# CZECH REPUBLIC

# MARKET OPPORTUNITIES

**Report Date:** **June 2024**

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# 1 COUNTRY PROFILE

## Overview

**Leader in Central & Eastern Europe (CEE) by combination of economic performance, buying power, size of population, infrastructure, stability & openness to trade**

- Second largest nominal GDP in CEE after Poland
- Third highest GDP per capita (PPP) in CEE after Slovenia and Lithuania
- Fourth most populous country in CEE
- Strategic location in heart of Europe and next to Germany, EU's largest market
- Strong manufacturing industries including high added-value sectors
- Educated and skilled labor force
- Favorite location for regional headquarters, R&D operations, service centers
- EU member since 2004


**Total area**: 30,452 square miles (77% of the area of Virginia)
**Population**: 10.9 million
**Government type**: Parliamentary democracy
**Language**: Czech (official)
**Capital + major cities**: Prague (1.3 million) + Brno (380,000), Ostrava (302,000), Pilsen (190,000)
**Currency**: Czech Crown (koruna, CZK)

**Average annual exchange rates (Czech National Bank): CZK per USD 1**

| 2019 | 2020 | 2021 | 2022 | 2023 | 2024 (Jan-May) |
|---|---|---|---|---|---|
| 22.934 | 23.196 | 21.682 | 23.360 | 22.210 | 23.154 |

The Czech economy is forecasted to return on a growth path in 2024 after a 0.3% drop in 2023. High inflation in the past two years reduced households' purchasing power and led to a contraction in private consumption, which is expected to rebound in 2024 as inflation has returned to low levels and real wages are again growing. With high accumulated savings, household consumption is to re-emerge as a main driver in 2024 and 2025.

**Key economic indicators, Czech Republic**

| | |
|---|---|
| **GDP nominal** | USD 326 billion |
| **GDP growth** | 2023: -0.3%<br>2024: +1.2%<br>2025: +2.8% |
| **GDP per capita PPP (worldwide ranking)** | USD 50,475 (38th) |
| **Inflation** | 2023: 12.0%<br>2024: 2.5%<br>2025: 2.2% |
| **Unemployment** | 2.8% (2024) |

*Source: Eurostat, 2024*

The Czech Republic has been recording the **lowest unemployment rates** in the EU since 2018. Its labor market remains tight with persisting shortage of skilled workers in combination with ageing population, putting pressure on wages and limiting potential growth.

With industrial production accounting for almost 40% of its GDP, it is the **second most industrialized** country in the EU after Ireland. Apart from traditional sectors such as automotive (generating 23% of manufacturing output), electronic and electrical engineering, plastics, metalworking, chemicals, and food, the country has recorded a boom in **high value-added segments** such as biotechnologies and life sciences, precision engineering, nanotechnologies, and information technologies and software. Services remain the top contributor to the economy generating approximately 60% of GDP.

As an **open economy** (export/GDP ratio standing at 71%, one of the highest in Europe) it is more vulnerable to external economic factors than countries with larger domestic markets such as neighboring Poland.

The Czech Republic's **key trading partners are its neighboring economies and other large European countries**: a third of Czech exports goes to Germany alone; other key export destinations include Slovakia, Poland, France, and the UK.

