

A photograph of a business meeting. Several people are gathered around a table, looking at a tablet displaying a bar chart and line graphs. One person is pointing at the tablet with a pen. There are papers with charts and a spiral notebook on the table. The background is slightly blurred, showing more people in business attire.

**Interconnected issues:
Chinese cars in EU &
Czech Republic and
industrial self-sufficiency**

Petr Knap

The EY logo, consisting of the letters 'EY' in a bold, black, sans-serif font. A yellow triangle is positioned above the 'Y'.

**Building a better
working world**

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The overall situation on the EU car market is getting complicated given the EV growth slow-down and increasing competition. The rising competition of Chinese OEMs is underpinned by the strong production base, competitive cost structure and resources control.



Section 1: EU car market & Chinese competition



Section 2: Industrial self-sufficiency in the context of the Czech economy: supply chains, crisis scenarios and recommendations



EU car market & Chinese competition



Executive Summary

As the global EV adoption moderates due to high costs, weak economic conditions and charging infrastructure concerns, the sales growth is expected to remain sluggish in the near term.

Consumers are increasingly seeing hybrid cars as a transitional solution towards adoption of BEVs, stimulating substantial sales growth for hybrids



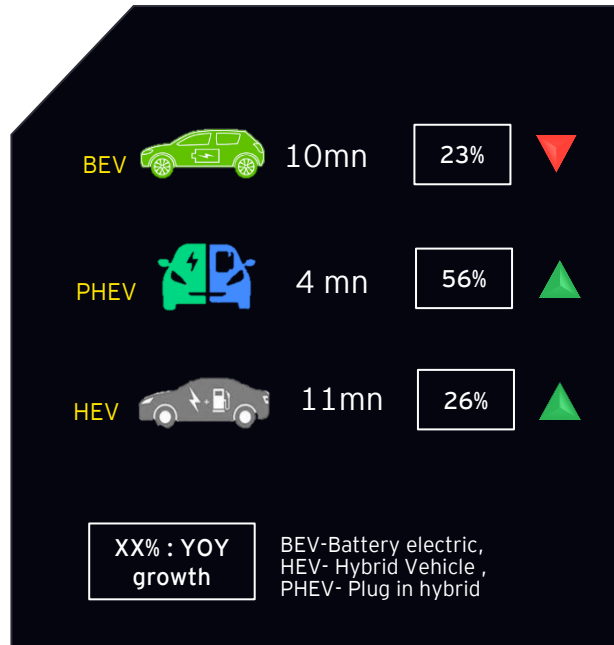
Hybrids have started to garner attention as EV sales growth has hit a speed bump in 2023



EV ecosystem is undergoing a seismic shift from early adopters to mainstream buyers



Regulatory targets for EVs have also softened



OEMs are reducing EV spending and shifting focus to hybrids

- Price increases
- Cost cuts including layoffs
- Postponing EV production plan
- Re-introducing Hybrid models
- Delayed EV spending

Share of consumers who are very unlikely to consider an EV rose across key markets *

Consumers have started **looking towards Hybrids as bridge to BEVs**

- High prices
- Inadequate charging infra
- Uncertainty around aftersales costs and residual values

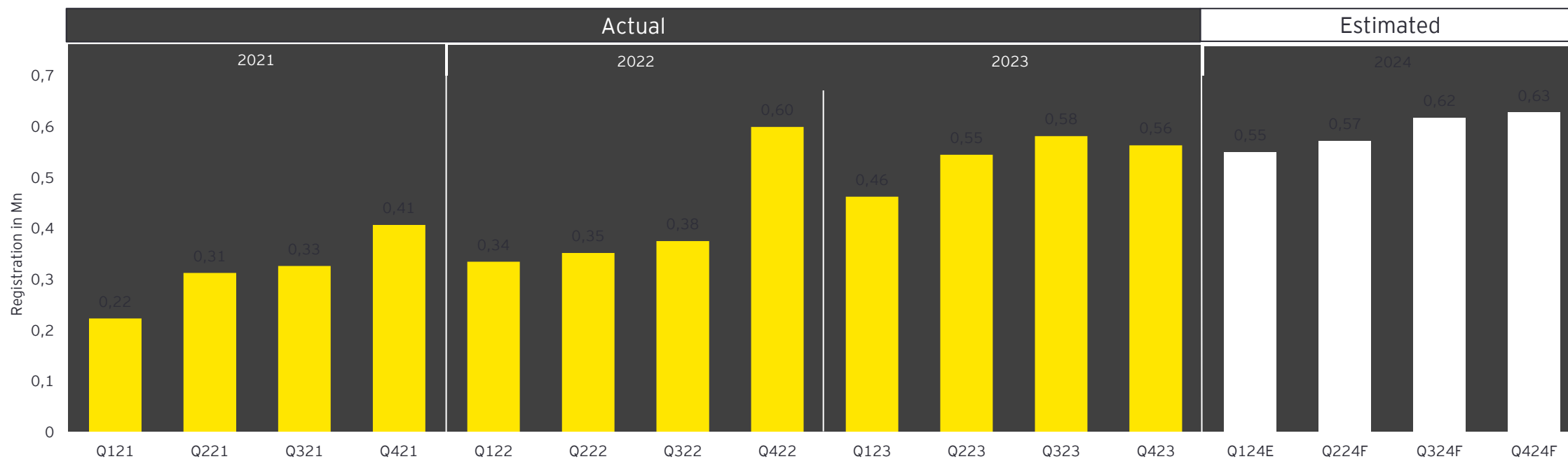
- Cancellation and reduction of EV subsidies
- Delay of ICE bans and EV targets
- Policies extending to non EVs

