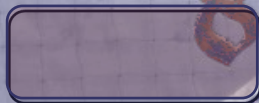




2024

Business

Outlook



amchamcz

- 3 President's Intro**
- 4 Vice-President of Intel Preface**
- 5 Executive Summary**
- 6 General Indicators with David Marek, Deloitte.**
- 7 GDP and Consumer Prices**
- 8 FDI**
- 9 Technology**
- 10 People: Availability**
- 11 People: Labor Costs**
- 12 People: Qualifications**
- 13 People: Migration**
- 14 Hays Market Insights with Agnieszka Pietrasik**
- 16 Infrastructure: Energy- Consumption and Prices**
- 17 BCG: Decarbonizing the Economy with Jiri Svejcar**
- 18 Infrastructure: Energy- New Capacity and Renewables**
- 19 Kearney: The Energy Transition with Martin Kuca and Petr Materna**
- 21 Infrastructure: Digital**
- 22 Infrastructure: Transport**

## President's Intro



**Milan Šlapák**  
CEO  
RSBC

**President**  
American Chamber  
of Commerce  
in the Czech Republic

Except for a few bumps and small surprises, our business community has lived through a golden era of growth and calm. The big news has almost been universally good; a constant inward flow of direct investment (our dividend “crisis” is not so much a crisis but the fact that the inward flow is so much larger than the outward flow), the spread of supply chains and markets to span the globe, the continuous peaceful and smooth transitions of democratic governing coalitions, joining Nato, and joining the EU. We were told that this was the end of history, and, unless we stared hard, it really seemed that was so.

Yet, history does not end. And now we are experiencing this. The threat of another pandemic became the reality of one. The difficulty of Russia losing its empire and its stature as one side of the Cold War has now been inflicted in Ukraine and with threats to obliterate Eastern Europe with atomic missiles. China’s economic growth has soured and transformed into military expansion. Populism and autocracy have crept back into our democratic discourse. Our own economic “miracle” has been exposed as a temporary benefit of relatively inexpensive talent re-entering mature, wealthy markets.

Each of us now face more uncertainty and more complex decisions than at any time since 1989. How we persuade the government to act, and how we guide our own companies will determine whether this first golden period of Czechia will grow into something greater, or be remembered as the second nostalgic moment of Czech potential.

That is why AmCham has urged the Czech government to focus on building a better and more sustainable technology base, attracting and developing more innovative talent, and becoming a leader in government planning and investment into economic potential.

And it is also why we decided to increase our Intel activities that share the wealth of information within our membership and spur discussions on our economic future that based on hard data and unsparing analysis. This Business Outlook is the flagship of this effort. It is not meant to be comprehensive, but it is meant to provide you with a multi-sided perspective of what is going on in our country, so that you can plan your business better, and that we together can move this country forward to a time of even greater prosperity and security.



AmCham's Intel activities are built on two facts.

Businesses need to make decisions on the best and most complete information they can gather on a market.

Our membership contains a wealth of experts with disparate and crucial information for understanding the market, and with interesting and sometimes conflicting interpretations of that information.

We are trying to create publications and forums that provide with that data and those views.

This report attempts to unify those activities in one overview of the market. That market is broken down into the important factors that impact your business: technology, people and infrastructure. We excluded government policy and will address that separately in an advocacy report.

We will supplement this report with events at which we will encourage the experts in our membership to interpret data. We will also add a workforce report and a technology report.

When we present data, we want to compare our outcomes with our neighbors and the countries with which we aspire to compete. Our benchmark neighbors are Austria, Poland and Hungary. Our aspirational benchmarks are Ireland, the Netherlands, and Germany.

We mean to provide you tools for making business decisions, a channel for hearing other business people's views of the market, and a platform for promoting your own expertise. Please let us know how we can achieve these goals better.

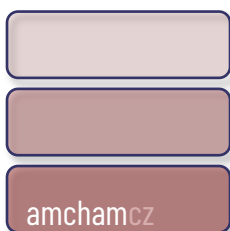
My own view of the Czech market is that we are in a major transition, and many important business leaders and politicians are ignoring that reality. Our primary economic partners are making larger investments into sustainable technology and sustainable energy than we are. Our primary economic partners are moving faster in investing into digital business and government than we are. Our primary partners understand the need to supplement domestic talent with foreign STEM and innovative students and experts, and have moved first and further in attracting them than we have. It is not too late for us to catch up, but we need more focus and better execution.

I hope this Business Outlook becomes an essential part of your decision-making. Please let us know how we can improve it.



**Martin Skřehota**  
**Senior Director**  
**Operations**  
**Finance Strategy**  
**Carrier**

**Vice President for Intel**  
**American Chamber**  
**of Commerce**  
**in the Czech Republic**



**Our aim in this Outlook is to present you with data and some analysis without providing you with too many “answers”, because the right way to view the Czech market depends a great deal on what your business does. So, what we aim to do with this document, is to give you a diverse set of facts, and let you sift through them to see how they fit your business.**

**To help you along, we have asked experts in our members to provide some analysis and research of their own. We thank Deloitte, Hays, BCG and Kearney for giving us a better idea of what is going on in key parts of the economy.**

**AmCham does policy, and what we get from the policy perspective is the following:**

- **We need more investment in business research. (page 9)**
- **Our demographics will not switch overnight, and we need much more immigration, particularly in STEM-related areas. (page 10,12,13)**
- **If we want equal opportunity for equal pay, we need to take a look at what is happening with the employment of women aged 15-29. (page 10)**
- **We need to take a look at why university graduation is down, especially in STEM studies (page 12)**
- **The path between where we are today and where we need to be in sustainable energy is not clear at all. (BCG expert input page 17, page 18, Kearney expert input on page 19-20)**
- **We need to do something about the digital capabilities of smaller companies. (page 21)**

**That is what we will take from this outlook and put into our update of the Letter of Innovation that will go to the government later this month.**

**We would like to hear what you learned, and what we can do better next time.**

**Weston Stacey, Executive Director**  
**wstacey@amcham.cz**

# General Indicators

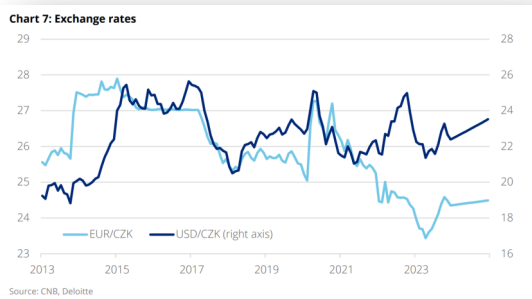
## GDP

Most forecasts estimate a rebound to low single digit growth in 2024. On average, private sector predictions are more wary than the Czech National Bank and Finance Ministry forecasts. Geopolitical risk of widening conflict across the Middle East toward Iran raises concern that shipping costs will spur further inflation and supply shortages. Companies may delay needed efficiency and sustainable product development investments until the outcomes of US and EU elections are known. Government consumption is not likely to increase substantially. Household consumption depends on the continued fall of inflation and interest rates.

## Inflation

The spike in inflation is likely to deflate further in 2024. Producer Price increases from the supply chain disruptions continue to work through the economy. Consumer prices also continue to be impacted by producer increases, including the impact on food prices of the attempted annexation of Ukraine by Russia. While the ripple effect of covid restrictions and order cancellation has mostly subsided, the impact of Ukraine and now the threat to shipping from the Middle East conflict still could push prices higher. Balancing that risk, wage levels that have risen below inflation should inhibit its growth.

## Exchange Rate

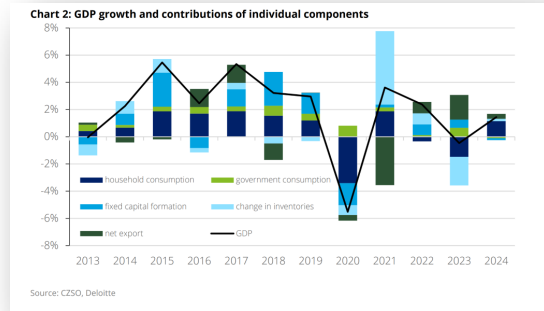


“Given that the CNB had postponed the start of the interest rate cut cycle by about one quarter, the pace of cuts could be relatively brisk. According to our estimated reaction function, the key interest rate should be 3.50% at the end of this year

Next year, the koruna is likely to come under pressure again. The CNB will ease monetary policy, but the ECB will have to be cautious with easing. Nevertheless, the koruna should end the year close to 24.50 EUR/CZK.”

**David Marek, Chief Economist,**  
**Deloitte Central Europe**

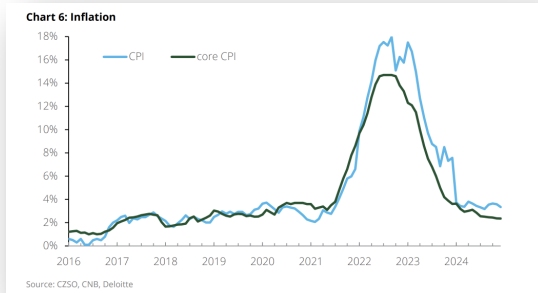
## GDP Forecast



“In terms of GDP formation, information, and communication activities (0.3 percentage point) and manufacturing (0.2 percentage point) will be the largest contributors to GVA in 2023 ”

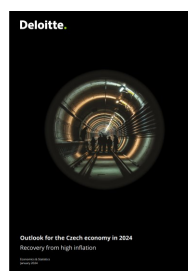
**David Marek, Chief Economist,**  
**Deloitte Central Europe**

## Inflation Forecast



“A question mark hangs over the development of energy prices. Although the unregulated market price of electricity and gas is falling on the exchanges, the Energy Regulatory Authority has announced a significant increase in the regulated component of energy prices of around 20-30%, which may ultimately nullify the effect of the fall in prices on the exchanges. Food prices may be another problematic item. Although the government has reduced the VAT rate on food from 15% to 12%, supermarkets have already announced that they will be forced to increase prices from the new year onwards due to rising energy prices.

