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THE CZECH REPUBLIC – YOUR BUSINESS PARTNER IN THE EU

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Photo: Government of the Czech Republic archives

Dear Readers,

At the beginning of the last year, the whole world was unexpectedly hit and suddenly needed to face a new challenge – a global pandemic. During these turbulent times, each country had to step up and quickly adopt a series of unprecedented measures that heavily affected the world we all knew, the Czech Republic included. These measures not only paralyzed our everyday lives but also impacted our fundamental rights and values that European Union lies upon. Restrictions that had been introduced to reduce the spread of SARS-CoV-2 have left deep marks on our economy and industry, and the overall scope of the impact is still yet to be determined. The very basis of our successful economic integration, the functioning of the Internal Market, has been badly hit. However, except for our vulnerabilities, this global pandemic fuelled an immense wave of European solidarity, strengthened the cohesion between the EU Member States, and uncovered new grounds for future cooperation. Nonetheless, the European Union is standing in front of a difficult task. In order to overcome all these economic and social challenges, the EU needs a helping hand from each Member State so it can recover, protect its civilians and defend its position abroad. I have no doubt that the Czech Republic is ready to become a leading partner on this difficult path.

Our country has gone a long way since the Velvet Revolution in 1989. From the beginning of the accession negotiations that started nine years later, through the very first Czech EU Presidency and up to this day, the Czech Republic has repeatedly proven to be an equal partner to the rest of the EU Member States. For the past few years, our country has been one of the highest growing economies in Europe with the lowest unemployment rates. Our industry, research, and development have been booming and we became a valuable member of the European Union with a lot to offer. In 2009, we presided over the Council of the European Union, while trying to navigate the EU out of the global recession and facing simultaneously a multitude of critical developments in EU's neighborhood. Whilst leading the dialogue among the Member States, the Czech Republic sought agreement on reforms of the EU institutions. Twelve years ago, we presented an ambitious agenda and successfully balanced various contradictory interests of the European community. I am truly convinced that we can do it again.

In July 2022, the Czech Republic will take over the EU Presidency for the second time. These six months represent a great opportunity to influence the direction, functioning, and priorities of the European Union in a long term. While bearing a great responsibility, we will be enjoying a spotlight to promote our cultural heritage and values, but also our industrial development and achievements. We are seriously preparing for this role, although fully aware of the difficulties and challenges the EU is currently facing. The Czech Republic managed to lead the European Union during the turbulences in the financial markets, and I am sure we will cope with the implications of a sanitary crisis as well.

As the Czech Republic has become an integral part of the European community, our work on the European project is also getting rewarded. In the past seven years, we benefited from the allocation of almost 24 billion euros that have been used on various projects all across the country. Our commitment to the EU is a two-way street, and the Czech Republic actively works on the European Union as much as it benefits from its membership.

The whole world is trying to recover from the global sanitary crisis and the Czech Republic is not an exception. Nevertheless, our historical journey prepared us for difficult moments like these. Let us set an example and be a leading partner in these challenging times. Let us help to stabilise the European Union and increase its resilience. Let us continue its project of enlargement and promote European values at home, as well as abroad. Let us be a reliable partner that the European Union needs.

MILENA HRDINKOVÁ

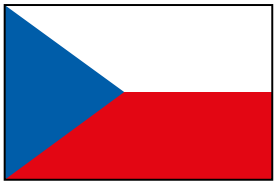
State Secretary for European Affairs, Office of the Government of the Czech Republic

USEFUL INFORMATION

STATE SYMBOLS OF THE CZECH REPUBLIC

Large State Coat of Arms

State Flag



The Czech Republic is a landlocked state situated in Central Europe, neighbouring on Germany, Austria, Slovakia, and Poland.

BASIC DATA

Population	10 701 777 (2020)
Area	78 864 sq.km
Capital	Praha (Prague)
State system	Republic
Language	Czech
Highest elevation	Sněžka (Snow Mountain), 1603 metres above sea level
Time zone	Central European Time GMT + 1, Summer Time GMT + 2
Currency	1 koruna česká/Czech crown (Kč/CZK) = 100 hellers EUR 1 = CZK 26.444 (average, 2020) USD 1 = CZK 23.196 (average, 2020)
Internet domain name:	.cz

MEMBERSHIP

The Czech Republic is a member of the European Union, the United Nations, NATO, WTO, the International Monetary Fund, the International Bank for Reconstruction and Development, the European Bank for Reconstruction and Development, the OECD, and many other organisations.

For additional practical information on the conditions of transport to the Czech Republic and stay in the CR, see www.czech.cz

TWELVE CZECH UNESCO WORLD HERITAGE ITEMS

The UNESCO World Heritage List includes the following cities and sites: Prague, Český Krumlov, Kutná Hora, the Litomyšl Chateau, Telč, the Lednice-Valtice area, Zelená Hora – the Church of St John of Nepomuk (in Žďár nad Sázavou), Holašovice, Kroměříž (Chateau and Gardens), the Holy Trinity Column in Olomouc, the Tugendhat Villa in Brno (architect Ludwig Mies van der Rohe), the Basilica of St Procopius and the Jewish Cemetery in Třebíč. Intangible UNESCO monuments: Slovácko Verbuňk (Slovácko Verbuňk belongs to male saltation dances. It is an impromptu dance, which is not bound by exact choreography rules), Lent (Descriptions of Shrovetide processions and masks in the Hlinsko Region have been documented since the 19th century), Falconry (Falconry is one of the oldest relationships between man and predator, which has lasted for more than 4 000 years. It is the traditional activity of hunting using trained birds of prey in a natural environment), Kings' Ride (The Ride of the Kings is a folk tradition of yet unknown origin, mostly associated with the traditional Christian holiday). More information at **www.unesco-czech.cz.**

NOTABLE PERSONALITIES

Czechs are described as a very cultured nation that has given the world a number of prominent figures. The most significant rulers and heads of state have included Emperor Charles IV and the Presidents T. G. Masaryk and Václav Havel. Figures of world renown include the scientists Jaroslav Heyrovský (Nobel Laureate in Chemistry), Otto Wichterle, a Czech chemist who invented contact lenses, and Antonín Holý, who discovered a drug treatment for AIDS. World renown was also gained by the entrepreneur Tomáš Baťa, as well as by Madeleine Albright, former US Secretary of State. The list of famous people in the cultural sphere includes the composers Smetana, Janáček, Dvořák, and Martinů, the writers Franz Kafka, Karel Čapek, Jaroslav Seifert (Nobel Laureate), Jaroslav Hašek, Bohumil Hrabal, and Milan Kundera. Winners of the American Academy Award are Czech film directors Miloš Forman (born in the Czech Republic), Jiří Menzel, and Jan Svěrák. Others worthy of mention are the artists František Kupka, Alfons Mucha, and the unique-style photographer Jan Saudek. Famous Czech-born sports people are, for example, Emil Zátopek, Věra Čáslavská, Martina Navrátilová, Jaromír Jágr, Martina Sáblíková, Petr Čech, and Petra Kvitová.

PRACTICAL INFORMATION

Country dialling code: +(420).

Licences for **Mobile telephone network** covering the territory of the Czech Republic have been granted to a couple of companies: for example O2 Czech Republic, a.s., T-Mobile Czech Republic a.s., Vodafone Czech Republic a.s. The most widely used credit cards in the Czech Republic are: Eurocard/Mastercard and Visa.

THE CZECH REPUBLIC AND THE EUROPEAN UNION

Czechoslovakia´s wish to become a member of the European Communities (EC) was expressed in many ways. One of the first was the slogan on the election billboards of the revolutionary Civic Forum platform, "Back into Europe". In December 1990, Czechoslovakia opened talks with the EC on the establishment of an Association Agreement. One year later, Czechoslovakia signed the Agreement, along with Hungary and Poland.

After the disintegration of Czechoslovakia, the European Communities suspended the ratification process. The Czech diplomacy, led by Foreign Minister Josef Zieleniec, exerted intensive efforts in order to make up for the time lost. As a result, in 1993 the two sides signed an agreement "establishing an association between the Czech Republic on the one side and the European Communities and their member states on the other side". The agreement entered into force on 1 February 1995. Until then, the mutual relations were governed by a Provisional Agreement.
At its meeting in Copenhagen in June 1993, the European Council decided that the associated countries in Central and Eastern Europe so wishing could become members of the European Union. It was also established that the accession would take place as soon as the country concerned was in a position to accept all the membership obligations, was meeting the required economic and political conditions and had sufficient administrative and judicial capacity needed for the Adoption of the Acquis.
At the meeting in Essen in December 1994, the European Council called upon the Commission to make a detailed analysis of the potential impacts of the eastern enlargement of the EU on the politics of the European Union and its future development. The internal report was submitted to the European Council at its session in Madrid in December 1995. The Council asked the Commission to prepare opinions on the individual membership applications as soon as possible after the closing of the intergovernmental conference and to start preparing a summary document on the course of the enlargement. On 17 January 1996, the Czech Republic filed its application for membership of the European Union through the Prime Minister of the Czech Government, Václav Klaus.

THE 1996-2004 PERIOD

In July 1997, the European Commission published its document – Agenda 2000 – in which it subscribed to the idea of a "stronger and larger union" and published Opinions on the preparedness of all candidate countries. The Commission also established that it would inform the European Council regularly about the progress the Central and East European countries had made in their preparations for membership. In its Opinion, the Commission recommended membership negotiations to be opened with the Czech Republic, Hungary, Poland, Estonia, Slovenia, and Cyprus.
In December 1977, at the summit in Luxembourg, the European Council entrusted the Commission with the preparation of Regular Reports on the progress made by the individual candidate states for membership.
At its meeting in Luxembourg on 13 December 1997, on the recommendation of the Commission, the European Council decided to tender an official invitation to 11 candidate states to join the EU. For the Czech Republic, the invitation was taken over by President Václav Havel, accompanied by the Minister of Foreign Affairs Jaroslav Šedivý. The summit in Luxembourg further decided that bilateral intergovernmental conferences would be called in spring 1998, where accession talks with six states – Cyprus, Hungary, Poland, Estonia, the Czech Republic, and Slovenia (known as the Luxembourg Group) – would be opened. The actual enlargement process was started at a meeting in Brussels on 30 March 1998, attended by the Ministers of Foreign Affairs of the EU15 and the 11 candidate states, including the Czech Republic.
The legal framework was formulated in the Accession Partnership deed. In Brussels, the Czech Republic submitted its National Programme of Preparations for EU Membership, issued in succession in 1999, 2000, and 2001.
The first part of the talks on the entry of the Czech Republic into the EU – known as the "screening", i.e. analytical comparison of the legislation of the candidate countries with EU law – opened in Brussels in April 1998. Actual accession talks, at ministerial level, started in November 1998, after preliminary technical negotiations. For screening purposes, the ACQUIS was divided by areas into 31 chapters. Before the opening of each of the chapters, the European Commission proposed the adoption of a common negotiating position of the Union, which was approved by the Council and presented by the presiding country. All the candidate states, represented at the talks by their chief negotiator and his team, also prepared their positions on all 31 chapters.
The head of the Czech negotiation team was Pavel Telička, Deputy Minister of Foreign Affairs, appointed on 14 January 1998. His comment on the complicated and often very demanding negotiations, was: "The negotiations were unprecedented, in terms of their comprehensive character, factual content, technical complexity and political significance, hardly comparable with anything in our history to date. This is true despite the fact that the European Union significantly narrowed down our negotiation space and relatively largely defined the conditions."
The main negotiator of the European Commission was Klaus van der Pas, with Michael Leigh and, from the year 2000, with Rutger Wissels at the head of the negotiating

team assigned specifically for the Czech Republic.
The process of preparations for membership was continuously monitored by the European Commission, which, starting in 1998, each year issued Regular Reports on the progress made by the candidate countries in their preparations for EU membership. The first evaluation Report of the Commission in 1998 was very critical, especially as regards state administration and the judiciary. The government made efforts to speed up the process of implementation and application of EU legislation. The second Report of the Commission of 1999 valued positively the adoption of the document, Economic Strategy of Entry into the European Union, the joint evaluation of the priorities of the country´s economic policy, the progress made in the liberalisation of the movement of capital and the adoption of basic rules for regional policy promotion. In spite of this, the final evaluation of the fulfilment of the Accession Partnership deed was unsatisfactory. Very critical, among other things, was the evaluation of the situation of the Romani population. In 2000, the Commission´s Report was much more favourable than the two previous evaluations. The evaluation of the accelerated process of harmonisation of the country´s legislation with EU law was especially favourable.
The EU summit held in Nice from 7 to 11 December had on its programme the enlargement of the Union eastward and the general reform of the institutions. It was agreed that, after its entry into the EU, the Czech Republic would have 11 votes in the Council and 20 deputies in the European Parliament. Since the Czech Republic and Hungary are states of approximately the same size as Belgium, Portugal and Greece, but were assigned fewer seats in the EU Council and the European Parliament, this meant their discrimination.
The 2001 Report evaluated the Czech Republic much more favourably, especially as regards the functioning of the market economy. A continuing problem was the situation of the Romani population and the state administration reform. In 2002, the "President Beneš Decrees" issue was on the agenda again. On the basis of its analysis, the Commission published a Report saying that, from the acquis point of view, the decrees were no obstacle to the Czech Republic´s accession. The last evaluation Report was issued on 5 November 2003 and was called "Summary Monitoring Report on the Ppreparations of the Czech Republic for Membership". In its opinions, the Commission proposed to enlarge the EU by 10 countries as proposed in Laeken.
The pre-accession process with 10 candidate states, including the Czech Republic, was terminated at the session of the European Council held in Copenhagen on 12-13 December 2002. There, all the chapters under negotiation, including the transitional periods, which gave the new member countries longer terms for the successful fulfilment of all their commitments resulting from EU membership, were closed. In keeping with the Commission´s position, the 10 new states were admitted on 1 May 2004. The accession of the Czech Republic to the EU was the outcome of the successful termination of accession talks, during which the conditions of the Czech Republic´s membership of the EU were discussed. On 1 May 2004, the European Union became a Community of 25 Member States. The number of official languages increased to 20.

CURRENT SITUATION

How do Czechs Influence European Politics?

The Czech Republic has its representatives in all the institutions of the European Union, where they often

Photo: pixabay.com

hold very important positions, so that a large number of Czechs participate in making decisions on the long-term orientation and everyday politics of the EU. The Czech Republic appointed Věra Jourová as a member of the European Commission, in which she now holds the high position of Deputy Chairwoman, in charge of the portfolio called "Values and Transparency".

Jourová Is One of the Most Influential Women in the EU

Věra Jourová is a member of the European Commission for the second term in succession. During her previous mandate in 2014-2019, she was in charge of the issues of Justice, Consumer Protection, and Equality between women and men. In that period, she managed to push through a number of steps, especially in the area of consumer policy, which make the lives of people in the EU easier and more pleasant. These include, for example, the cancellation of roaming charges and the simplification of cross-border shopping on the Internet. The Politico.eu server has repeatedly ranked Věra Jourová among the most influential women forming the EU. In 2017, she was even placed sixth on the list. No other member of the Commission has participated in so many political battles, according to the server. Jourová has solved a number of thorny subjects, such as data protection, terrorism on the Internet, the Dieselgate affair, double quality of food, protection of the rule of law and issues related to sexual harassment.

The Czech Prime Minister, Members of Parliament and Ministers Participate in EU Decision Making

The Czech Republic also plays an important role in the European Council, where the heads of state and governments of all the member countries meet and define the general orientation of the EU. Czech Ministers participate in the meetings of the Council of the European Union, where they hold debates with their counterparts on EU legislation. The Czech Republic has 21 deputies in the European Parliament. In respect of its population, the Czech Republic has a higher relative representation than the large states, such as Germany and France. Since the previous elections to the European Parliament in 2019, the posts of Vice-Chairmen of the European Parliament have been held by Czech deputies Dita Charanzová and Marcel Kolaja; before them, in 2017-2019, one of the Vice-Chairmen of the European Parliament was Pavel Telička. The Czech Republic also has its representatives in other EU institutions and agencies, e.g. the EU Court of Justice, the European Service for External Activities and the European Defence Agency. Besides the main EU institutions, there are also advisory bodies, such as the European Committee of the Regions. In 2019, a Czech specialist, Petr Blížkovský, was elected its General Secretary. Czechs have 21 seats in the European Parliament, 14 of which are the seats of Vice-Chairmen. They represent 7 political groups. The Czech Republic also has its permanent representatives in Brussels. Edita Hrdá is a member of COREPER II, composed of ambassadors, and Jaroslav Zajíček of COOPER II, concerned with Agriculture and Research.

Czechs and EU Agencies

Specialised EU agencies concern themselves with specific scientific and technical issues. The Czech Republic is the seat of the European Global Navigation Satellite System Agency (GSA) and is to become a space centre. The presence of the Agency attracts know-how to the Czech Republic and stimulates the Czech space industry, which has a long tradition in this country. Czech firms participate in international projects, such as the manufacture of the Ariane 6 rocket, the latest in the series of space rockets launching satellites into orbit. The Czech Republic is also the first of the former eastern bloc countries to have built a space incubator, where new ideas are being developed.

Presidency 2022

The Czech Republic will assume its historically second chairmanship on 1 July 2022. This country first stood at the head of the EU in the first half of 2009. As in the previous term, it will form the presidential trio with France and Sweden. Presidency of the EU Council is one of the most important rights and most demanding tasks resulting from EU membership. The role of the presiding country is not only to organise, but also to mediate and handle political and representation tasks. Preparations for the forthcoming Czech presidency were started in July 2018. The preparations and the actual realisation of the Czech presidency in 2022 are taking place under the guidance of the Prime Minister, through the Section for European Affairs of the Office of the Government of the Czech Republic. Other institutions to participate in the presidency will be the Ministry of Foreign Affairs, as leader, and the Permanent Representation of the Czech Republic to the EU. The coordinator will be the Committee for European Affairs. The domain of the Office of the Government of the Czech Republic is www.eu2022.cz, where current information about the Czech presidency of the Council of the European Union will be published.

Do you know that…

three Czech writers have been awarded the EU Prize for Literature? They are:
Bianca Bellová (2017) - award for her novel "The Lake" (Jezero)
Jan Němec (2014) – award for the fictionalised biography of the famous Czech photographer, František Drtikol, titled "History of Light" (Dějiny světla)
Tomáš Zmeškal (2011) - award for his first work, "Love Letter in Cuneiform" (Milostný dopis klínovým písmem)

In 2009, Helena Třeštíková´s film "Miracle" (Zázrak) won the EU Prix MEDIA award, accorded within the framework of the Creative Europe programme. It was presented to her at the International Film Festival in Cannes.
Prix EUROPA – UNDER THE AUSPICES OF THE European Parliament, was awarded to:
TV DOCUMENTARY 2015 – "Mallory", Helena Třeštíková
TV FICTION 2014 - "The Numbers Eight" (Osmy), Marek Epstein
SPOT 2005 – "Home Sweet Home", Jan Rendl

THE CZECH REPUBLIC AND THE EURO

The Czech Republic´s membership of the European Union involves, among others, the commitment to adopt the single European currency as soon as the required Maastricht criteria have been met. Therefore, in connection with the Czech Republic´s accession to the European Union, the question arises: when will the euro be accepted?

The answer to this question has been the drafting of a joint document of the Czech government and the Czech National Bank – Strategy of the Process of Accession of the Czech Republic to the Eurozone, adopted in 2003. The document described the economic situation of the Czech Republic in relation to the economic standard of the Eurozone. At the same time, considering the expected pros and cons resulting from the introduction of the single European currency, it outlined the potential strategy of introducing the euro in this country. The years 2009-2010 were mentioned as a potential target for the adoption of the euro, on the assumption that the process of real convergence of the Czech economy and the fulfilment of the required Maastricht criteria continue.
In 2006, the Czech government decided to take several steps towards starting preparations for the Czech Republic to adopt the euro. The following are some of the important steps taken by the government in the process of preparations for accepting the euro.

- An institutional structure was created for the introduction of the euro in the Czech Republic, an important feature of which is to get all the institutions concerned involved in the process. The supreme body is the inter-ministerial National Coordination Group for the Adoption of the Euro, comprising representatives of the ministries concerned and the Czech National Bank (CNB). The National Coordination Group is entrusted with the creation of working groups for making the necessary preparations in the different sectors for the adoption of the euro, to be led by the National Coordinator appointed by the government.
- An important decision which had to be made right at the beginning was the decision on how the euro would be introduced in the Czech Republic. EU legislation offered three potential scenarios of transition to the euro – using a transitional period, a one-off transition to the euro using the "gradual abolition phase", or the one-off transition to the euro called "Big Bang", which is a scenario where the euro is introduced in cashless and cash payment operations at the same time. Today, when the euro is already an internationally recognised currency, new Eurozone members without exception choose the Big Bang method. The examples of Slovenia, Cyprus, and Malta confirmed unequivocally that this was the cheapest and simplest option for the introduction of the euro.

CURRENT SITUATION

At the end of 2020, the Czech government adopted a joint recommendation of the Czech Ministry of Finance and the Czech National Bank not to set a target date for the adoption of the euro for the time being. The decision is based on information contained in the document "Evaluation of the fulfilment of the Maastricht convergence criteria and the degree of the economic harmony of the Czech Republic with the Eurozone". The common document of the Ministry of Finance and CNB maps out the country´s economic preparedness for the adoption of the euro, which has been evaluated regularly since the Czech Republic joined the European Union in 2004. The document stated that, in 2020, under the unprecedented conditions caused by the COVID-19 pandemic, and the related worldwide economic decline, the Czech Republic is in a position probably to fulfil just one of the Maastricht convergence criteria, specifically the criterion concerning interest rates. The criteria concerning public finance and price stability will not be met. The last criterion, which evaluates participation in the exchange rate mechanism, cannot be formally met, because the Czech Republic does not participate in it.

Photo: freeimages.com

As regards the level of preparedness of the Czech Republic for accepting the euro, weak spots persist. An obstacle to joining the Currency Union, according to the government, is the unfinished process of real economic convergence of the Czech economy, where in most key indicators, in particular the price and wage levels,

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the lag remains considerable. Another disparity rests on the structure of the Czech economy in comparison with that of the Eurozone, which would complicate the performance of the single currency policy. And, in view of the aging of the population, the problem of the long-term sustainability of public finance, which, after the adoption of the euro, should partly offset the loss of the autonomous currency policy, has not as yet been solved. On the other hand, the high degree of the openness of the Czech economy and its great business and ownership interconnection with the Eurozone speak in favour of adopting the euro. Other positive factors are the relatively stable exchange rate of the Czech crown in relation to the euro, even during this year´s deep economic downfall, the restored harmony between the financial markets of the Czech Republic and the Eurozone and the solid banking sector in the Czech Republic.
Over the past few years, the form of the institutions and the rules of the Eurozone have changed and talks on tightening European integration are continuing. Therefore the future potential financial and non-financial commitments of the Czech Republic linked with the country´s entry into the Eurozone are difficult to be reliably estimated.

Macroeconomic Prediction of the Czech Republic

In April 2021, the Ministry of Finance published an important document, the Macroeconomic Prediction of the Czech Republic, drafted on the basis of the plan of non-legislative documents for the 1st half of 2021. The Czech economy has been fundamentally affected by a new type of coronavirus pandemic.The measures adopted to prevent the spreading of the infection have caused a profound fall in the economy, amounting to 5.6 % for the whole of 2020. The decline has affected all spheres of domestic consumption, with the exception of public spending. The Ministry of Finance expects that the vaccination of the population now in progress will improve the epidemic situation, which will support economic revival not only in the Czech Republic, but also in other countries. The growth of GDP in 2021, pushed by the creation of gross fixed capital, inventory recovery and general government consumption, could reach 3.1 %. The economic revival in other countries, too, is expected to help to improve the Czech balance of trade. While household consumption in 2021 is likely to be stagnant, its revival in 2022 is expected to accelerate economic growth to 3.7 %.
Since the 4th quarter of 2020, the year-on-year growth of consumer prices has been visibly slowing down and has returned below the upper three-per cent tolerance band of the CNB inflation target. The fall in consumer demand has an anti-inflationary effect, while frictions on the supply side of the economy work in the opposite direction. For the year 2021, we expect the average inflation rate to be at the 2.5 % level, where the higher prognosis is supported mainly by higher crude and food prices. In 2022, in the absence of major anti-inflationary factors – with the exception of household consumption revival – the inflation rate could slow down to 2.3 %. The development in the labour market is largely influenced by fiscal stimulation measures. Despite moderate growth, the unemployment rate is standing at a substantially lower level than the current cyclic position of the Czech economy would suggest. In consequence of the delayed effects of the economic decline, the unemployment rate in 2021 is likely to rise to 3.6 % according to the latest sample labour force survey. In 2022, it might rise slightly, to 3.7 %, in a situation at the end of this year, where the economic revival and the expected suspension of measures keeping the employment rate high will be working against each other.
The public finance deficit in 2020 amounting to 6.2 % of GDP was largely influenced by the coronavirus pandemic. The slowing down of economic activities was accompanied by a decline in income and an increase in expenses, provoked by measures taken to contain the epidemic and mitigate its social and economic consequences. The continuing epidemic will also be reflected in this year´s balance sheet, expected to be down by 2.6 p. p. Public debt is expected to grow from 38.1 % of GDP in 2020 to 44.8 % of GDP at the end of 2021. In 2022, however, the effects of the epidemic are likely to be minimal. With continuing consolidation, the deficit next year is estimated to be below 6 % of GDP and the debt above 48 % of GDP. The prediction is burdened by a number of risks, which in sum are strongly pointing downwards. The main negative factor is the development of the epidemic situation and the process of vaccination. Despite the agreement between the European Union and the United Kingdom on the future arrangement of mutual relations, uncertainties in the area of international trade can still be felt. Internal risks include uncertain developments in the automotive industry, the reaction of the labour market to potential structural changes in the economy, overvaluation of residential property prices and the potential growth of non-performing loans.