*2024 Edmunds EV Sentiment Survey



BEV sales growth started dropping in Q4 2023 due to pessimism driven by high prices, reduced incentives, and charging infrastructure issues

Europe's BEV sales growth appears to have entered a **go-slow zone starting Q423**, with **~25% decline* yoy in Dec'23** alone, as Germany, Europe's largest market, abruptly ended EV subsidies



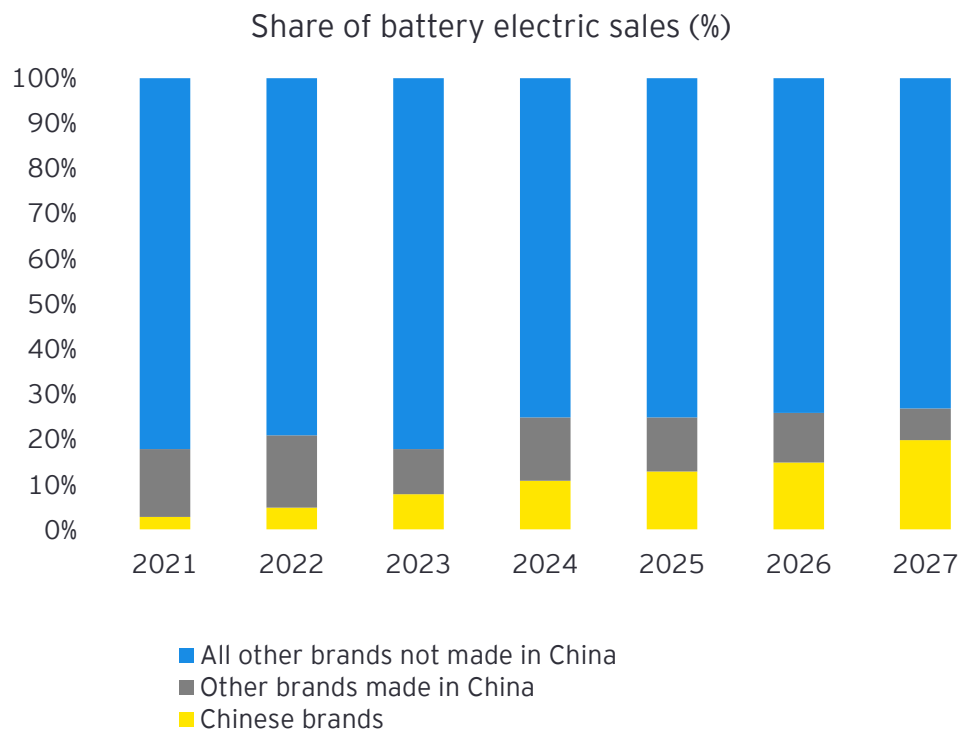
Total BEV sales	1.3 million	1.5 million	2 million	2.5 million
Overall BEV share**	↗ 9%	↗ 12%	→ 14%	→ 17%
Overall BEV growth	66%	↘ 30%	↘ 29%	↘ 23%




Source: ACEA, LMC, EY lens forecaster 2024 study, news articles, EY Analysis

Chinese OEMs are aggressively expanding their presence in Europe with affordable models by establishing local production, adopting efficient operational structures through partnerships

Almost a fifth (19.5%) of EVs sold in Europe in 2023 were made in China, this number is expected to reach a quarter (25%) in 2024

BEVs by Chinese brands could reach 11% of the European domestic BEV sales in 2024 and 20% in 2027



Localisation   

- ▶ Establishment of Polestar as a new European brand owned by Volvo
- ▶ Formation of ZEEKR's European design center to market vehicles as 'Designed in Europe'
- ▶ BYD has confirmed its investment into a new modern NEV factory in Hungary

Partnership      

- ▶ Emil Frey+ GWM - Sales and distribution of GWM cars
- ▶ BYD + Shell - Establish holistic charging solution incl. BEV hubs, charging R&D
- ▶ Nio + Shell - Establish battery swap stations
- ▶ ZEEKR + Plugsurfing - EV charging service as 'ZEEKR Charge' in Europe