**David Marek, Chief Economist,**  
**Deloitte Central Europe**



# General Indicators

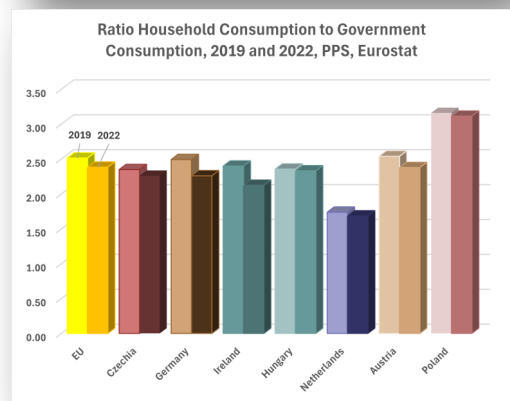
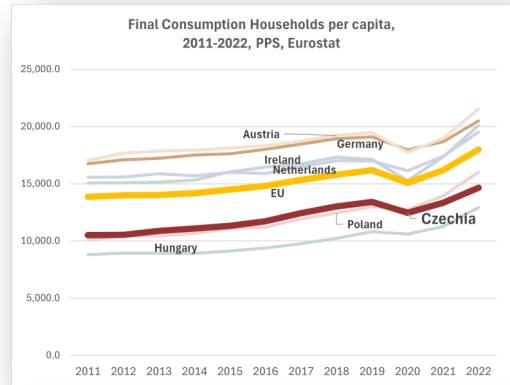
## GDP Components

Czech household consumption per capita is slowly approaching the EU average. The increase in household consumption here experienced less of a lift than in other benchmark countries. The ratio of household consumption to government consumption (how much PPS of household consumption for every 1 PPS of government consumption is lower than the EU average, but in line with Germany and Ireland.

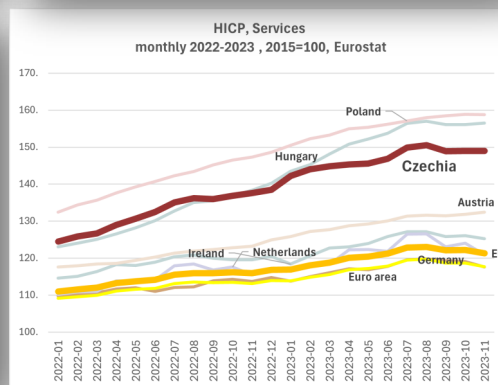
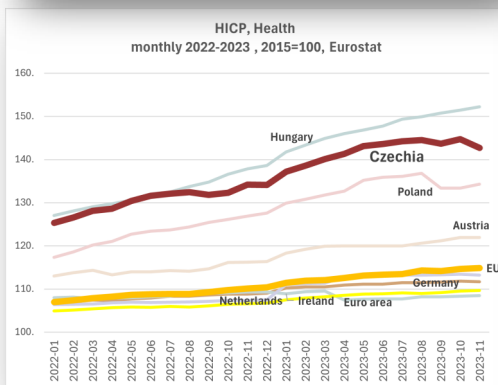
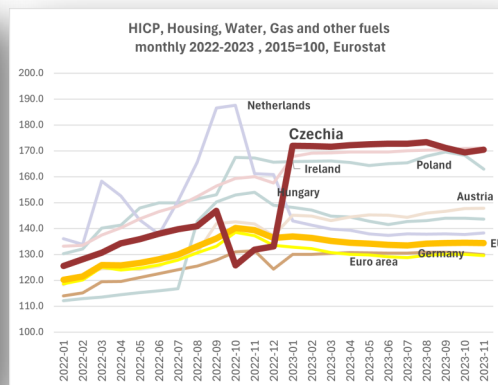
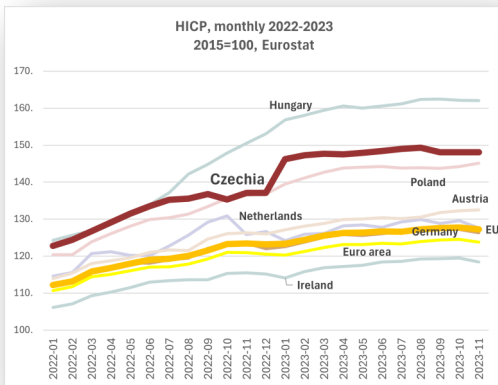
## Consumer Prices

Overall consumer price increases stabilized over 2023, and even dipped slightly at the end of the year. In some areas, such as health and services, prices continued to rise.

## Household Consumption



## Consumer Prices



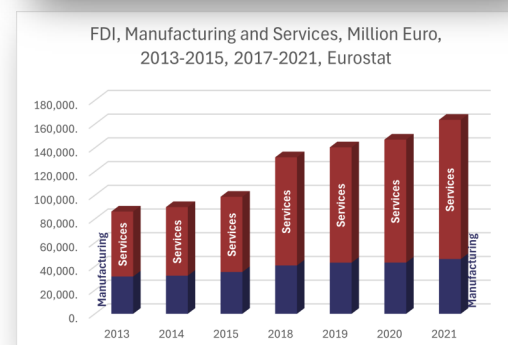
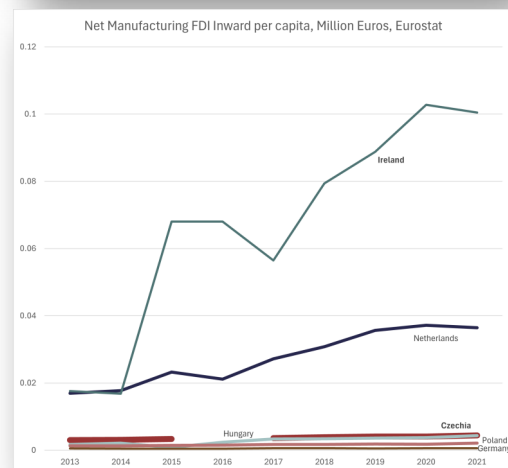
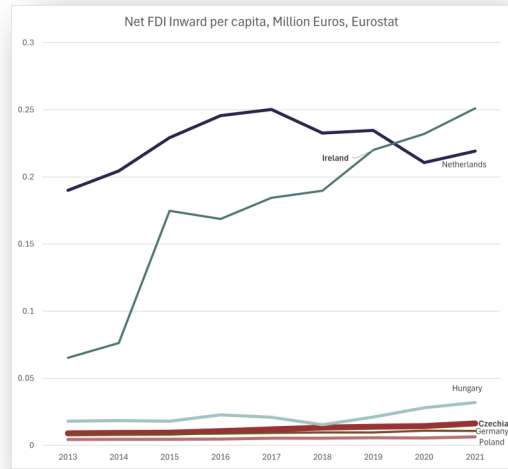
## General Indicators

### Foreign Direct Investment (FDI)

Czechia remains close to the top of the CEE range for total FDI per capita and FDI per capita in manufacturing. Czechia outperforms Germany in both. The country still lags significantly behind Ireland and the Netherlands.

Growth in FDI is primarily driven by increased investment into services.

### FDI





# Technology

## Production

The Czech Republic produces high-tech products for export at the EU average. The country hosts 8% of the enterprises conducting high-tech manufacturing, generates 1.8% of the high-tech manufacturing turnover, and produces 1% of the valued-added created by high tech manufacturing in the EU.

The number of entities is more than twice than number in Hungary and more than the number of entities in France or Spain.

Turnover equates to 4.64 million euros per entity. The EU average is 20.39 million euros per entity. Germany generates 21.62 million euros per entity.

High tech manufacturing creates .875 million euros per entity in the Czech Republic. The EU average is 7.01 million euros per entity. Germany produces 7.41 million euros per entity.

## Development

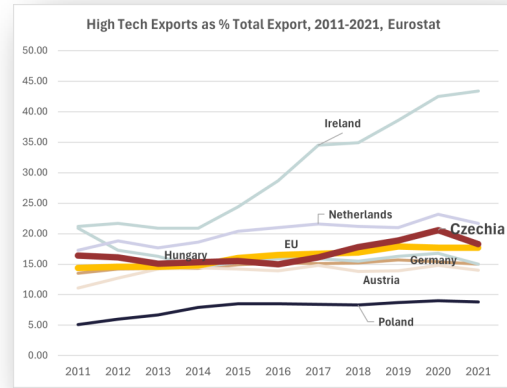
Business investment in research & development remains lower per capita than the EU average. The ratio of business research expenditure to other sources of research spending is the lowest of the benchmark group. The country's share of total research spending has plateaued after a period of steady growth prior to covid.