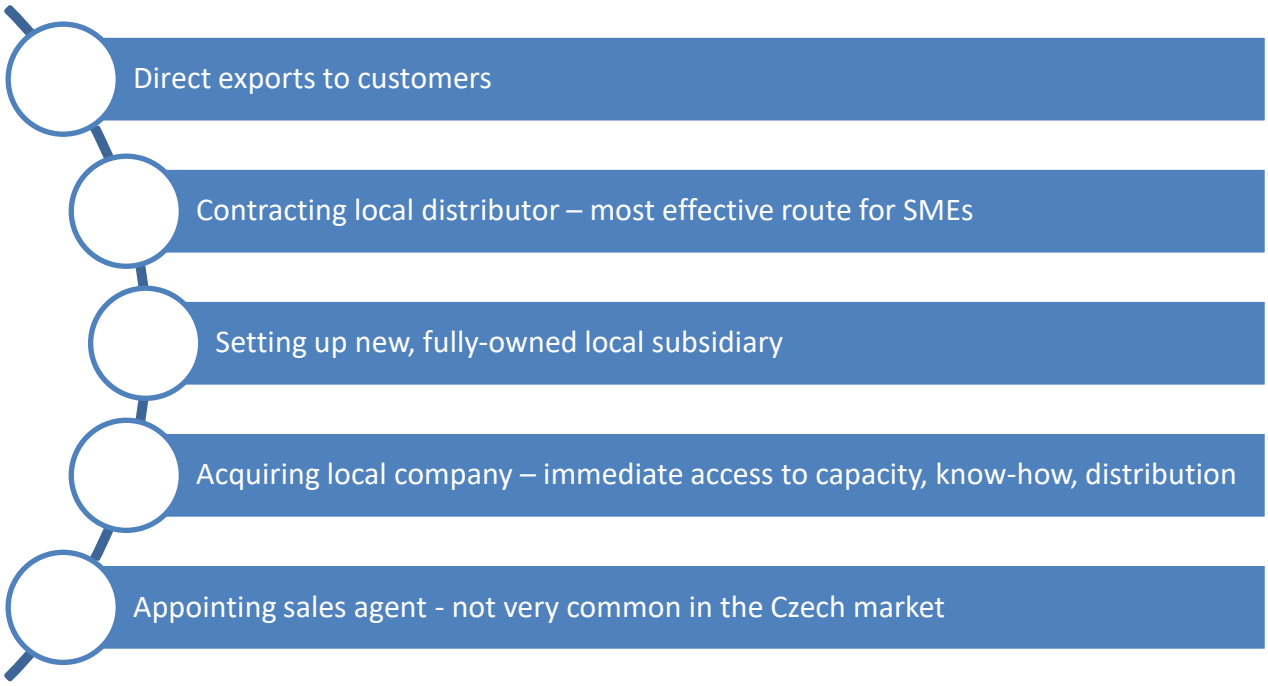
# 2 ROUTE TO MARKET

This document presents five sectors that present specific market opportunities for Virginia exporters. However, business potential is much broader. The Czech economy is highly diversified with **opportunities for all exporters who offer strong and unique selling points.**

The Czech Republic is a member of the EU, OECD, and WTO, and applies all international regulations from those bodies. US companies can apply the same business principles as when entering any other EU market.

US companies can gain access to the Czech market via multiple channels.

## Routes to market




Having someone local on the ground who speaks the Czech language is a major advantage for US companies. Local contractors and suppliers with daily operations in the market, access to information and contacts with decision makers can better identify and respond to business opportunities.

The Czech Republic's **NextGenerationEU Recovery and Resilience Plan**[1] worth EUR 9.2 billion (next-generation-eu.europa.eu) will **boost demand in multiple sectors covered in this report** – particularly:

- cybersecurity of digital public administration systems
- strengthening and digitalization of electricity distribution systems
- transition towards renewable energy by streamlining permitting procedures
- strengthening domestic electricity grid
- facilitating production of clean energy by leveraging solar and wind power.

[1] ***NextGenerationEU*** *is a European Commission's over EUR 800 billion temporary recovery instrument to help repair economic and social damage brought by the coronavirus pandemic to make Europe healthier, greener, and more digital. To receive support from the Recovery and Resilience Facility (RRF) for the period 2021–2026, member states need to submit National Recovery and Resilience Plans. Czech Republic's modified plan (including a RePower EU chapter) was endorsed by the EU Commission in September 2023. The European Commission launched* ***REPowerEU Plan*** *to phase out Russian fossil fuel imports in the wake of global energy market disruption caused by Russia's full-scale invasion of Ukraine.*

# 3 TARGET SECTORS

## 3.1 DEFENSE AND SECURITY


### Armed forces modernization

Recently unveiled new defense strategy, funding, and modernization commitments together with the Czech Armed Forces Development Concept 2035 (KVACR) signal a significant shift in defense policy and express unprecedented bluntness by explicitly identifying Russia as the primary security threat.

The current administration **committed to spending 2% of GDP on defense, for the first time since joining NATO,** and to bolster collective defense in Europe via modernizing Czech armed forces, to deepen bilateral defense cooperation, particularly with the United States, and to improve interoperability with NATO.