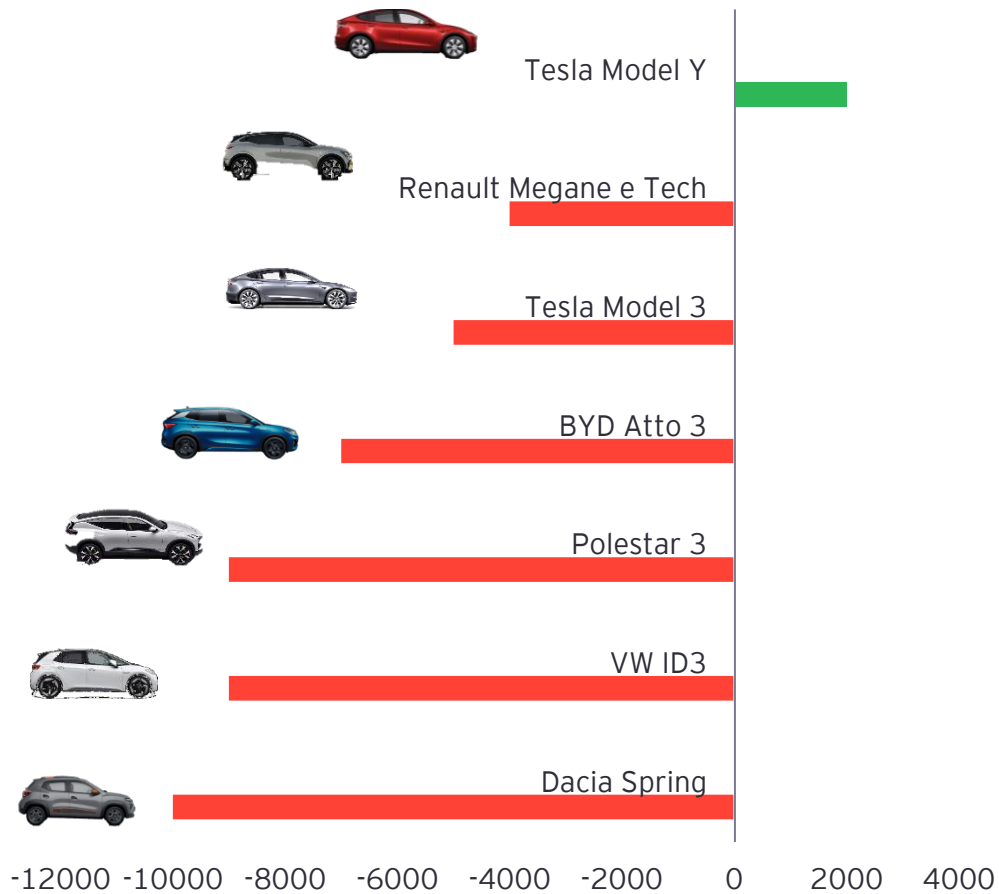
Innovation    

- ▶ E-mobility financing in Europe - Partnership between ZEEKR, BNP Paribas Personal Finance and Arval
- ▶ NIO opened an innovation centre in Berlin for new technologies, localisation, testing and validation in Europe