Credit Rating Agencies Confirm Excellent Rating Position of the Czech Republic

The evaluations of the Fitch and ACRA Europe rating agencies confirm the high credit reliability of the Czech Republic, which, despite the economic development caused by the coronavirus pandemic, will retain its financial position on both the domestic and foreign markets. In 2021, Fitch Ratings confirmed its rating of the Czech Republic for long-term liabilities in the domestic and foreign currencies at AA- level. The agency especially appreciates its stable fiscal and monetary policy, a strong institutional base, and the good position of Czech public finance as regards the debt ratio. The assessment outlook is stable. ACRA Europe, after the closure of the markets, also confirmed the country´s excellent rating at AA level, for its long-term liabilities in both the domestic and foreign currencies. According to the agency, the Czech economy entered the pandemic period in good shape, thanks to its low unemployment level, low public debt, high foreign exchange reserves and a stable banking system.

CZECH FOODS AND FARM PRODUCE ACCORDED NAME PROTECTION BY THE EUROPEAN UNION

Since the CR's accession to the European Union, Czech manufacturers have applied to the EU for protected designation of origin, the traditional speciality guaranteed status and the protected geographical indication status for a number of their products to be protected against counterfeiting.

After joining the European Union in 2004, the Czech Republic, after application, obtained the right to use the protected geographical indication for its generally known products, such as České Budějovice Beer, Žatec Hops, Třeboň Carp, Pardubice Gingerbread, Hořice Tubes, and Olomouc Stinky Cheese. Gradually, regional and even local and less-known, or completely unknown products, such as Czech Caraway Seed,Chod Beer, Březnice Lager, Znojmo Beer, Všestary Onions, and Chelčice-Lhenice Fruit, were added to the list. What does the situation look like today? The following are the most important Czech products accorded the protected geographical indication status.

PROTECTED GEOGRAPHICAL INDICATION

- Hořice Tubes – rolled wafers, the manufacture of which began in Hořice in 1812, when a Napoleon's cook reportedly made a recipe for making them readily available.

- Lomnice Biscuits – unlike dietary biscuits, they are sweet slices; in 1927, they gained the highest award for a food product at the World Exhibition in Paris.
- Pardubice Gingerbread – honey pastry, manufactured in Pardubice since the 14th century.
- Beer from ChodováPlaná – brewed by the Chodovar brewery. It owes its unique taste to mineralised water and storage in 800-year old cellars.
- Karlovy Vary Biscuit – a unique product linked with Karlovy Vary, made with local thermal water and salt.
- Beer from ČeskéBudějovice – The right to use the geographical indication ČeskéBudějovice Beer, Budějovice Beer and Budějovice Burghers' Brew was created in 2004. The České Budějovice Beer trademark is used by Budějovice Budvar, the indication Budějovice Burghers' Brew belongs to the Budějovice Burghers' Brewery and both brewers may use the name Budějovice Beer.

- Štramberk Ears – Special bakery product made of flour, sugar, eggs, water, baking powder, spices, and honey or caramel. The dough is rolled out into small circular scones, which are rolled up into the shape of cones after baking.

- Třeboň Carp – The Třeboň carp has very good meat with a minimum content of fat and a specific taste.

Cereals are used for their fattening. The Třeboň Carp indication has been used for more than a hundred years.

- Všestary Onions – The conditions in the village of Všestary and its environs are ideal for onion growing. Všestary onions are exceptional for their high iron content (about 25 % more than other onions) and they contain practically no noxious agents.
- Czech Beer – To obtain the Czech Beer designation, the beer must meet three conditions: to be brewed on the territory of the Czech Republic, use traditional raw materials and exclusive traditional technologies. Two-phase fermentation – the main fermentation process must be separated from maturing – is also a condition.
- Žatec Hops – This protected indication only applies to semi-early red fine-aroma Žatec hops cultivated in the Žatec hop-growing region, which is situated in a "rain shadow". The climatic conditions, together with the geographical position and soil composition combine to create ideal conditions for hop cultivation. Žatec hops are cultivated in the traditional region for more than a thousand years.

- Pohořelice Carp – South Bohemia has the Třeboň carp, South Moravia the Pohořelice carp. The entire production process, from swabbing to growth and feeding takes place exclusively in the fishpond area around Pohořelice. The fish feed on natural food from the ponds; additional feeding with cereals takes place at certain times of the year, with granules being used only exceptionally.
- Novošice Sauerkraut – The specific properties of Novošice sauerkraut, which distinguish it from other sauerkrauts, are given by the locality, in which it grown, and by the original recipe. The cabbage is first sliced, salted, and flavoured with caraway and mustard seed, after which it is placed in vats. There it is treaded as in olden times. This is followed by six-day fermentation. The result is golden yellow sauerkraut with its typical acid to finely bitter taste, which has a high C-vitamin content.
- Czech Caraway Seed – Czech caraway seed is much in demand on world markets, where it enjoys high acclaim. Three caraway seed varieties cultivated in the Přibyslav region – Record, Prochan, and Kepron – are valued especially for their typical aroma. Caraway seeds began to appear in the Vysočina Region about 150 years ago. Currently, caraway is grown in the whole of the Czech Republic on about 1600 hectares.
- Chamomilla Bohemica – This Latin name is the protected geographical indication assigned by the EU to the blossom of wild chamomile grown in Bohemia. Unlike chamomile from other areas, it has a higher content of the main agent responsible for chamomile's anti-inflammatory effect.
- Chelčice-Lhenice fruit – fruit of the temperate zone intended for both direct consumption and canning, comprising kernel and stone fruit, and small fruit. The taste of the fruit is full, sparkling, with a large scale of fruit elements and lasting long on the tongue. The specific properties of this fruit (such as freshness and compactness), in both smell and taste, are due to the local conditions (mainly the difference between day and night temperatures during ripening time and also morning mists in the cultivation areas).
- Olomouc Stinky Cheese is a ripening cheese made from skimmed milk. Its production is concentrated traditionally to the Haná region, where it has been made since the 15th century. Today its production is linked with the small town of Loštice, where this type of cheese has been produced since 1876 by the firm A. W., named after its founder Alois Wessels.

A complete updated list can be found at http://eagri.cz/public/web/mze/potraviny/znacky-kvality-potravin/chranena-zemepisna-oznaceni/

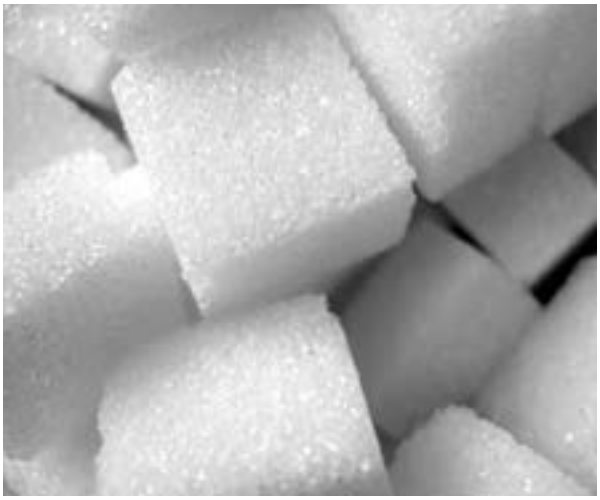
Photo: © CzechTourism archives, Author: UPVISION; Budějovický Budvar archives; freeimages.com; pixabay.com

CZECH RECORDS!

DID YOU KNOW THAT...

- the first sugar cube was made in Dačice?

In 1829, the brothers František and Tomáš Grebner established a sugar refinery – using sugar beet – in Kostelní Vydří near Dačice. After realising that neither the climate nor the soil in the area was suitable for growing sugar beet, František decided to establish a refinery that formed raw sugar into various shapes and textures – icing sugar, caster sugar, coarse sugar, sugar loaves, sugar cubes, and chips. In 1840, Swiss-born businessman Jakub Kryštof Rad became the director of the Dačice refinery. His wife gave him the idea and in 1841 he manufactured the first 300 white and pink cubes of beet sugar. Rad moulded them in an apparatus he himself had invented. Thus an invention was born, whose practical use was soon to be discovered by the whole world. More at www.dacice-mesto.cz



- many inventions and discoveries such as contact lenses were made by Czech scientists?

Otto Wichterle, Czech chemist and the founder of the Institute of Macromolecular Chemistry in Prague, was the inventor of soft contact lenses. He is also considered the founder of macromolecular chemistry and is the author of about 150 inventions. In 1993, one of the planetoids was named after Wichterle. The physicist and chemist Jaroslav Heyrovský was the first Czech scientist to win the Nobel Prize. It was awarded to him in 1959 for the discovery of the polarographic method and its use in electroanalytical chemistry. The outstanding Czech orientalist Bedřich Hrozný, who lived at the turn of the 20th century, became famous for deciphering the ancient Hittite language. In November 1915, he announced that he was able to read the writing of the ancient Hittites, the official language of the Hittite empire. The first sentence he deciphered was: "Now you shall eat bread, and water you shall drink..."

- the most famous Czech song is the Beer Barrel Polka?

The Beer Barrel Polka, or Roll Out the Barrels, is probably the best known Czech song in the world. It has become popular in many countries during the Second World War. It was composed in 1927 by Jaromír Vejvoda as an instrumental piece of music. He adapted it in 1929, and in 1934 Václav Zeman wrote the Czech lyrics and called it Škoda lásky (Wasted Love). It became a popular song with the allied armies as well as Czechoslovak pilots in the Battle of Britain. Its popularity is testified also by the fact that it accompanied astronauts on the Discovery Space Shuttle; it was also played in the popular series M.A.S.H. The Vejvoda family archive records 14 names of the song and 27 versions of lyrics in various languages. More at www.j-vejvoda.cz.

- the first radioactive spa was established in Jáchymov?

The Jáchymov Spa is a very famous spa centre, where the first spa with radioactive waters was

established. At the beginning of the 20th century strong radioactive springs were discovered there and subsequently in 1906, the first radon spa in the world was established. The spa was established after Pierre and Marie Curie, Nobel Prize winners, had isolated the first radioactive elements – polonium and radium – from the waste from the Jáchymov uranium ore, the uranite. The thermal and radioactive springs improve the condition of patients with metabolic disorders, ailments of the nervous system, locomotive system disorders. Metabolic illnesses (diabetes and gout) are also treated here as well as age-related illnesses. More at www.jachymov.cz.

- the second largest equestrian statue is on Vítkov?

The second largest European equestrian statue cast in bronze stands on Vítkov Hill in Prague. The statue of the Hussite leader Jan Žižka of Trocnov weighs 16.5 tonnes and is 9 meters high, 9.6 metres long, and 5 meters wide.

- the oldest university in Europe is Charles University?

Prague University was founded by the Czech King and Holy Roman Emperor Charles IV in 1348 as the first university (studium generale) north of the Alps and east of Paris. It followed the example of the universities in Bologna and Paris and soon it became internationally renowned. Today, there are 42 000 students studying there. More at www.cuni.cz

- the world's largest stadium is in Prague?

The Strahov Stadium with an area of 63 000 square metres is the largest stadium in the world. The construction work started as early as in 1926. It was first used by members of the Sokol gymnastics organisation and later by members of sports associations. At the moment, there is FC Sparta training centre there. On occasions, concerts of famous stars such as The Rolling Stones are held there.

-many famous personalities are of Czech origin?

For example the former US Secretary of State Madeleine Albright was born in Prague (in 1937) in the family of the Czech diplomat Josef Korbel. Miloš Forman, the film director and winner of two Academy Awards for the films Amadeus and One Flew Over the Cuckoo's Nest, moved to the United States in 1968. Martina Navrátilová, top tennis player, is a former world number one in women's tennis and is generally considered one of the best women tennis players of all time. She is originally from Czechoslovakia but she emigrated to the United States in 1975. Another famous tennis player, the winner of 94 tennis tournaments, Ivan Lendl, or Alena Vrzáňová, the famous figure skater and two-time World Champion, are both of Czech origin.

- the words robot and dollar are of Czech origin?

The word robot was first used in 1920 in the dramatic play R.U.R. – Rossum's Universal Robots, written by the well-known Czech playwright and journalist Karel Čapek. The word was suggested to him by his brother Josef, after Karel had asked him what name he should give to the artificial being. The originally intended "labor" sounded too artificial. The word dollar is close to the Old Czech word tolar, which is related to the German Taler, a shortened version of the original Joachimstaler, meaning "of Joachimstal (St. Joachim's Valley)". This was the name of a silver coin which Count Shlik started to mint in 1518 in Czech Jáchymov.

- medicine against cancer has been invented by a Czech scientist?

In 2004, Antonín Holý, chemist from the Institute of Organic Chemistry and Biochemistry at the Czech Academy of Science, presented the result of his collaboration with American colleagues. It is a tablet which significantly prolongs the life of AIDS patients. In 2008, a new substance intended for treating lymphoma and chronic leukaemia came under testing at five Czech and five American clinics. Professor Antonín Holý co-developed six drugs used worldwide and sixty Czech and foreign patents. In 2007, he was proclaimed the best Czech scientist. More at www.uochb.cas.cz

- the Hranice Chasm is the world´s deepest flooded cave?

The Hranice Chasm is the deepest known freshwater cave on earth. Five years ago, a team led by the Polish specialist Krzysztof Starnawski dived into it and confirmed that its depth was at least 404 metres. However, already in 2016, during descent into the cave hypotheses emerged suggesting that the cave´s bottom was 700-1000 metres deep. The geologists´ assumption was based on figures showing the chemical composition and temperature of the water at a depth of some fifty metres, which oscillated between 16 and 19 degrees Centigrade. The transparency of the water is variable, sometimes the visibility range was just one metre, at other times up to fifty metres. It is a mineral water containing carbon dioxide.

- the Czech Republic has the highest number of people with secondary education?

91.6 % of people in the Czech Republic have at least secondary education, the most of all EU countries. On the other hand, the country has relatively few university graduates in comparison with other states. Only 19.9 % of people have tertiary education, in comparison with 43.1 % in, for example, Luxembourg.

- we have the most detailed network of hiking trails?

More than 130 years have passed since the first hiking trails were marked out by Czech Tourist Club enthusiasts. The Czech tourist marking system is considered the most reliable and most detailed not only in Europe, but also worldwide. The system of hiking trails criss-crosses the whole country, so that, with slight exaggeration, tourists following the yellow, red, blue or green marks will easily find their destinations, from the smallest hut to the most imposing sight. The Czech Republic has the densest network of tourist trails in Europe – with more than one kilometre of marked trails per square kilometre. Regrettably, the Czech primacy cannot be confirmed with absolute certainty, because many countries do not publish information

about the length of their hiking trails. Its confirmation, howeer, may be that tourists could hardly see so many guideposts or tourist marks on trees. In the Czech Republic there are 42 885 km of marked hiking trails, 33 817 km of marked road bike paths, 3 757 km of off-road bike paths, 3 067 of marked ski trails and 2 826 km of horseback tourist trails and fourteen wheelchair trails. In all, the CzechTourist Club takes charge of 86 352 km of marked tourist trails, whose total length is an equivalent of twice the tour of the equator.

- the world´s densest library network is here?

The Czech National Library stores 7.4 million books and it serves nearly half a million regular readers. There are more than 6 000 public libraries in the Czech Republic, which is about 5.1 library per 10 000 inhabitants. The EU average is 1.3 libraries per 10 000 inhabitants. Thirty-two per cent of the Czech population are regular library visitors, while the EU average is 23 %.

- we are the overall most active mushroom-pickers?

Perhaps nowhere else in the world is mushroom-picking so popular as in the Czech Republic. Each year Czech people collect more than 20 000 tonnes of mushrooms, which is more than six kilograms per household a year. The mushroom-hunting tradition is probably nowwhere else so live except in other Slavonic countries, Germany, the Baltic and the Scandinavian states and Finland, or Southeast Asia, if there is any such tradition at all.

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SHOCK FOR EXPORTS, CZECH MANUFACTURERS COUNTER WITH INNOVATION AND FLEXIBILITY

It is no surprise that the role of industry and exports is of key importance for the Czech economy. This country is a typical example of a small, open economy dependent on the development of the external environment. The degree of openness of the Czech economy is one of the highest within the European Union. Moreover, the country´s foreign trade turnover is growing faster than the economy as a whole on a long-term basis. The only exception was 2009, the year of global economic recession. In that year, Czech exports dropped by nearly 10 % in real terms. The recovery, however, was very quick, with exports returning to their pre-crisis levels after approximately 18 months. Investment, on the other hand, took nearly a whole decade to improve.

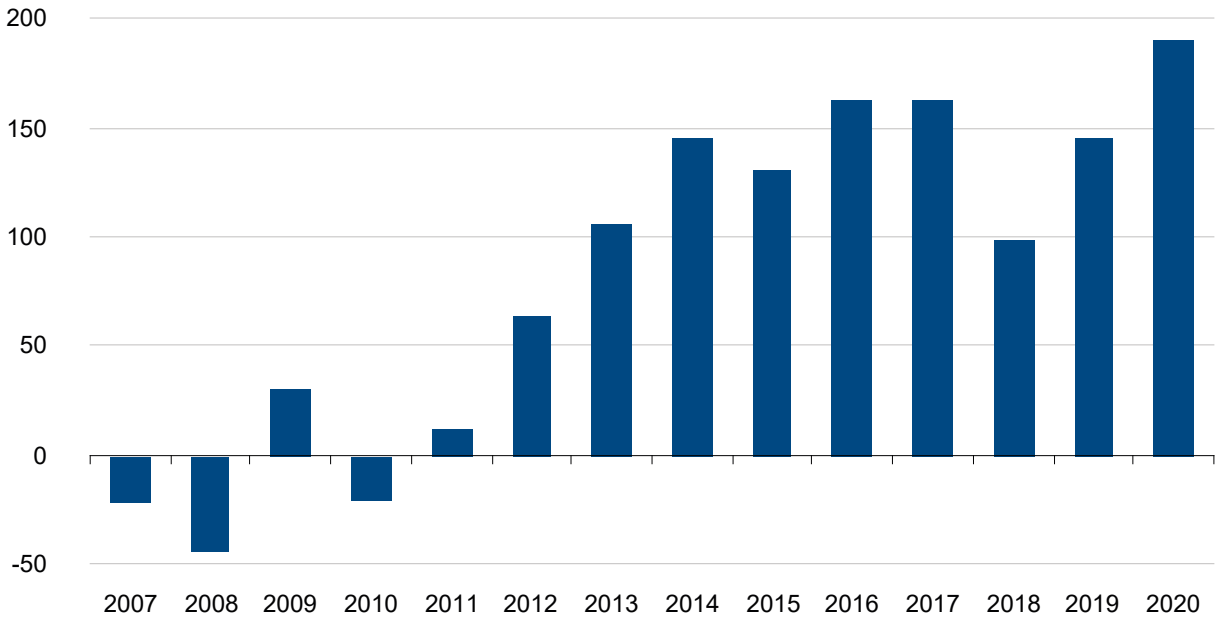
FOR FOREIGN TRADE, THE PANDEMIC WAS A SHOCK COMPARABLE WITH 2009

The year 2019 was already a presage of worse times for exporters. The year 2020 and the economic crisis, as a consequence of the new coronavirus pandemic causing the covid-19 disease, meant one thing: the real volume of Czech exports declined for the first time in 11 years.

Already in the last quarter of 2019, Czech exports declined in real terms year on year, specifically by 1.2 %, although the annual balance still showed a 1.2 % growth. Czech exports were hit by the recession in German industry with a relatively long delay. German industry was in decline from mid-2018, not only because of the cyclic factors, but also in connection with structural problems, which affected especially the automobile and energy industries. An even greater shock came at the end of the first quarter of 2020, and especially in the following quarter. The spreading coronavirus pandemic provoked tough restrictive measures on the part of most governments, which strongly paralysed the production abilities of the economies concerned. Absolutely unprecedented was the closing of the borders within the European Union, whose very existence stands on the free movement of goods, services, and persons. The borders with countries outside the EU were naturally also practically impassable. The global entwinement of production chains thus unveiled the weak link of this production model, with a number of manufacturing plants having to be closed because of a shortage of material inputs. This consequently became a problem

Photo: © www.bigstockphoto.com

LAST YEAR´S FOREIGN TRADE SURPLUS WAS, SURPRISINGLY, THE HIGHEST IN HISTORY (USING THE NATIONAL METHOD, IN CZK BILLION)



Source: ČSÚ, Ekonomický a strategický výzkum, Komerční banka

on the part of exporters, including Czech businessmen, who in the first quarter of 2020 exported 1.9 % fewer goods year on year, and in the second quarter the slump was an unprecedented 23.3 %.
In most economies, the spring wave of the coronavirus pandemic culminated in April, when the economies, including the Czech Republic, fell into hibernation because of government measures. Their mitigation began in May, which led to a revival of economic activities, and as a result the third quarter was doing much better in comparison with the second, especially as regards foreign trade. The arrival of the autumn months, however, once again witnessed a worsening of the epidemiological situation. Taught by the experience undergone during the first wave, the government refused to impose across-the-border restrictions, and industry, in particular, carried on undisturbed, enjoying an unexpectedly strong demand from abroad. This naturally resulted in unexpectedly favourable results in foreign trade in the second half of 2020.

FOREIGN TRADE REVIVED IN THE SECOND HALF OF LAST YEAR

Let´s examine in more detail how Czech exporters and importers fared in the pandemic year of 2020, especially in comparison with 2019, and how this situation became reflected in foreign trade statistics. When looking at the figures in goods' trading in 2019, we see a slight increase in turnover in comparison with 2018, when the sum of total exports and imports increased by 1.5 %, with exports increasing by 2.1 % year on year and imports by 0.8 %. The balance of trade in goods ended in a surplus of CZK 145.7 billion, in comparison with CZK 98.5 billion in 2018. The year 2020 unequivocally reflected the coronavirus crisis. In the first half of that year, exports dropped by 13.5 % and imports by 11.3 %. Total surplus dropped by one half, in comparison with the first half of 2019, amounting to CZK 51.7 billion. The revival shown in the third quarter, supported by strong foreign demand, spilled into the fourth quarter, so that the figures for the second half of last year absolutely unexpectedly more than offset the catastrophic results of the first half of the year. Total surplus in trade in goods for the whole of last year amounted to CZK 190 billion, CZK 44.3 billion more than in 2019. Nevertheless, it must be pointed out that weaker imports significantly influenced the result reflecting losses caused by a large proportion of shops being closed. In addition, an important role was played by poor investment because of the high cost. Total imports in 2020 fell by 5.9 % and exports by 4.5 %.
Besides the surplus in trade in goods, the safer external position of the Czech economy is also supported by the surplus in its trade in services. The volume of services' exports, however, is only about one-fifth of the volume of goods' exports. From the balance sheet point of view, the figures are more interesting. In 2020, the balance of trade in services showed a surplus of CZK 105.4 billion. Let´s recall that the surplus in trade in goods amounted to CZK 190.0 billion. The services sector last year reflected the impact of restrictions imposed in connection with the coronavirus pandemic. The exports of services in 2020 declined by 17.3 % year on year and imports fell by 20.5 %.

FOREIGN DEMAND WILL BE ONE OF THE DRIVERS OF CZECH ECONOMIC REVIVAL THIS YEAR

The Czech Republic, an industrial country exporting about one half of its entire production, is essentially dependent on the condition of the global economy and free foreign trade. In respect of both these factors, the year 2020 was a great challenge for domestic producers. Nevertheless, as shown also by the previous crises – the 2009 global recession, the European debt crisis 2011 and 2012, the 2013-2017 exchange rate commitment and the period following the annexation of Crimea by Russia in 2014 and the consequent sanctions against that country – Czech manufacturers are innovative and flexible, regarding the current situation as an opportunity. It is therefore expected that in 2021 net exports will be one of the drivers of the performance of the domestic economy and will contribute to the anticipated 2.5 % growth of the Czech economy.

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Nothing has changed regarding the key position of the manufacturing industry and that of Germany as the Czech Republic´s key partner during the pandemics

The decisive role in foreign trade statistics is played by products of the manufacturing industry. In 2020, this sector accounted for the unbelievable 95.7 % of total exports and for 93.7 % of total imports. For the whole of 2020, export of those products fell by 4.4 % in comparison with 2019, which in monetary terms amounts to CZK 156.3 billion. In the same period, import showed a 4.4 % decline, which in absolute terms is CZK 144.4 billion.

The most successful Czech export item within the framework of the manufacturing industry is the production of motor vehicles. In 2020, products of this subsector accounted for as much as 27.3 % of total export of the manufacturing industry. The pandemic was responsible for the loss of CZK 98 billion worth of total automobile export, a decline of nearly 10 %. Other important items on the export side were machinery and equipment, and computers and electronic devices. On the side of import, motor vehicles, trailers and semi-trailers also held the most important position in 2020, accounting for 15.5 %, a fall of 13.5 % year on year.

On the goods' balance sheet, the manufacturing industry last year contributed significantly to its surplus, which amounted to CZK 256.4 billion. In comparison with 2019, this was CZK 4.0 billion less. The total product balance of the manufacturing industry was adversely affected, especially by the year-on-year decline in the surplus in trade in motor vehicles. However, the lowering of the deficit in crude oil and natural gas trading by as much as 55.9 % was most important. Here, of course, besides the lower volume of import, an important role was played by the fall in crude prices.

From the territorial point of view, the position of the Czech Republic remains unchanged. Its geographical position and EU membership unequivocally determine its key trade partners. In 2020, 79.7 % of total Czech exports went to EU countries, with the Eurozone accounting for 64.9 % of total exports. The unequivocally most important Czech trade partner is Germany, with a 31.5 % share of total Czech exports. In second place, far behind Germany, is Slovakia with a share of 9.2 %, followed by Poland (6.6 %), France (4.8 %), Austria (4.1 %) and the UK (3.8 %). Total surplus in trade with EU countries in 2020 amounted to CZK 684.8, in comparison with CZK 638.4 billion in 2019.