Significant growth in investment into Czech army modernization is planned until 2030 (including increase from current 20% to up to 60% of spending on new equipment)

The planned investments include **infantry fighting vehicles, guns, tanks, SPYDER anti-aircraft set, and F-35 aircraft** as well as other **new technologies, increased supplies, and infrastructure developments.**

Between 2031 and 2035, investments are to stabilize at 35% of the Army's budget with a focus on system integration of new equipment and weapons. Other strategic objectives include strengthening readiness, deployability and sustainability, **replacement of ground and air combat equipment as well as digitalization of command-and-control systems, effective engagement in all operational domains, deepening international cooperation and developing interoperability, agile innovation and introduction of emerging and disruptive technologies.** The Czech Army aims to have 30,000 professional soldiers and up to 10,000 active reserve personnel by 2030; currently there are under 28,000 professional soldiers and 4,300 reservists.

## Defense industry

| Czech defense industry overview | | | |
|---|---|---|---|
| Two-thirds of Czech defense companies are SMEs | Some unique and highly sophisticated technologies | Exports: 90% of Czech defense production | Defense and Security Industry Association: 130 members employing 20,000 people |

The Czech Republic was one of the first countries to provide Ukraine with military assistance and equipment after the Russian full-scale invasion in February 2022. In addition to direct supplies from army depots and supplies from Czech defense companies, the Czech Republic supports Ukraine by providing repair of armored vehicles, military staff training as well as helping to source and channel military supplies to Ukraine.

Notably, the **Czech-led ammunition initiative** to obtain ammunition for Ukraine has attracted considerable international attention, connecting funding from Western governments with the Czech Republic's ability to procure ammunition from third countries, making use of global defense-related trading experience of Czech companies, including in third-world countries from prior to the collapse of the former Eastern bloc.

**Multiple Czech defense companies have recently engaged in acquisitions with global impact.**

**Colt CZ Group SE**
coltczgroup.com
The Czech company Ceska zbrojovka Group acquired Colt Holding Company, owner of iconic U.S. firearm producer Colt's Manufacturing Company, as well as its Canadian subsidiary, Colt Canada Corporation, in 2021. Subsequently, the whole company was renamed to Colt CZ Group SE. In 2023, Colt CZ Group SE acquired 100% in Sellier & Bellot, a major Czech ammunition producer.

**Czechoslovak Group**
czechoslovakgroup.com
This major Czech group of defense companies recently acquired Spain's oldest ammunition factory, Fábrica de Municiones de Granada (FMG), and a majority stake in Italian Fiocchi Munizioni, the world's leading producer of small-calibre ammunition. The most significant deal to date is pending acquisition of a share in Vista Outdoor, which includes major ammunition manufacturers Federal, CCI, Spear, Remington and others under its Sporting Products division and The Kinetic Group, for USD 1.9 billion. With this acquisition, CSG would become the world leader in production of small caliber ammunition.

## VEDP Trade Mission

The 2024 VEDP Trade Mission to Bulgaria and Czech Republic will be held concurrently with **FUTURE FORCES FORUM** taking place in Prague on October 14 - 18, 2024 (future-forces.org). The event includes a trade fair with European and overseas exhibitors and has been a hub for international defense and security community networking for over 22 years, providing an excellent platform for B2B, B2G and G2G meetings. The FFF includes expert panels, annual NATO working group sessions, and other networking events. The last edition of this biennial event was attended by 8,000+ professional visitors, official delegations from 70+ countries, and 1,000+ official delegates and VIPs from the defense, security, and emergency sectors.

## 3.2 MEDICAL DEVICES

The **Czech medical devices market** is projected to reach USD 1.81 billion in 2024 (source: Statista). Cardiology devices are expected to be the largest category (USD 268 million) followed by diagnostic imaging devices (USD 219 million). **The market is forecasted to record an annual growth rate of 4.95% (CAGR 2024-2029),** growing to USD 2.31 billion by 2029.

### Imports

**Imports cover about 80% of domestic demand for medical devices.** The Czech Republic boasts of its own innovative and competitive production base which is however limited to only selected product groups for which the country is an important medical device exporter - two-thirds of its production are exported.

German products dominate the market followed by medical devices from the United States, Japan, China, Switzerland, and the United Kingdom.

The largest import categories include medical instruments, devices and technologies for medical and veterinary sciences, consumables such as needles, catheters, and cannulas, artificial body parts, oxygen therapy and artificial respiration, artificial joints, and orthopedic and other devices.