NEV- New energy vehicle

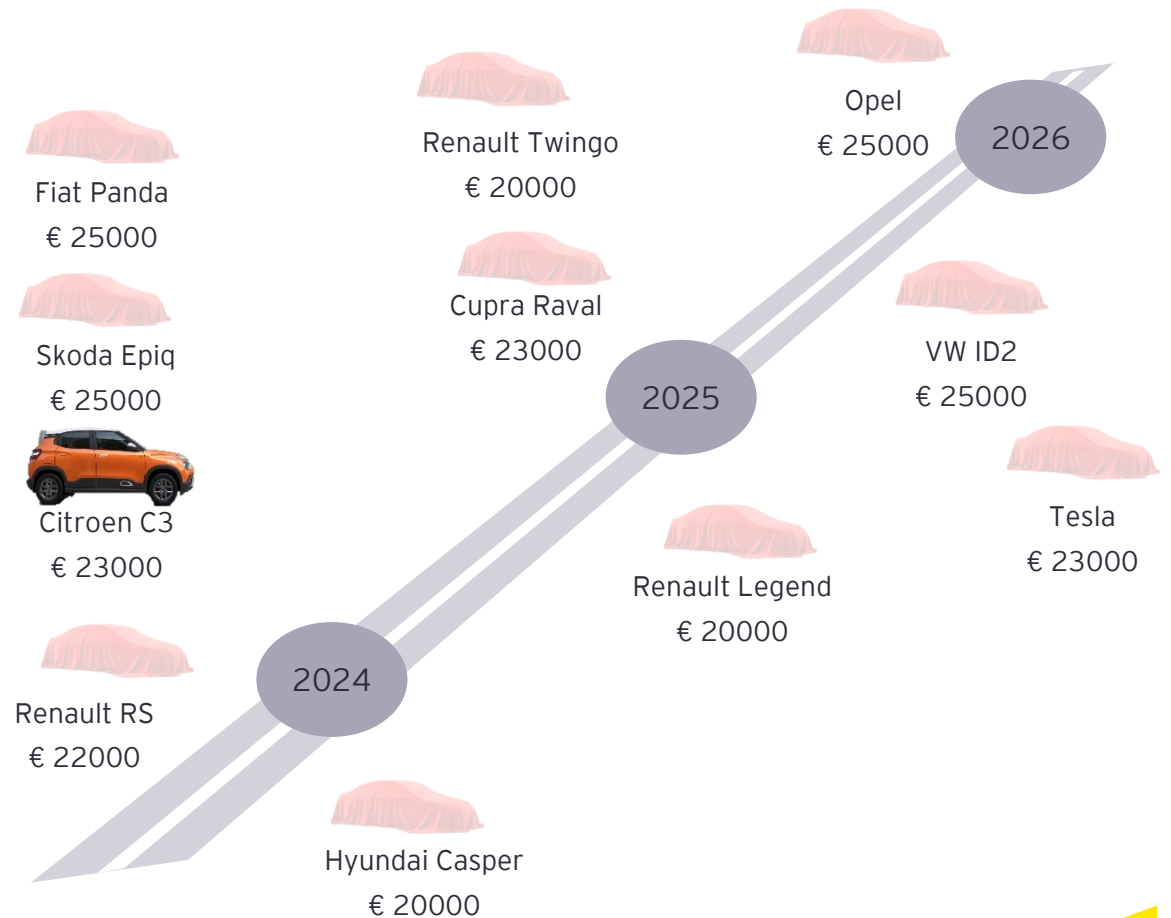
Facing competitive pressure from Chinese brands and an intense price war, European OEMs have cut BEV prices and are now planning to expand their entry-level EV lineup

2023 Price changes across EV models in Europe, in €



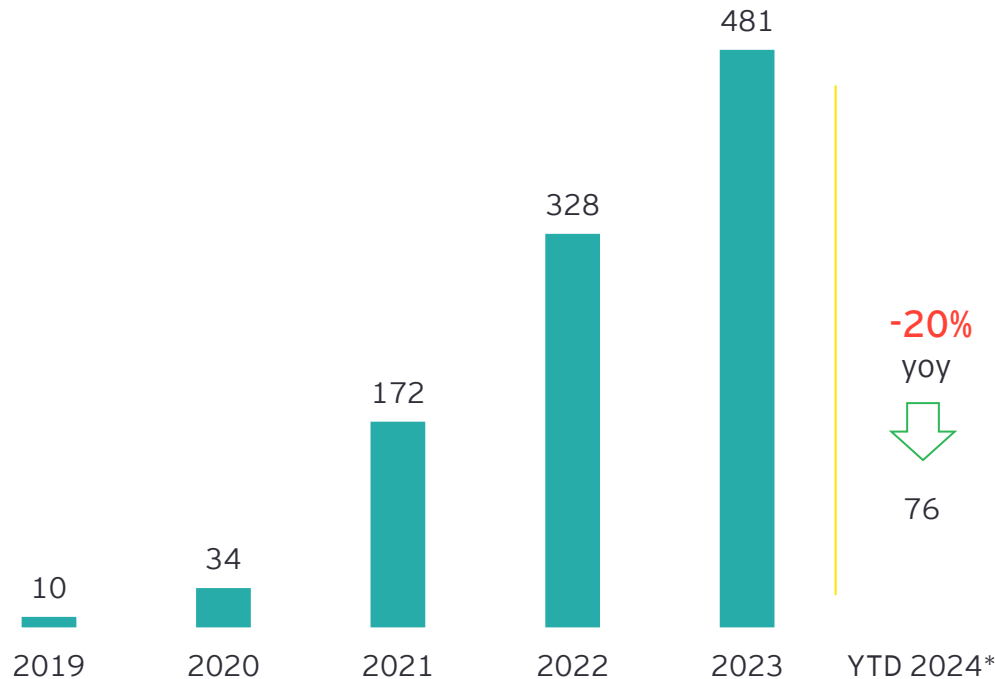
Source: S&P, T&E, ACEA, News articles, EY analysis

OEMs have planned to produce more affordable (<€40K) BEV models in Europe



Amid EU's import restriction probe, EV exports from China to the EU came down by 20% in beginning of 2024

Import of EVs from China to the EU, '000 units



Timeline of EU import restrictions

- Sep 2023: EU Commission announced it would probe alleged subsidies by Chinese companies
- Mar 2024: EU announced that it started a registration process required for it to impose retroactive tariffs

