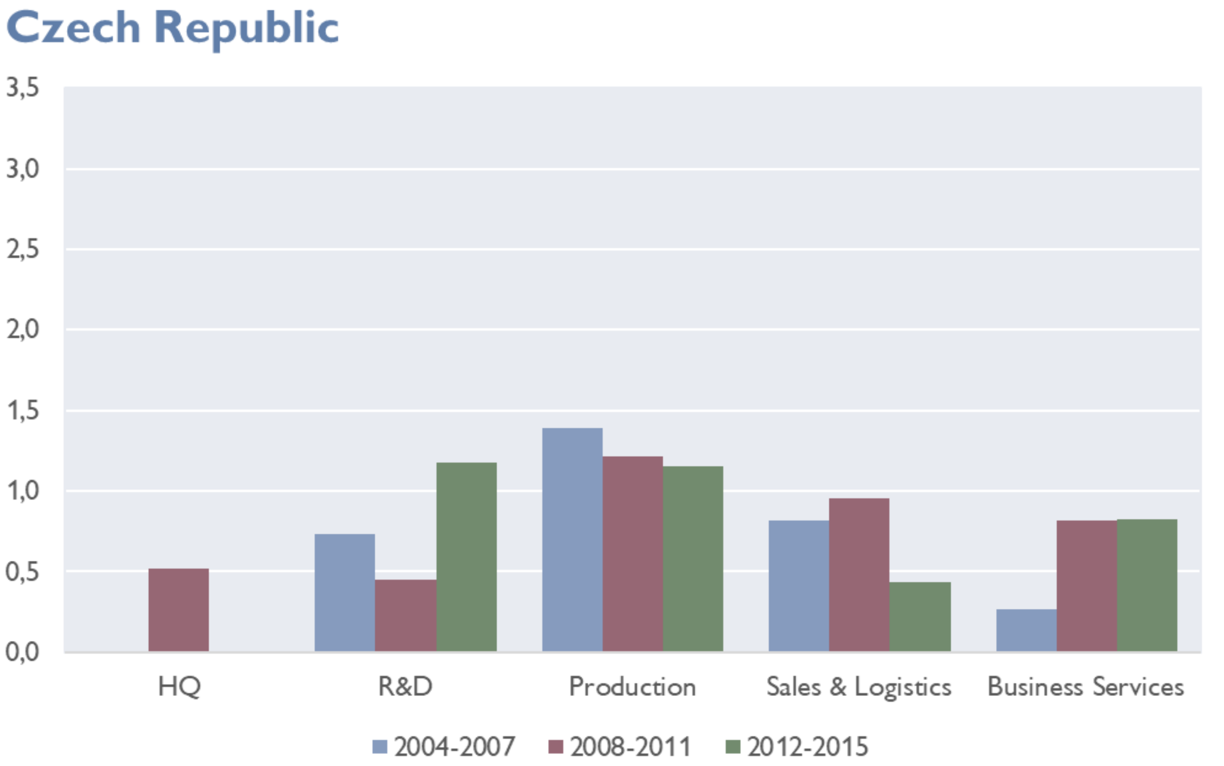
https://www.dreamstime.com/sin-cars-l-city-geneva-switzerland-march-electric-cargo-van-presented-annual-international-motor-show-image144498517

… but CESEE risk to remain trapped in low value-added value chain functions

Relative functional specialization measure of the automotive sector



Note: Automotive sector defined as NACE rev. 2 C29 'Motor vehicles, trailers and semi-trailers'.
Data based on the fDI markets database.
Source: Stoellinger, 2021.