Market opportunities exist for innovative and sophisticated medical equipment that increases efficiency and reduces occupancy rates in hospitals: minimally invasive surgery technologies, patient monitoring systems, telemedicine, and home-care equipment.

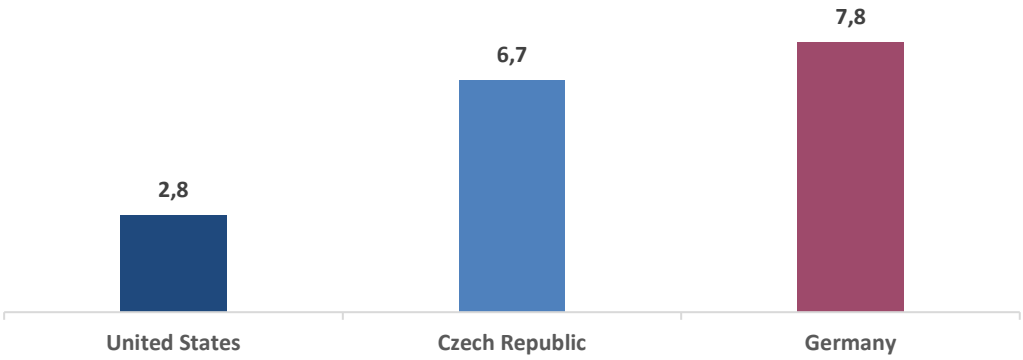
### Health care system

The Czech healthcare system is predominantly financed by the public sector through mandatory insurance. All citizens and residents must have health insurance (the state provides it for children, students, elderly and unemployed). People can freely choose a health insurance fund and healthcare providers. There are seven health insurance funds, of which state-controlled VZP (vzp.cz) dominates the market, covering close to 60% of population.

In 2023, **health spending accounted for 8.5% of GDP** (down from 9.5% in 2021 and 8.8% in 2022, but still above 7.6% from pre-covid years)**.** 86% of health spending was covered from public funds, which was the highest share in the EU and over five percentage points above EU average. In 2022, health care expenditure per capita averaged CZK 55,275 (USD 2,370), roughly 60% of EU average.

Approximately 95% of primary healthcare services are provided by physicians in private practice, usually sole practitioners. Secondary care services are offered by private specialists, healthcare centers, polyclinics, hospitals, and specialized in-patient facilities..

**Hospital beds per 1,000 inhabitants, selected countries, 2021**




*Total hospital beds include intensive care, rehabilitative care, long-term care, and other beds in hospitals.*
*Source: OECD, 2024*

There are **189 hospitals with approximately 58,000 beds** throughout the country, **126 specialized clinics with 17,800 beds, and close to 27,600 out-patient facilities and doctor's offices**. The Ministry of Health directly manages 19 hospitals; 5 hospitals are managed by other central government bodies (Ministry of Defense, Ministry of Interior), 23 hospitals are managed by regional authorities, 17 by municipalities and 124 by other entities (individuals, church or legal entities).

State-owned university hospitals must comply with the Public Procurement Act which requires that all purchases over given thresholds must go through open public tenders.

## Certification

Compliance with the **European Union Medical Device Regulation** (EU MDR, eumdr.com, applicable as of May 2021) **is mandatory for medical device companies that wish to sell in the EU**. It requires medical device manufacturers to demonstrate that they meet essential requirements and undergo a conformity assessment process. This involves conducting clinical evaluations, risk assessments, and post-market surveillance activities to ensure ongoing compliance and safety. The EU MDR introduces new classifications for medical devices based on risk level, with stricter requirements for higher-risk devices. It also places greater emphasis on traceability and transparency in the supply chain, with the introduction of unique device identifiers (UDIs) and the European database on medical devices (EUDAMED).

Within the Czech Republic's national market, the **State Institute for Drug Control** (sukl.cz) is the regulatory body for medical devices.

## 3.3 CYBERSECURITY

The **National Cyber and Information Security Agency** (NÚKIB, nukib.gov.cz), a central agency for cybersecurity, registered **a record high number of 262 cyber attacks in 2023** (compared to 146 in 2022) mainly due to **repeated waves of DDoS attacks led by pro-Russian hacking groups**. Russia and China have been the most active state-sponsored cyber threat actors. The most common types of attacks include phishing, spear-phishing, vishing, and fraudulent e-mails or attacks on availability, mainly in the form of DDoS attacks.