Impact of EU import restrictions

- EU has been the major destination for EV exports from China. Amid import restriction probe, the EV exports from China to EU slashed by 20% in beginning of 2024
- Raising the EU tariff on all vehicle imports from China would make medium-sized sedans and SUVs more expensive than their European counterparts
- OEMs would need to increase domestic production capacities and invest in local EV supply chains to avoid these tariffs
- This will enhance the overall EV production scenario in Europe, creating more E-mobility revenue pools

Source : ACEA, General Administration of Customs, news articles, EY Analysis



Industrial self-sufficiency study introduction

The analysis of industrial self-sufficiency was divided into 4 parts.



Part 1: Defining the significance of industrial self-sufficiency in the context of the Czech economy



Part 2: Supply chain analysis



Part 3: Crisis scenario modelling



Part 4: Formulation of recommendations



Executive Summary

The concept of industrial self-sufficiency is the cornerstone for achieving economic autonomy and stability for the country. This concept encompasses a wide range of activities, from the extraction and production of basic materials to investments in energy, infrastructure, innovation and technology, which are essential to remain competitive in the global market.

For the Czech Republic, the pursuit of industrial self-sufficiency is not only a chance to increase economic stability and independence, but also an opportunity to build on and further develop our rich industrial tradition.

A strategic opportunity for the Czech Republic within the EU

In the context of the European Union as a whole, increasing industrial self-sufficiency is key to strengthening security, sustainability and long-term stability. By reducing dependence on imports from third-party and often undemocratic regions, the EU can achieve greater economic resilience. In this strategic shift, the Czech Republic has a unique opportunity to become a leader within the EU, attracting strategic investment and talented individuals, which will lead to a boost in economic growth and innovation.

Strengthening the industrial self-sufficiency of the Czech Republic as a key to leading the transformation

On the basis of the Antwerp Agreement, which stresses the importance of maintaining industrial activities in the regions, the Czech Republic has the opportunity to strengthen its commitment to maintaining and strengthening its industrial base. By focusing on material self-sufficiency, energy independence, resource efficiency and supply chain security, we can strengthen our existing capabilities and ensure the long-term resilience and prosperity of our industry.

Definition of the significance of industrial self-sufficiency in the context of the Czech economy



Industrial self-sufficiency is the important ability of a given society to operate without obstacles, critical in an interconnected economy

Industrial self-sufficiency is defined as the ability of a given society to operate without obstacles and to be independent of potential risks throughout the entire production cycle, with risk-free assurance of both production inputs and sales of the final product.

Main aspects affecting industrial self-sufficiency

Domestic capacities and possibilities

Natural resources

Trading conditions inside and outside the EU

Political system

Importance of industrial self-sufficiency

National Security

Economic stability and development

Technology development

Independence

The value of goods imported into the Czech Republic has been **increasing steadily** over time from CZK 1,878.6 bln in 2005 to CZK 3,958.1 bln in 2021.

In 2021, **91.8%** of all imports were manufactured products.

The economy and industry of the Czech Republic are predestined for a high degree of openness and industrialization due to its geographical location, industrial tradition and investment.

Exports are primarily focused on the EU single market (**80.4% of total exports of goods** from the Czech Republic in 2022).

Mining and processing of mineral resources

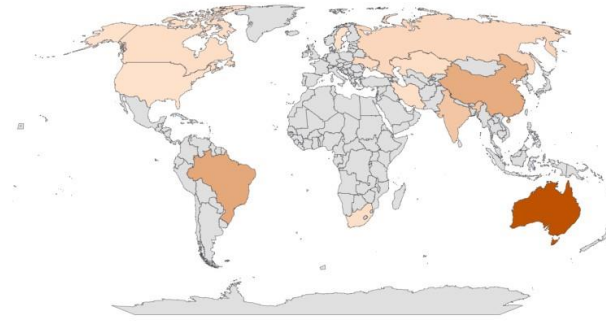


Main areas of extraction of selected raw materials are concentrated in Australia and China, and a handful of other countries outside of Europe

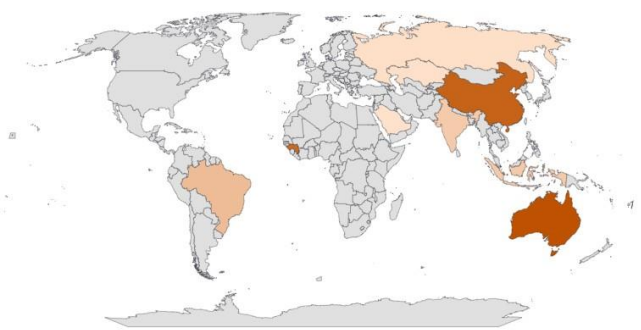
Mining of key industrial raw materials such as iron ore, aluminum, lithium, magnesium, zinc and rubber is mainly concentrated in **Australia** and **China**.