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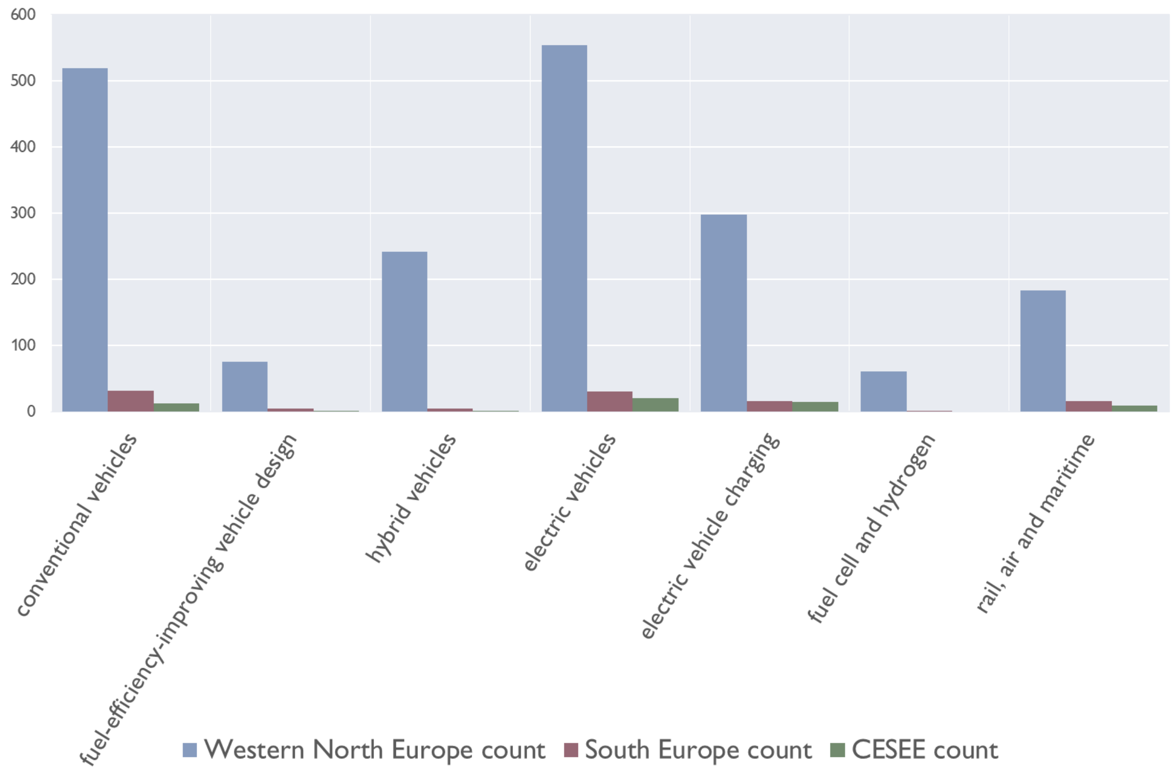
Data based on the fDI markets database.
Source: Stoellinger, 2021.

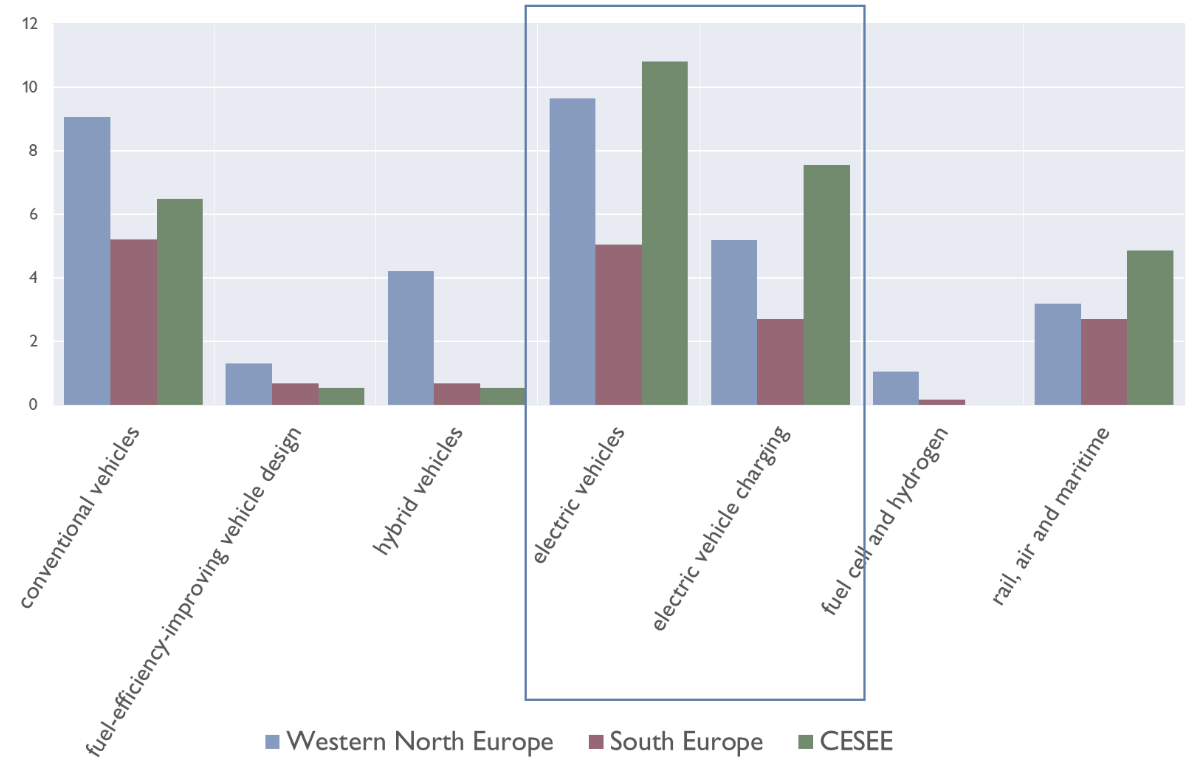
Catching-up in innovation activity a key prerequisite