INDUSTRY VERY QUICKLY RECOVERED FROM THE FIRST WAVE OF THE PANDEMIC

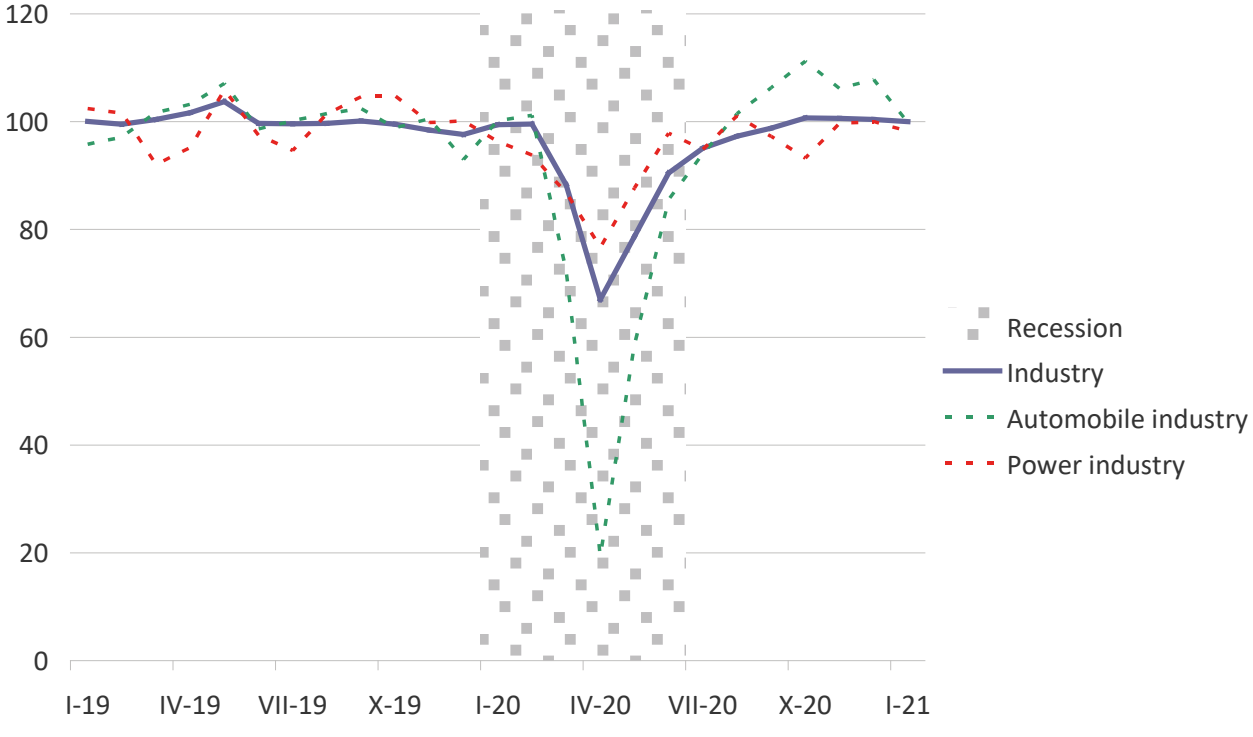
In 2020, the Czech economy, like those of other European countries, was hit by the Coronavirus pandemic, which called for a number of restrictive measures affecting the lives of people and the functioning of firms. Industry, which showed the first signs of cyclical slowdown already before the outbreak of the pandemic in Europe, did not escape its spring wave.

Already in February 2020, industrial production began slowing down as a result of the break-up of foreign supplier chains caused by production lay-offs in Asia and complications in transport. Consequently, in mid-March, a number of Czech industrial firms, just as firms in other European countries, resorted to voluntary shutdowns, which resulted in a massive decline in the production of the largest domestic sector – the manufacture of transport vehicles. As a result, production in the automobile industry in April fell by more than 80 % year on year, which had a negative impact also on related sectors, such as the manufacture of plastic and electrical products, and metals. In a few months, however, production began to revive and already in August 2020 it rose over the average level of the previous year and, importantly, this trend was not reversed even by the oncoming new wave of the pandemic. Domestic industry remained practically immune to the second wave of the infection, as confirmed by a comparison of the results for the two 6-month periods. In comparison with the first period, when industrial production dropped by 12 %, in the second period, it rose by more than 13 %. In the case of the automobile industry, the contrast between the first and the second 6-month periods was even more distinct (-27 % vs. + 43 %). An equally rapid turn could also be observed in other important sectors directly related to automobile production.

STABILISING ROLE OF INDUSTRY

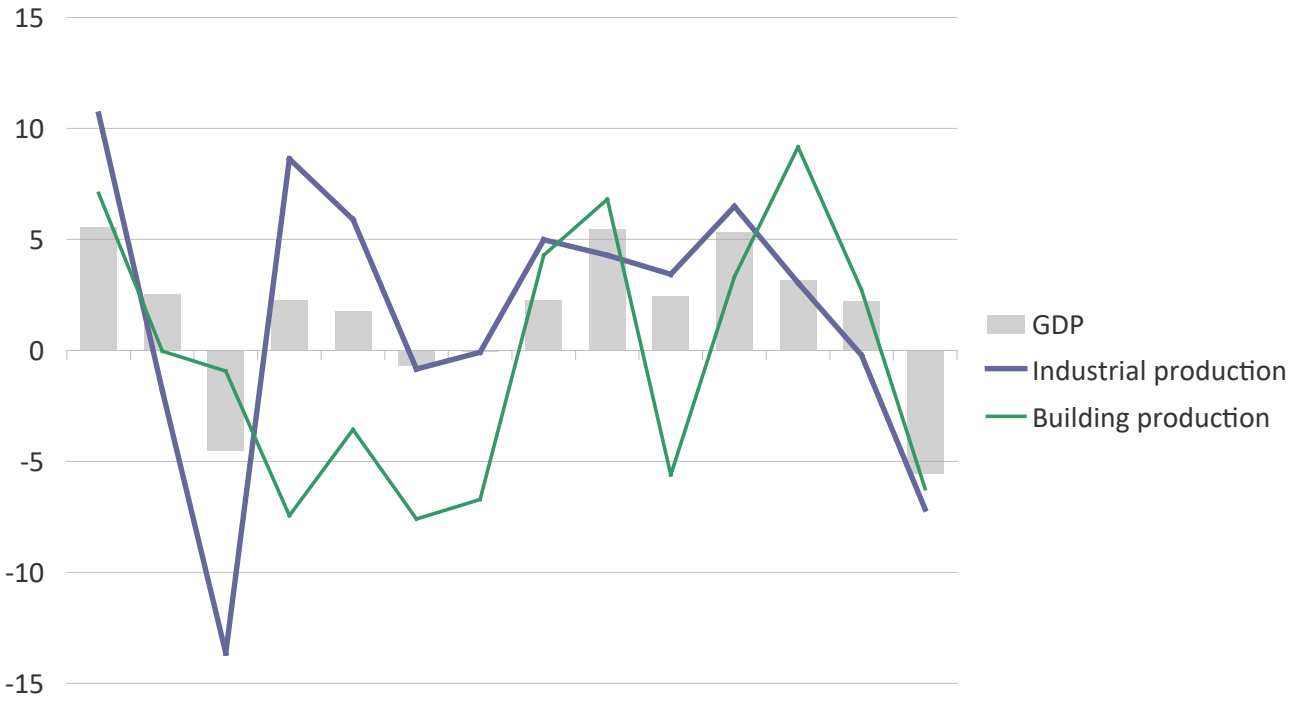
During the second wave of the pandemic, which was, by the way, much more serious as regards its extent,

INDUSTRIAL PRODUCTION (2019=100, SEASONALLY ADJUSTED)



Source: Czech Statistical Office

ECONOMIC GROWTH (YEAR-ON-YEAR IN %)



Source: Czech Statistical Office

industry played a stabilising role, thanks to which the economy did not slip into recession again, after the short revival in the third quarter. Despite the fact that the state of emergency had been in force in the Czech Republic from the beginning of October, with a number of measures restricting social contacts (including a lockdown in services), industrial production continued to grow, which completely offset the slowdown in sectors affected by the restrictions. Mainly owing to the development of industry in the second half of the year, the Czech economy showed a mere 5.6 % decline year on year, less than the entire EU or the Eurozone taken together. Most responsible for this situation was foreign demand and the negotiation of contracts for up to 12 months in advance.

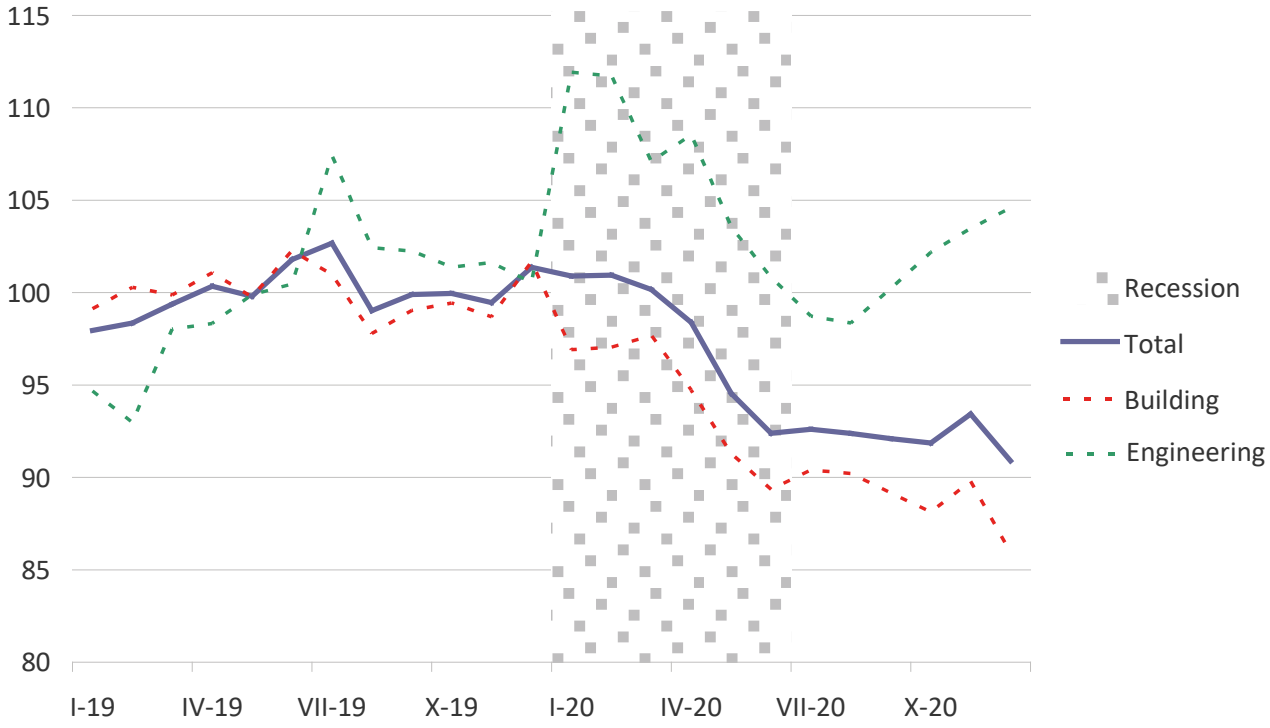
OPPORTUNITY FOR SOME SECTORS TO EXPAND

Although the restart of industry after the die-down of the spring wave of the pandemic was relatively rapid, production failed to fully catch up with the fall witnessed in the first half of the year, despite the favourable results at the end of the year. The overall 8 % decline in industrial production in 2020, however, was not record-high, either on the domestic or the European scale, according to Eurostat figures. As a matter of fact, at the time of the global economic crisis, industry plummeted by as much as nearly 13 %. The results of domestic industry were better in comparison with the EU as a whole (-8.5 %), and with Germany, where production of this sector fell by as much as 11 %. A much lower decline was also shown by automobile production, which in the Czech Republic declined by 12 %, while the drop in the entire EU was nearly 22 %, and in Germany as much as 25 %. The number of cars manufactured last year dropped to 1.154 million, about the same as in 2013, when the entire European automobile market reached its lowest level, after a 5-year decline. The fall in car production became automatically reflected in the export of automobiles, which last year declined by 10 %, equalling CZK 100 billion. Nevertheless, automobiles still account for about one-quarter of total Czech exports, mainly to EU countries. Most other industrial sectors, too, showed a decline last year, with the exception of some which did not witness any slow-down at all. Specifically, this concerned the paper, pharmaceutical, and food industries, for which the Corona crisis even meant an opportunity for expansion on both the domestic and foreign markets.

EMPHASIS ON EFFICIENCY

The pressure on efficiency in production once again increased as a result of recession and the labour shortage. Although in 2020 employment in industry decreased, the sector remained the most important branch of the Czech economy as regards employment and GDP generation. In December last

BUILDING PRODUCTION (2019=100, SEASONALLY ADJUSTED)



Source: Czech Statistical Office

year, the number of employees within the sector dropped by approximately 4 % (49 000). However, the demand of firms for new workers in that period decreased only symbolically. Vacancies in industry in proportion to total employment dropped to 4.2 % but, in spite of this, the employment rate was by far the highest within the entire EU. This means that firms were creating new jobs, even at the time of the economic slowdown, and the shortage of skilled and unskilled labour continued. In 2020, industry played an important stabilising role with regard to not only GDP development, but also the labour market. The favourable development of industry in the second half of the year was one of the main reasons why the growth of unemployment last year stopped at the level of 4 %, which was incomparably less than during the previous two recessions.

Although, at the beginning of 2021, the Czech Republic experienced another wave of the Coronavirus pandemic, industry remained immune to this development, just as in the autumn. Mood surveys and the indices of Purchase Managers already at the beginning of the year signalled an increase in the number of new contracts for the coming year. The first official figures indicate that industry is functioning even under emergency and partial lockdown conditions and that industrial production continues to grow. The main risk this sector is facing is the shortage of foreign sub-deliveries and their increasing prices.

With regard to demand, the outlook of industry for 2021 continues to be very favourable, and there is a great likelihood that, already this year, industrial enterprises will manage to offset last year´s fall in production and profitability.

BUILDING PRODUCTION LAGGING BEHIND BUILDING CONSTRUCTION

In 2020, the negative consequences of the pandemic also influenced the development of the building industry. Building production declined by 6.3 %, mainly in consequence of the massive reduction in building construction from the beginning of the pandemic. While building construction was in decline for the rest of the year, civil engineering very quickly resumed its growth after the summer intermission, and, thanks to the steadily high level of contracting, it showed – as one of few economic sectors – a moderate growth in production of 1.3 %. The main reason for the weaker results in civil engineering is the postponement of investment by non-financial enterprises, due to uncertainties caused by the pandemic and the inadequate capacity of building firms faced with a shortage of both skilled and unskilled workers. As shown by the regular surveys of the Statistical Office, it is exactly the lack of (foreign) workers, which is the greatest hindrance to the growth of the entire sector. A negative trend is also shown by housing construction, which has been on the decline from

the beginning of last year. In 2020, nearly 9 % fewer apartments were under construction than in 2019. For example, in Prague alone, the construction of new apartments dropped by 30 %. At the same time, demand for new apartments did not decline, even during last year´s recession, so that the only logical consequence of this situation was further acceleration of the increase in prices of apartments on the market.

It can therefore be said that, although the pandemic has broken the 3-year-long course of growth, the prospects of this sector remain favourable. Regular statistics show that demand for building production is growing again, and the main problems of the sector will be inadequate capacity and the short supply of building materials. The number of new contracts in civil engineering is also increasing, while engineering construction is showing a moderate decline. At the same time, the number of contracts in both the private and public sectors has been growing at a two-digit rate and building firms are receiving new orders from abroad. For the time being, the prospects for housing constructions are uncertain, where the number of new building permits being issued are showing no signs of a turn for the better.

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The Czech Republic Remains a Net Recipient of EU Money

In 2020, the Czech Republic obtained CZK 85.7 billion more from the EU budget than it returned into it. This is the second-best result since the Czech Republic´s entry into the EU in 2004. Last year, the Czech Republic received CZK 145.9 billion from the EU budget and returned CZK 60.2 billion into it. Thus, the same as in previous years, the CR remained a net recipient of EU money.

One of the main priorities of the Czech government as regards the drawing of EU money, according to the Minister of Finance, is to submit the National Renovation Plan, which aims to assist the Czech economy after the coronavirus crisis. "We want to draw EU money for digital and green transformation, support of business, the infrastructure, science, research, innovation, and education," says the Minister. "For the years 2021 – 2026, the CR could obtain CZK 182 billion," she added. The Plan is to be submitted to the European Commission by 30 April at the latest.

In total, since joining the EU in May 2004, the Czech Republic has paid CZK 677 billion into the EU budget and has obtained CZK 1.57 trillion from it. Since its entry into the EU, the net position of the Czech Republic is CZK 896.4 billion.

The same position, according to the latest figures published by the European Commission in 2019, is held by countries which joined the EU in 2004, together with the Czech Republic. On the other hand, the volume of returns paid by the original EU countries, such as Germany, France, Italy and the UK, exceeds the money obtained by them from the EU budget.

In 2019, the largest contributor to the EU budget was Germany, which returned EUR 14.3 billion (approx. CZK 372 billion) more into it than it obtained from it. The largest recipient of EU money was Poland, who obtained EUR 12 billion more from the EU budget (approx. CZK 312 billion) than it returned into it.

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CZECH ENERGY INDUSTRY

The energy industry is one of the most important sectors in the Czech Republic. Traditionally, we are very strong in the area of engineering and the manufacture of power-generating facilities, which the industry can build and operate efficiently, including nuclear power sources.

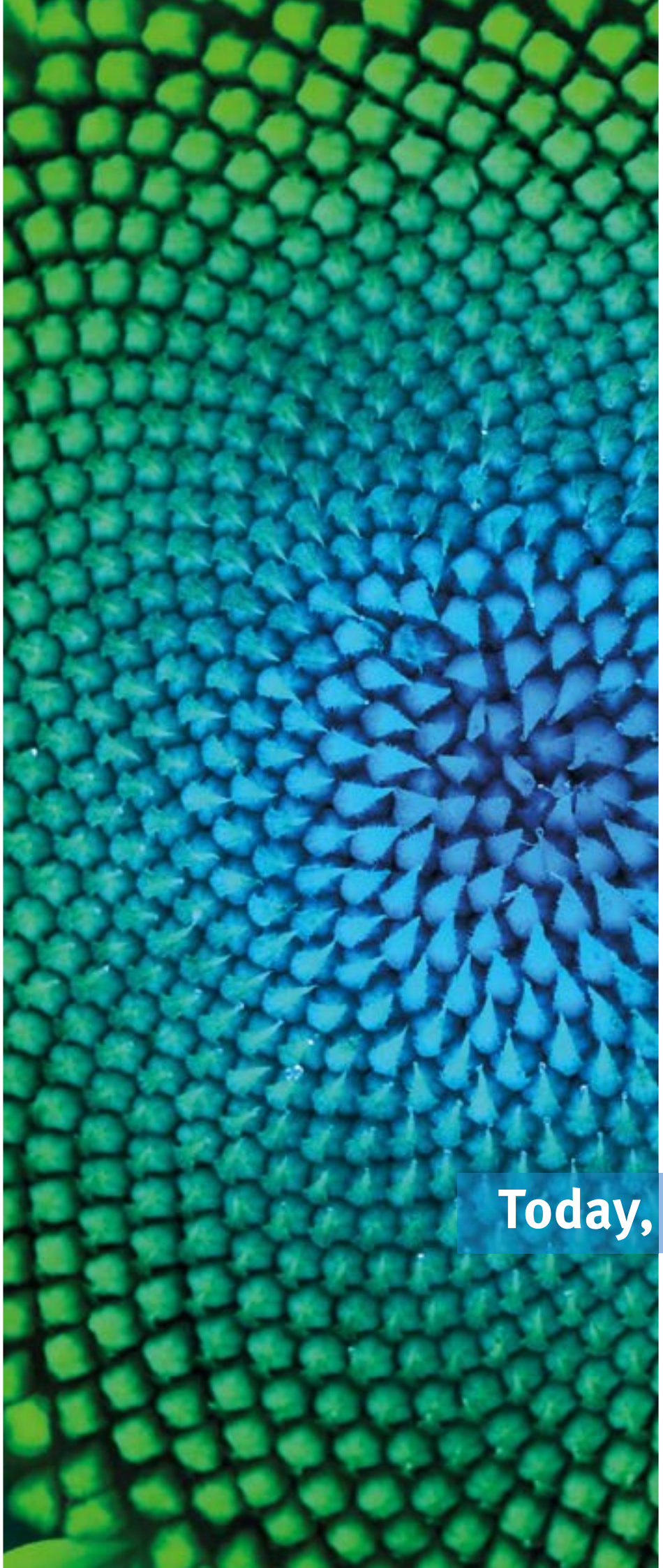
The Czech Republic is self-sufficient in electricity production, based predominantly on domestic brown coal deposits and nuclear power sources. On the other hand, natural gas and oil are imported from politically unstable countries, which may endanger safe and reliable supplies in future. The adequate capacity of national and international transmission facilities creates prerequisites for international trade in electricity. The energy sector is a stable branch in the Czech Republic, which attracts foreign investors and creates good prerequisites for the further development of Czech industry. The Czech power industry is still dominated by coal resources. Traditionally, with the largest proportion of energy being generated by brown coal-powered power stations, the second largest electric power source in terms of output in the Czech Republic is the Temelín and the Dukovany nuclear power stations. Despite the protective measures and restrictions taken by the government, the Dukovany and the Temelín power stations in 2020 narrowly surpassed the 30 billion kilowatt hour mark in electricity supply, confirming the key position of emission-free energy sources in the Czech Republic. In 2020 the Temelín power station generated 15.75 terawatt hours – historically its third highest output

PHOTOVOLTAIC BOOM

Solar energy is one of the pillars on which the European Union wants to build a greener society, and that is why the popularity of photovoltaic power plants is growing. No wonder that in the long run electricity prices have been growing, while the prices of the solar systems have been declining. What trends are to be expected in energy prices in 2021? Probably those tending upwards, as shown by figures published by ČEZ Sales, one of the main providers of photovoltaic panel installations in the Czech Republic. In the first five months of 2020 the firm installed 238 solar systems on Czech roofs, a 54 per cent increase in comparison with the same period in the previous year. The upward trend has not been stopped even by the Coronavirus pandemic.
In the Czech Republic, photovoltaic power stations are installed on the roofings of large carparks outside shopping centres or employee carports. The largest carport for 322 cars with a 820 kilowatt photovoltaic power station is currently being built outside the Dukovany nuclear power plant. The equipment worth CZK 60 million is using double-sided panels, another photovoltaic technical novelty, producing power not only from direct sunshine, but also from the light reflected from the cars parked there. Such a solar park is expected to generate about 20-25 per cent more electricity than conventional panels. The largest roof power station was installed by Škoda Auto in Mladá Boleslav in 2020. Photovoltaic stations on company and carport roofs in Mladá Boleslav are expected to generate more than 450 megawatt hours of green electricity, which the car factory will use for its own immediate consumption. The excess electricity will be stored in batteries. In 2020, a total of 1373 commercial photovoltaic facilities were installed on the roofs of companies and factories with a total output of 28.8 MWp, according to the Solar Association statistics. Nearly four times more small stations were installed on the roofs of family houses, although their aggregate capacity was only 22.6 megawatt hours.

DYNAMIC RESEARCH PROJECTS IN POWER ENGINEERING

The Czech power engineering industry does not entail the mere operation of power stations, coal mining and photovoltaics. In addition to all of these, the Czech Republic has a number of important programmes and research projects it can be proud of. Řež Research Centre: the construction of the SUSEN infrastructure project is completed and research is continuing. The extensive research base for nuclear technologies in Řež near Prague and in Plzeň is already in operation. The SUSEN workplace in Plzeň focuses on the research of nuclear fusion, materials, diagnostics and testing for the purposes of the power industry. An important part of the SUSEN project in Plzeň are the nondestructive defectoscopy laboratories. The material research laboratories verify the firmness, resistance, and service life of metals and welds. Broader contexts of "pure" energy generation are being sought by the Advanced Photovoltaics Centre being built in Prague, in addition to seeking ways of raising the efficiency of solar panels. At the birth of this ambitious centre were graduates from the Nuclear Engineering, Civil Engineering, and Electrical Engineering faculties of the Czech Technical University in Prague. The Centre brings together all aspects of Photovoltaics, from theoretical Physics, which will help to improve the efficiency of solar cells, to technological problems, the testing and diagnostics of solar panels and their integration into the structures of buildings.