## High Tech Manufacturing

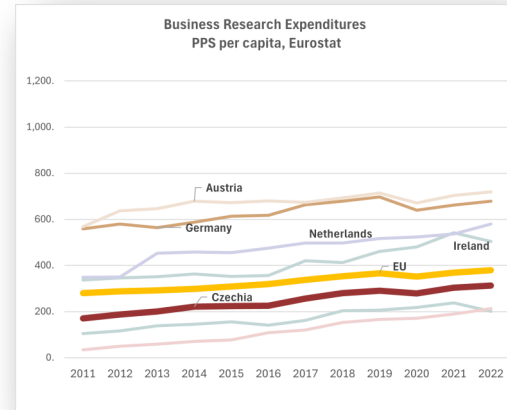
High-tech manufacturing statistics, by country, 2020				
	Number of enterprises	Turnover	Production value	Value added
			(€ million)	
EU	42 848	873 588	785 854	300 403
Belgium	715	40 692	45 054	16 107
Bulgaria	441	1 336	1 318	505
Czechia	3 419	15 874	14 974	3 026
Denmark	753	..	..	..
Germany	9 798	210 868	184 593	72 618
Estonia	149	..	..	..
Ireland	..	..	..	..
Greece	539	3 417	2 932	941
Spain	2 700	29 570	29 167	10 189
France	2 923	146 504	139 732	38 825
Croatia	583	1 216	1 223	521
Italy	5 459	56 386	57 740	21 387
Cyprus	..	..	..	..
Latvia	213	734	698	269
Lithuania	170	791	747	305
Luxembourg	13	..	..	..
Hungary	1 438	18 423	15 596	3 857
Malta	..	..	..	..
Netherlands	2 171	..	..	..
Austria	724	14 567	13 016	5 120
Poland	4 314	16 708	15 026	4 068
Portugal	531	4 349	3 995	1 145
Romania	949	4 106	3 830	1 413
Slovenia	379	..	..	..
Slovakia	..	..	..	..
Finland	592	21 423	13 896	4 183
Sweden	1 474	..	..	..

Source: Eurostat (online data code: sbs\_na\_sca\_r2)

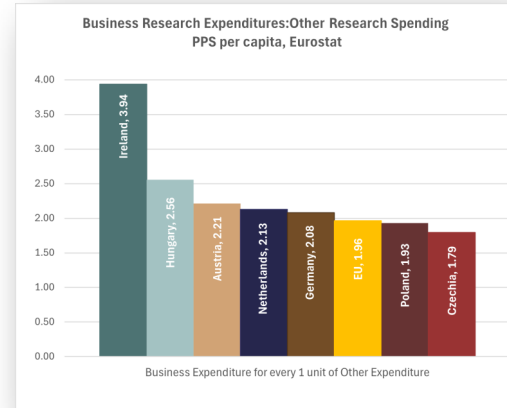
## High Tech Exports



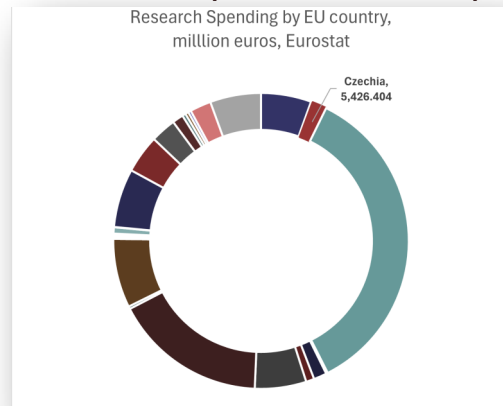
## Business Research Expenditure per capita



## Business Research Expenditure to Other Research Spending



## Business Research Expenditure to Other Research Spending



# People

## Availability

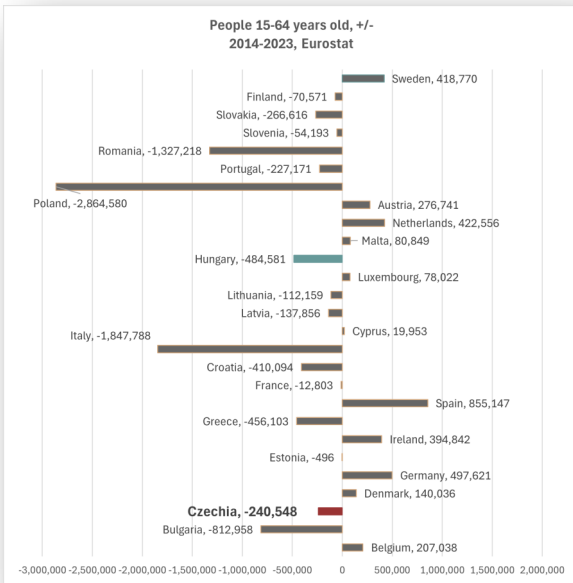
Czech citizens aged 15-64 years are employed at levels higher than the EU average. That advantage holds true for people in the ages 55-64 years, who had an employment rate in Czechia nearly 10% higher than the EU average. That is the 6th highest employment rate in the EU for that age category.

Only 44% of the population aged 15-29 is employed in Czechia, which is 5% lower than the EU average. Females in that age category have the 7th lowest percentage employment (37% in the EU).

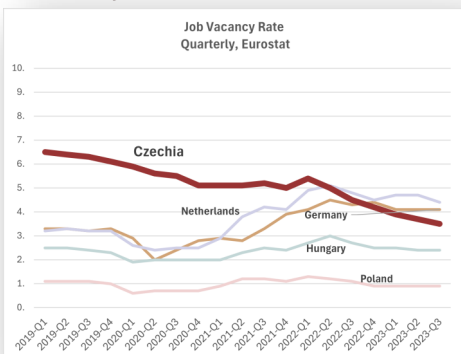
Women overall (15-64) and women 55-64 years old are employed at rates higher than the EU average.

The Czech working age population decreased by 240,000 people in the 2014-2023 period. That is the ninth largest decrease in the EU.

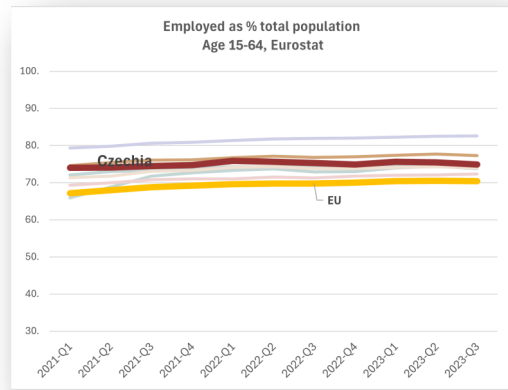
## Working Age Population Increase/Decrease



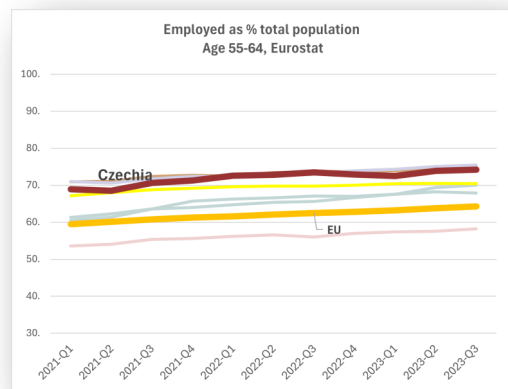
## Job Vacancy Rate



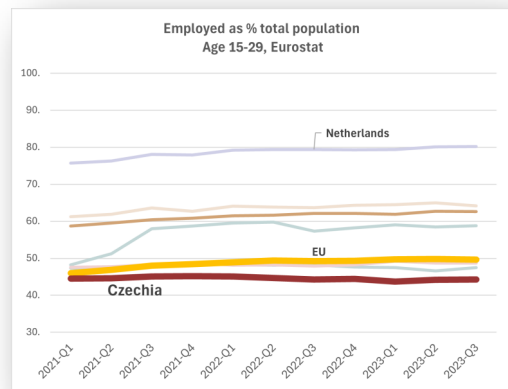
## Employed as % Total Population aged 15-64



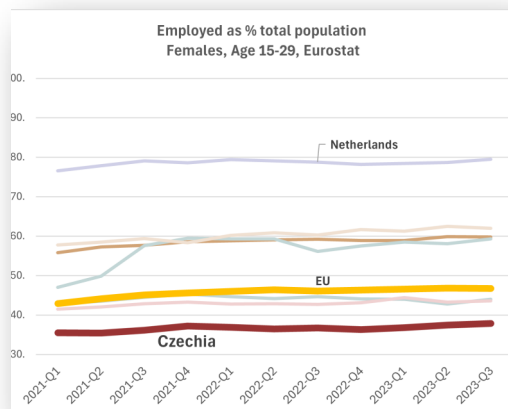
## People Employed as % Total Population aged 55-64



## People Employed as % Total Population aged 15-29



## Females Employed as % Total Population aged 15-29



# People

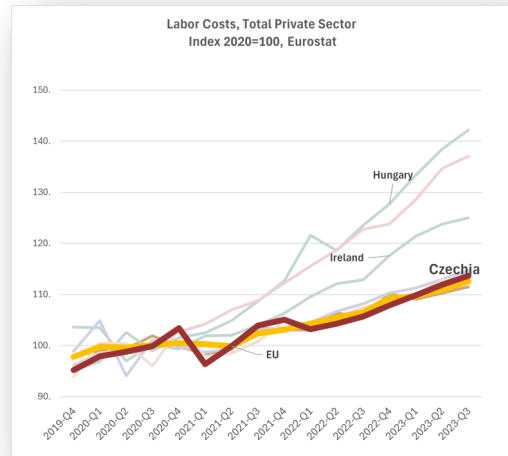
## Labor Costs

Czechia's increases in labor costs track the EU average and are significantly below the labor cost hikes in Poland and Hungary.

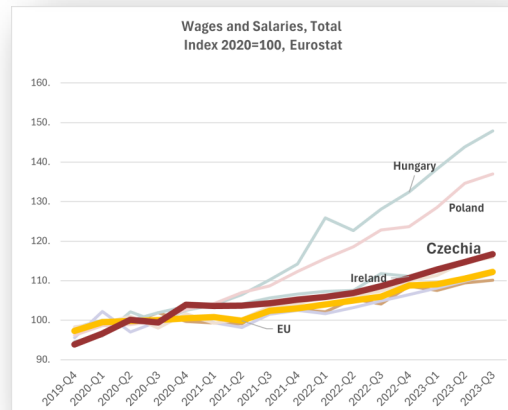
Labor Cost increases in manufacturing are higher than the EU average. They remain below those of Hungary and Poland.