Number of green patents in transport sector



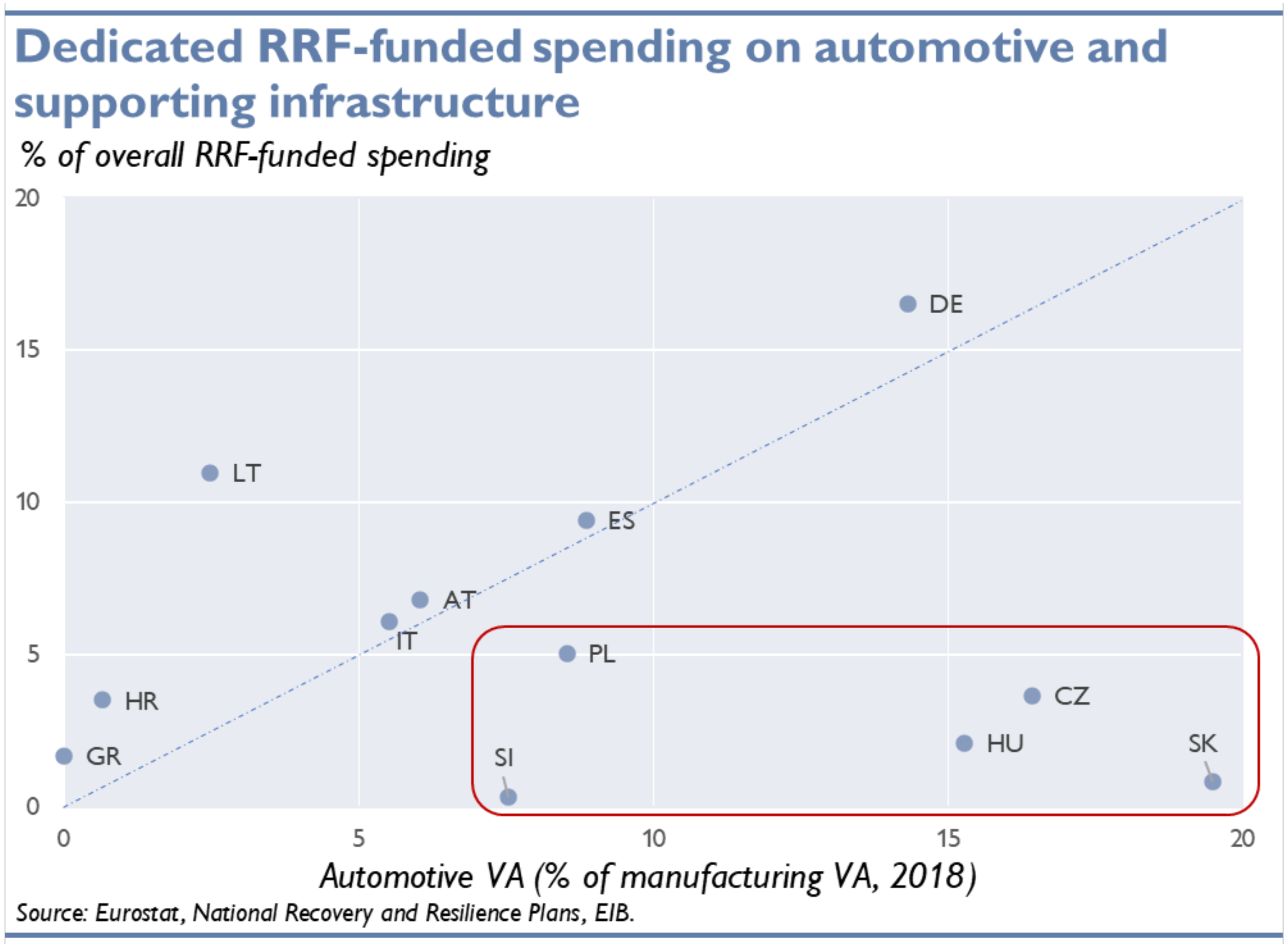
Source: PATSTAT.