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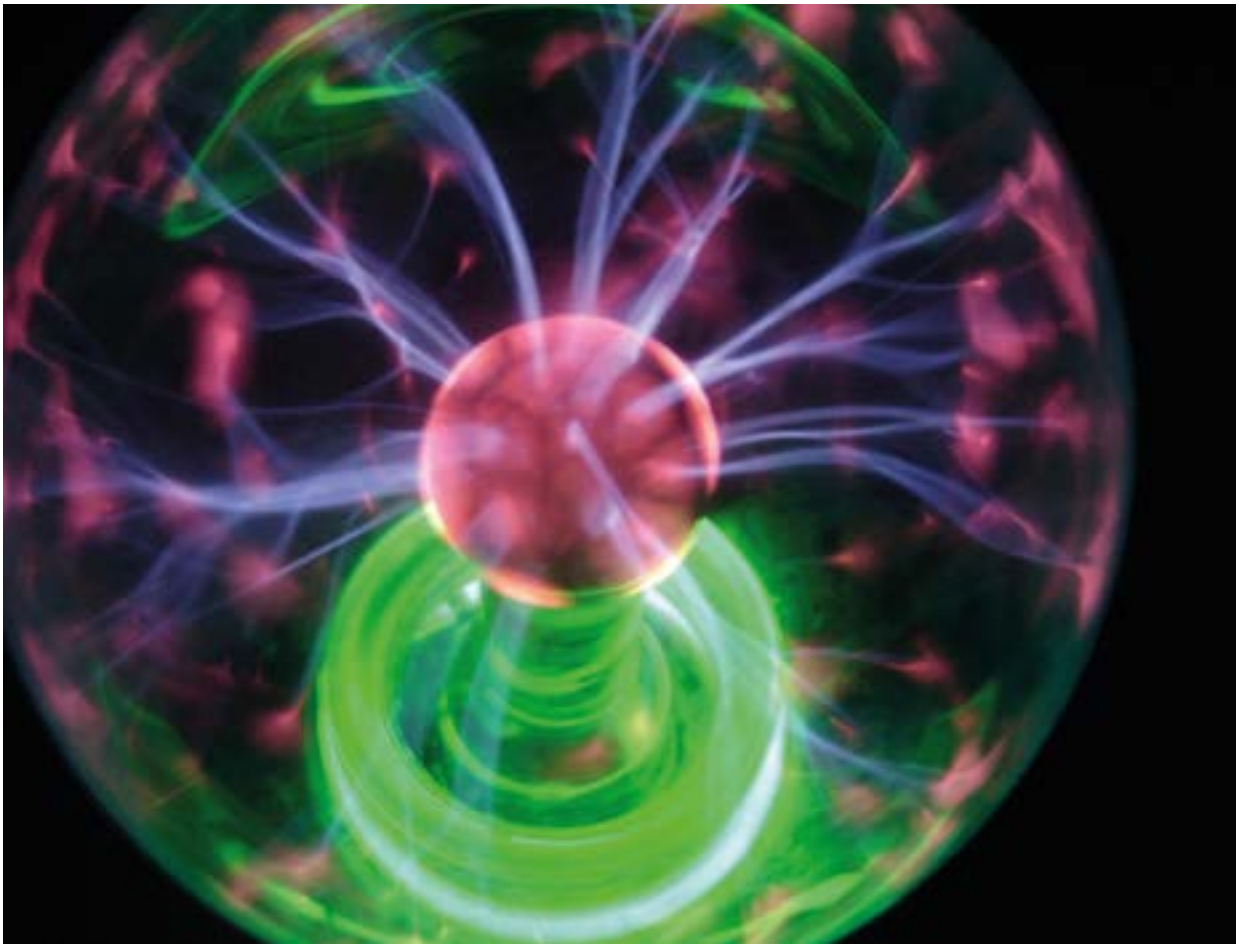


BATTERIES ARE BECOMING INCREASINGLY POPULAR

Batteries are becoming increasingly popular, both with households and industry. In 2018, for example, the number of hybrid solar power stations with batteries installed in family houses increased by leaps and bounds. Several projects of larger batteries will also be realised in industry. For the time being, however, the Czech Republic is not prepared for the installation of large battery systems, and the two large batteries existing in the country do not as yet have the required legislative backing. On the other hand, accumulation is a challenge for Czech development firms, some of which have already taken the initiative. For example, the battery from OIG Power succeeded in the innovative project competition in Spain, and another Czech firm, Energon, has successfully tested its big stationary battery in the German market. The development of accumulation is also an opportunity for the manufacture of battery systems, and the Czech Republic is already preparing to start the production of batteries for energy storage facilities and electric car charging stations.

ENERGY ENGINEERING

Czech energy engineering is currently showing a slowdown, caused primarily by low electricity prices, which in turn led to a halt in new power plant construction. The herald of a brighter morrow is seen in the rapid development of know-how and extensive production capacity, traditions and a good name worldwide. Especially strong instances of this can be found in the East European countries, the former Soviet Union, and in the Middle East, where Czech companies were successful suppliers in the past. A solution is to offer new products and to establish a footing in new markets. One of the big firms holding a prominent position in this field is the Vítkovice Machinery Group, comprising 30 firms concerned with the preparation of large investment projects. Another important player is Doosan Škoda Power, s.r.o., a member of Doosan Heavy Industries, based in Plzeň, with a century-long tradition in turbine manufacture. The company also manufactures turbo generators, heat exchangers and engine rooms, using its own development and product testing. Also well known is Modřany Power, a.s., an important manufacturer of piping systems for the energy industry, which are exported to some 40 countries worldwide. It also supplies parts for the gas industry, petrochemistry, and construction.

ENERGY STABILITY IN THE CZECH REPUBLIC AND ATTRACTIVENESS FOR FOREIGN INVESTORS

From the foreign investors' point of view, the Czech Republic is very attractive as regards the energy sector, both concerning legislation and future development. More investment can be expected to go into production facilities, cross-border installations and protection against electricity spilling across the border, especially from Germany, investment in the

infrastructure in the area of distribution and the completion of the backbone gas pipeline running from north to south. The parameters of the updated State Energy Concept and the draft to regulate the pipeline system create good conditions for ensuring a reasonable payback period for the capital invested.

OBJECTIVES AND AIMS OF CZECH ENERGY INDUSTRY

The future structure of the energy mix and the strategy of the Czech Republic are outlined by the State Energy Concept, approved in 2015. The document envisages a relatively massive reduction in the use of solid fossil fuels, from the current 40 per cent to 11-17 per cent, which mainly concerns black and brown coal. Reduction is also envisaged in the use of liquid fossil fuels to 14-17 per cent from the present 20 per cent, while the importance of nuclear power and renewable energy sources is to increase. Concerning natural gas, pressure is expected to grow on ensuring the reduction of its use, but in reality it is very likely that its importance will grow, especially with regard to the flexibility of this fuel. The Czech Republic will continue to stand on the same pillars on which it has been standing to date: nuclear energy and domestic coal, with the use of domestic renewable sources. Nuclear energy is to be supplemented with coal and gas. Therefore an important role will be played by accumulation of heat in hot water tanks and electricity in accumulators to ensure a short-term balance. The development of technology for hydrogen and methane production from electricity for the seasonal storage of summer surpluses gained from renewable sources for winter use will also be important. The role of coal will be weakening with the gradual exhaustion of its domestic deposits, while the role of renewable energy sources, nuclear sources and gas will be strengthening. As regards vehicle drive development, greater space exists for the use of methane and hydrogen obtained from renewable sources, rather than for electromobility. The Czech energy industry is becoming increasingly tied to the development of the European power industry, with all its pros and cons. It will be very important to prevent the transfer of the risks and costs arising from the source irresponsibility in electricity production in other EU states to the Czech power industry. Distributors will have to change into platform providers and link together local plant operators with battery storage facilities, electric car charging stations, smart city applications and other entities. Grid operators will thus be playing the central role in the framework of the transformation of the Czech power industry. The year 2021 will be a demanding one for all the energy market actors. In the Czech Republic, key act amendments are expected to be passed by Parliament, and the European Commission, too, will come forward with the revision of important directives. A major event will be the approval of the form and the follow-up invitation of tenders for the construction of new blocks in the Dukovany nuclear power

plant. The launch of the Modernisation Fund will also have a great impact on the situation in the energy industry. Its fate will determine the fixing of the final horizon for the closing down of coal mining in the Czech Republic. Also important, in this connection, will be the debate on the transformation of the heating industry and the supply of heat to households. Also, the Czech Republic will have to define steps regarding the growing demand for net mobility, further development of renewable energy sources and related measures in the electricity transmission and distribution networks.

KEY ACTORS IN THE ELECTRICITY AND GAS MARKETS IN THE CZECH REPUBLIC

The most significant player in the Czech market is the ČEZ Group, currently figuring among the ten most important players in the European market. ČEZ is a vertically integrated company, operating in the area of coal mining, conventional and renewable energy sources' production, trading, electricity and gas sales, electricity distribution, energy services, and telecommunications. The ČEZ Group has the capacity to react flexibly to changes in the energy sector which, according to EBITDA, ranks it alongside the best energy companies in Europe.

Net profit of ČEZ Group in the first half of 2020 was CZK 14.7 billion, which is CZK 1.3 billion more than in the previous year. The Group´s operating profit before interest, taxes, depreciation and amortisation (EBITDA) rose by 11 %, to CZK 38.7 billion. The higher profit is due especially to the growth of the realisation prices of electricity produced in the Czech Republic thanks to its multi-annual advance sale in the wholesale market in Germany and additional profits from commodity trading. The COVID-19 pandemic has a relatively limited impact on ČEZ Group (less than CZK 3 billion). Its operating revenue amounted to CZK 106.3 billion, which is 6 % more year on year. Electricity production from traditional sources declined by 8 % year on year, mainly as a result of the growth of emission permit prices and the decline in electricity prices caused by the COVID-19 pandemic, the layoffs of the production sources and the gradual phasing out of obsolete coal power plants. Over the past five years, the ČEZ Group reduced the production of electricity in those power plants by 24 %. The production of electricity from new energy sources increased by 5 %, mainly thanks to the better weather conditions in Germany and Romania. The second most important actor in the Czech market is Innogy Energie (formally the RWE Group), which is concerned with gas transmission, distribution and sales, and energy services. Other important players in the Czech market include the E.ON Group, selling and distributing electricity and gas and providing energy services. The Group's portfolio also comprises smaller manufacturing facilities. Another company with a similar structure is Pražská energetika, operating on the territory of the capital city of Prague, which also invests in renewable energy sources outside its own distribution area. The Veolia Energie Group in the CR, too, is one of the largest producers and suppliers of heating, cooling, electricity and other energy commodities. At the same time, it is a European leader in providing energy services for cities, villages and their inhabitants, healthcare facilities, schools, industrial enterprises, public institutions and clients in the tertiary sector. Bohemia Energy controls about 3 % of the electricity and natural gas markets and is still growing, thanks to the acquisition of its weaker rivals. There are also a number of alternative electricity and gas suppliers and energy service providers in the Czech Republic. Energy services are another step towards broadening the activities of vertically integrated companies and a segment with great potential for future development.

CHALLENGES FACING CZECH ENGINEERING

Engineering is showing unparalleled dominance in Czech industry. It has a number of sub-sectors, which supply the domestic and foreign markets with products of sizes from a few millimetres to machines weighing several tonnes, in addition to many components used in transport, the power industry, and raw material excavation and mining. Of essential importance is engineering production supplying the entire domestic economic sector, one reason being that it accounts for nearly 60 per cent of total Czech exports.

Besides car making, Czech engineering firms are gaining recognition in other countries with deliveries of highly specialised and technologically advanced equipment, especially in the areas of power generation, transport equipment, and machinery for agriculture and the food industry. Other sectors whose products that have a good reputation in other countries are air conditioning equipment and machinery production. A special chapter is machine tool production - milling machines, machine drills, lathers, etc. The very good reputation enjoyed by this segment of Czech engineering abroad is mainly due to the long tradition of the renowned TOS trademark. To maintain their current markets and to gain new ones and new clients, Czech firms are monitoring the specifics of those markets so as to be able to react flexibly to them and be competitive. This is a challenge facing them especially in today´s globalised and economically complicated world. A step towards maintaining competitiveness is the enlargement of the range of high added value products following the latest technological trends, i.e. processes using digitalisation and automation in production and 3D printing, which in general terms means Industry 4.0.

POTENTIAL OF THE ENGINEERING INDUSTRY

The more than 5 000 firms in the Czech Republic engaged in the engineering industry employ over 130 000 people. The Czech Republic also has a high potential among the EU member states as regards the automation of production processes (up to 40 % of all processes can be automated), which explains the high demand for automation equipment and the integration of robots in manufacturing processes. Global players, such as Siemens, ABB, and Robert Bosch, who actively invest in equipment in the Czech Republic and participate in supporting science and research, are aware of the stability of the Czech Republic´s economic environment, the high technological standards of its production, top research and development programmes and the close links between Czech engineering and other sectors of industry. In spite of this, a cooling down in production can be noticed in some engineering branches (not only because of the Coronavirus pandemic), although power engineering is still doing well for the time being. The firms´ great advantage is that most of them are working on long-term projects and consequently are not excessively dependent on current demand, unlike other sectors of industry. In 2019, production in engineering fell by 1 % in comparison with 2018. The largest markets for Czech products are the neighbouring states and also China. This year, however, experts forecast a slight decline in export activities due to the trade war between the USA and China, and Brexit. Most of the goods were exported to Germany, China, and Slovakia, followed by Poland, Russia, and the USA, according to the Association of Engineering Technology statistics. The coronavirus crisis, however, also hit full force on machinery manufacturers. Already in 2019 Czech firms had to cope with a fall of nearly 25 %, or CZK 13.2 billion, year on year, with machinery exports in the first quarter of 2020 also falling by one-quarter year on year. In the second quarter of 2020 Czech machinery exports dropped by 31 % in comparison with the same period in 2019, according to the Engineering Technology Association (SST). The fall was due to the closing of the borders during the spring wave of the epidemic, when Czech manufacturers could not hand over their machines to the clients, and the handover had to be postponed. The main reason for lower production and fewer orders, however, is the overall decline in investment. One of the reasons of the lower demand for new machines in the automobile industry is also preparation for transition to electromobility. In spite of this Czech companies are moderately optimistic, believing in the arts of Czech people, and innovation.

CONTRIBUTION OF THE AVIATION INDUSTRY

The aviation industry has built a respected position for itself in the international arena over the more than a century of its existence. Most of those informed will remember the training and light combat aircraft of Aero Vodochody (L-28, L-39 and L-159), transport aircraft L-410 from Let Kunovice (now Aircraft Industries) and the extensive production of UL/LSA category aircraft. Thousands of these machines found their satisfied customers in all continents except the Antarctic, with their frequently modernised versions continuing their successful tradition, according to CzechInvest Agency. As the list indicates, the domestic industry very often, and justifiably, boasts of being one of few countries in

the world capable to manufacture complete aircraft, from beginning to end, on their own territory. The same applies to this country´s ability to develop and manufacture aircraft engines. Czech manufacturers, however, have succeeded also in other areas, as shown by the growing number of world references and achievements. At a closer look this reveals the great competitiveness of the domestic industry, which covers all the main sub-sectors, such as the ATM system and radar technology manufacturers, who have turned Pardubice, a statutory city in east Bohemia, into an important hub. In this case, a representative of virtually global dimensions is the company ERA, supplier of ATM systems and military solutions for the detection, tracking and identification of targets. Its products have found their use all over the world, from the United States of America to the UK and India, China, and Australia. Its presence in more than sixty countries, with orders, for example, for NATO, speaks for itself. Another company, which can be proud of its products, is ELDIS, whose active radar systems cover the airspace in Canada, Russia and Indonesia. The third company of the successful trio is Retia, which offers devices monitoring the situation in the air and prides itself with orders from the Vietnamese Ministry of Defence and The Airbus Defence and Space company.

Although it may seem surprising, domestic manufacturers have found a firm position for themselves in the propeller segment. Prague´s Avia Propeller, with its roots going back more than a century, has become a supplier for the well-known engine manufacturer Lycoming or historical models, such as T-6 Texan. Situated just a few kilometres away from that firm is Woodcomp Propellers, specialising in the manufacture of wooden and composite propellers. The

AGRICULTURAL ENGINEERING – INTELLIGENT CONSTRUCTION AND FLEXIBLE PRODUCTION

There are approximately 200 manufacturers of agricultural and forestry machines in the Czech Republic, from large enterprises to medium-size ones and the smallest producers of accessories and components. The Agricultural and Forestry Machinery Association (A.ZeT) comprises 43 firms, whose members include all the significant domestic manufacturers and both agricultural universities, and a research institute. The overall production of the member firms is worth more than CZK 20 billion (approx. EUR 781 million), which is 80 % of overall production in the Czech Republic. The export of those firms accounts for more than 85 % of overall Czech exports amounting to CZK 18.6 billion (approx. EUR 724 billion). Manufacturers of agricultural machinery employ approximately 8 000 people in the Czech Republic. According to long-term statistics, the sales of universal tractors are stable, with approx. 2 200 machines being sold each year throughout the past decade. As regards the sales of combine harvesters, the capacity of the market, taking into account the required machinery renewal, is estimated at some 160 machines; the sales, however, fluctuate slightly year on year. Of special interest is the fact that in 2021 Zetor tractor marked its unbelievable 75th anniversary. From the very beginning Zetor tractors have been manufactured in Brno, where visitors are invited to see a non-traditional museum, the Zetor Gallery, displaying all types of tractors made by the factory to this day.

Photo: © Siemens archives

MACHINE TOOLS ARE FACING GREAT CHALLENGES

The machine tool and forming machine sector is the cornerstone of the entire Czech engineering industry. The development of this sector basically influences the development of other engineering sectors and consequently the industry as a whole. Its characteristic features are high technical standards and technological sophistication. The basic requirements placed on machine tools are precision, productivity, safety, and reliability. In many respects, Czech machine tools are at the absolute top. This applies, for example, to mechatronic systems, control systems, spindle and axle drives, clamping and gripping technology, tool and workpiece probes, tool trays and a number of IT and technological systems. Czech manufacturers use components for their products from the same manufacturers as their rivals. These CNC machines can be connected to communication structures meeting the requirements of the Industry 4.0 concept. Although new technologies, such as additive production, are beginning to force their way into production, machining and forming will long stay the most widely used technological processes in engineering. In production requiring absolute size precision, machining is irreplaceable.

company exports its products to dozens of countries all over the world and its propellers spin on airplanes in countries from South Africa to China and Japan. The large number of applications also includes the company Mejzlik Propellers, which entered successfully the unmanned aerial vehicles (UAV) sector. This sector has become an important part of Czech specialisation. Since its founding five years ago, Prague´s Primoco UAV has established itself successfully and entered markets in Asia, the Near East, Africa, and South America. Its products have found broad application in areas ranging from agriculture to research and patrol purposes. In April 2020, the firm attracted attention with the remarkable performance of its One 150 model, which held up in the air for an uninterrupted fifteen hours and covered a distance of 1 650 km. Innovation and continuous development are among the current trends in aviation, also in the Czech Republic, as confirmed by the promising startup Zuri. With its VTOL airplane for 3-4 persons the company is planning to serve destinations up to 700 kilometres distant. At the moment, the project is far beyond a mere concept, concentrating on the construction of the first experimental plane.

EMPHASIS ON DESIGN

Industrial design is intensively developing in the Czech Republic. A key innovation, which is able to provide a number of competitive advantages, such as greater user comfort, is the good and functional design of products, which can assist the manufacturer to penetrate new markets, provide new business opportunities, help reduce production costs, and raise the selling prices of products. In 2015, Czech engineering won the highly prized Design Oscar Award. The prestigious Red Dot Award was won by Martin Tvarůžek for his design of a horizontal boring and milling machine in the Engineering subcategory. Its manufacturer is Škoda Machine Tool in Plzeň. The unique construction of the TOS FRU machining centre with a travel portal makes possible both machining and milling operations. Its multifunctional design, which is one of the main competitive advantages in global markets, is combined with a portfolio of automatically exchangeable spindle heads. The basic design of the machine remains the same, but it is always adjusted maximally to the customer´s needs and machining technology. The centre makes it possible to work technologically demanding

and large-size parts, such as steam turbines, boat engines, and parts of aircraft, with the minimum need of workpiece manipulation. This significantly shortens the overall machining time of even very complicated parts. The interior of the spacious cabin fitted with vertical travel affords the utmost comfort and safety to the operator. The robust FRU machines have already found their use, for example, in Canada, Russia, India, Turkey, and other countries. In the Production and Processing Machines category of the A´Design Award competition, a team of research workers at the Faculty of Mechanical Engineering scored success with their design of the Big Trimmer machine for cannabis harvesting ordered by the Czech firm, Sunflower Trimmer. “We won the Iron A´Design Award intended for one-fifth of the best designs entered in the competition. For us, this is the first award for a project we realised for an industrial partner, and it gives us great pleasure. All the more so, as our design is a highly technicist, well thought-out product. In our case, it was not a signifcantly stylish design, but an industrial product relatively modest and purposeful,” pointed out Chief Designer David Škaroupka of the Construction Institute of the Faculty of Mechanical Engineering, VUT, who participated in the project with two of his colleagues.

CZECH RAILWAY INDUSTRY EXPORTS OVER HALF OF ITS PRODUCTION

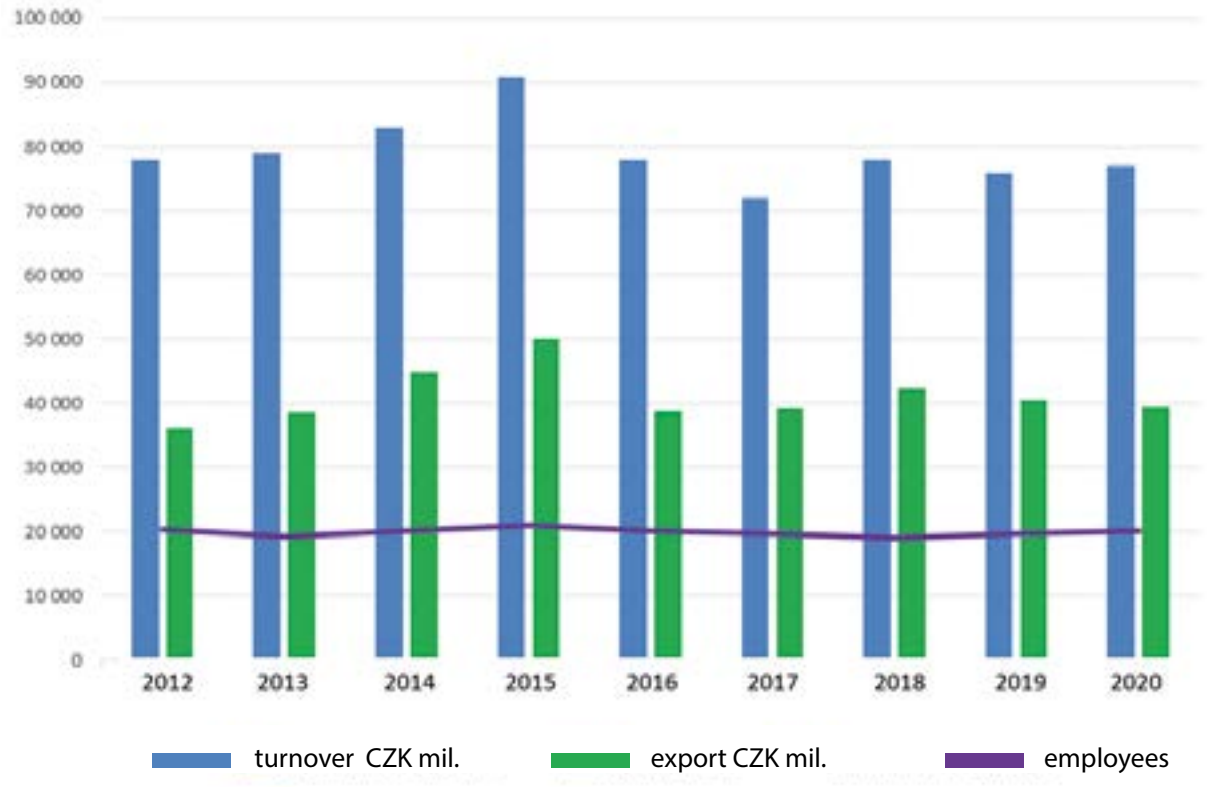
The present successful advancement of railway transport was enabled thanks to more than 200 years of traditional development of the Czech railway industry. The former ČKD and SKODA plants, together with a range of other manufacturers, have always been at the top of their professions. The quality of their products is reflected in their high exports.

This long-standing tradition is successfully linked to the present representatives of the Czech railway industry, who do not rely only on tradition but invest significantly in the development of new products, in the purchase of high-tech technologies and the renewal of production areas. This technological innovation is necessary to ensure the competitiveness of this industrial branch.

A highly competitive and stable industry that is resilient towards the economic difficulties associated with the current pandemic situation – just as can be translated into the economic results – was achieved last year by companies associated in the Association of Czech Railway Industry (ACRI). Last year, ACRI members achieved a turnover of approximately 77 billion crowns and, importantly, compared to the previous year, which was not affected by the problems associated with the COVID-19 infection, their turnover increased slightly year-on-year.

"The share of exports is very significant, reaching 53 per cent in 2020. It proves that Czech companies offer innovative and competitive products and services in this demanding sector, "says Marie Vopálenská, CEO of ACRI. "The stability of the industry is proving to be a very important factor in maintaining employment, especially in today's difficult times. And, of course, it is important for the country's economic indicators – according to an analysis prepared by Deloitte, Czech companies operating in the railway industry create an added value of approximately 26 billion crowns. If we include indirect and induced effects, it is almost 52 billion crowns, which represents 1.3 per cent of the Czech Republic's GDP. "

ECONOMIC RESULTS OF FIRMS OPERATING IN THE RAILWAY INDUSTRY



Source: analysis for 2020, ACRI

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At the same time, the whole sector has great growth potential – shortly before the current Coronavirus crisis, the European Commission introduced the so-called Green Deal for Europe, a package of measures to ensure a smooth transition to a sustainable and green economy for Europe. Significant investments in ecological transport are also directly related to this. The European Union emphasizes the role of rail transport in the Green Deal – its development and support are key to the plan to reduce greenhouse gas emissions from transport by 90 per cent by 2050. The year 2021 will become the European Year of Railway. The European Union places great emphasis on ecology, a substantial reduction in the carbon footprint and climate neutrality, and therefore intends to support the strengthening of the role of rail transport. And investments in this area of railway should be at the forefront in the Czech Republic as well.

MARIE VOPÁLENSKÁ
General Director, ACRI
www.acri.cz

SUCCESSFUL PROJECTS OF CZECH COMPANIES

ACRI members export their high quality products and services especially to the member states of the European Union, the Balkan countries, Turkey, and Russia. Their products, such as train control systems, locomotives and tramcars, are of the highest European standards. The Czech railway industry is at the top among European manufacturers, and Czech companies are in a position to compete on the international scene. Worth mentioning among its export achievements is the recent contract for the delivery of electric units from ŠKODA Transportation to Germany, Turkey, Finland, or Hungary, and the delivery of tramcars from the same manufacturer to a number of European and non-European cities; AŽD Praha is modernising railways in Slovakia, the Balkans, and Turkey, rails from TŘINECKÉ ŽELEZÁRNY are being delivered to European countries, while railway wheels from Bonatrans can be found serving practically all over the world, and the same is true of anti-friction bearings from ZKL.