Labor Cost increases in the ICT sector show an even higher divergence from the EU average, and sit approximately midway between the EU average and those of Poland and Hungary.

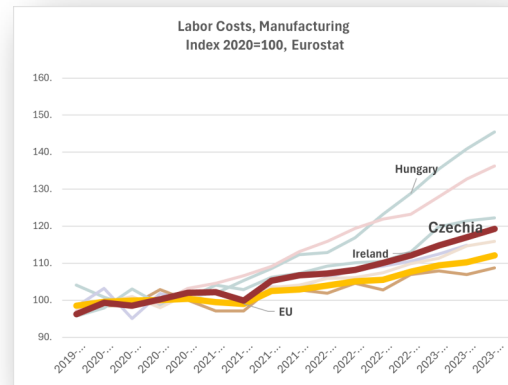
## Labor Costs



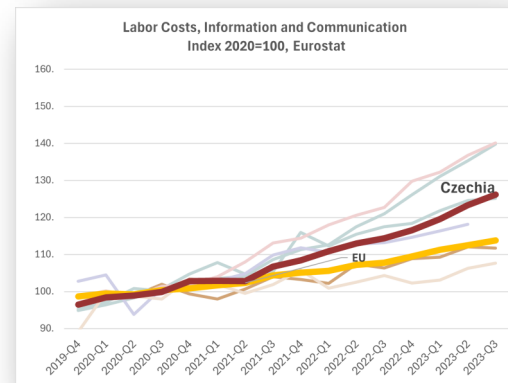
## Wages and Salaries



## Labor Costs in Manufacturing



## Labor Costs in ICT



# People

## Qualifications

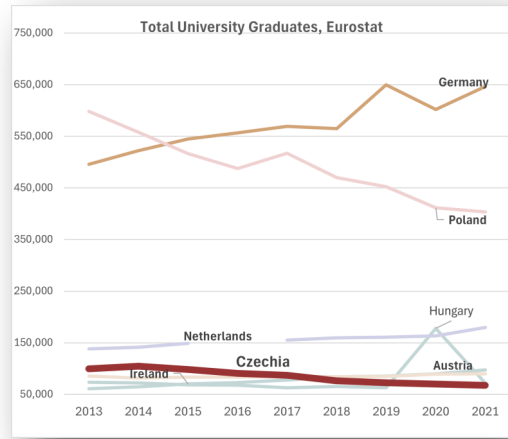
The number of total university graduates and the number of STEM graduates in Czechia are both declining. The 32,000 graduates in 2021 were 67% of the total graduates in 2013.

In 2021, Czechia had 32% of the natural science and math graduates of the Netherlands (a comparably sized country), 55% of the information technology graduates, and 60% of the engineering graduates.

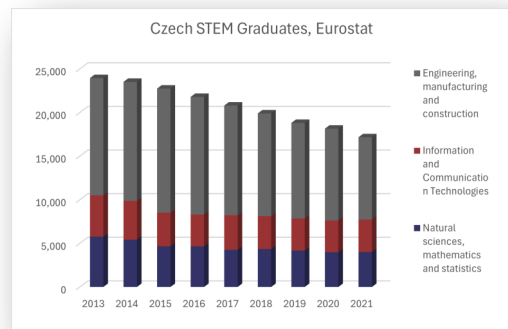
The total number of doctoral graduates has stayed about the same over the same period. The country totaled 4,974 natural science and mathematics doctoral graduates in the nine year period from 2013-2021. That is 970 more than Austria, more than twice the total of Hungary, and 770 less than the more populous Poland (Netherlands did not submit numbers for all years in the period).

In the same period, Czechia had more than 4 times the number of doctoral graduates in engineering than Hungary, and more than both Austria and Poland.

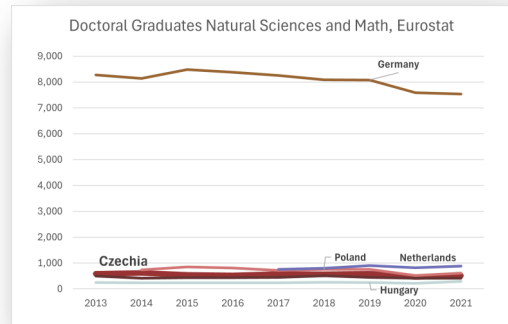
### University Graduates



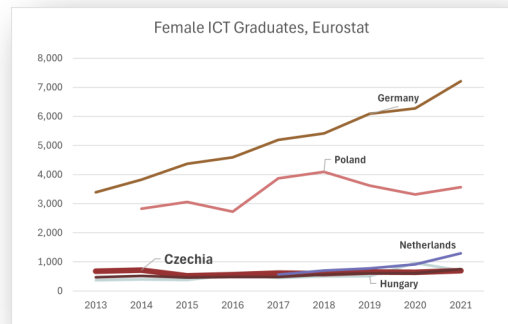
### Czech STEM Graduates



### Doctoral Graduates in Natural Sciences and Math



### Female ICT Graduates

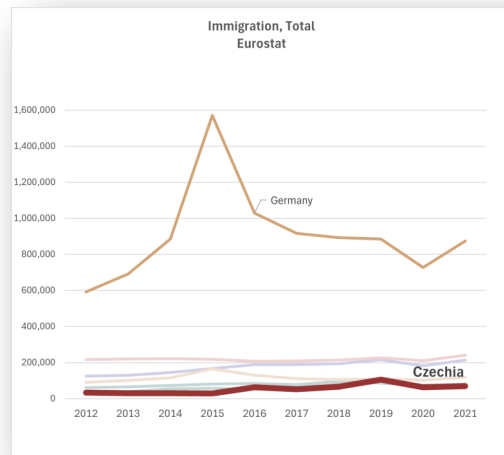


# People

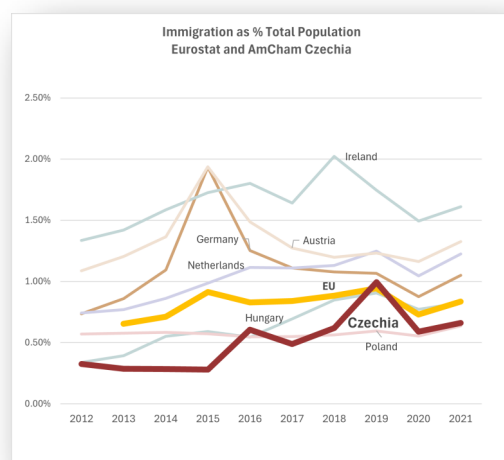
## Migration

Czechia immigrates a relatively small number of people into the country, both in terms of total number and as a ratio to the total population. Emigration from the country remains low, and a sharp drop in emigration in 2021 meant the number of immigrants for every emigrants surged.

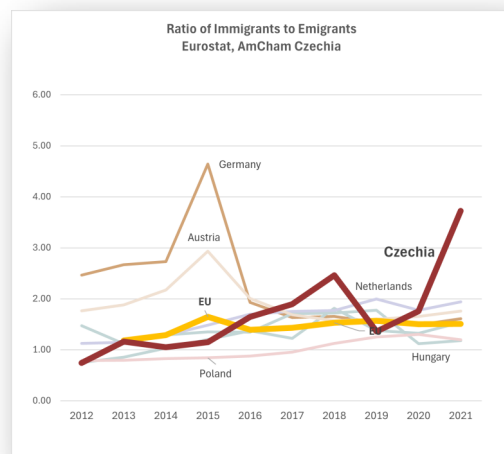
### Immigration



### Immigration as % Population



### Immigrants for every emigrant



## People: Labor Market Outlook

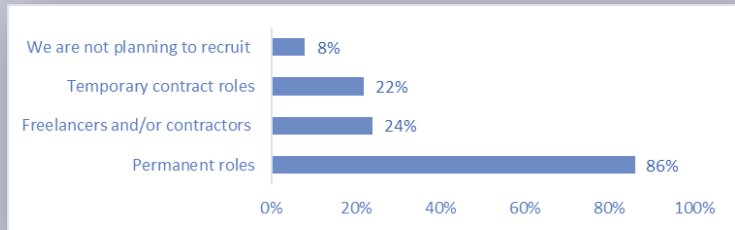
The unemployment rate in the Czech Republic has long been among the lowest in the European Union. The share of employed persons has not changed much year-on-year and the medium-term outlook does not foresee any significant change. While in the European Union, according to the Cedefop portal, employment is expected to grow by 3.5% between 2022 and 2035, in the Czech Republic a slight decrease of 0.2% is expected. The areas with the greatest potential for employment growth will be ITC and Arts, recreation & other services, while a decline is expected in the Mining & Quarrying sector.

The number of job offers and unemployed persons is currently balanced, however, the labour market continues to struggle with a talent mismatch. Certain **occupations** still face shortages due to specific skill requirements or industry demands, such as **technology, healthcare,** and **engineering** as they continue to seek large number of skilled professionals. In upcoming years, as a result of many technological advancements, the number of skilled opportunities in these industries will continue to grow and the gap between workforce available and labour market demand, alongside with aging population, may extend further.

In 2024, according to Hays Survey, 92% of companies are planning to hire new employees. Majority of these roles will be permanent, while 24% of respondents are interested in contractors and 22% are open to temporary workers. This represents a significant increase of 12, respectively 16% year-on-year in demand for contractors and temporary or agency employment. As many businesses remain focused on cost optimisation, there is a clear intention to engage more temporary workers or contractors as a smart, effective, and flexible recruitment solution.