Then in countries such as **Brazil**, **Guinea**, **Chile**, **Peru**, **Thailand**, **Indonesia** and **Vietnam**.

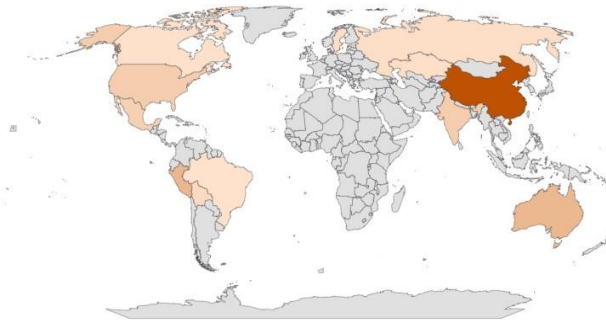
Iron ore



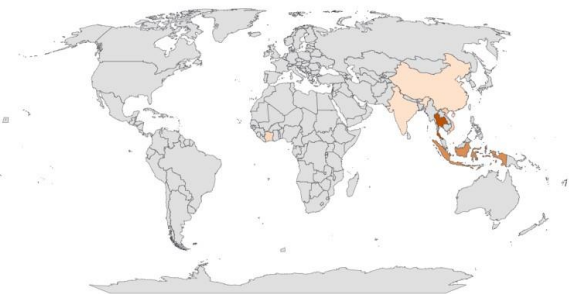
Bauxite



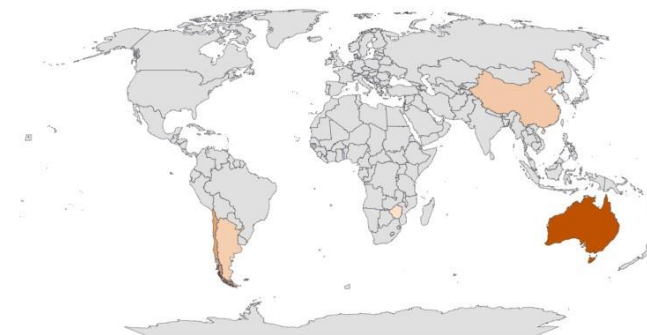
Zinc



Natural rubber



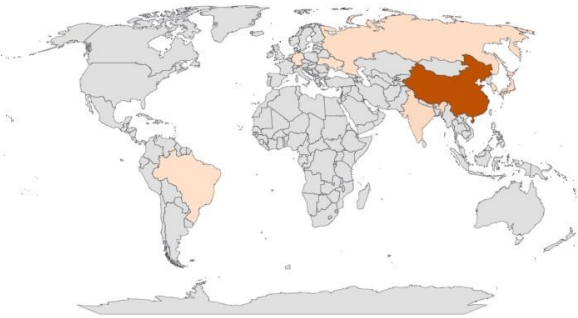
Lithium



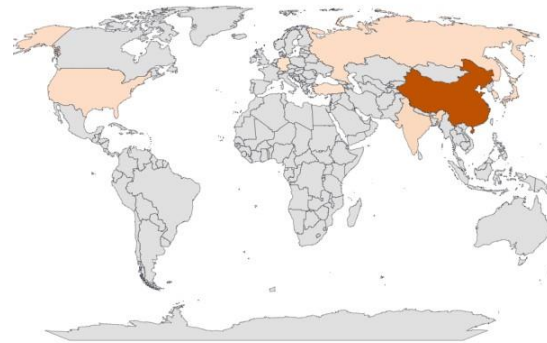
China's dominance in raw materials processing is exceptional

Further processing of raw materials is mainly concentrated in **China**, which plays a key role in the global supply chain of these materials.

Pig iron



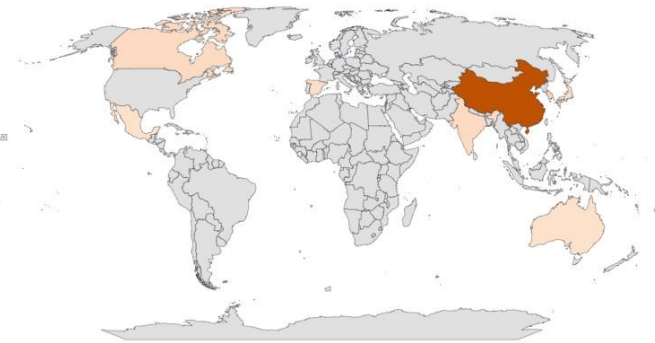
Crude steel



Crude aluminium



Processed zinc



Mapping significant production inputs - the example of lithium that travels typically from Chile to China and then to the rest of the world

Extraction of ore containing lithium



World production:
73,2 k tones

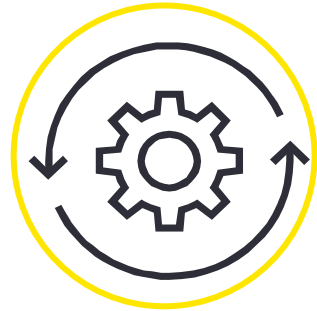
Country of production:

- Australia 53%
- Chile 24%
- China 10%
- Argentina 8 %

Lithium production begins with the extraction of lithium-bearing minerals.