According to a media interview with a Soitron cybersecurity manager, up to 70% of domestic organizations have a cybersecurity problem. SMEs often fail to comply with even basic security measures such as proper user identity management, software and hardware updates, network segmentation, perimeter protection, endpoint security and central log management.

Security and defense of the Czech Republic in the cybernetic and informational domain is delivered by **Czech Army Cybernetic and Information Warfare forces** (www.army.cz/en/armed-forces/organisational-structure/cyb/cyber-forces-command-218593).

The **new Czech Cyber Security Act, implementing the NIS2[2] directive, is expected to come into force in October 2024**. In general, it imposes stronger requirements to a wider scope of organizations and introduces fines and enforcement, a broader set of mandatory security measures and new incident notification requirements for essential and important entities. Non-compliance can be punished with fines up to EUR 10 million or 2% of global annual revenue. Its requirements include rapid response to incidents, conducting risk analysis, implementing policies on information systems and supply chain security, using encryption, disclosing vulnerabilities and a two-step approach to incident reporting. This approach will also require organizations to report incidents within 24 hours of discovery and then submit a report within one month. In practice, this new standard on cyber security will domestically **expand the number of critical infrastructure entities from current 400 to 6,000 organizations and regulate over 105 types of services in 18 sectors** (energy, healthcare, banking, transport, public administration, and digital infrastructure). These entities will need to align their business processes, organizational structure, staffing and technology base.

Czech organizations already face a shortage of cybersecurity professionals and the situation is expected to intensify with the new Cybersecurity Act.

Outsourcing and shared services are expected solutions for shortage of experts.

[2] ***NIS2 (Network and Information Security 2)*** *is an EU-wide directive on cybersecurity, i.e. the security of information systems, computer networks, applications, software, and information; it aims to make organizations more resilient to cyber attacks.*

**The new legislation creates a need for experts and suppliers in the below listed areas**:

- Cybersecurity experts, consultants, and auditors experienced in NIS2/NIST Cybersecurity Framework
- Experts and consultants in crisis management training and audits as well as business continuity managers – local companies and organizations often lack an incident contingency and recovery plan.
- Security Operations Center (SOC)
- Security Incident and Event Management (SIEM)
- Pre-screening of new staff and antifraud check – providing records on pre-screening
- Preparation of guidelines and directives within companies in line with the new legislation (in Czech)
- Internal Phishing – testing of employees
- Supplier management - implementation of NIS2 requirements into contracts
- Log management – technological update such as log retention and development of security monitoring in IT and OT environments
- Tools for managing accounts with higher privileges in applications and systems (PIM/PAM)

For instance, ČEZ, the largest power utility in the country, plans to invest CZK 2.5 billion (USD 112.6 million) into new legislation compliance. The company now has 75 cybersecurity employees and claims to need at least 80 more in future.

An inaugural bilateral **Cyber Dialogue between the Czech Republic and United States** was held in Prague in March 2024 as part of the Prague Cyber Security Conference[3]. Discussions also involved avenues for increasing collaboration, including by strengthening information sharing between Computer Emergency Response Teams (CERTs) on cyber threats and vulnerabilities, collaborating on cyber exercises, addressing the risks posed by AI in the context of cybersecurity, and confronting the challenges of quantum-resistant cryptography.

[3] Key topics of the *Prague Cyber Security Conference (PCSC), organized by the National Cyber and Information Security Agency (NÚKIB) in coordination with the Ministry of Foreign Affairs of the Czech Republic, included the impact of artificial intelligence on cybersecurity, the protection of subsea cables from cyber threats and foreign interference, cyber warfare, and the fight against organized cybercriminal groups. It was attended by guests and government officials from over 60 countries.*

## 3.4 ROBOTICS & AUTOMATION

| Robot density: Czech Republic | | |
|---|---|---|
| 13th in the EU (out of 27): in overall use of industrial and service robots | 4th in the EU: robots in large enterprises (250+ employees) | Robots per 10,000 employees:<br>country average: 111<br>in industrial manuf.: 241<br>automotive sector: 670 |

The Czech Republic ranks 13th in the EU in overall use of industrial and service robots (6% of enterprises use robots); the leaders are Denmark (12%), Belgium (10%), Finland, Italy, and Spain (9% each). However, **if only large companies with 250+ employees are considered, the country ranks fourth in the EU** with 36% of enterprises using robots, surpassed only by Slovenia (43%), Croatia (40%), and Denmark (39%). Business opportunities in robotics and automation thus lie predominantly with medium-sized and small companies.