ŠKODA Transportation will supply 80 modern tramcars for the Rhein-Neckar-Verkehr transport company.

Photo: © ACRI archives; AŽD archives

Czech Railways ordered 50 super modern express vehicles from the SIEMENS-SKODA consortium. SKODA will supply 7 six-carriage trains to Saint Petersburg Metro via OOO VAGONMAŠ, part of the Škoda Transportation Group. Škoda Transportation, in consortium with ŽOS Trnava, won the tender to supply up to 25 electric units to Slovak Railways (ZSSK). The Slovak company will receive state-of-the-art single-decker RegioPanter units. Transtech Oy, a subsidiary of Škoda Transportation, will supply 10 ForCity Smart Artic trams to the Finnish City of Helsinki.

- AŽD Praha has equipped the 13.3 km-long loop at the Velim Test Centre with ETCS Level 2. Also completed is the first commercial project for the installation of the ETCS L2 on the section Kolín – Břeclav – state border of the Czech Republic with the Slovak Republic and Austria. The ETCS L2 project on the Petrovice u Karviné – Břeclav section is under construction, and work on the Česká Třebová – Přerov section has recently been completed. AŽD Praha is collaborating on various projects in Turkey, for example, on the modernisation of the Istanbul Metro, for which

AŽD supplied the signalling systems and carried out the upgrade of railway crossing safety devices. It also supplied components for more than 260 railway crossings, and traffic control and information systems for Izmir. AŽD PRAHA is completing the delivery of its signalling system to Montenegro.

- GHH-BONATRANS, premium supplier of railway wheelsets and their parts, a company with a history of more than 200 years with delivery footprints in more than 80 countries globally, represents an impressive part of the history of wheelset design and manufacture. Generations of genuine experts continuously contribute to the development of wheelsets. Respecting the past but looking ahead, the pioneers of wheelset manufacture produce premium solutions for railways worldwide.
- ŠKODA ELECTRIC offers the development, production and integration of propulsion and control systems for various rail vehicles i.e. underground railways, locomotives, EMUs, low-floor trams, trolleybuses and battery vehicles for environmentally friendly public transport. Škoda Electric also has experience with PMSM motors, SiC semiconductors, TCMS and system integration, and is a reliable partner and technology leader in the field of propulsion systems for rail vehicles.
- AMiT is a supplier of industrial electronics and reliable solutions for public and mass transportation, industrial automation and building automation. AMiT Transportation is one of the most important players in Central Europe in the development and production of control systems for transportation, mainly for railways and rolling stock.
- DAKO-CZ is a traditional manufacturer of braking systems and components for railway vehicles. It has important contracts with leading world rolling stock manufacturers, including Siemens and Stadler. Another important customer of DAKO-CZ is Tatravagónka Poprad, co-owner of the Třemošnice manufacturer. Besides train brakes, DAKO-CZ also supplies braking systems and components for underground railway trains and tramcars. UP to 70 % of the company´s production goes for export. For example, it has made another delivery of braking systems for LHB carriages to the Indian customer, ESCORTS. DAKO-CZ has been in the Indian market since 2006. Its exports began to grow meaningfully in 2015.

A Company that Succeeded on the Global Market and Became a Czech Singularity

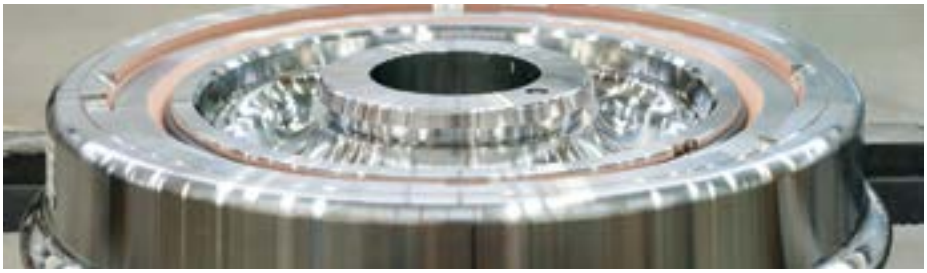
Jakub Weimann, the CEO of BONATRANS GROUP a. s.: Our goal is to maintain the position of European leader for next generation and further.

BONATRANS is globally a very well-established supplier of railway wheelsets. What makes it unique?

The most unique aspect is the fact that the people in Bohumín both construct and manufacture the wheelsets (and parts thereof, including axles, wheels, and centers) and they have a lot of experience with it. It is specifically due to "the decades of experience" that we are able to effectively react to market requirements and focus on our own development. This involves efforts in improving the products' lifecycle, increasing their lifespan under increased costs stemming from environmental requirements, ride comfort, etc. The solution for this is the materials used, technologies and the logistics of production, and many others aspects.

Where can we experience a ride in a train that runs on BONATRANS wheelsets? Are there some outstanding places you think are worth a mention?

You can get a ride practically anywhere, as we supply our products to eighty countries, five continents and we hold a 40 % share in the European market. You can ride BONATRANS wheelsets in the subways of Paris, Prague, and New York, and if you travel to the Tibetan high plateau, which a railway in China passes through, you also have the chance to ride in our wheelsets. As far as distance is concerned, the furthest we have ever exported our product was New Zealand. However, in Europe you are most likely to catch a ride in Germany, Austria, France, or the UK, as railway operators and city transport companies of countries with most developed network of rail-bound transportation are our biggest customers. Be it for new fleets indirectly, through manufacturers of rolling stock, or directly for existing fleets. If to consider out of Europe, it would be North America, India, and China.



In 2020 BONATRANS has reached an important milestone, fifty-five years since its founding. What are your plans for the future?

BONATRANS is the European leader in its field, and we would like to maintain this position. There are still markets that interest us, with potential for us to grow (in particular Italy, Scandinavia, China, North America, and India). For such expansion we will obviously need top-notch machinery equipment, smooth and flexible processes, but most importantly all of our employees onboard with their knowledge and passion. We will need to deepen the communication with our customers, to react to their ideas and help to transform them into future products. We will also strive to be involved in the development of advanced technologies, machines, and devices with focus on automation. This is for us the way forward, creating an environment that leads to prosperity and at least another fifty-five successful years.

BONATRANS and GHH-RADSATZ represent an impressive part of the history of wheelset design and manufacturing. Generations of true experts continuously contribute to the evolution of the wheelset. Respecting the past but looking ahead, the pioneers of wheelset manufacturing produce premium solutions for the railways of the world.

GHH-BONATRANS supplies a full range of first class products and reliable solutions such as heavy rail wheelsets for high-speed trains and locomotives, low-floor solutions for light rail, including resilient wheels and noise absorbing solutions. Not only do we manufacture solutions of the highest possible standards, we design the products with our customers and provide a complete after-sales service.

The neverending spirit of curiosity and passion for perfection enables the birth of new innovative solutions that drive the industry forwards.

- The premium supplier for wheels, axles and wheelsets
- More than 200 years of history
- For all types of rolling stock, including trams and metros
- For all major railways and rolling stock manufacturers
- More than 80 countries delivered worldwide

www.ghh-bonatrans.com

GHH-BONATRANS
Pioneers of wheelset solutions

TOP QUALITY AND EXQUISITE DESIGN OF BOHEMIA GLASS AND CERAMICS

Glass – a commodity which this country has always been exporting and selling readily. And art glass of Czech provenance, too, is represented in all world collections. Bohemia glass is a phenomenon with a tradition of more than a thousand years. As far back as the fourteenth century, the art of Bohemian glassmakers was known all over Europe. At that time Bohemia´s churches were among the few which had glazed windows. An important era in Bohemian glassmaking was the period between the two wars, when domestic glassworks became known for their accomplished skills of turning out art pieces in modern styles, such as Art Nouveau, Art Deco, and functionalism.

Glass- and ceramics-making is a traditional sector of the Czech manufacturing industry. Firms are investing in the modernisation of production and the development and manufacture of higher value-added products. This sector is facing keen global competition, which Czech firms are dealing with successfully with the high quality, innovative and exquisite design and originality of their products.

FLAT GLASS

The only manufacturer of large-size flat glass sheets in the Czech Republic is AGC Flat Glass Czech, a.s., a member of the AGC Group based in Teplice. This company is currently the largest manufacturer of flat glass and its applications in Central and Eastern Europe.

PACKING GLASS

Packing glass production comprises beverage bottles and canned glass made for the food industry (beer, wine, liqueurs, non-alcoholic beverages, mineral waters, fruit juice, etc.) and glass containers for products of the chemical, pharmaceutical, and cosmetics industries. The dominant manufacturers of packing glass in the Czech Republic are the companies of O-I Manufacturing Czech Republic, a.s. with the sales company, O-I Sales and Distribution Czech Republic, s.r.o., and Dubí u Teplic, which are members of the Owens-Illinois (USA) supranational group, and VETROPACK MORAVIA GLASS, a.s., Kyjov, part of the Vetropack Holding AG Group. Other packing glass manufacturers in the Czech Republic are SKLÁRNY MORAVIA, a.s., Úsobrno and STÖLZLE – UNION, s.r.o., Heřmanova Huť.

GLASS FIBRES AND PRODUCTS THEREOF

The only manufacturer of textile glass fibres and products thereof in the Czech Republic is Saint-Gobain ADFORS CZ, s.r.o., Litomyšl. The company manufactures primary glass fibres and glass products for composite materials, such as glass fibre yarns, glass fibre roving (long filament) for cutting, weaving and winding, and drawn profiles reinforced by glass fibres, cut glass fibre strands and mats. Glass fibres are also used to make a number of different types of technical fabrics, grid glass fibre fabrics, glass fibre wallpaper, and non-woven fabrics. The only Czech manufacturer of thermal and sound insulation materials using glass fibres in the form of mats and boards (coming under the ROTAFLEX Super.trademark) is Union Lesní Brána, a.s. in Dubí u Teplic. Insulation material, based on glass wool in the form of boards and rolls, is made by KNAUF INSULATION, spol. s.r.o. in Krupka u Teplic.

UTILITY GLASS

There is a number of smaller firms making a wide range of glass products, such as Crystalex CZ, s.r.o., Crystal Bohemia, a.s. KavalierGlass, s.r.o. and Crystalite Bohemia, s.r.o., decorated by paint and pen-and-ink drawing, high enamel and engraving, handmade utility glass, historical replicas and metallurgical glass, e.g. AJETO, s.r.o., Lindava, Rückl CRYSTAL, a.s., Nižbor Blažek Glass, s.r.o., Poděbrady, Crystalite Bohemia, a.s., Světlá nad Sázavou, SKLÁRNA SLAVIA, s.r.o., Nový Bor, Královská Huť , s.r.o., Doksy, EGERMANN, s.r.o., Nový Bor, and JADI, s.r.o., Jablonec nad Nisou. Pressed and blown decorated drinking glass is made by Sklárna Heřmanova Huť, a.s., while exclusive, handmade utility glass is produced by Moser, a.s., Karlovy Vary.

OTHER KINDS OF GLASS

The range of this category of glass made in the Czech Republic is very wide. It comprises technical and laboratory glass, technical balls, industrial glass appliances, protective welding glass and optical glass, in addition to the production of glass building blocks, costume jewellery, semi-finished products, and lighting glass. The dominant Czech manufacturer of technical and laboratory glass, tubes and apparatus made of borosilicate glass is KavalierGlass, a.s. (formerly Sklárny Kavalier, a.s.), Sázava. Technical and laboratory glass is also made by TECHNOSKLO, s.r.o., Držkov, EXATHERM, s.r.o., Železný Brod

(glass thermometers and hydrometers), Vitrum, spol. s r.o., Sklárna Janov and other smaller firms. The best-known optical glass manufacturers are, for example, EcoGlass, s.r.o., Jablonec nad Nisou, which is concerned with the production of precision pressed optical glass components for electro-optical instruments, and BOHEMIA OPTIK, s.r.o., Mařenice u České Lípy, a manufacturer of optical components and systems.

FURNACES, MACHINERY AND EQUIPMENT, AND TECHNICAL SERVICES FOR THE GLASS INDUSTRY

At present, there are about 40 to 50 independent firms in the Czech Republic which manufacture and supply furnaces, machinery and equipment, glass moulds and instruments used for the production of glass, and firms providing services, projection and other technical and consulting work for this sector. These firms are of different sizes and have different production programmes. Companies pursuing independent production and commercial activities exceeding the bounds of the Czech Republic include manufacturers of machinery and equipment, such as Sklostroj Turnov CZ, s.r.o. making machines and equipment for automatic packing glass production, SKLOPAN LIBEREC, a.s., which specialises in the construction of machines for flat glass working, SKLÁŘSKÉ STROJE Znojmo, S.R.O, supplying various glassmaking machines, and TRIM, s.r.o., Turnov, a specialist in the manufacture of machines for glass fibre production and processing.

RAW MATERIALS FOR THE GLASS INDUSTRY

The long tradition of glassmaking and its development in the Czech Republic is based, besides other factors, on the sufficient supply of raw materials, i.e. sand, kaolin, feldspar, and silica. The high quality glass sands with an extremely high SiO_2 content are excellent materials for the glassmaking industry and for various other uses in different sectors. The sands are supplied in either wet or dry form. In the Czech Republic, these sands are mined and supplied by Provodínské písky, a.s., Provodín, and Sklopísek Střeleč, a.s., Mladějov v Čechách. Kaolin mining and

Outlook for 2021

The manufacturers of glass, ceramics and porcelain have great expectations, after surviving the demanding year 2020 with honour. Nevertheless, as a large part of glass and ceramic products is also intended for the domestic market (construction and the automobile and the food industries and gastronomy), domestic demand, economic development and the decline in trading bring a lot of unknowns into the firms´ plans. Small glassworks are waiting for a release of tourism in Europe, which greatly influences their revenue. Czech manufacturers have flexibly used the situation for the digitalisation of their businesses and improvement of their digital presentation, and are looking for new export territories and reliable partners in the changing world, while strengthening their existing contacts. Owing to their high quality, Czech glass and ceramics maintain their good name in this country and in the world, and their manufacturers, relying on the skills of their workers, needn't worry about their future.

dressing is the core programme of the companies of LB MINERALS, s.r.o., Sedlecký kaolin, a.s., Božičany, and Kaolin Hlubany, a.s., Podbořany. In addition to kaolin mining and dressing, LB MINERALS, s.r.o., is also concerned with feldspar mining and dressing.

AUTOMATION ON THE RISE

The Czech glassmaking industry is a sector with the highest degree of automation. In the past few years, it has increasingly been incorporating robots in its production lines. The industrial sector with the highest level of automation is packing glass production. "The human hand first touches our products practically no sooner than when they are used, and our plan is also to introduce robots in other manufacturing sections. In our plant in Kyjov, for example, we are using a greasing robot," says Milan Kucharčík, Member of the Board of Vetropack Moravia Glass, the Czech Republic´s number two in the packing glass manufacturing sector. The robot has replaced a mechanic whose job was bottle mould greasing. Vetropack is currently working on the robotisation and digitalisation of administration work and processes. In 2014, AGC Flat Glass Czech invested CZK 1 billion in the installation of the globally most advanced glassmaking technology. Group AGC, which has its manufacturing plant in Teplice, north Bohemia, can make, for example, glass facades, into which photovoltaic cells are sealed. "We´ll propose to the client and will calculate what output the installation will have. We ourselves have such photovoltaic cells installed on the overhanging facade of the building of our research centre in Belgium. We also supplied such photovoltaic cells for the roofing of parking spaces in Milan," says Marcela Anglov of AGC Flat Glass Czech. Another firm which bets on specialised production is EcoGlass, a manufacturer of optical elements for lighting appliances. Its glass lenses and parts are used in airport navigation systems, luxury car headlights, and concentration solar power plants.

INTERIOR GLASS

Kolektiv Ateliers in Nový Bor has been in the art glass market for more than ten years. Its specialisation is lighting installations, interior art solitaires and atypical designs of art glass in architecture. One such project was the reconstruction of glass ceilings and the cupola in the National Museum in Prague. "To accomplish the contract, we had to develop a special technology of injecting the dies between the glasses and baking them so as to make the ceilings and the cupolas accessible from both below and above. All our projects, which also include historical buildings and churches, are exactly tailored to the customer´s requirements. The final appearance of those projects fully agrees with the outlines of designers with whom we cooperate closely," says Michal Vlček, Chairman of the Board of Kolektiv Ateliers. Another manufacturer of interior glassware is Kavalierglass Company, maker of household, laboratory, and industrial glass. The glassworks has developed glass bricks from borosilicate glass. Their size is the same as that of the conventional building brick. "Glass bricks, the production of which started in 2016, are not used as a conventional building element, but are used as decoration elements or partition walls. The bricks were used in a part of the exposition of the Czech Republic at the international exhibition in Shanghai in 2018," says Jana Musilová of Kavalierglass.

INNOVATION AND ORIGINALITY OF CZECH MANUFACTURERS

The firm Lasvit, founded by Leon Jakimič in 2007, specialises in the manufacture and installation of lighting fixtures, glass artworks, art elements and objects. Its collections, winners of a number of prizes, have made a breakthrough in the world of design and revived the famous Czech glassmaking tradition. The company's aspirations are to create exquisite lighting fixtures and glass objects for a discerning clientele all over the world. Lasvit has added new freshness to its products and started a new era of Czech glassmaking. For example, in 2018 LASVIT scored success with its exposition at the Week of Design Exhibition in Milan, where it won the main prize, the Milano Design Award. Original glass installations and sculptures bearing the Lasvit trademark are to be seen in public places and spaces of prestigious hotel chains and business complexes

WILL GLASSMAKING SURVIVE THE CORONAVIRUS PANDEMIC?

Glassmaking has experienced an unprecedented boom in recent years. Currently, however, glassworks have found themselves in a difficult situation with many of them fearing that the Coronavirus pandemic may mean the end for them. One of the first to realise this was Moser glassworks of Karlovy Vary, one of the most distinguished players in the Czech glass and ceramics market, which, in spring 2020, announced production restrictions. Moser´s main buyers are foreign clients, especially Asian importers, who were among the first to be hit by the spread of the Coronavirus pandemic. While a large part of Moser´s output goes for export, an important proportion of its production is sold to foreign tourists visiting the Czech Republic. The closing down of the border therefore means a massive blow not only for this glassworks. Export is highly important also for other large glassworks, such as Preciosa, BOMMA, Rückl and Lasvit, as well as most of the smaller domestic glassmakers. In recent years, export of the Czech glass and ceramics industry has accounted for up to 90 % of the revenue of domestic glassmakers, according to the Association of the Glass and Ceramics Industry of the CR. Sales, however, became frozen not only in the Czech Republic, but also in other countries. Tourism has subsided and so has the prosperity of glassmaking, with domestic sales unable to replace the loss of foreign demand

Photo: © Bomma archives,

(e.g. The Ritz-Carlton Residences in Singapore, Hyatt Capital Gate in Abu Dhabi, The Shangri-La Bosphorus in Istanbul, Four Seasons in Moscow, Quadrio in Prague, Sake No Hana Restaurant in London, The New York Palace Hotel, etc.), as well as in luxury and private residences all over the world. One of the best known designers in the Czech Republic is Rony Plesl, famous for his innovative glass design and interesting stone sculptures, as well as interior designs and drawings. Currently Plesl's attention is focused on uranium glass, the production of which has been suspended in most European glassworks. His works are to be found all over the world, including, for example, at Walt Disney World, where many glass sculptures by Rony Plesl are installed, and in Hamburg, Germany, where a glass tower designed by Plesl is to be seen. Martin Janecký is a real master of glass art. No one else in the world has created such amazing glass sculptures as he has. He is what we could call a glassmaker-cum-sculptor. He needs no moulds to make the wonderful objects – he simply shapes the blown-out glowing matter by hand. He is represented by one of the most prestigious galleries in the USA and his works are gems in Elton John's collection. Bomma is really one of the few glassworks in operation, if not the only one, which came into being in the Czech Republic after 1989. It was built at Světlá nad Sázavou and at that time employed workers from nearby glassworks which had closed down after a century-long glassmaking history. Bomma opened in June 2012 as a manufacturer of modern crystal drinking and decorative glass with robotic decor, designed for it by famous artists such as Arik Levy, Maxim Velčovský, Olgoj Chorchoj, Rony Plesl, Jiří Pelcl, and František Vízner, and studios such as Koncern and DeForm. A few years ago, the glassworks started the production of lighting fixtures.

The Czech Republic has another talented designer who has revived a two-century old glassmaking technique, in which the entire universe is concealed. For the Pilsner Urquell Brewery, for example, he designed a unique anniversary bottle. He can boast years of successful cooperation with Adidas, Footshop and renowned Czech glassworks, such as Rückl or Lasvit. Lukáš Novák displays his collections not only in the Czech Republic, but also in other countries in leading glass studios.

MEDICAL DEVICE MANUFACTURE IS ONE OF THE MOST INNOVATIVE INDUSTRIES

The manufacture of medical devices has a long and very successful tradition in the Czech Republic. This is evidenced by a number of worldwide Czech patents and innovative products and inventions such as polarography, contact lenses, biodegradable stents, etc.

Some of the latest Czech products priding themselves on high quality are hospital beds, armchairs and other medical devices, as well as implants. One of the world´s largest production lines turning out high-standard hospital beds is to be found in the production halls of the Czech firm LINET, which exports its products worldwide and is the most successful exporter in the area of medical devices. Another international success was achieved by the Czech manufacturer of microscopes. Owing to the small Czech market, most other manufacturers in the healthcare sector, too, are export-oriented and sell their products to countries all over the world. The Czech export leader in the sector is LINET, with its affiliations in many countries. Its most successful export markets are the countries of the former Soviet Union, the South American markets and traditional European states, such as Germany, Italy, and Spain. In general, the trend is to continuously improve and innovate medical devices and other equipment. This process always takes place in collaboration with physicians, universities, etc. Another trend on which Association of Manufacturers and Suppliers of Medical Devices wants to focus, partly thanks to the foreign development cooperation project, is the preparation and realisation of a more comprehensive offer of the products of our members, for example, the construction and furnishing of hospital wards, operating theatres, field hospitals, and also larger projects. This naturally requires closer collaboration of firms – members of the Association.

TASKS FOR THE ASSOCIATION

The Association´s emphasis is on research that will lead to high technical parameters and innovativeness of new products and methods of treatment. Medical device manufacturers know that good medicine cannot do without technical devices. Medical practitioners themselves say that progress in medicine requires innovation, such as visualisation systems, equipment and instruments for microsurgery and the use of computers. That is why manufacturers also focus on other branches, such as nanotechnology and microsystems for the construction of apparatus, equipment for the minimisation of invasive methods, introduction of information technologies in healthcare, urgent medicine, cardiac surgery and other branches of modern medicine. To achieve these aims, firms must collaborate with university research workplaces and top doctors and hospitals. In their research projects, firms are also using different forms of support and grants controlled or administered by the Ministry of Industry and Trade. The Association also collaborates with the academic sphere.

CZECH FIRMS JOIN IN FIGHT AGAINST CORONAVIRUS

Firms are putting into practice new technologies and adjusting their production to new requirements. They often switch their production, despite the potential risks associated with the launch of new products and the need to have them certified so that they can be sold at home and in other countries. The certification process, confirming the required parameters and properties of the product and its absolute safety, often takes up to several months. Especially in the case of health protection, the product must undergo a number of tests. An advantage is having people with experience and knowledge of all the legislative requirements. One such person is, for example, Prof. Karel Volenec of the Ella-CS firm, which operates successfully on the international medical market. Prof. Volenec forged ahead with the development and certification of a swab for sampling used in coronavirus testing. “The swab, seemingly a simple thing, must fulfil a number of functions. Besides absolute medical safety, it must be designed so as to ensure accurate examination. For practical reasons, we test both its flexibility and the material used at its tip,” explains Prof. Volenec. A manufacturer of the prototype was promptly found: ISOLIT Bravo, a firm in Jablonné nad Orlicí. Another Czech firm, Robot Protect, supplies protective sleeves for robots, machines and automation equipment. Last April, it switched part of its production to the manufacture of protective suits and sleeves for people. Hundreds of its protective suits have been supplied to the Czech Mountain Rescue Service. CzechInvest Agency has published a list of Czech manufacturers of protective devices with the necessary certification, which are assisting in the struggle against the coronavirus pandemic. The list is available at https://spojujemecesko.cz/vyrobci/.

Photo: © Linet archives

SUCCESSFUL FIRMS WITHIN THE SECTOR

These are mostly companies whose production is closely linked with their own development, thus showing their way to success in competition with rival firms. An example is ELLA-CS, s.r.o., a purely Czech company without any foreign capital, which operates worldwide. It is represented in more than 70 countries all over the world. The company specialises in the development and production of stents for the gastrointestinal tract, which include oesophageal stents, pyroduodenal stents and biliary and colorectal stents. ELLA-CS is the only manufacturer of the following medical devices: biodegradable stents – a globally unique product, allowing a new approach to the treatment of benign oesophageal strictures, without the need for stent extraction; danis stent – a unique medical device used for stopping acute bleeding of oesophageal varices; extractor – original instrument for the removal of oesophageal stents which are no longer needed within the oesophagus. On the basis of own development, BMT Brno supplies a wide range of steam, hot-air, and chemical sterilisers, laboratory driers and incubators. The firm has a tradition of more than 80 years and more than 40 years of export experience. BTL, founded in 1993, is one of the world´s largest manufacturers of medical equipment. It develops and manufactures physiotherapy equipment, such as electrotherapy devices, ultrasound devices, lasers, magnetic therapy devices, lymphatic drainage instruments, fullbody and limb bathtubs, therapeutic beds, gynaecological chairs,

AVDZP/CZECHMED

AVDZP members currently employ nearly 9 000 people. Their average revenue is CZK 19 billion per year, with exports accounting for more than 40 per cent. In the case of certain manufacturers, it is more than 80 per cent. Their medical device portfolio is wide, comprising approximately 500 000 items, from dressing material to orthopaedic implants and cardiostimulators. Another organisation is CzechMed, the Czech Association of Manufacturers and Suppliers of Medical Devices, which is also a member of MedTech Europe, the European association representing the medical technology industry, as well as CZEDMA, the Czech Association of In Vitro Diagnostic Medical Manufacturers and Suppliers. Export trade in medical devices is showing a favourable balance.

pneumological and cardiological devices, patient monitors, infusion equipment, devices for general practitioners, and aesthetic medicine instruments. EGO Zlín is an important manufacturer and supplier of complete biological protection systems, logistic decontamination systems, urgent medicine devices and long-term care equipment. The firm is working on development programmes based on the specific requirements of clients or prompted by urgent worldwide needs. MZ Liberec is continuing its tradition of medicinal and technical gas distribution system manufacture dating back to 1958. The company designs, manufactures, supplies and installs medicinal and technical gas distribution systems. An indivisible part of its production programme is the manufacture of end distribution elements, such as ramps, source bridges, revolving ceiling, systems and medical equipment for operating theatres, intensive care units, anaesthesiology and resuscitation departments, and standard inpatient wards all over the world. The company also ensures the delivery and assembly of medicinal gas distribution systems, i.e. oxygen generators and compressors, vacuum, reduction, and evaporating stations.