It is not mined in the Czech Republic.

Processing



Lithium compounds are produced from mineral concentrates: lithium carbonate and lithium hydroxide.

The world's largest exporter of processed lithium chemicals is **Chile**.

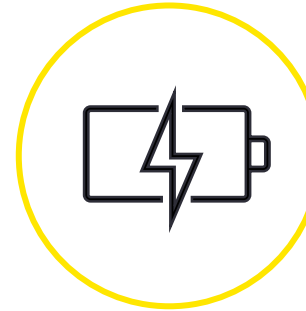
Lithium refining



Refining lithium is the last step before its subsequent use in industry.

China is the world's largest exporter of refined lithium products.

Production of lithium cells



Production of lithium lubricants



Galvanic cells and lithium batteries

Import to the Czech Republic

- Most imports come from the Republic of Korea, China, France, Germany and Malaysia.
- Total imports amount to 1.9 k tones (CZK 1.6 billion).

Exports from the Czech Republic

- The largest export countries are Germany, Denmark, Austria, France and Spain.
- Total exports amount to 0,5 k tones (CZK 1,0 billion).

Trade balance

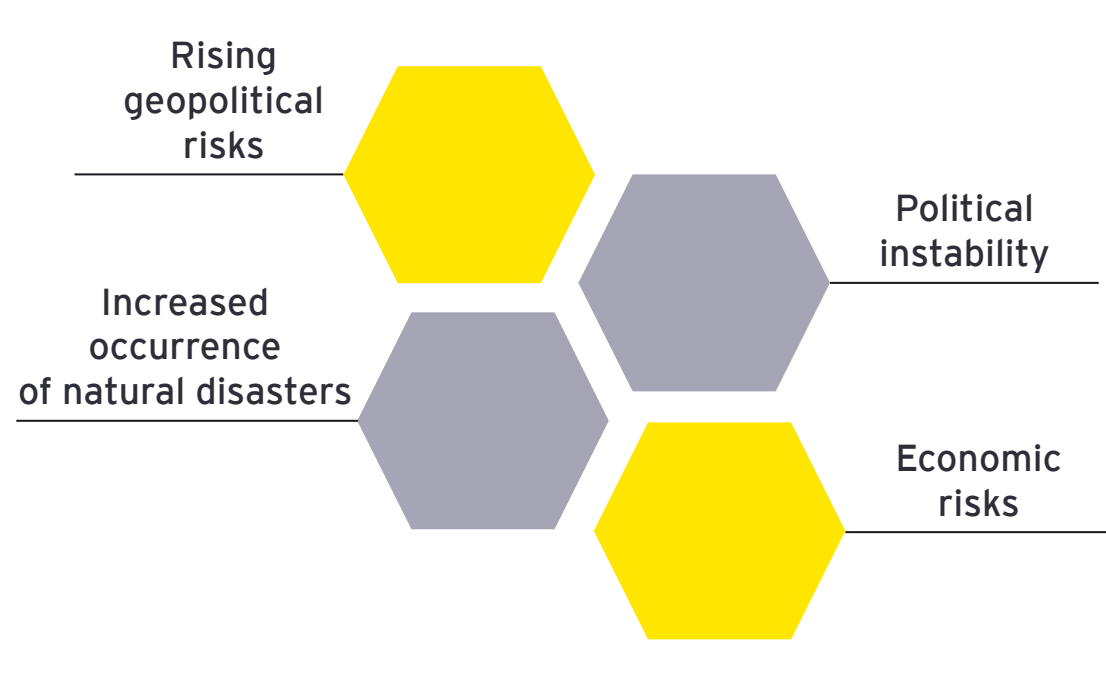
- 1,4 k tones

- CZK 0,6 bln

Risks in global supply chains are rising with geopolitical risks and a major concentration of resources in less than friendly countries

Global supply chains face diverse regional risks that require careful analysis and proactive management.

- East and South Asia
(China, Taiwan, India)
- South and Central America
(Brazil, Mexico, Chile)
- Eastern and Southeastern Europe
(Russia, Ukraine, Turkey)



Germany has developed the first comprehensive **Strategy on China** to balance cooperation with competition by strengthening the EU's internal markets, diversifying supply chains, strengthening technological sovereignty and mitigating the risks associated with the Chinese market and geopolitical influence.