**Robotics in manufacturing sector enterprises, Czech Republic, 2022**

| | Share (%) |
|---|---|
| Manufacturing, by enterprise size, total (10+ employees) | 16.6 |
| • Small enterprises (10-49) | 7.2 |
| • Medium enterprises (50-249) | 28.2 |
| • Large enterprises (250+) | 64.3 |
| Manufacturing industry (10+ employees) by sector | |
| Motor vehicles and other transport equipment | 42.8 |
| Rubber and plastics products | 30.4 |
| Electrical equipment | 20.2 |
| Glass and building materials | 20.0 |
| Computer and electronic products | 19.7 |
| Basic metals | 18.3 |
| Machinery | 17.0 |
| Chemicals and pharmaceutical products | 12.3 |
| Food products | 10.6 |
| Wood and paper | 8.9 |
| Textiles and apparel | 3.8 |

*Source: Czech Statistical Office, 2024*

**The automotive sector records the highest robot density with 670 robots per 10,000 employees**. For comparison, this indicators stands at 111 robots for the whole of the Czech Republic and 241 robots in industrial manufacturing companies.

Key factors motivating companies to invest in robotics include efforts to achieve standardized product quality, response to high cost or scarcity of human labor and need to improve safety in the workplace.

Several domestic research centers have gained worldwide recognition in the field of robotics, particularly **Czech Institute of Informatics, Robotics and Cybernetics** (ciirc.cvut.cz) **at the Czech Technical University in Prague** (cvut.cz) as well as the **Brno University of Technology** (vutbr.cz/en).

## E-commerce sector automation

Service robots that assist humans have been gradually appearing across various sectors. Specifically in the logistics and warehousing sector, some 4% of all companies used service robots in 2022; for comparison, only 1% of all companies and 7% of large companies used service robots in 2022.

E-commerce companies see the future in robotic systems; despite high purchase price, they can benefit from robots being faster and making less errors than humans combined with their ability to work around the clock.

The Czech e-commerce sector, considered one of the most developed in Europe, has recently seen multiple major robotic and automation investment projects. Various types of robots have been installed in warehouses of almost all leading e-commerce players. European e-grocery technology leader **Rohlik Group** is redefining last mile delivery via automation of their fulfilment centers. The largest Czech e-commerce retailer, **Alza.cz**, has invested more than EUR 40 million in development of its logistics center, which is the largest investment in the company's history and one of the biggest installations of an AutoStore system in Europe. **Packeta Group**, a Czech logistics company, introduced its unique robotic solution for sorting shipments at their depots in 2021, becoming the first company in Europe to use such system.

**Automatic and robotic solutions of selected e-commerce players, Czech Republic, 2024**

**ROHLIK GROUP**
rohlik.cz
New distribution center near Prague includes a 12-story structure the size of an apartment building, divided into 44,000 storage boxes; 265 robots; the system can handle approximately 1,000 orders weighing up to 30 kg per hour

**ALZA.CZ**
alza.cz
Covering approximately 8,000 $m^2$ area operated by over 400 robots, 40 inbound and 30 picking stations

**PACKETA GROUP**
packeta.com
Depot in Prague uses 190 Packman robots supported by 150 people; Packmans - AGVs that carry shipments weighing up to 15 kg (up to 40 x 40 x 50 cm); the robots sort over 10,000 shipments per hour, i.e. double the previous mode (humans doing the work)

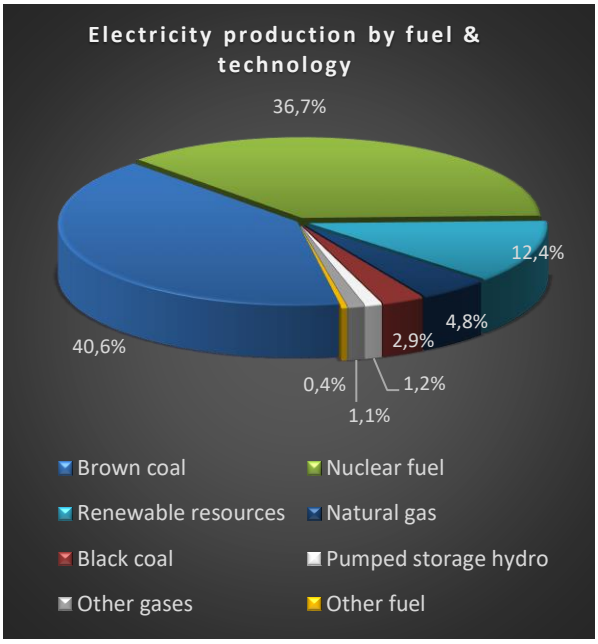
## 3.5 POWER SECTOR TRANSFORMATION & DECARBONIZATION