THE ASSOCIATION HAS BUILT A VIRTUAL 3D HOSPITAL

AVDZP has successfully realised a unique offer of a comprehensive solution in the area of healthcare and the supply of medical products, technologies and services in the form of a visual 3D hospital. This is a follow-up of its previous successful project aimed at strengthening the capacity for becoming incorporated into foreign development cooperation projects. Currently the project serves as a functional platform of manufacturers of medical devices for sharing experiences and know-how. In its framework the Association has created an electronic catalogue, Czech Healthcare Solutions (offering comprehensive solutions for hospital departments and other thematically oriented brochures with the offer of innovative products for ensuring healthcare especially in the developing world). A number of AVDZP firms have joined the project and have realised a unique joint offer of a comprehensive solution in the area of ensuring healthcare and the supply of medical products, technologies and services in the form of a visual 3D hospital. It is a unique way of presenting the offer of products on eight levels with eighteen hospital departments. The complete offer of the 3D hospital is available at www.avdzp.cz/vrcatalogue.

Photo: © Linet archives

BUILDING INDUSTRY AT THE CROSSROADS

The building industry sector comprises business firms involved in construction and having their headquarters in a territory with predominant construction activity (branch classification of economic activity 45). Construction covers building work, reconstruction, enlargement, renewal, repair and maintenance of permanent and temporary buildings and structures. It also covers the assembly of structures and the built-in materials and constructions.

In 2020, after three strong growth years, Czech building production dropped by 7.7 %, the biggest decrease for the past decade. The key role in this process was played by building construction, whose slowdown (by one-tenth) was the highest since the year 2000. On the other hand, the performance of civil engineering last year declined by a mere 1 %, despite the higher benchmark. This reflects the continuing increase in public investment in transport infrastructure, where investment transfers into the State Fund of Transport Infrastructure (SFDI) rose by 41 %. The flow of money from EU structural funds also showed an increase (+21 %, to CZK 75.8 billion). Also growing is the number of projects under construction, which will call for massive construction of transport infrastructure in 2021. In anticipation of this requirement, a record CZK 127.5 billion has been allocated to transport infrastructure by the SFDI budget.

PUBLIC PROCUREMENT

To mitigate the economic consequences of the pandemic, it is important to prevent any slowing down of preparations for future public procurement. Currently there are 259.7 km of motorways and 1st-class roads under construction, including 127.7 km of motorways on green field sites (D11 Hradec Králové – Jaroměř, D 35 Opatovice – Ostrov, D55 Otrokovice ring road, enlargement of D7 Panenský Týnec ring road), 71 kilometres modernisation of D1 and 61 km of 1st-class

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roads. Next year, construction will continue at the same rate. In railworks, there is progress on dozens of kilometres of tracks, 60 railway buildings are under reconstruction and 50 km more of tracks are being prepared for reconstruction. Another 170 safer railway crossings will be built in 2021. The long-awaited Olbramovice ring road will be completed in two years, and thousands of vehicles will be shifted to a 3.4 km-long new track. The government has also given its approval to starting preparations for a large project to canalise the Odra River up to Ostrava. The structure is part of the gigantic project to build a Danube-Odra-Labe canal. The section of the Odra River up to Ostrava could be made navigable by the year 2031. The plan provides for large-scale construction of motorways and ring roads, the completion of the D1 motorway, modernisation and construction and reconstruction of railway junctions and corridors, and the further repair of dozens of neglected railway buildings. The plan for 2021 comprises the construction of a number of important projects. The intent is to realise up to 40 new road and motorway structures.

SLOWING DOWN OF NEW CONSTRUCTION

As mentioned before, new construction last year was supported by repairs and modernisation, prompted by the issue of a large number of building permits for making changes on completed structures. On the other hand, a slowdown could be observed in new construction, especially as regards non-residential building. In comparison with 2019, a decline by -8.9 % took place in the construction of new apartments and a drop by -5.4 % in the completion of apartments. Newly started apartment construction was lagging behind, mainly in the second half of last year, while the construction of apartments to be completed at the end of the year accelerated. Although demand is pushing apartment prices up, their construction is slowing down. This, however, is rather an institutional, or bureaucratic problem, which does not allow for more flexible construction in times of booming demand.

The number of workers in construction declined by 2.0 % year on year, more than in the 4th quarter (-1.7 %) and the whole of last year (-1.4 %). Large firms (more often engaged in civil engineering) were better off. At the end of the year, they even slightly increased the number of their employees. In December, the average gross wage of an employee in construction was 5.2 % higher, which was 3.5 % more for the whole of last year and nearly 50 % less than in 2019, but nearly twice as much as in industry as a whole. Besides wages, the growth also slowed down in the cost of construction work. In December, these prices were 3.0 % higher year on year, the least for the past two and a half years. Besides labour, cost increases were also noticeable in material inputs, which were strongly subdued last year.

FOREIGN CONTRACTS

Foreign contracts were influenced in different ways last year. According to the latest CEEC Research Survey, building companies had to cope with worse working conditions on the part of their workers concerning, for example, their commuting, work on the building sites, etc. (70 %). Three-fifths of the respondents mentioned a slowing down of the process of construction (61 %). Two-fifths of companies were obliged to postpone their delivery terms in the case of foreign contracts, or the contract was cancelled by the investor (39 % each). 26 % of respondents report lesser willingness of foreign investors to invite tenders, and 13 % received fewer foreign orders since the beginning of the Coronavirus crisis. Building companies also report that they had to postpone the delivery terms in 36 % of their total foreign contracts, with 7 % of them being completely cancelled. Nine out of ten building companies also state that the frequently changing and unclear measures complicate the commuting of cross-border workers, which has an impact on the realisation of contracts and filling the production capacity of building companies (91 %). Building production in the EU dropped by 5.3 % year on year between January and November 2020. In most states, the production of building construction decreased more than that of civil engineering. The decline in construction in the Czech Republic (-7.2 %) was slightly higher than in the eurozone countries (-6.1 %), but less than, for example, in Hungary (-9.9 %). In Germany, construction continued to grow (+2.6 %), just as in Denmark, Italy, and the Netherlands, whose building production in November reached the pre-epidemic level (from the beginning of 2020).

Prospects for 2021

This year´s year-on-year decline in the Czech building industry (by nearly 8 %) is also expected to continue next year, according to most analysts. The uncertainty caused by the pandemic leads businessmen in construction, building firms and developers to suspending and cancelling some of their projects, so that the performance of the sector is expected to decline distinctly also in 2021. Besides firms, investment expenditures are also being cut by local governments, who, fearing the risk of lower tax revenue, will be more cautious in investing and will prefer postponing some of their projects.

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CZECH AGRICULTURE IS CHANGING

Agricultural production, together with the follow-up food production, is one of the traditional sectors of the national economies of countries all over the world. What is the situation in the Czech Republic in this respect?

Over the past century, the agricultural production surface area of this country declined by 1.6 million ha. In 1918, farmers cultivated some 5.1 million hectares of land. In 2017, cultivated farmland covered an area of a mere 3.5 million hectares. Over the past 100 years, the sown area declined by more than one-third. The acreage of arable land, according to the latest inventory carried out in 2019, is 3 524 000 ha, i.e. 443 ha more than last year. Arable land thus accounts for 70.6 % of total agricultural surface area, the same as last year. In 1920, the figure was 3.8 million ha. Farmers mostly sow cereals. Today, the dominant crop is wheat. A century ago, the main crop was rye, and also oats.

DEVELOPMENT IN 2020

In 2020, agricultural production was worth CZK 145.4 billion in basic current prices, according to first estimates. This is a 3.1 % increase year on year. The value of crop production was CZK 82.8 billion, a 3.6 % increase year on year. "The favourable development in crop production in 2020 is mainly due to the good harvests of cereals, rape, legumes, and fodder crops. Price increases are shown mainly for technical crops and fruit," says Renata Vodičková, Head of the Agriculture and Forestry Department of the Czech Statistical Office.

In 2020, 16 500 vintners cultivated 18 100 hectares of vineyards, according to the latest survey of Vinice 2020. In comparison with the previous survey of 2015, the number of vine growers declined by 9.2 %, while the vineyard surface area increased by 2.3 %. The most widely grown vines are Veltlín Green and Müller Thurgau. The value of animal production is expected to reach CZK 3.7 billion, 1.7 % more than in 2019, mainly due to higher egg and milk production (+9.3 % and +3.1 %, respectively)

LAND PRICE

The average price of farmland in 2020 increased by 3.9 %, the most for the past three years. Farmland is sold at CZK 25.35 per square metre on average. Last year, the 4 % real estate Acquisition Tax was abolished. In other aspects, land trading is undergoing a quiet period. The Coronavirus pandemic has reduced the volume of trading, but in the middle of the year the situation returned to normal. Farmland in the Czech Republic covers a surface area of 4.2 million hectares. Natural persons own three-quarters of the area, which is about 1 hectare of land per natural person.

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CZECH AGRARIAN TRADING WAS DOING WELL LAST YEAR

In 2020, Czech farmers, food producers and businessmen exported more agrarian goods than in 2019. The negative balance of agrarian foreign trade (AFT) improved by 22.7 %, as the deficit was reduced from CZK 47.5 billion to CZK 36.7 billion. Total AFT turnover amounted to CZK 464.3 billion. More exports went to EU countries, while exports to non-EU states slightly decreased. Last year, the Czech Republic exported agricultural goods mainly to Germany (23.1 %), Slovakia (20.7 %), and Poland (9.8 %). The largest volumes of agricultural goods were imported from Germany (22.9 %), Poland (15.6 %), and the Netherlands (6.8 %). The greatest increase, in comparison with 2019, was shown by Czech agrarian export to Germany, which rose by CZK 9 billion to CZK 49.4 billion.

The largest Czech export items were wheat, food preparations, bakery goods, fodder, cigarettes, and milk. The largest Czech imports included pork, bakery products, food preparations, cheeses, and chocolate. At the time of the Covid-19 pandemic, when travel and personal contacts with foreign partners were restricted, a suitable instrument in support of Czech firms was the work of agricultural diplomats of the Ministry of Agriculture. Thanks to their activities, the key territories for the export of Czech milk products, for example Lebanon and the United Arab Emirates, have been maintained, obstacles to livestock export to Kazakhstan and hatching eggs to Russia have been removed, and permission to export breeding cattle to Lebanon renewed. Agricultural diplomats are currently working in Russia, China, the USA, the United Arab Emirates, Lebanon, Japan, and Serbia. Other representatives of the Ministry of Agriculture are working in Kazakhstan and Ukraine. Their task is to promote Czech agricultural products, remove bureaucratic obstacles and help to establish trade relations. The aim of the Ministry of Agriculture is to continue supporting the export of products with higher added value, such as dairy produce, confectionery, beverages, and seeds. The Czech Republic is very competitive in these products and would like to pick up the historical trade relations from the past. The country's ambition is to export more to countries outside the EU, which have a great export potential.

FARMERS ARE AHEAD OF INDUSTRY IN DIGITALISATION

According to the survey of the Association of Small and Medium-sized Enterprises and Crafts of the Czech Republic, which focused on digitalisation in agriculture, eight out of every ten entities, all operating in agriculture, would understand the term "digital agriculture" and link it with some specific operation. Regrettably, for the time being, only 20 % of these invest in robotisation and digitalisation. More than four-fifths of agricultural enterprises currently use modern technologies or tools. Most often this concerns the use of GPS, smart machines, such as digital milking machines, measuring of surfaces via satellite, data monitoring and collection, weather stations, crop rotation records, smart sensors (Internet of Things and Animals, online measuring), self-driving tractors, drones and robots, etc. Another term for "digital agriculture" is "precision agriculture", which is mainly linked with the use of various navigational methods for machine control or, for example, agricultural crop planting and harvesting. Agriculture is an example of the comprehensive use of the main technological pillars: satellite location, use of Earth observation products such as maps, digital models and analyses, and data transmission digital communication, e.g. for cattle tracking and the measuring and

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control of different parameters. Specific examples of the practical use of modern technologies include, for example, the control of poultry farms by computer, compound feed production, grain drying and storing, remote climate control in halls and automatic control of consumption in biogas stations. The use of modern digital technologies is wide-ranging in agriculture. Unlike industrial production, agriculture places fewer demands on precision in measurement and regulation, which is favourably reflected in set-up costs.

CZECH FARMERS MAY BECOME PIONEERS OF AGRICULTURE 4.0

The coverage of 98 % of the territory of the Czech Republic by the Internet of Things' signal is among the best in all Europe. Thanks to this fact, special sensors that will send farmers data concerning humidity or crop harvesting and storage figures will be available to farmers even in the most remote domestic field or silo. Among the first places where such sensors have been installed in the Czech Republic is the farm at Klíčany near Prague. The AGROSS family farm in Klíčany focuses on crop and animal production. It grows cereals, oilseeds, and root crops on 1 150 hectares of arable land, which it clears and processes in its own facilities and sells in small packings. As regards animal production, the farm keeps laying hens and pigs and breeds bees. Precision farming was introduced on the farm in 2000. Ondřej Bačina of AGROSS appreciates the role played by the measuring sensors, which send him data to his mobile phone. "We have good experience with our new bar meter, which we have installed in the winter wheat silo. In about three weeks of storage, one layer began to heat up," he said and continued: "We took a sample and found that a pest had settled in the wheat. We had to treat the entire layer. Without knowing this, we would have only learned about it at the moment the pest had burst the gate of the store open," Ondřej Bačina added. For the farmer, this would mean selling the crop in feed quality, i.e. at a lower profit. The data collected by the sensors serve farmers in precision farming. "For example, we see that 3 km from the farmhouse the rainfall was 10 millimetres, while at the farm it was just 1 millimetre. This information is of key importance, because, after such rainfall, no machinery can be used in the wet soil," Ondřej Bačina adds, highlighting the potential savings. Perhaps an even more important role is played by data in planning spraying operations. For example, if the sensor on the sprayer shows that there is no wind and the farmer knows the pressure tendency and the air humidity, he may estimate whether the spraying substance will be blown away or will evaporate, or whether he can apply the spraying substance safely, without having to fear that it will also affect areas not intended to be sprayed. In time, the data from sensors located in different places in the field could be connected to form a network covering the whole country. Such a project is being developed by the Czech Agricultural University. This would create prerequisites for farmers to be able to manage their fields in accordance with sustainable development principles. At the local farm in Přáslavice, they decided to accept the challenge of the Agriculture 4.0 system and transformed it into an Aquaponic Farm 4.0 and its wider variant Urban Farm 4.0, which combines the cultivation of fish and plants suitable for towns and their suburbs. They also introduced the simple hydroponic variant. The purpose is to create and show the concept of how a small local farm growing vegetables and breeding fish can function, and to suggest a solution which is simple and easily operated and which can be located in inconspicuous places.

The cherry varieties of the VŠÚO Holovousy Plant Breeding Institute became famous primarily for the Kordia variety and the recently developed variety Tamara. After its registration in 1981, Kordia became widespread worldwide. Grown in millions of trees, it has become popular with fruit consumers all over the world.

The Institute´s other variety, Tamara, registered in the Czech Republic in 2015, also attracts major attention of cherry tree growers. The variety has been granted legal protection in the EU, Switzerland, the USA, and Australia and applications for its granting have been filed by Chile and China. New plantations of thousands of trees of this variety are being started each year on the basis of licensing arrangements. The exponential growth in demand for the Tamara variety promise well for the Institute in future years.

Another new variety, also much in demand, is Irena, characteristic for its late ripening. Over the past few years, the number of this new variety of trees planted each year is running into dozens of thousands. Judging by the interest shown by growers and consumers, Irena has a great potential of further growth. The Institute has already filed applications for its legal protection in the EU, Switzerland, Serbia, Ukraine, and Australia.

Comprehensive research of temperate zone fruit species

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WORLD RENOWN OF FRUIT FROM HOLOVOUSY

This year, the Fruit Research and Breeding Institute (VŠÚO) Holovousy s.r.o (Ltd) celebrates the 70th anniversary of its founding. It was formed by the merger of Prague´s fruit research institutes and their transfer to Holovousy, a locality known for its fruit growing tradition going long back into history, and its famous breeders.

This is where the well-known Holovousy Raspberry Apple tree, developed by the once owner of the local property, baron Leveneur, takes its roots. At the World Exhibition in Vienna in 1873, Franz Joseph I, Emperor of Austria, became so fond of it that he had a whole plantation of this variety planted in Schönbrunn. The Fruit Research Institute is continuing these traditions, and in the course of time it added yet other Holovousy varieties to the list. Its Kordia Cherry Tree variety, and in recent years also the varieties Tamara and Irena, gained fame literally all over the world.
In 2015, we completed the construction of a new building to house the Fruit Research Institute, worth nearly EUR 24 million. This made it possible to relocate the Institute, including all the facilities, to a site in the neighbourhood of the historical chateau, the original seat of the firm.

THE INSTITUTE TODAY

Today, VŠÚO Holovousy s.r.o. has the use of a modern administration building, with offices and laboratories fitted with the most up-to-date instruments and technical devices, and a conference hall seating 120 people. The research team comprises 100 scientific workers and technicians. The firm´s annual turnover is more than EUR 3.6 million. The worth of projects in hand, including subsidies, is EUR 3 million.

INTENSIVE COOPERATION WITH FOREIGN COUNTRIES

We are a scientific and research centre for applied research concerned with comprehensive fruit-growing issues focusing on temperate zone fruit species, including consulting, also for the general public.
We cooperate intensively with research institutions in the Czech Republic and other countries, with partners concerned with fruit production and related sectors. The foreign institutions include, for example, Artevos FRG, INRAE France, Agroscope Switzerland, Fleuren Netherlands, Pcfruit Belgium, Research Institute Laimburg South Tyrol Italy, National Research Institute Skierniewice Poland, Variety International the USA, Tuniche Chile, ANFIC Australia and many others.

NEW STRESS-RESISTANT VARIETIES

The Institute´s laboratory offers the testing of both biological and inorganic materials to fruit institutions in the Czech Republic and other countries. With the help of molecular-biological methods and the use of DNA sequence, we breed new varieties resistant to stress caused by climate change. We use similar laboratory techniques in proving varietal authenticity of fruit species.
Growing interest in cooperation on the part of foreign partners is proof that we are going the right way.

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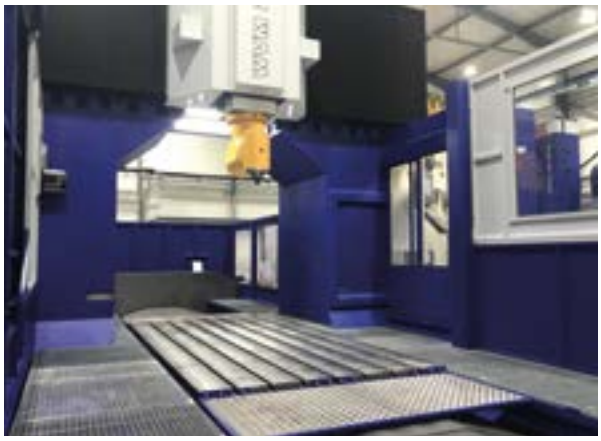
TOS VARNSDORF – LEADING GLOBAL SUPPLIER OF MACHINING TECHNOLOGIES

The TOS VARNSDORF engineering company engaged in the development, manufacture, sales, and service of machine tools has its own construction team for the continuous development of machines and a strong manufacturing base, ensuring the company´s own production. It also provides services in the form of offering collaboration (custom metalworking, measuring and chemical and thermal processing of engineering products). Its specialisation is the manufacture of horizontal boring and milling machines, machining centres and portal machines, all with a wide superstructure of machining technologies.



The company was founded as far back as in 1903. Its products used in all industrial countries worldwide benefit from the years of experience of several generations of technicians and workers and the current high technical standards of the firm. Its products compete successfully even in the most demanding international markets. Today, its largest customers are the EU states, mainly Germany, Poland, France, Belgium and Italy, followed by the Russian Federation, Belarus, China, Canada, the USA, and other countries.

CZECH MACHINE TOOLS ALL OVER THE WORLD

TOS VARNSDORF is a trademark known by customers literally on all the inhabited continents of the Earth. Since 1948, nearly 20 000 machine tools have been manufactured by the firm, a great majority of which has been exported. Varnsdorf machine tools can be found operating in South and North America, all across Europe, in Russia and China (there the firm stood at the founding of the first joint Chinese-Czechoslovak producer of machine tools), in India and several African countries, especially Egypt and the South African Republic, as well as in locations which are relatively exotic for machine tools, such as Iceland, the Philippines, the Marshall Islands, etc. Varnsdorf machine tools are used by a number of supranational companies and renowned firms, such as SAAB, Sweden, ABS Pump AB, Sweden, M.E.C.A.A.S.E, Spain, BOMAG, Germany, SIEMENS Industrial Turbomachinery, the Czech Republic, Goodrich Krosno, Poland, CATERPILLAR MAGYARORSZAG AG, Hungary, ŠKODA AUTO, the Czech Republic, METROWAGONMASH, the Russian Federation, BELAZ, Belarus, McDonald Steel, Canada, FTV PROCLAD, UAE, CHINA STATE BUILDING, China, BHARAT HEAVY ELECTRICALS, India, among others.
The company works systematically on the improvement of its services in all the export territories. Customers mainly appreciate the prompt delivery of spare parts, the presence of a service technician in the region and the expert assistance of salesmen. TOS VARNSDORF has built spare part warehouses and service bases for its technicians, and oversees the continuous improvement of the technical competence of its dealers. Through these activities, the company supports its exports, where the core of success rests on the high reliability of the supplied machines.
TOS VARNSDORF participates regularly in the largest international trade fairs in Europe, on the American continent and in Asia, e.g. EMO in Hannover and Milan, IMTS in Chicago and CIMT and CCMT alternately in Peking and Shanghai, China. Representatives of TOS VARNSDORF can be met regularly at the Metallo-obrabotka exhibition in Moscow and at the domestic International Engineering Fair in Brno. Each year, the company organises an international conference for its sales representatives, where some 50 salesmen from more than 25 countries meet on the grounds of the parent company, in order to become acquainted with what is new in the company´s production programme and to discuss the latest client requirements and the situation in different markets.

THE FIRM´S STEADY PROGRESS

TOS VARNSDORF is known for its regular practice of annually introducing to the market new items in its offer of machining technologies for different sectors of industry. Its range comprises new products with surprising parameters and performance. Its latest achievements in the area of development and research include a new series of WHT 110/130 machining centres and WVM 2600/3600 portal machining centres. Details about these new items, as well as others can be found at: **www.tosvarnsdorf.com.**

FORMS OF BUSINESS ACTIVITIES IN THE CZECH REPUBLIC

Czech or foreign natural persons or legal entities can perform business activity in the Czech Republic if they comply with the Czech law. The condition is generally the issuance of a Czech trade license regulated by the Czech Trade Licensing Act or another specific permit regulated by a number of specific acts, depending on the type of business activity. The exception from this condition applies to entrepreneurs from another EU member state in case of temporarily provision of services based on the trade licenses issued in such member state.

NATURAL PERSONS AS ENTREPRENEURS

A natural person or entrepreneur is, according to Czech law, a person who conducts business on the grounds of a trade licence, a person who conducts business using a special licence, or a person who practises agriculture and is registered according to a special regulation. Citizens of other countries are allowed to conduct business in the Czech Republic under exactly the same conditions and to the same extent as Czech citizens, unless the law says otherwise. For this purpose, the term foreign person applies to a natural person whose permanent residence is outside of the Czech Republic. Therefore, it is permanent residence, and not citizenship, that is decisive here. Visa are required in certain cases.

CONDUCTING BUSINESS WITH A TRADE LICENCE

According to the Czech Trade Licensing Act (Act No. 455/1991 Coll.), the business activity is conducted systematically, individually, using one's own name, on one's own responsibility, with a view to make profit and under the conditions laid down under this law. The different professions requiring a trade licence are listed in appendices 1- 4 of the Czech Trade Licensing Act. The Czech Trade Licensing Act differentiates between notifiable trades, where the licence is granted once the agreed conditions are met and the Trade Office is notified, and concessionary trades, which require state permission – i.e. the granting of a concession; this is not accorded automatically. Notifiable trades are further divided into skilled, restricted and free trades. Every natural person who is considering pursuing a trade must meet a set of general conditions, including being 18 years old and above, having legal capacity and being a person of good character. In the case of restricted, skilled and concessionary trades, a natural person is additionally obliged to meet special conditions – a professional

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qualification or other competence as defined by the law for each profession. In case of non-compliance with these special conditions, a natural person is obliged to conduct a trade through the intermediary of a responsible representative, who is obliged to meet both the general and the special conditions pertaining to the given type of trade. Access to the Trade Register is free and available online at www.rzp.cz.