Crisis scenario modelling



Main study scenarios

1

**Geopolitical tensions
- China and Taiwan
conflict**

2

**Increasing
protectionist measures
in the world**

3

**Economic
transformation
and material shortage**

Taiwan's importance to the global economy is evident in logistics as well as in advanced semiconductor production

The Taiwan Strait is one of the busiest shipping lanes in the world.

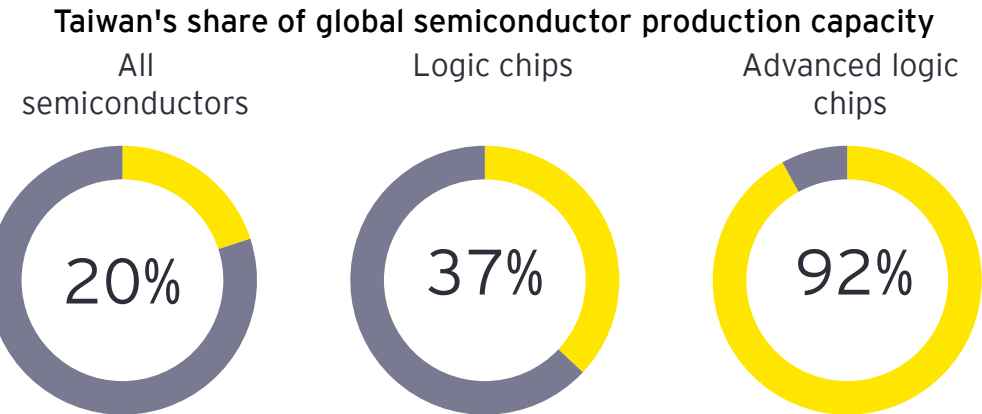
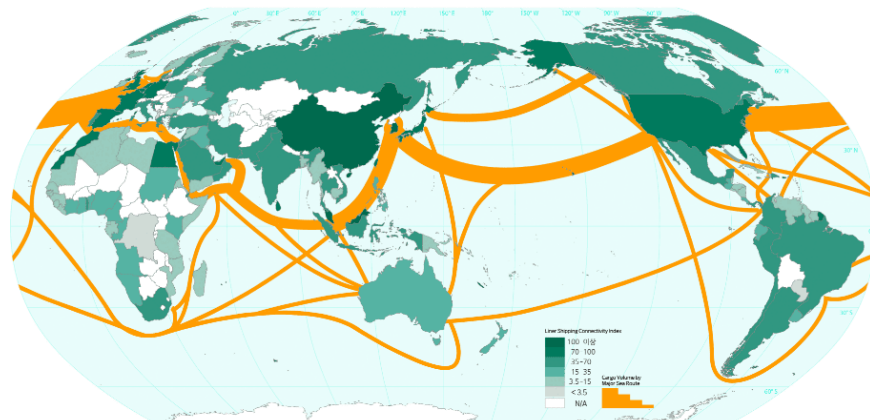
Taiwan dominates the global market for the production of the most advanced chips.

> 88%

of the world's largest container ships pass through this strait every year
(Bloomberg)

40%

of EU trade passes through the Taiwan Strait
(Central European Institute of Asian Studies)



Source: IEP, Global Peace Index 2023

China's importance in the global economy becomes very evident if we look at the early stages of all key supply chains

China is one of the world's largest processors and exporters of raw materials and minerals.

China is also one of the world's major trading partners.

China controls **80% of the world's rare earth refining industry**, making the processing of these raw materials heavily dependent on the Chinese market.

(Visualcapitalist)



46% of German industrial companies depend on intermediate goods from China.

Given the close links between the Czech and German economies, changes in German-Chinese trade relations could significantly affect the Czech economy.

(Ifo Institute Survey)

Germany has developed the first comprehensive **Strategy on China** to balance cooperation with competition by strengthening the EU's internal markets, diversifying supply chains, enhancing technological sovereignty and mitigating the risks associated with the Chinese market and geopolitical influence.

Consequences of the China-Taiwan conflict would be devastating to both economies as well as to the world economy

2.8%

Decline in global economic output

7%

China's economic slowdown

40%

Taiwan's economic downturn

During the 2021 semiconductor crisis, passenger car production in Europe fell by around 13% on average, with some countries, such as Germany and Italy, experiencing production declines of up to 25%.

If there were a complete blockade of Taiwan, the impact would be much more widespread and would affect the entire automotive industry and associated sectors in many countries, including the Czech Republic.

Source: IEP, Global Peace Index 2023

Recommendations



The main asks on the Government of Czechia are to...

1

Comply with the European Critical Raw Materials Act (CRMA)

2

Create and maintain a good investment environment for specific projects

3

Take the initiative in the area of industrial self-sufficiency

Thank you for your attention



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