The future of the Czech power sector is being shaped in line with EU-wide commitments and targets for decarbonizing the energy and industry sectors, alongside considerations in response to the global energy market disruption caused by Russia's full-scale invasion of Ukraine.

In December 2019, the European Commission unveiled the European Green Deal, which is the blueprint for transforming Europe into the first climate-neutral continent and a modern, resource-efficient, and competitive green economy. **The European Climate Law sets a legally binding climate neutrality objective by 2050 and introduces an intermediate target of reducing net greenhouse gas emissions by at least 55% by 2030, relative to 1990.** Meeting the targets will necessitate an increase in the share of renewable energy and enhanced energy efficiency.

Prior to Russia's full-scale invasion into Ukraine in February 2022, the Czech Republic was among countries most heavily reliant on Russian natural gas alongside Latvia, Hungary, and Slovakia, as 98% of gas came from Russia, despite some previous attempts to diversify its gas sources. Remarkably, within just eight months in 2022, the country managed to slash its reliance on Russian gas to a mere 4% – replacing Russian gas mainly with imports of natural gas from Norway and LNG imports from the United States. Its reliance on Russian crude oil is expected to end in 2025 thanks to current investments into the TAL pipeline which allows the Czech Republic to import oil from Italy through Germany (currently 60 % of oil still comes from Russia).

In 2023, gross electricity production declined by almost 10% to 76 TWh. The country has been a net electricity exporter. The **electricity production mix is predominantly based on brown coal and nuclear fuel** (combining for over 77% of electricity generation in 2022); **renewable resources contributed 12.4% in 2022**.




**Electricity consumption (reaching 57.8 TWh in 2023) is projected to double by 2050**. In current plans, **coal phase-out is expected by 2033**, but it can be sooner due to rising price of emission allowances that coal-fired power plant operators as air polluters have to buy. Also, there is no longer enough coal for the power industry to rely upon in the coming decades.

**Feasible options for replacing coal include nuclear power, RES, and gas/hydrogen.**

**The Czech Republic needs to start massively building renewable energy sources.** Construction of new solar and wind power plants is partially funded from the EU Modernization Fund, which uses money from the sale of emission allowances in support of decarbonization.

2030 National Climate and Energy Plan: 30% RES share in gross consumption by 2030 - i.e. five times the current installed capacity of solar (from 2.1 to 10 GWe) and wind (from 0.3 to 1.5 GWe) by 2030

**ČEZ, a.s.** (cez.cz; 70% state owned) is the largest heat and electricity producer (generating two-thirds of domestic electricity); its production portfolio consists of 2 nuclear, 31 water, 12 photovoltaic, 2 wind, 7 coal, 1 gas, 1 biomass, 1 biogas, 3 heating, and 130 co-generation sources. **The company aims to develop 6 GW of renewables by 2030, with projects prepared primarily for photovoltaic power plants on brownfields, degraded industrial sites and mine spoil heaps.**

A major tender for the construction of four new nuclear units is underway; the first new Dukovany unit should be commissioned by 2036; its construction is scheduled to start in 2029. There are only two bidders now in the tender – France and South Korea.

The CEZ company also plans to build 10 SMRs by 2045; the first SMR at the nuclear site of NPP Temelín is to be developed between 2032 and 2035. ČEZ has signed memoranda of cooperation on SMRs with NuScale, GE Hitachi, Rolls Royce, EdF, Westinghouse, KHNP, and Holtec.

**Sokolovská uhelná** within SUAS Group (suasgroup.cz), a brown-coal mining company and electricity producer, has declared plans to locate SMRs on premises of their two production sites. They won a USD 1.5 million grant financed via the US State Department's Phoenix program for funding SMR location feasibility studies in Europe.