Employers continue to see the lack of skilled workers as a major obstacle in reaching their organisations' goals. Mid-level roles (independent workers, technicians, specialists) are the most challenging to fill, mainly due to the intensity of demand, given that most of the advertised skilled roles fall into this category. Companies therefore try to boost their recruitment success by strengthening their brand positioning, by making greater use of recruitment agencies and continuous upskilling of existing employees.

### What kind of roles are you recruiting for in 2024?



### Labor Costs

#### Remuneration trends

Inflation in the Czech Republic has fallen below the double-digit threshold in the second half of last year and continues to decline. Given that firms have been under unprecedented wage growth pressure in recent years, they are now planning to be more cautious with wage increases in 2024, considering also other essential investment needs, such as process optimization or technology. Most employers (43%) in the Czech Republic, according to Hays Czech Republic's survey, intend to increase their wages by up to 5% in 2024, while less than a third (30%) expect to keep the growth rate in the 5-10% range, which, if inflation continues to fall, would have positive effect on real wages too.

In many positions, the bonus component is an important part of the salary. In order to increase employee motivation, companies often adjust bonus schemes to make the set targets not only more achievable overall, but also more achievable in shorter period of time. The trend is to set bonuses on a monthly or quarterly basis rather than a one-off annual payment. There are multiple criteria for paying them, but there are more employers who put more emphasis on the performance of a particular team rather than the company as such.

### Which of these statements best describes the labour market in 2023/2024?



**Migration**

The Czech Republic remains an attractive location for foreigners for multiple reasons, such as its good location, safety, high-level education system, multicultural environment and many interesting job opportunities.

In many skilled sectors, companies are struggling to find available labour and are increasingly turning abroad to meet their demand. However, they face many obstacles. Compared to Western or Northern Europe, our wages are not competitive, and recruitment from third countries is hampered by lengthy administrative processes.

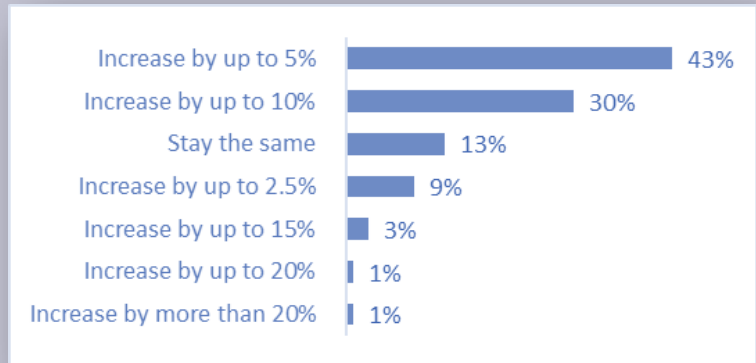
Over the past year and a half, the Czech Republic has integrated more than 120 000 Ukrainian citizens with refugee status into the labour market. Their most frequent employers are manufacturing construction companies, but they also work in the health care and service sectors. They have thus taken up jobs that employers have struggled to fill for a long time. The Ukraine citizens, in a long term perspective, could also help fill skilled jobs in the Czech Republic in sectors with critical demand for talents, such as IT or engineering, especially by families who decide to stay in the Czech Republic and whose children will continue their studies here.

**Qualifications**

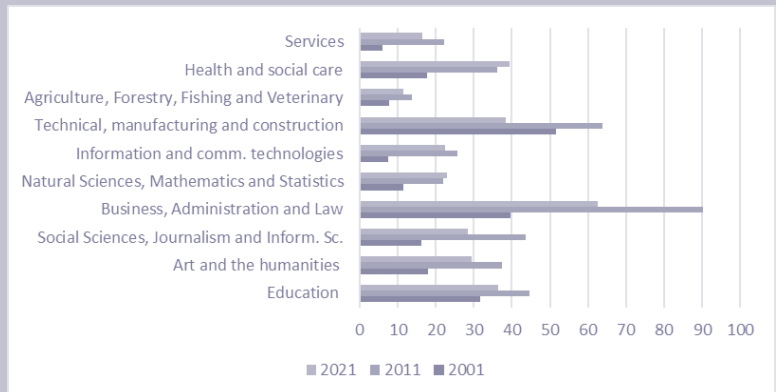
According to results of census in 2021, the proportion of people with higher levels of education in the Czech Republic continues to increase. Over 53 % of the population aged 15 years and older had at least a high school diploma or higher. Over 1,5 million of people in the Czech Republic have a university degree, this represents 18.7 % of population in Czechia. The most popular subjects among students were business, administration, and law.

The largest increase in the number of students is in the field of information and communication technologies, where the number of students has tripled in the last 20 years. On the other hand, there is less interest in technical sciences, manufacturing, and construction, where the number of students has fallen by a quarter over the same period. This could cause an even greater talent shortage in the future, given the ever-increasing demand from employers for technically qualified professionals. Study areas with highest potential for the future will most likely be Engineering, information technology and healthcare.

**In 2024, how do you expect salaries/rates of pay within your organisation to generally change?**



**Number of university students (in thousands)**



**HAYS CZECH REPUBLIC**  
**SALARY GUIDE 2024**

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# Infrastructure: Energy

## Consumption

Czechia has slightly increased its energy consumption (4.7%) since 2013. Industry increased its consumption in that period by 3% (compared to 4.5% decline in the EU); transport increased its consumption by 20% (compared to a 5.3% increase in EU). Households decreased their consumption by 1.5% in the same period (compared to a 9% decline across the EU).

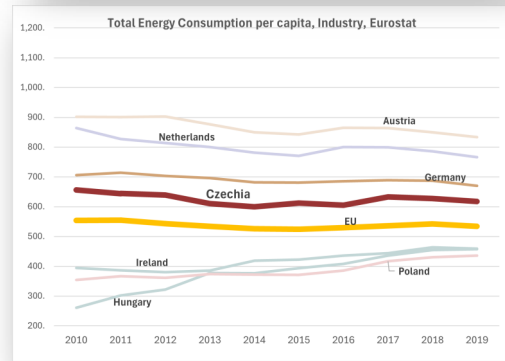
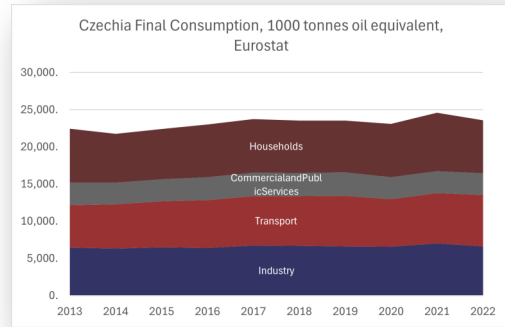
Industry energy consumption per capita is above the EU average but lower than Austria, Germany and the Netherlands.

## Prices

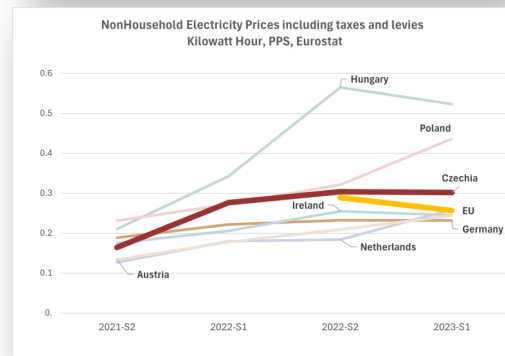
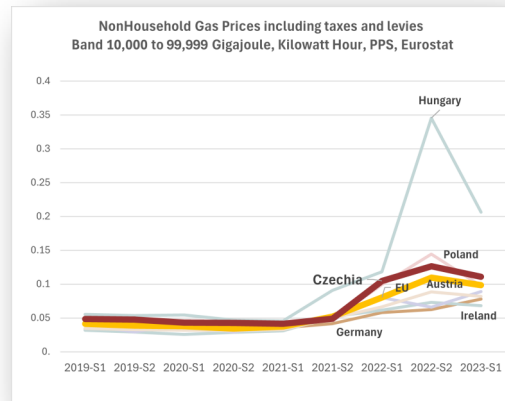
Czech nonhousehold gas and electricity prices both have risen to above the EU average when measured in purchasing power standard (PPS).

Assessed on a PPS basis, household prices of electricity and gas have risen sharply, and are now substantially higher than the EU average.

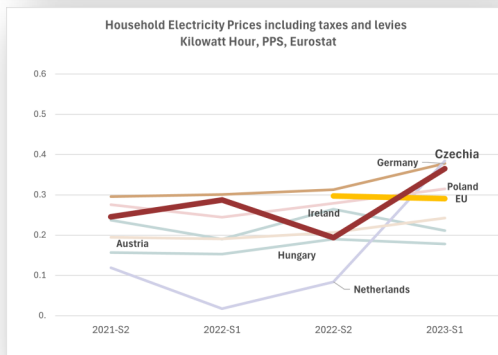
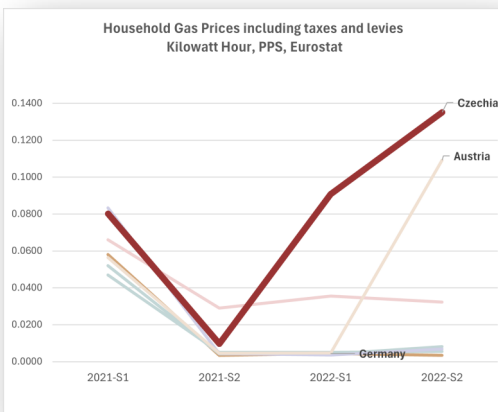
## Consumption



## NonHousehold Prices



## Household Prices





# Energy: Business Decarbonization

As EU's 3rd largest emitter (per GDP and per capita), Czechia must abate emissions faster than others, even as it faces less favorable conditions for RES production.