CONDUCTING BUSINESS USING A SPECIAL LICENCE

The different business objects for the given category are the professions listed in Section 3 of the Czech Trade Licensing Act, and which are exempt from its provisions. First and foremost, this applies to professional services (doctors, advocates, expert witnesses, auditors, tax advisers, dentists, etc.). Conditions for each of these professions are specifically defined by separate laws.

PRACTICE OF AGRICULTURE

The third type of natural persons encompasses persons who practise agriculture and who are registered under a special regulation – the Agriculture Act (Act No. 252/1997 Coll.). Agriculture includes forestry and water resource management. An agricultural entrepreneur is any person who practises agriculture for profit and meets the agreed conditions, including being at least 18 years of age, having legal capacity and Czech or EU citizenship - all other natural persons need permanent residence in the Czech Republic and a certification of a basic knowledge of the Czech language.

LEGAL ENTITIES

The Czech Act on Business Corporations recognises the following types of business entities:

- limited liability companies
- joint-stock companies
- general partnerships
- limited partnerships
- co-operatives
- Societas Europaea (European companies)
- European Economic Interest Grouping (EEIG).

The Czech Civil Code recognises also other forms of legal entities, such as trust and associations, which can also perform business activity, but this should not be the main purpose of their existence. A Czech legal entity is an entity that has its registered office in the Czech Republic. Commercial companies are formed in two stages. The first stage involves founding the company and the second stage involves establishing it as a legal person, as of the date of its entry in the Commercial Register. The Commercial Register is maintained by the courts. Only after registration in the Commercial Register the company is entitled to commence its business activity in the Czech Republic. Access to the Commercial Register is free and available online at www.justice.cz.

BRANCH OFFICE

A branch office is merely an organisational unit of the founding company and it is not regarded as a separate legal entity and does not have its own legal capacity. It is an entity legally dependent on its head office, although it has an independent management and their own accounts. The branch office must be registered in the Commercial Register and the founder must appoint a director of the branch office, who acts on behalf of the founding company, but this is only in relation to matters concerning the branch office. In case of commencement of any business activity in the Czech Repubic (i.e., continuous business activity carried out independently and aimed at generating a profit), it is important to ensure that the respective trade licenses or other permits in the Czech Republic are obtained and registration with the Czech Commercial Register is performed.

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INCORPORATING A LIMITED LIABILITY COMPANY

The limited liability company is the most common form of business corporation in the Czech Republic. How to establish such company?

A limited liability company is established by a Memorandum of Association, which is signed by all the founders, i.e. the future shareholders or just one future shareholder. In both cases, it is essential that it is executed in a form of notorial deed of a Czech notary. The notary fee usually does not exceed CZK 5 000 (EUR 195) and is depending on the amount of the registered capital. In case of basic Memorandum of Association which contains only the mandatory provisions required by the Civil Code and Business Corporations Act and if all contributions to the registered capital will be monetary and registration of the company to the Commercial Register will be performed by the notary, the notary fee was decreased to CZK 2 000 (EUR 78). The founding deed must contain basic information about the company, e.g. the business name, registered address, identification of the shareholders, types of business interests (shares) held by each shareholder and specification of rights and obligations attached to such business interests (assuming various types of business interests are allowed), list of the company's business activities, number of executives and how they will act on behalf of the company, amount of registered capital, amount of contribution of each shareholder to the company's registered capital, identification of the initial executives and appointment of contribution administrator. The business name must not be interchangeable with any already existing name of another company registered in the Commercial Register. This is why the business name being considered by the founders should be checked out in this regard in advance at the website www.justice.cz. If the company's business name contains the name of a living natural person, the founders must obtain the consent of such person.

OBTAINING A BUSINESS LICENCE

Once the founding deed has been drawn up, the initial executives need to obtain the trade license at the Trade License Office unless the company's business activity includes only management of own property, letting of real estate, residential units and non-residential units, or a special permit is required. The administration fee for obtaining the trade license at the Trade License Office amounts to CZK 1 000 (EUR 38).

BUSINESS INTERESTS

The founding deed of the limited liability company may allow formation of various types of business interests (shares) held by shareholders of the company. Furthermore, the business interest of the shareholder could be represented by a common certificate issued as registered security. Shareholders of the limited liability company can own more than one business interest in the company.

REGISTERED CAPITAL AND PAYMENT OF CONTRIBUTIONS INTO THE REGISTERED CAPITAL

The minimum requirement for the registered capital of the limited liability company is CZK 1. However, it is recommended that founders agree on the higher amount of the company's registered capital than the minimum amount. A shareholder's contribution into the registered capital is either in monetary or in-kind form, whereas all contributions of founders are administered by the contribution administrator, who is usually one of the founders. Monetary contributions are deposited to a special bank account established for this purpose. The in-kind contributions must be appraised in the expert's opinion drafted by the expert chosen by the founders from the official list of experts. Before submitting the application for the entry of the company into the Commercial Register, any in-kind contribution must be fully paid up, while at least contribution premium (if any) and 30 % of each monetary contribution must be paid. As of 1 January 2021, the amended Czech Business Corporations Act allows exception from the above-mentioned rule. It shall be possible, in cases where the amount of the registered capital (and therefore the deposited amounts) does not exceed CZK 20 000 (EUR 800), to deposit the registered capital amount directly into the hands of the contribution administrator.

ENTRY OF THE COMPANY INTO THE COMMERCIAL REGISTER

The application for entry of the company into the Commercial Register has to be submitted either by all executives of the company on the prescribed form with their officially verified signatures or the registration can be performed through the notary, who can register the company into the Commercial Register directly. The application must be submitted to the competent court depending on the location of the company's registered office within 6 months from the foundation of the company; otherwise the founding deed is considered as withdrawn. The founding deed may stipulate another period. The registration court fee amounts to CZK 6 000 (EUR 232). The fee amounts only to CZK 2 700 (EUR 105) if the registration is performed by the notary on the basis of the notarial deed which would contain only mandatory provisions and if all contributions to the registered capital of the Company are monetary, the registration

of the company is for free. Irrespective whether the application is submitted by the company's executives or through the notary, the following documents must usually be presented:

- a notarial deed containing the founding deed, a trade licence or licence for other type of business activity,
- a deed attesting the legal basis for use of the premises at which the company's registered office is situated, e.g. a written consent of the owner (such consent may not be older than 3 months and signatures on the document must be legally certified), together with the decision of the company's statutory body on the company's registered office location,
- a document attesting the fulfilment of the obligation to pay prescribed contributions into the registered capital. This fact could be proved by a declaration of the contribution administrator and, in case the registered capital, exceeds CZK 20 000 (EUR 800), also the confirmation from the bank that the relevant monetary sums have been credited to the special bank account of the company,
- documents attesting the fact that persons who are to be registered as members of the company's bodies satisfy the requirements set forth by law, i.e. that they are at least 18 years old, have legal capacity, are without a criminal record related to the business, and that there are no impediments to their operating of a trade in accordance with the Trades Licensing Act and other legal regulations (such as an affidavit concerning such facts and an extract from the criminal record or equivalent document issued by the relevant authority of the EU Member State in which they were last residents in the case of citizens from another than EU Member State)
- the consent of the person being registered to their registration in the Commercial Register. The necessary forms for entering the company into the Commercial Register can be found in Czech on the website of the Czech Ministry of Justice https://or.justice.cz/ias/iform/index. html?0. Documents presented to the Commercial Register must be in Czech, including all their attachments; any deeds in a foreign language must have a legally certified translation unless they have been drawn up in one of the official languages of the European Union (in that case, a simple translation is sufficient). For certain types of foreign deeds (e.g. an extract from a criminal register or commercial register), a special form of higher authentication is required, one that certifies the authenticity of the issuing authority, generally identified as an apostille or 'super-legalisation', depending on whether the country issuing the deed is a signatory to the so-called Hague Apostille Convention. The statutory deadline for registration of the company is five working days from submission of the application. If, within this period, the court does not register the company or request additional documents from the applicants, the company is considered as registered. The notary can register the company into the Commercial Register almost immediately. In order to submit an application to the Commercial Register or Trade Register, it is not mandatory to be represented by a lawyer. Nonetheless, with respect to fulfilment of formal requirements, we recommend that an attorney-at-law is engaged. The average amount of time needed to establish a limited-liability company in the Czech Republic is approximately 7 days but registeration within even one day is also possible.

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INCORPORATING A JOINT-STOCK COMPANY

The joint-stock company is the second most common form of business corporations in the Czech Republic. How to establish such company?

A joint-stock company is established at least by one founder on the basis of Articles of Association, which are executed in the form of the notarial deed of a Czech notary and signed by all the founders. The notary fee usually does not exceed CZK 16 000 (620 EUR) and is depending on the amount of the registered capital. The founding deed must contain basic information about the joint-stock company, such as business name, registered address, list of the company's business activities, number of shares and their nominal value, specification of shares and whether the company issues registered shares or bearer shares, amount of the registered capital, number of votes attached to an individual share, total number of votes in the company and estimation of costs related to the establishment of the company. The business name must not be interchangeable with any already existing name of another company registered in the Commercial Register. This is why the business name being considered by the founders should be checked out in this regard in advance at the website www.justice.cz.

OBTAINING A BUSINESS LICENSE

After the founding deed has been executed, the members of the company's statutory body need to obtain the trade license at the Trade License Office, unless the company's business activity includes only management of own property, letting of real estate, residential units and non-residential units or unless a special permit is required. The administration fee for obtaining the trade license at the Trade License Office amounts to CZK 1 000 (EUR 38).

CORPORATE GOVERNANCE

The founders could choose between the monistic and dualistic model of corporate governance. In case of dualistic model, the company establishes a Board of Directors and a Supervisory Board. The Board of Directors is in charge of the management of the company's business. The Supervisory Board supervises the exercising powers by the Board of Directors. In case of monistic model, the company has only an Administrative Board that determines the basic orientation of the management of the company's business and supervise its proper execution. The Administrative Board should, as a rule, have three members, unless the Statute of the company sets out a higher number. For joint-stock companies with a sole shareholder, an exception is provided, and the one-member Administrative Board is allowed. From 2021, the position of the statutory director will be cancelled and the Administrative Board will perform all its powers. At the same time, it can be assumed that the provisions on codetermination will not apply to public joint-stock companies with a monistic internal structure, as they will already be regulated separately.

SHARES

There are two types of shares in the joint-stock company, i.e. shares with no special rights (ordinary shares) and shares with special rights (such as different or fixed profit shares or different vote weightings shares). The so-called no par value shares are shares that have nominal value.

REGISTERED CAPITAL AND PAYMENT OF CONTRIBUTIONS INTO THE REGISTERED CAPITAL

The minimum amount of the registered capital of the joint-stock company is CZK 2 000 000 (EUR 77 000). A shareholder's contribution into the company's registered capital may take either monetary or in-kind form whereas all contributions are administered by contribution administrator, who is usually one of the founders. Monetary contributions are deposited to a special bank account identified in the Articles of Association. The value of in-kind contributions is determined by the expert chosen by the founders from the official list of experts. Before submitting the application for registration of the company into the Commercial Register, each founder must pay up at least the share premium and all the founders must further pay up in aggregate at least 30% of nominal value of the subscribed shares. All in-kind contributions must be fully paid.

ENTRY OF THE COMPANY INTO THE COMMERCIAL REGISTER

The application for entry of the company into the Commercial Register could be either submitted by all the members of the company's statutory body on the prescribed form with their officially verified signatures or the registration can be performed through the notary, who can register the company into the Commercial Register directly. The application must be submitted to the competent court depending on the location of the company's registered office within 6 months from the foundation of the company; otherwise the founding deed is considered as withdrawn. The founding deed may stipulate another period. The registration court fee equals to the amount of CZK 12 000 (EUR 465). The fee amounts to CZK 8 000 (EUR 310) only if the registration is performed by the notary. Irrespective whether the application is submitted

by the company's members of the statutory body or through the notary, the following documents must usually be presented:

- a notarial deed containing the founding deed,
- a trade licence or licence for other type of business activity,
- a deed attesting the legal basis for use of the premises at which the company's registered office is situated, e.g. a written consent of the owner (such consent may not be older than 3 months and signatures on the document must be legally certified), together with decision of the company's statutory body on the company's registered office location,
- a document attesting the fulfilment of the obligation to pay at least statutory minimum contributions into the registered capital. This fact could be proved by a declaration of the contribution administrator and confirmation from the bank that the relevant monetary sums have been credited to the bank account of the company,
- documents attesting the fact that persons who are to be registered as members of the company's bodies satisfy the requirements set forth by law, i.e. that they are at least 18 years old, have legal capacity, are without a criminal record related to the business, and that there are no impediments to their operating of a trade in accordance with the Trades Licensing Act and other legal regulations (such as an affidavit concerning such facts and an extract from the criminal record or equivalent document issued by the relevant authority of the EU Member State in which they were last residents in the case of citizens from another than EU Member State),
- the consent of the person being registered to their registration in the Commercial Register (members of the company's statutory body),
- the decision on the appointment of the chairman of the Board of Directors, chairman of the Supervisory Board, chairman of the Administration Board or statutory director, if applicable.

The necessary forms for entering the company into the Commercial Register can be found in Czech on the website of the Czech Ministry of Justice https://or.justice.cz/ias/iform/index.html?o. Documents presented to the Commercial Register must be in Czech, including all their attachments; any deeds in a foreign language must have a legally certified translation unless it is drawn up in one of the official languages of the European Union (in that case, a simple translation is sufficient). For certain types of foreign deeds (e.g. an extract from a criminal register or commercial register) a special form of higher authentication is required, one that certifies the authenticity of the issuing authority, generally identified as an apostille or 'super-legalisation', depending on whether the country issuing the deed is a signatory to the so-called Hague Apostille Convention. The statutory deadline for registration of the company is five working days from submission of the application. If, within this period, the court does not register the company or request additional documents from the applicants, the company is considered as registered. The notary can register the company into the Commercial Register almost immediately. In order to submit an application to the Commercial Register or Trade Register, it is not mandatory to be represented by a lawyer. Nonetheless, with respect to fulfilment of formal requirements, we recommend that an attorney-at-law is engaged.

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STEPS FOR ACQUIRING A CZECH TRADE LICENCE

Trades are divided under the Czech Trades Licensing Act (Act No. 455/1991 Coll.) into notifiable trades, which can be obtained based on notification, and concession trades, which can only be pursued on the basis of a special business licence – a concession. Notifiable trades are categorised into three further groups: vocational, professional, and unqualified.

Notifiable trades are characterised by the fact that the authorisation to trade becomes valid immediately at the very moment of notification (not later when the trade licence is issued). To illustrate the various types of trade, here are a few examples. Trades categorised as vocational include carpentry, bakery and confectionary, bricklaying and plastering, brewing, etc. Professional trades include activities such as providing or brokering consumer credit, work as an optician, or animals trading. In order to acquire the concession for concessionary trades, it is necessary to demonstrate the relevant professional eligibility and in some cases to also meet some additional requirements. Trades that require concessions include operating a travel agency, road freight transport or a security firm employed to protect other people's property. Those interested in a licence for a notifiable trade can obtain one by notifying the trade, while applicants for a concession can submit their application at one of the general trade offices – central registration points, by means of government administration contact points (Czech-Point) or do so electronically using the Trade Register web system. Trades are notified and applications for concessions are submitted using a standard registration form. Forms can be obtained at any trade office, and in most cases are freely available at the Ministry of Industry and Trade website https://www.mpo. cz/en/business/licensed-trades/guideto-licensed-trades/ (forms must be completed in Czech).

GENERAL CONDITIONS FOR PURSUING A TRADE

The general conditions applying to a natural person pursuing a trade are: to have reached the age of 18 years, to have full legal capacity and a clean criminal record. According to the Act, a person with a clean criminal record is someone who has not been finally convicted of intentionally committing a criminal act, if it was committed in connection with business activities, or with the business object for which they are applying or notifying, unless they are now considered as not having been convicted of such offence.

PROFESSIONAL ELIGIBILITY

Alongside the form, in the case of a professional or vocational trade or concession, the notifier or applicant must submit a document attesting its professional eligibility for the relevant trade, or of the appointed responsible representative, together with his/ her signed declaration that he/she consents to the appointment. The signature on the declaration must be officially certified. If documents are in a foreign language, they must be translated into Czech by a sworn translator (a list can be found at http://datalot. justice.cz/justice/repznatl.nsf/$$- SearchForm?OpenForm), with the exception of documents submitted by nationals of EU Member States or by a legal entity with its registered office, central administration or principal place of business activities in an EU Member State, unless there are doubts as to the translation's correctness.

OTHER TERMS AND CONDITIONS

Further, a document attesting the legal basis for use of the premises on which the trader has located their place of business (e.g. a lease contract) must be submitted, and also a receipt for payment of the administrative fee, which is 1 000 CZK (40 EUR) for a notifiable trade (if multiple trades are notified simultaneously, the fee is charged only once) must be submitted. Foreign natural persons, except for nationals of EU Member States or of a State Party to the Agreement on the European Economic Area, or the Swiss Confederation, must attach to their notification of a trade or concession application a document corroborating that they have been granted a visa to stay longer than 90 days or have had their long-term residency permit. A foreign natural person must further provide an extract from the criminal register or equivalent document issued by the relevant court or state authority of the country of which the individual is a national; the extract must not be more than three months old. The Trade Office is obliged to make the entry into the Trade Register within 5 business days of receiving the notification and issue the entrepreneur an extract if the notifier meets the conditions set out in the Czech Trades Licensing Act. Where concessions are concerned, the Trade Office shall decide the matter within 30 days of receiving the application, provided that all of the relevant particulars are met. Subsequently, within 5 business days of the decision granting the concession having come into effect, an entry is made in the Trade Register and an extract is issued to the entrepreneur.

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LEASE OF BUSINESS PREMISES

The New Czech Civil Code regulates the lease of premises for business purposes, even in relation to lease agreements entered into prior to this date. Compared to general types of property leases, lease of business premises has several specific features. Landlords, property developers and their tenants who are leasing business premises in the Czech Republic should certainly be aware of them.

REQUIREMENTS OF A LEASE CONTRACT

The essential requirement of a lease contract is now simply an agreement concerning the object of the lease and the amount of rent. The purpose of the lease no longer needs to be specified in the contract. If, however, the object of the lease will not be used at least predominantly for the operation of business, then no specific conditions shall apply. Neither is it required to have the object of lease approved by the occupancy permit for the contract to be valid. The regulation of leases in the Czech Civil Code is not mandatory. Parties therefore have the opportunity to manage their mutual rights and obligations according to their own specific requirements and needs. The lease contract does not need to be renegotiated and rewritten due to the adoption of the new legislation, although in practice the parties prefer this option to exclude application of certain newly introduced provisions of the Czech Civil Code.

TERMINATING A LEASE OF BUSINESS PREMISES

Unless the contracting parties agree otherwise, the notice period for a lease with an indefinite term is six months, and three months for a fixed term lease. The notice on a fixed term contract must state the reason for terminating the lease, otherwise the notice is not valid. Unless the parties set out other reasons, tenants are entitled to give notice on a fixed term lease before the lease expires, inter alia if (i) they have lost the capacity to carry out the activity for which the business premises were intended, (ii) the leased premises have ceased, for objective reasons, to be eligible for carrying out the activity for which they were intended, and the landlord does not provide the tenant with equivalent alternative premises, (iii) the landlord has grossly breached his obligations in respect of the tenant, and (v) the circumstances on the basis of which the parties concluded the lease agreement have changed to such an extent that it would be unreasonable to require the tenant to continue the lease. The landlord is entitled to give notice on a fixed term lease contract, inter alia if: (i) the real estate in which the business premises are located is to be demolished or rebuilt in such a way that prevents the leased premises from being used any further, provided that the landlord did not and could not have predicted such situation when entering into

the contract, or (ii) the tenant has grossly breached his obligations in respect of the landlord (e.g. the tenant is more than 1 month in delay with the payment of rent or services connected with use of the business premises), (iii) the tenant is convicted of an intentional criminal act committed against the landlord, a member of his family, or person who lives in the building in which the business premises are located, or against another person's property situated in such building, (iv) the business premises need to be vacated due to a reason of public interest protection, or (v) some other similarly serious reason exists. The lease agreement passes over to the new owner in case of the sale of the premises. If the new owner had no reasonable cause to doubt that he was buying the premises free of any lease, he is entitled to terminate the lease within three months after he became or must have become aware that the premises are leased and who the tenant is. Objections can be raised against a termination notice. Objections must be made in writing and notified within one month of the relevant party having received the notice. If the notice is not withdrawn by the terminating party within one month from the delivery of the objections, the party who raised the objections may ask the court to examine the legitimacy of the notice within the period of another two months. If, however, the tenant vacates the business premises in accordance with the notice, then such notice shall be regarded valid and as having been accepted by him without objections. In particular cases termination without the notice period is possible; by the landlord in cases of particularly serious breaches of the lease agreement by the tenant, by the tenant if the landlord fails to provide the tenant with sufficient protection against claims of a third party, who asserts the right of ownership or another right in a thing or claims that the premises be surrendered or vacated. Nevertheless, the breach has to be specified in the notice and a possibility to remedy the breach before the notice has to be given.

SIGNS REGULATION

The tenant is entitled to furnish, to the appropriate extent, the real estate in which the object of the lease is located with various types of signage, provided the landlord has given his consent. The landlord may only withhold his consent for serious reasons. If the tenant requests the landlord in writing to be given such consent and the landlord does not respond within 1 month, it shall be taken that consent has been given. On the other hand, a failure to obtain the consent constitutes a gross breach of the lease agreement by the tenant.

COMPENSATION FOR TAKING OVER A CUSTOMER BASE

One entirely new legal mechanism is the payment of compensation for taking over a customer base, i.e. a group of customers who were regular clients of the tenant, provided that such base has been created by the tenant himself/herself. The tenant is entitled to compensation for the take-over of a customer base in cases where the lease is terminated by notice of the landlord and at the same time the customer base is taken over by the landlord or a new tenant. However, the tenant will not be entitled to compensation for the takeover of a customer base if the landlord has given a notice to the tenant for the reason of the tenant's gross breach of obligations.

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EMPLOYEES – TAXATION, SOCIAL SECURITY AND HEALTH INSURANCE

The extent of individual's taxation in the Czech Republic depends on individual's tax residency status. Czech tax residents are subject to tax on their worldwide income. Czech tax non-residents are subject to tax on Czech-source income only. Tax non-residents are taxed in the same way as residents on their Czech-source income, except for certain types of income.

Czech source income is, for instance, income for work performed in the territory of the Czech Republic, rental income from real estates located in the Czech Republic, etc. In addition, Czech tax non-residents may not qualify for certain tax deductible items and tax reliefs.
The term "tax resident" includes any person residing in the Czech Republic for at least 183 days within a calendar year (continuously or over several periods) or having a residence (permanent home)[1] in the Czech Republic.
If an individual is treated as a tax resident in the Czech Republic and, at the same time in another country, the final tax residency status is to be determined in accordance with the applicable double tax treaty. Czech Republic concluded double tax treaties with nearly all European countries and majority of other developed countries.
If there is no double tax treaty in place between the Czech Republic and the other country, double taxation may arise.

INCOME SUBJECT TO TAX

Employment income includes salaries, wages, bonuses, other compensation of a similar nature and most benefits in kind[2]. Employment income also includes fees paid to directors and shareholders of private limited companies and to limited partners of limited partnerships for work performed for the company or partnership.
On the other hand, travel reimbursement within the Czech labour law statutory limits and various other qualified benefits, such as luncheon vouchers, cultural and social fund benefits, temporary accommodation of up to CZK 3 500 per month (approx. EUR 135) and private life insurance or supplementary pension insurance premiums annually of up to CZK 50 000 (approx. EUR 1 923) may be exempt from taxation if further conditions are met.
The tax base for employment income equals the sum of the gross income of the employee. No expenses may be deducted from employment income.

TAX-DEDUCTIBLE ITEMS

The tax base from employment as described above is to be consolidated with all other partial tax bases (i.e. partial tax base from self-employment and business income, from rent, investment income or from other income).
The overall tax base can be lowered by tax deductible items such as gifts to charities and other organizations for qualified purposes, mortgage interests, and contributions towards individual's private life insurance or supplementary pension insurance.

TAX RATE

The employee's tax liability is computed from the tax base reduced by the above tax base deductions, using the 15 % tax rate.
In case the gross income of the employee exceeds annual maximum assessment base for social security contributions, 23 % tax rate applies on employment income exceeding the limit4.
For non-residents from countries outside the European economic area with no treaty on exchange of tax related information with the Czech Republic in place, income from dividends, capital gains, interest, royalties and remuneration to members of statutory bodies is subject to 35 % withholding tax rate.

TAX ALLOWANCES

Tax payer may lower the annual tax liability through deduction of tax reliefs. The below tax reliefs, except for the personal tax relief, are available for tax residents and in general, also for Czech tax non-residents who qualify as residents of other member states of the European Union or of the European economic area and their Czech-source income accounts for at least 90 % of their total annual income.
The annual personal tax relief is CZK 27 840 (approx. EUR 1 071). In addition, tax relief of CZK 24 840 is granted for a spouse living in the same household with the taxpayer, unless the spouse's annual income exceeds CZK 68 000 (approx. EUR 2 615).
Additional personal tax relief of CZK 2 520 (approx. EUR 97) is granted for partially disabled persons and of CZK 5 040 (approx. EUR 194) for fully disabled persons. Tax relief of CZK 4 020 (approx. EUR 155) is granted to tax payers who are full-time students up to the age of 26 and tax relief of CZK 15 204 (approx. EUR 585) is granted for the first, CZK 19 404 (approx. EUR 746) for the second and CZK 24 204 (approx. EUR 931) for the third and each other dependent child. In addition, parents may apply for tax relief for children visiting the kindergarten of CZK 14 600 (approx. EUR 562) per annum. In case of the taxpayer's tax liability having been fully covered by tax reliefs, the child tax relief can also be used as a child tax bonus. In this

case, the tax bonus increases employee's net salary or is paid to the tax payer by the tax authorities.
Taxpayers can also claim proportionate amounts of tax reliefs, with the exception of the taxpayer allowance, if the applicable conditions are met for part of the year only.