Share of green patents in transport sector (%)



Source: PATSTAT.

Recovery and Resilience Facility funds: only a small share goes to automotive and supporting infrastructure in CESEE



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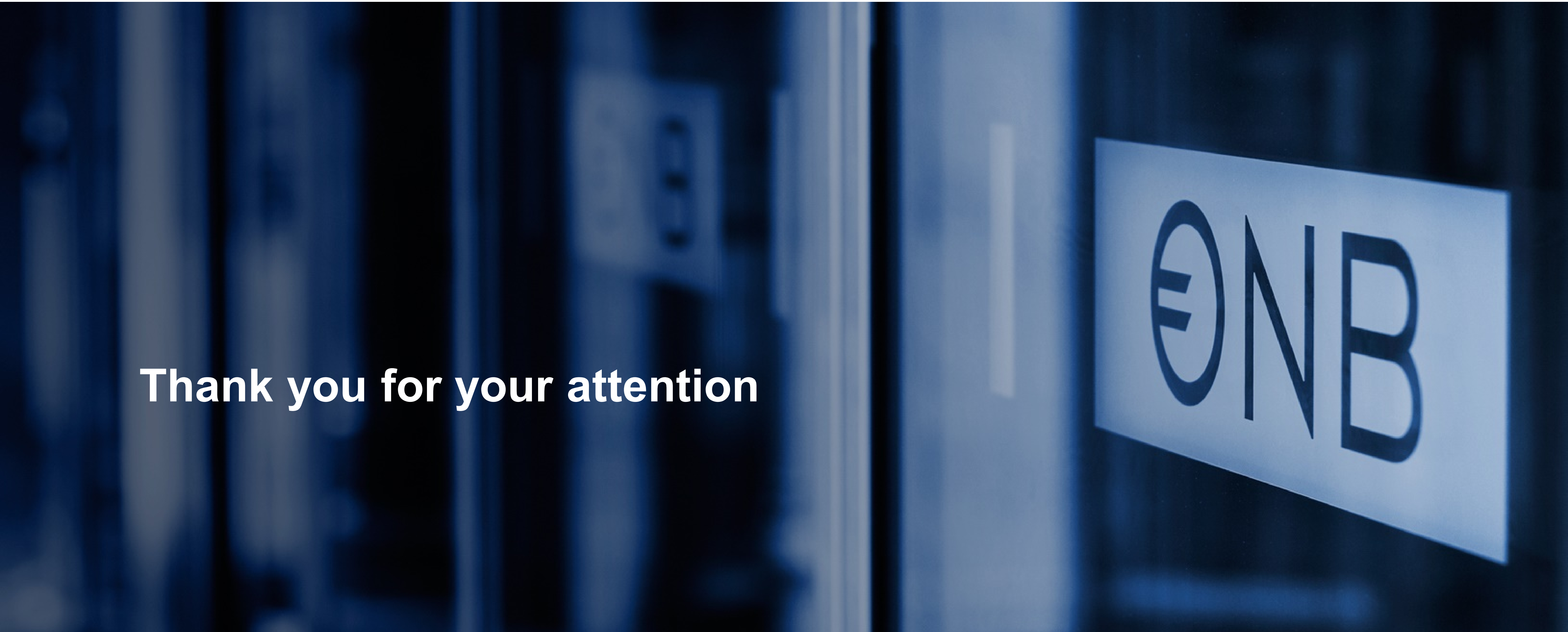

Thank you for your attention