High-polluting sectors (energy, industry, and transport) account for over 75% of emissions.

## Czech Economy Shifting

Green transformation puts 10% of GDP at strong shift (energy, heavy industry, car manufacturing) and additional 20% at medium shift. This represents significant pressure on economy to stay competitive.

## Key Changes for a proactive shift

Czechia needs to incrementally invest 3,200B CZK by 2050, or 1.5%-3% of GDP annually.

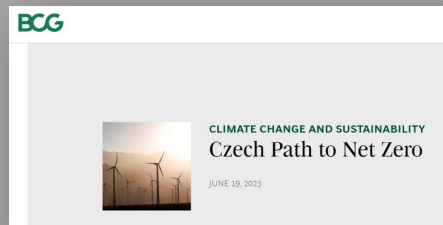
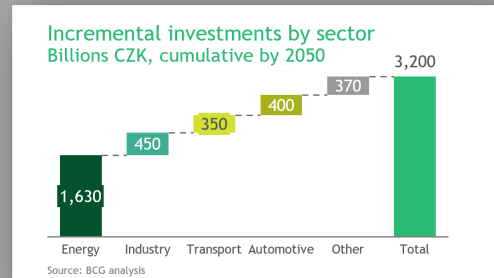
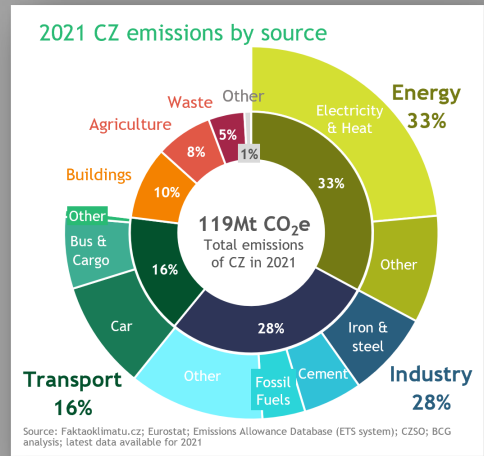
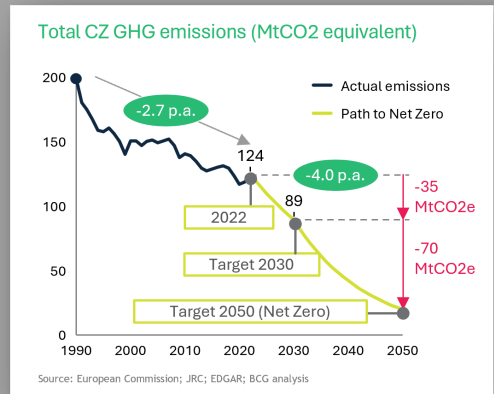
1,200B CZK of this must be invested by 2030, supported by over 1,000B CZK in EU funding.

- Energy demand will rise to 125TWh by 2050. This, coupled with targets to raise share of energy produced from RES and nuclear, will drive the switch of fossil fuels to RES. Investments will prioritize RES generation, grid resilience, and balancing.
- Industry decarbonization in iron & steel and cement & lime sectors is vital. ~85% of investments will incrementally grow GDP.
- Transport sector will shift to EVs and hydrogen for trucks and buses, requiring significant investments to charging and hydrogen networks.
- Individuals and families, who play significant role in carbon production, must be motivated to facilitate the transition to net zero.

## Opportunities for Czech Business

Considering its robust industry and cost-effective workforce, Czechia could gain an edge by focusing on five key opportunities: Establishing EV battery supply thanks to abundant Lithium reserves; leveraging industrial background for H2 components production; establishing a European hub for Smart grid software development; leading commercial deployment of SMR technology by leveraging its nuclear expertise; and harnessing capacities to win market in heat pump production. The EU market estimate for these ranges 1,500-2,200B CZK annually.

State-level coordination will determine the Czech economy's future. Delaying action will be costly and impede growth. To support efficient decarbonization, our report lays out 27 specific actions.



# Infrastructure: Energy

## New Capacity

Czechia has added far less capacity than Germany, the Netherlands and Poland. The total reported amount of connected capacity in Czechia for the period 2013-2021 was less than the annual connected capacity for the Netherlands for seven of the nine years in the period, and 28% of the capacity Poland connected in 2021.

## Renewable Energy

Czechia solar capacity- as measured in terajoules- increased by 45% in 2013-2021 period. This is roughly the same as the growth in Germany. Poland's solar capacity grew 3.7 times in the same period.

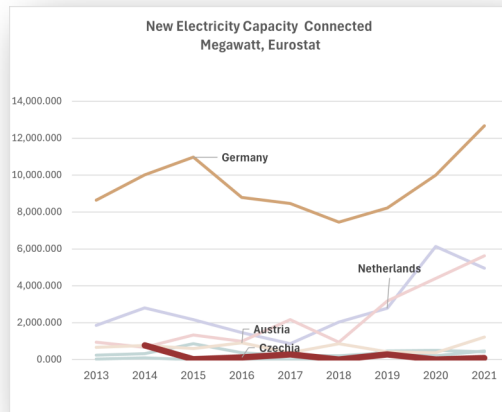
Czechia's solid biofuels capacity grew by 36%, which is significantly higher than Germany or Poland. Czechia accounted for an estimated 7-9% of the EU's total added capacity in biofuels for the period.

Czechia's growth in renewable municipal waste (15%) was above the EU average (12%).

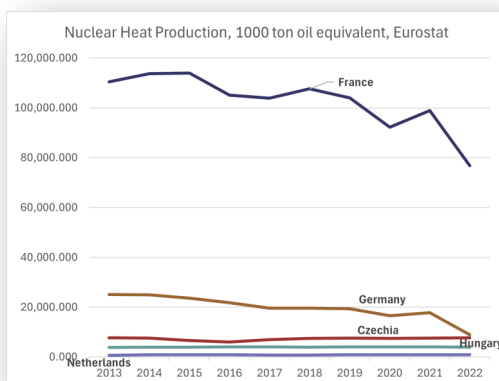
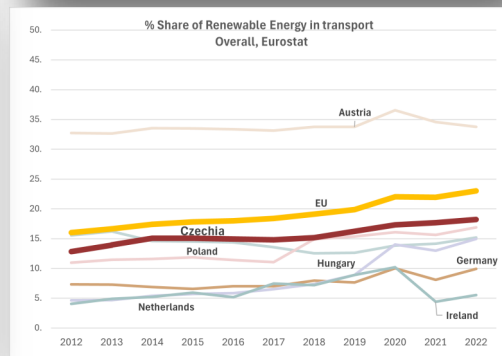
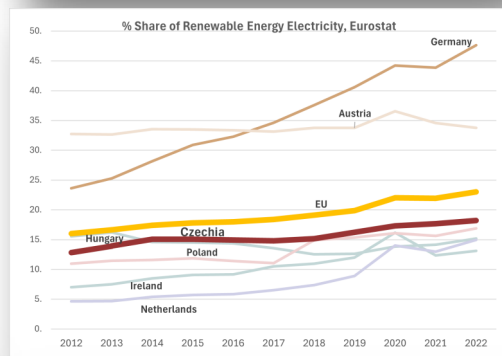
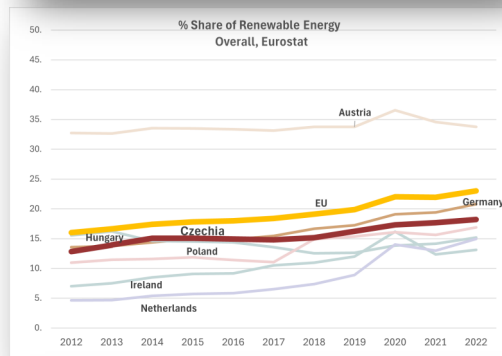
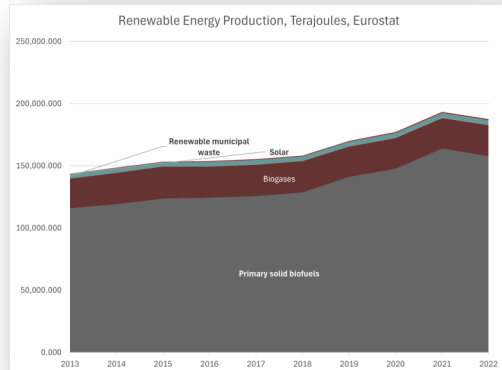
Czechia's growth in biogases (4%) was significantly below the EU average, and the even further below growth in Germany, the Netherlands and Austria.

Czechia ranks below the EU average in the share of renewable energy overall, in electricity and in transport. It ranks above the EU average for renewable energy share in heating and cooling.

## New Electricity Capacity



## Renewable Energy



# Infrastructure: Energy Market Outlook

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## Electricity consumption

In 2022, the Czech Republic's annual electricity consumption stood at 58 terawatt-hours (TWh). Among various sectors, the industrial sector accounted for the highest share, consuming approximately 41.3% of the total electricity.

Looking ahead to 2030, we anticipate an 11% increase in overall electricity consumption. This growth will be primarily driven by a 230% surge in the transportation segment, resulting from the ongoing electrification efforts. Additionally, we expect a 12.5% increase in electricity usage within the household segment and an 8.3% increase in the industrial segment.

## Electricity generation mix

Coal, as the only domestic fossil fuel, has played a crucial role in the Czech Republic's energy supply. However, the question is no longer if, but when, coal will exit the country's energy mix. To boost investor confidence and ensure adequate electricity generation beyond 2030, the government must establish a clear pathway for phasing out coal. The updated version of the Czech National Energy Concept that is currently being finalized assumes a reduction in the use of coal, especially in connection with the production of electricity and heat. After 2033, coal consumption will be limited to non-energy use only.

Till 2030, we expect decline of 26 TWh in the electricity generation capacities from coal power plants. This decline will be partially offset by increase in electricity volumes generated from the renewable energy sources, especially solar power plants (increase from 2.3 GWh in 2022 to 11 GWh in 2030).

## CO2 emission allowances

The European Union Emissions Trading System (EU ETS) plays a pivotal role in shaping carbon pricing within the EU. In July 2021, the EU proposed a revision of the EU ETS as part of the ambitious "Fit for 55" package. The goal is to cut 55% of all GHG emissions by 2030 compared to 1990 levels. As a result, the price of emissions allowances traded on the EU ETS has surged from €8 per tonne of CO2 equivalent in early 2018 to around €92 more recently.

We estimate that by 2030, carbon prices on the EU ETS could reach as high as €80 per tonne of CO2 equivalent due to accelerated annual cap reduction of up to 4.4% between 2024 and 2030 compared to originally planned 2.2% and the gradual phasing out of free emission allowances. In total, we expect reduction of 329 million emission allowances between 2024 and 2030 (23% drop in their volume). Moreover, the price of energy allowance will be also determined by correlation of volume of allowances and how quickly will European industry adjust and go green.

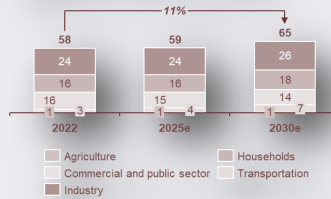
## Wholesale electricity prices

In recent years, the Czech Republic has witnessed significant fluctuations in its wholesale electricity prices. Between January 2021 and August 2022, prices surged by more than nine-fold, reaching a peak of €476 per MWh. However, in 2023, the average wholesale electricity price in Czechia stood at approximately 73 euros per megawatt-hour, marking a year-over-year decrease of around 70%.

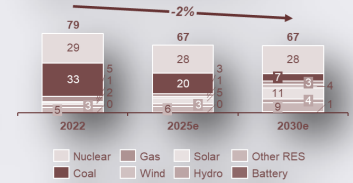
Despite this positive trend, we estimate that energy costs may continue to fluctuate at €90-105 per MWh by 2030. The increase in energy prices can be attributed to several factors, namely expected increase in the price of emission allowances (reaching €80 per tonne of CO2 equivalent), rising gas commodity prices

## Market Developments

2022 – 2030: 11% increase in electricity consumption, driven by e-mobility boom (TWh)



2022 – 2030: Gradual decline in electricity generation<sup>1</sup> due to coal phase-out (TWh)



Continuing growth of CO2 emission allowance prices after drop in 2024 (EUR/t)



Emission allowance prices expected to increase after 2024 due to 23% reduction in allowance volume (1,329 million) between 2024-2030: – Accelerated annual cap reduction (2024-2030) 4.3% – 4.4% new reform vs. 2.2% originally planned – Gradual phasing out of free allowances

<sup>1</sup> Net electricity generation. Consumption and generation outlook based on CEPS progressive scenario: in line with Fit for 55 legislative, chosen as the middle scenario between Conservative/ Respondent and Decarbonization scenario. Source: Kearney, EIU, CEPS, SEPPA, WNEP, Bloomberg, EC

Wholesale electricity prices: new price level will stabilize between 110 and 140 EUR/MWh (EUR/MWh)



Electricity price is established based on the marginal costs of the most expensive powerplant meeting demand (gas fired powerplants).

Two key drivers of the el. price are gas commodity prices (expected range 28 – 35 EUR/MWh) and emission allowance prices.

(expected range €28 – €35 per MWh), and the anticipated coal phase-out.

## Nuclear renaissance

The nuclear renaissance is taking shape in Czechia, with plans for the construction of four additional NPP (Nuclear Power Plant) blocks. Furthermore, the first Small Modular Reactors (SMRs) are expected to be operational by 2035.

As part of the coal phase-out, nuclear energy is poised to play a major role in the energy generation mix. By 2050, it is projected to represent 50% of the energy mix, compared to its 36% share in 2022. Commercial investments in nuclear power are bolstered by the EU Taxonomy and purchase agreements specifically designed to finance nuclear power plants commissioned after 2030.

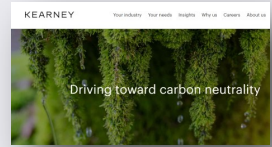
The growth in nuclear power will be driven by the development of large-scale power plants. For instance, CEZ, a major energy company in Czechia, has announced an ambitious 7.2 GW expansion of its existing nuclear power plants by 2040. This expansion includes the addition of four new reactors at the Dukovany site and two reactors at the Temelin site.

In addition to the large-scale plants, CEZ also has plans for a new 350 MW capacity SMR, which is expected to be operational by 2035. Furthermore, there is potential for an additional nine SMRs to be deployed by 2040.

## NPP Installed capacity



- 1 First 350 MW SMR in 2035
- 2 New Dukovany reactors in 2036 with 4800 MW capacity  
New 1100 MW Temelin reactor in 2039
- 3 Extra SMR capacity up to 1000 MW
- 4 New 1100 MW Temelin reactor in 2041 with capacity
- 5 Dukovany decommissioning after 2047<sup>1</sup>



# Infrastructure: Energy Market Outlook

## RES generation to double between 2025 and 2030

Renewables, though not yet major players, should increase their share on the consumption to 30% by 2030. To reach this goal, Czech Republic is committed to bolstering its renewable energy sector through substantial subsidies. Over the period from 2024 to 2030, more than CZK 200 billion will be allocated to support renewable energy projects across households, businesses, and municipalities. These funds aim to accelerate the transition to cleaner energy sources and enhance energy security.

However, to expedite the deployment of renewable energy systems, there is a pressing need for streamlined approval processes. Ensuring swift authorization for projects will facilitate their timely implementation. The government is actively exploring also the concept of renewables acceleration areas. These zones are designated regions where renewable energy projects receive preferential treatment, enabling faster development and deployment. The goal is to create an environment conducive to renewable energy growth.

In 2023, Czechia witnessed an extraordinary surge in PV installations, with over 80,000 new installations. This trend is expected to continue, leading to a 240% increase in PV installed capacity by 2030 when the country's solar capacity is projected to reach 10.3 GW. In power generation capacity, this means increase of 2.3 TWh in 2022 to 10.9 TWh in 2030.

In addition, Czechia aims to boost its wind energy capacity significantly. By 2030, the country anticipates reaching 3.6 GWh of wind power generation capacity compared to 0.6 GWh in 2022, contributing to a more diversified energy mix.

As renewable resources flourish, the demand for flexibility grows. We expect that cogeneration (combined heat and power) will be a key solution. Czechia plans to achieve a cogeneration capacity of up to 6.8 GW (20%) by 2030. This approach will enhance country's energy efficiency and resilience.

## Decentralized energy and community power

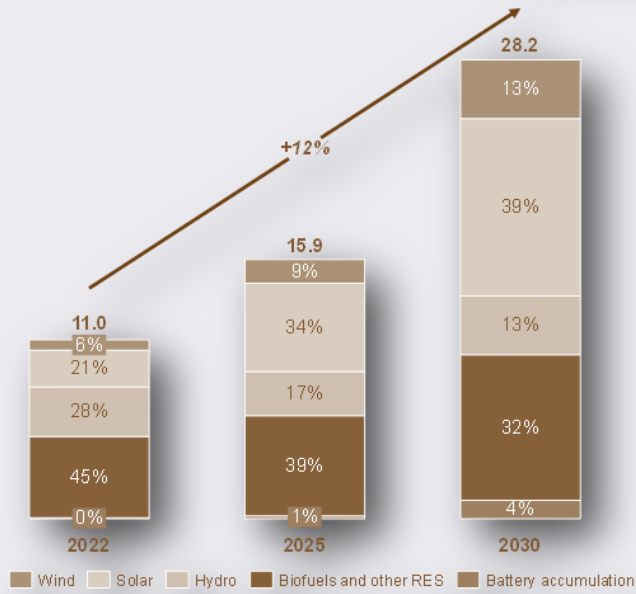
In recent years, the development of the decentralized energy in the Czech Republic was driven by PV prosumers – individuals and small businesses who both consume and produce electricity. Although their generation capacity was 0.8 TWh in 2020, we estimate that they will reach 4.1 TWh by 2030, approximately 35% of total solar generation.

A significant legislative milestone in this journey is the Lex OZE II, which came into force in January 2024. Its key provisions include licence exemption for small-scale producers with an installed capacity of under 50 kW, flexible billing periods, introduction of the concept of energy communities and the communities for renewable resources.

In line with that, Czechia is committed to supporting development of community energy initiatives. By 2030, CZK 60 billion (approximately €2.3 billion) will be available through EU funds to bolster energy communities. These funds will support various aspects, including renewable energy generation, accumulation, district heating, and energy management systems.

Furthermore, Lex OZE III that is expected to take effect in January 2025, will likely trigger an accumulation and storage boom. For instance, CEZ plans to build 300 MWh of new storage capacity by 2030. This move aligns with CEZ's commitment to clean energy and grid stability.

## RES generation to increase at 12% CAGR RES generation in Czechia1 (TWh)



## Energy services market on increase

In recent years, energy services market in the Czech Republic has experienced expansion primarily attributed to small-scale PV installations, home and efficiency solutions. In 2023, the combined market size across these segments together with e-mobility, smart cities, and flexibility solutions reached CZK 38 billion in revenues. Looking ahead to 2030, we anticipate this market to reach CZK 52 billion in revenues, i.e., growth of 37% compared to 2023.

With the energy crisis, increasing energy prices and CO2 emission allowance prices, we observed more dynamic development of the CO2 neutral solutions and energy efficiency offers. Energy consulting services, including subsidies management, green commodity supply, and turnkey solutions have gained prominence.

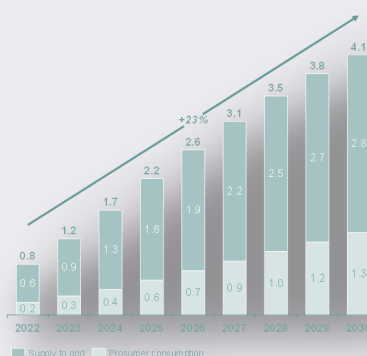
The Energy Performance Contracting (EPC) market is also on the rise. While it stood at CZK 3.6 billion in 2023, we project it to reach CZK 4.7 billion by 2030. Key players focus their efforts on municipal buildings and energy-intensive properties, with untapped potential estimated at up to CZK 20 billion annually.

The market showcases also innovative solutions leveraging artificial intelligence (AI) for energy optimization. Pioneering installations include "AI-ready" heat pumps, electric vehicle (EV) chargers, and batteries for business as well as end consumers.

Lastly, we expect also significant increase in the e-mobility market, growing from the CZK 2 bn in 2023 to CZK 4.1 bn by 2030. It is the fastest growing market with up to 750 thousand EV by 2030. The Czech Republic is planning to allocate EUR 1.2 bn for clean mobility within National Renewal Plan.

## 5x growth in small-scale PV generation by 2030

Prosumer generation and consumption (PV generation with capacity below 1 MW, TWh)



## Energy services market driven by PV installations, home and efficiency solutions

Estimated market sizes of the energy services segments in CZ (annual revenues, CZK bn)

Segment	2023	2030	% change
Small-scale PV installations	14.3	18.8	+31%
Home solutions	12.9	16	+24%
Energy efficiency	5.7	9.3	+63%
E-mobility	2	4.1	+105%
Communities/ Smart cities	2.8	4	+43%
Flexibility	0.3	0.6	+100%
<b>Total (CZK bn)</b>	<b>38</b>	<b>52</b>	

# Infrastructure: Digital

## Digital Intensity

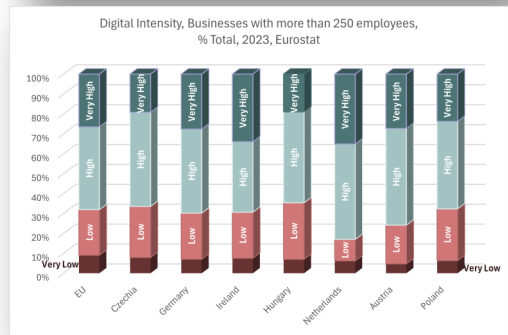
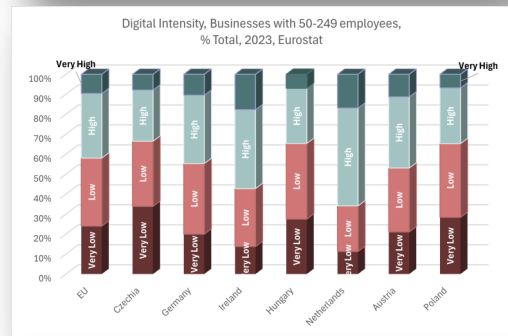
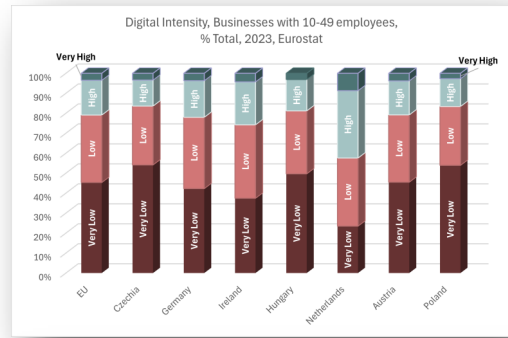
The digital capabilities of Czech industry remain below the EU average. For large companies of over 250 employees, the digital deficit is slight, but digital capabilities decline significantly for companies of 50-249 employees, and the country has one of the worst results in the EU for companies with 10-49 employees.

## Digital Skills

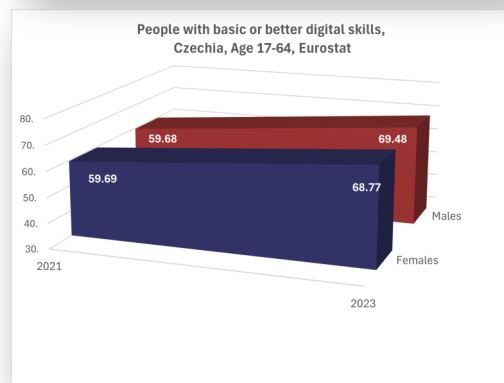
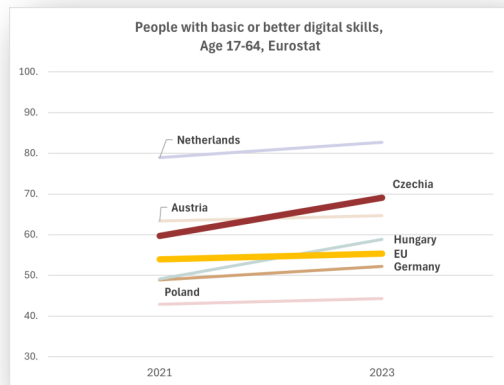
Czech citizens had much higher digital skills than the EU average, and those skills have risen at a much higher rate from 2021 to 2023. In the benchmark group, only the Netherlands scores better.

The percentage of Czech men and women with basic or better digital skills is virtually the same and is rising at approximately similar rates.

## Digital Intensity



## Digital Skills of Population



# Infrastructure: Transport

## Road

Czechia's freight transport relative to GDP had been beneath its 2015 levels until 2019. The country experienced a significant rise of this indicator in the 2019-2021 compared to the benchmark countries. The country's road freight volumes have held fairly steady since 2019.

For passenger transport relative to GDP, the country registered a sharp drop in 2020 that was similar to other benchmark countries, but Czechia's rise in 2021 was much sharper.

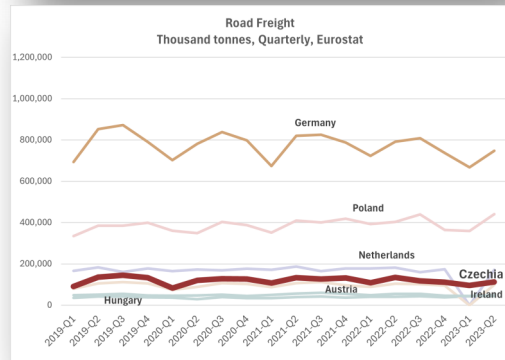
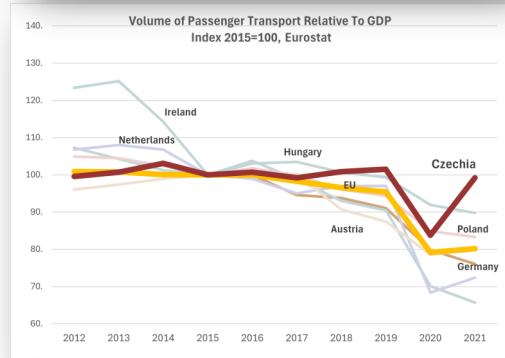
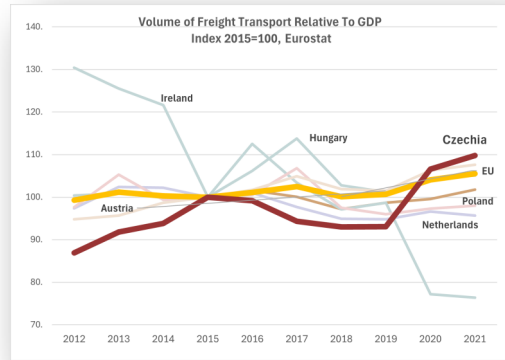
## Road and Rail

Czechia's domestic use of road and rail is similar to the EU average.

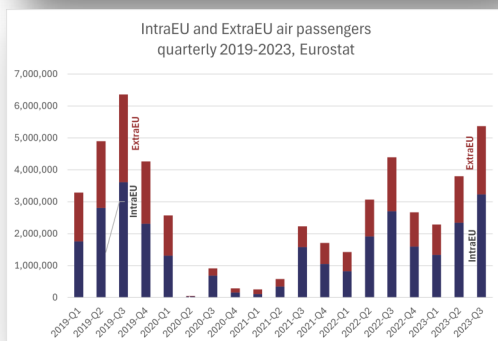
## Air

Czechia's air passenger numbers are rising, but had not yet returned to pre-covid levels. The total air passengers in the third quarter of 2023 was approximately 1,000,000 fewer (84.5%) than the third quarter of 2019. Recovery is based primarily on passengers within the EU (3Q2023 is 89.5% of 3Q2019 number), while passengers outside of the EU remains at 77.6% of 2019 levels. Recovery in extra EU passengers is the fifth lowest in the EU.

## Road Transport



## Air Passengers



## Inland Freight Use of Road and Rail