TAX COLLECTION

The employer is obliged to operate monthly payroll to calculate monthly payroll tax withholding and remit the payroll tax withholding to the tax authorities.
If the tax payer has only one employer at each time during the year who does not receive other income above CZK 6 000 (approx. EUR 231) (apart from income that is subject to the final withholding tax, e.g. interests and dividends from the Czech companies), the tax payer is not obliged to file annual tax return. Consequently, the tax payer may ask the employer to perform annual tax reconciliation to apply tax base deductions or tax reliefs that cannot be applied within the monthly payroll (simplified annual tax filing).
In other cases, the tax payer is obliged to file annual tax return.
The tax return for the respective tax period (calendar year for personal income tax) must be filed with the tax authorities by 1 April of the following year or 1 May of the following year if the tax return is filed electronically. The filing deadline may be extended by additional three months if the tax payer grants a power of attorney to a certified Czech tax adviser, or on the basis of a special application. Another extension of the tax return filing deadline until 1 November of the following year is available if the tax payer has income from abroad.

SOCIAL SECURITY AND HEALTHCARE INSURANCE PREMIUMS

Employment income is subject to social security and healthcare insurance premiums.
The assessment base for premium computation is derived from the employment income, where the assessment base is the sum of the income subject to personal income tax.
The premium consists of a part to be paid by the employer and a part to be paid by the employee. The payer of the premium is the employer, who withholds the premium from the employee's monthly income.
The employer pays both these parts to the social security and healthcare insurance authorities. The employer pays 24.8 % of the assessment base as a social security premium and 9 % of the assessment base as a healthcare insurance premium; 6.5 % of their assessment base for social security and 4.5 % for healthcare insurance are withheld from employees, members of statutory bodies, and executives.
A maximum annual assessment base[3] is set for social security premiums. There is no maximum premium set for healthcare insurance contributions. For employees changing employment in the course of the calendar year, or working for several employers simultaneously, the maximum assessment base for social security premiums is calculated for each employer separately. If the amount of the employee's social security premium exceeds the annual maximum, the employee may claim the return of the surplus after the end of the year. No premium overpayment arises to the employer.
Employees coming from another EU country or a country with which the Czech Republic has a bilateral treaty in the area of social security and/or healthcare insurance, may apply for an exemption from premium payment in the Czech Republic. On the basis of such an exemption, employees are not required to contribute to the social security and/or healthcare insurance systems in the Czech Republic, but remain covered by their home social security and healthcare insurance systems.
As a member state of the European Union, the Czech Republic is bound by the EU social security regulations (currently applicable to all member states of the European economic area and Switzerland) and other EU law. In addition, to prevent double social security contributions and to assure benefit coverage, the Czech Republic has entered into social security agreements with several non-EU jurisdictions, including Australia, Canada, India, Japan, Korea (South), Russian Federation, or the United States.

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[1] Residence (permanent home) is a place where the payer has a permanent residence, i.e. an apartment which is available to him/her at all times, whether owned by him/her, or rented, and where the payer intends to be staying (depending on his/her personal and family situation). The apartment may be rented to another person, but only in a form enabling the payer its use according to his/her needs.
[2] Or in connection with a previous, current or future performance of dependent activity, regardless of whether the activity is carried out for the payer of the income or not.
[3] For healthcare insurance premium, as of 1 January 2013, the annual ceiling is no longer applicable. For social security premiums, the annual ceiling amounts to 48-fold average wages; in 2021 it is CZK 1 701 168 (approx. EUR 65 430).

ENTREPRENEURSHIP OF FOREIGN ENTITIES & ITS TAXATION IN THE CZECH REPUBLIC

Entities that are not tax residents of the Czech Republic may become liable to income tax according to the Income Tax Act No. 586/1992 Coll., as amended, if they receive income derived from the territory of the Czech Republic.

Although the basic level of taxation of this income is relatively low (corporate income tax 19 %, natural persons 15 %), it may become a fundamental complication for their business activities. It is essential to realise the fact that, in some cases, income tax of tax non-residents is withheld in a form of withholding tax from gross revenues (at the rate of 5 % or 15 %) and not from profit. Withholding tax rate of 35 % is also applicable for taxpayers who are not EU members or taxpayers from a country that has not signed Double Tax Treaties with the Czech Republic. Although the Czech Republic as a member of OECD has signed many international bilateral double tax treaties regarding the avoidance of double taxation – currently with 88 states – these agreements mostly modify the rate of the withholding taxes, but the principle of withholding tax by retention tax from the whole income instead of profit taxation is a basic complication. Under these conditions, it is appropriate to consider founding a subsidiary or branch used for doing business in the Czech Republic.

I. TYPES OF INCOME TAXED BY WITHHOLDING TAX

Among revenues of tax non-residents derived from the territory of the Czech Republic, on which 15 % withholding tax is levied (unless reduced/eliminated by a double tax treaty or unless a permanent establishment is created), may be included e.g.:

Revenues from:

- services (except realisation of building site or construction or installation or assembly project) rendered on the territory of the Czech Republic;
- consulting, management, and brokerage and similar professional activities provided on the territory of the Czech Republic;
- independent personal services rendered on the Czech territory;
- income of artistes and athletes for their performance in the Czech Republic.

Payments from Czech tax residents (or from permanent establishments of non-residents) for:

- industrial and cultural royalties, including payments of any kind received as a consideration for the use of any industrial, commercial or scientific equipment, except of financial leases;
- director's fees;
- contractual penalties from business obligations;
- dividends;
- other income derived from a capital asset interest.

Revenues of tax non-residents obtained from the territory of the Czech Republic on which 5 % withholding tax is imposed are rentals from financial lease. We have to note that the Czech Republic has a broad system of capital gains (realised on sale of shares) tax exemption valid for Czech non-transparent companies with shares in Czech/EU non-transparent subsidiaries and for EU non-transparent companies with shares in Czech subsidiaries. The conditions are, in particular, that at least a 10 % share is held for at least a 12-month period (even sale of shares in a third-country subsidiary may qualify under certain additional conditions).

II. TYPES OF INCOME OF NON-RESIDENTS TAXED ON INCOME PROFITS

Besides income liable to withholding tax types of income derived by non-residents from the territory of the Czech Republic, incomes exist which are subject to the standard 19/15 % Czech corporate income tax applied on profit. For these types of income, a standard income tax return shall be submitted (once a year until 1 April of the following year, or until 1 July of the following year if the tax return is prepared by a tax advisor/attorney at law on the basis of Power of Attorney) and the tax base consists of profit adjusted for attributable and deductible items. These revenues are typically represented by revenues from real estate or permanent establishment.

Permanent Establishment

Permanent establishment in the Czech Republic arises as a result of a fixed place of business, of a building site or construction or installation or assembly project carried out by a tax non-resident which has existed for more than six months within any twelve-month period, from the performance of professional services and of other activities of an independent character in the Czech Republic, if such activities are carried out on the territory of the Czech Republic for more than six months within any twelve-month period. Also, a dependent agent with authority to negotiate/conclude contracts in the Czech Republic binding on the non-resident may trigger a permanent establishment of this non-resident. These basic definitions of permanent establishment can be altered by wording of the relevant treaty on avoidance of double taxation.

III. TAXATION OF PARTNERSHIP INCOME

Czech general commercial partnerships (v.o.s.) and limited partnerships (k.s.) are regarded as tax transparent entities for the purpose of corporate income tax (the latter only with respect to the general partner(s)). The profits of a general commercial partnership are not subject to taxation at the v.o.s. level, but at the level of its partners. In a limited partnership, profits are divided into a part for the general partners (subject to taxation at the level of partners) and a part for limited partners, which is subject to taxation at the limited partnership level. The latter part, minus corporate income tax, is divided between limited partners in the form of dividends; dividends are generally liable to a withholding tax of 15 %. The income of v.o.s. partners or k.s. general partners or members of a civil association (without legal capacity) who are not Czech tax residents from participation in v.o.s. or k.s. or association and from loans granted to v.o.s. and k.s. is regarded as income derived through a Czech permanent establishment, taxable at the standard income tax rate (19 % for legal entities). Carrying tax losses forward as of 2004, tax losses suffered in a tax period can be carried forward in the next five tax periods. Carrying losses backward, however, is not possible. There are restrictions on the deductibility of tax losses (shown in previous tax periods) which may result from a fundamental change in the composition of owners of the company concerned, or from its merger. As a rule, beginning from tax periods commenced in 2011, the tax administrator is entitled to check tax returns and assess tax liability in retrospect within three years from the end of the deadline for filing the tax return for the controlled tax period. But this is the minimum term, which can be prolonged. Considering the complexity of this problematic volume of judicature and statements of the Ministry of Finance of the Czech Republic, we recommend always using the professional assistance of a tax advisor in identifying the possibility of the formation of the tax duty from revenues derived from the territory of the Czech Republic.

JAKUB KOVÁŘ
NEXIA AP
E-mail: kovar@nexiaprague.cz

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IQ STRUCTURES

We help governments and companies to protect what is valuable to them from the bad guys. It can be a citizens' personal identity, documents of monetary value or commercial products. We have been in the industry for more than 20 years and during that time we were able to accumulate a unique mixture of people, know-how and technology. In combination with a passion for what we do, this allowed us to become one of the key players in the security printing industry.

We co-operate with the largest banks in the world and governments of many states to improve the security of their banknotes and identification documents.

The domain of IQ Structures is physical protection – not with bulletproof gates, armed guards nor protected vaults, but with holograms. Hologram is an optical device, that is easy to recognize and authenticate, yet extremely difficult to produce.

Banknotes are particularly sensitive documents, because they directly carry monetary value and are used repeatedly throughout their life cycle. As such, they require the highest possible level of security and ask for something special. We have reserved a set of the most sophisticated holographic effects for the use on banknotes only and work with the leaders of material producers in their respective fields.

Secure identity documents are key tools for national security and threats connected to migration and identity thefts are feared by governments around the world. At this time, high-quality holographic protection of identity documents is important more than ever. And for this reason, we focus exactly on this. We have developed a state-of-the-art technology, which changes the status quo of the industry as it removes many limitations in protection of polycarbonate documents.

We are pleased to be perceived as experts on banknote and personal identity protection among the banknote and identity document manufacturers and their customers – governments and national banks from all over the world.

More on **www.iqstructures.com** and **www.iqproid.com**

https://www.iqstructures.com/en/mastering#library

https://youtu.be/3uUckNGi9J0

EU CITIZENS DO NOT NEED WORK PERMITS IN THE CZECH REPUBLIC

Under Czech legislation, citizens of EU member states and members of their families are not considered foreigners and have the same legal position as citizens of the Czech Republic. The same legal position as Czech citizens is also enjoyed by citizens of the European Economic Area (EEA) and Switzerland and their family members.

The husband or wife or the partner of a citizen of the EU/EEA and Switzerland with whom he or she has entered into a registered partnership, disregarding his or her nationality, is considered a family member, and so are their offspring provided that they are under 21 years of age or are dependent on him or her, and the parent, if he or she is a citizen under 21 years old whom he or she maintains and with whom he or she lives in the same household, and a dependent direct relative in ascending or descending line, or such a relative of the husband or wife of an EU citizen. For the purpose of employment in the territory of the Czech Republic, a citizen of EU/EEA and Switzerland or his or her family member does not need a work permit in the Czech Republic. A family member who is not a citizen of the EU/EEA or Switzerland, however, is required to present to the competent Labour Office a document confirming that he or she is a family member of a citizen of the EU/EEA or Switzerland.

It can therefore be said that EU citizens do not require any Residence Permit for the territory of the Czech Republic and their right to settle anywhere within the framework of the EU is fully reflected by the Czech side in this respect. However, if an EU citizen decides to remain in the territory of the Czech Republic for a period of more than 30 days, he or she is required to report the place of his or her residence to the competent Aliens Police Office (depending on the place of residence). In the case of the EU citizen deciding to stay in the territory of the Czech Republic for a period of more than 30 days, he or she has the right (not obligation) to apply for a Temporary Residence Certificate. Here, it is worth mentioning that, although this is just a formal act concerning the right of the EU citizen, i.e. it depends on the person´s decision whether he or she applies for the Certificate of Temporary Residence or not, situations may occur where he or she will need the certificate. Until recently, this concerned cases such as e.g. applications for residential parking in parking zones in Prague, car registration in the Czech Republic, application for pension or life insurance, or just confirmation of a 5-year continuous temporary stay for the purpose of filing an application for Permanent Residence in the territory of the Czech Republic. Nevertheless, a family member intending to stay in the country for 3 months is required to apply for a Temporary Residence Permit.

TEMPORARY RESIDENCE IN THE TERRITORY OF THE CZECH REPUBLIC

Temporary residence of the EU citizen or his or her family member is a type of Long-term Residence, which, as mentioned before, can only be accorded in the case of stays longer than 3 months. In the application, the applicant is required to prove the purpose of the stay. The following documents must be attached to the application:

- passport (to be presented only when submitting the application; the Ministry of the Interior will duly return it to the applicant);
- document proving the purpose of stay (work contract or agreement on work performed outside employment);
- health insurance certificate (need not be submitted in the case of the EU citizen or his family member becoming insured by entering employment);
- accommodation certificate (lease or sublease agreement, accommodation agreement or agreement with similar content, or duly filled "Accommodation Confirmation" form, to be found on the websites of the Ministry of the Interior).

Instead of a document confirming the purpose of his

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or her stay, the family member is required to submit a document proving that he or she is an EU citizen´s family member. The Temporary Residence Certificate should be issued to the EU citizen within 30 days and the Temporary Residence Permit of a family member within 60 days. Nevertheless, considering current practice, the procedure in the case of family members may take longer than the statutory deadline, by as much as several months. The positive aspect is that the family member of an EU citizen is entitled to stay in the territory of the Czech Republic and to work there for the duration of the proceedings, which may last up to several months. The Temporary Residence Permit is issued to an EU citizen without restriction; the Residence Permit for an EU citizen´s family member, if approved, is issued for a maximum period of 5 years.

PERMANENT RESIDENCE OF AN EU CITIZEN AND HIS/HER FAMILY MEMBER

After the lapse of 5 years of continuous temporary residence, the EU citizen and his or her family member are entitled to apply for Permanent Residence in the territory of the Czech Republic. The advantage is, especially in the case of the EU citizen´s family members, that they can obtain a Permanent Residence Permit for a period of 10 years, which can simply be renewed (without having to apply for the prolongation of the Permanent Residence). In the case of an EU citizen´s family member, it is even possible to apply for a Permanent Residence Permit already 2 years after his or her continuous temporary residence, provided that he or she has been a family member of a citizen of the Czech Republic, who has a Permanent Residence Permit, or a family member of a citizen of another EU member state, who is in possession of a Permanent Residence Permit in the territory of the Czech Republic. The EU citizen or his or her family member is required to attach the following documents to the Permanent Residence application:

- passport (its original only when filing the application; the Ministry of the Interior will return it to the applicant);
- document confirming that the condition of 5 years of continuous temporary residence, or 2 years of continuous temporary residence in the case of the family member of the EU citizen having been his or her family member for at least 1 year, has been fulfilled;
- document on the provision of accommodation (lease or sublease agreement, accommodation agreement or agreement with similar content, or filled “Accommodation Confirmation” form, to be found on the websites of the Ministry of the Interior).

THE EMPLOYER HAS THE OBLIGATION TO INFORM THE LABOUR OFFICE

The employer employing an EU/EEA or a Swiss citizen, or his or her family member, or the legal or physical person to whom those persons have been sent by a foreign employer, is required to inform the competent Labour Office, according to the place of work. The employer or the legal or physical person is required to inform the competent Labour Office of the the termination of the person´s employment within 10 calendar days of the date of the termination of his or her employment. In the case of a citizen of another EU/EEA member state or Switzerland losing employment in the Czech Republic, he or she may apply for employment at the nearest Labour Office (Labour Offices are to be found in all district towns) and register as a job seeker. A list of Labour Offices with contacts can be found at: https://www.uradprace.cz/.

EURES PUBLIC EMPLOYMENT SERVICES

When the Czech Republic joined the European Union, Czech Labour Offices became part of the EUREWS network, whose basic mission is to facilitate international mobility of the labour forces. EURES provides employment services offered by all the EU member states, Norway, Iceland, and Liechtenstein. Switzerland, too, has an agreement on participation in the EURES network. EURES services are provided to citizens and employers through https://www.uradprace.cz/web/en and by EURES advisers and contact workers at all Labour Offices in the Czech Republic.

THE CZECH REPUBLIC – ATTRACTIVE COUNTRY FOR STUDY

Foreign cooperation programmes, such as ERASMUS and CEEPUS, are some of the best-known ways for foreign students to obtain admission to Czech universities. This, however, is not the only opportunity for Czech university students to meet their foreign mates on university grounds. The Czech Republic has become a much sought-after educational centre in recent years.

The following is a review of the current situation in which foreign university students studying in the Czech Republic find themselves. The review is based on a survey carried out by the Foreign Cooperation House in conjunction with the Ministry of Education, Youth and Physical Culture, and Czech universities at the turn of the year 2019/2020.

FOREIGN STUDENTS IN THE CZECH REPUBLIC

The enrolment of foreign students at Czech universities at the beginning of 2020 was 46 534, which is 16 % of the total number of university students studying in Czech educational institutions. Over the past 9 years, those students have been supplementing the continuously declining number of Czech university students. The number of foreign students is increasing year on year (the increase since 2011 is 6.2 percentage points). Nearly half (45 %) of foreign students come from Slovakia, proving the close relationship between the two nations, which for more than half a century constituted one country. The second largest group (27 %) are students from the territory of the former Soviet Union (Russia, Ukraine, Kazakhstan, and Belarus), followed by students from India, Germany, China, and other European and non-European countries.

LARGEST CZECH UNIVERSITIES ARE MOST ATTRACTIVE

Which universities and which courses of study are most popular? Unequivocally in the lead are the largest Czech universities, where the most popular field of study is Medicine, followed by Economic Studies, Natural Sciences, ICT and technical fields. For nearly half of the foreign students, the main reason for coming to study in the Czech Republic is a specific field of study or a specific university. For one-third of them a role is played by the geographical position of this country in the centre of Europe, which enables them to travel easily across the entire European continent. For one-quarter of the respondents, the decisive fac-

Photo: © pixabay.com

tor is the low cost of living and of the study itself (in public universities, studies are free). In the current unstable global situation, safety is one of the most important factors influencing the choice of the country of study, especially for students from outside the European Union. A positive finding, among others, is the fact that, for two-thirds of foreign students, Czech universities are the first choice – the prestige of Czech education is high.

FOREIGN STUDENTS' STUDIES IN THE CZECH REPUBLIC

Students coming to the Czech Republic for the full form or the shorter form of study must not forget that they are coming not only because of the studies, cheap locality and the possibility of learning about a new culture, but also that they are coming to another country that will gladly welcome them, of course provided they have fulfilled their basic obligations. Already upon entering the country, they must know how long they will be staying and for what purpose they have decided to visit the country. Therefore they must take care of certain obligations already before their arrival and visit the Czech Embassy in their home country. There, students who are EU citizens and know that they will be staying in the Czech Republic for more than 90 days and students of third countries (countries outside the EU) may apply for a residence and study permit.

APPLICATION FOR A LONG-TERM RESIDENCE PERMIT FOR THE PURPOSE OF STUDY

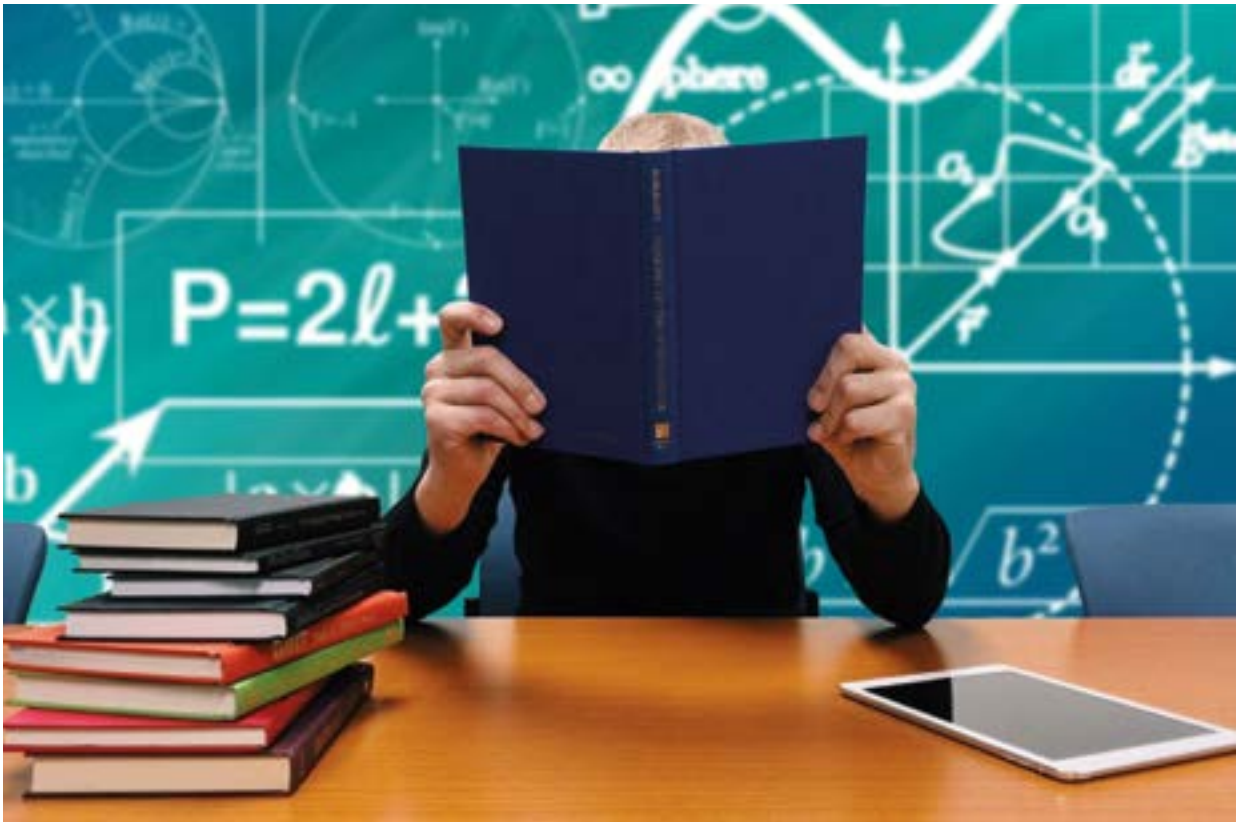
Foreign students who want to stay in the Czech Republic for more than three months for the purpose of study, for example at a university, or for secondary-school study in the framework of an exchange programme, may apply for a long-term permit.

WHAT DOCUMENTS ARE NEEDED?

To obtain a long-term residence permit, the applicant must submit to the Embassy of the Czech Republic a valid passport and documents confirming the purpose of the applicant´s stay – e.g. certificate of admission to study. Before their arrival, students will have to prove that they have arranged accommodation in the Czech Republic. An important requirement when filing the application is to prove that the applicant has the necessary funds for the purpose of long-term residence in the Czech Republic. The sum is derived from the existential minimum (the accurate amount can be found on the websites of the Ministry of the Interior). The applicant is also required to have health insurance arranged for the whole duration of the stay.

HOW LONG WILL IT TAKE TO HAVE THE APPLICATION PROCESSED?

The length of time the Embassy has to process the application for long-term residence for the purpose of study is 60 days. In the case of study at a higher-level technical school or at a university, the permit may be extended to a maximum of two more years of study. The application for a long-term visa for the purpose of study concerns foreign students who intend to be studying in the Czech Republic for more than three months. This, however, does not apply to university study, but to study at a secondary school, excluding study within the framework of an exchange stay or study at a conservatory.



DEADLINE FOR PROCESSING THE APPLICATION

As in the case of the previous application, the deadline for its processing is a maximum of 60 days. Foreign students may study in the Czech Republic under the terms of the application for a long-term visa for the purpose of study. This study, however, is not classified as study under Act 326/1999 Coll. The applicant is required to attach to the application his passport, confirmation of the purpose of his stay, etc. The application will be processed within 90 days. The study of foreign students in the Czech Republic does not begin on the first day of their study; students must realise that their obligations already begin on the day of their arrival in the Czech Republic.

EU STUDENTS

In the case of the stay of EU students in the territory of the Czech Republic being more than 30 days, students are obliged to report to the Aliens Police. There they must present a filled in Foreigner´s Registration Form (the form can be downloaded from the Czech Police website). Although the main purpose of the stay of foreign students in the Czech Republic may be study, it is also good to bear in mind practical things, such as, for example, transport in the city. Therefore, students are recommended to provide a local transport card, complete dormitory residence formalities and to go to the educational facility personally for registration.

Study sojourns of foreign students in the Czech Republic – practical references

- http://www.studyin.cz/
- http://www.mvcr.cz/clanek/informace-pro-skoly.aspx?q=Y2hudW09Nw%3D%3D
- http://www.msmt.cz/vzdelavani/zakladni-vzdelavani/vzdelavani-zaku-cizincu?lang=1

University Degree in the Czech Republic – How to obtain it

Would you like to obtain a university degree in the Czech Republic? Higher learning institutions in the CR offer accredited study programmes at three levels: Bachelor´s, Master´s and Doctorate, as well as life-long educational courses. Higher learning institutions in the Czech Republic are either private or state-run. The traditional public or state-run institutions (university type) offer a number of study programmes, while private institutions (non-university type) mostly run Bachelor´s study programmes. Several public and private institutions offer programmes ending with an MBA degree – Master of Business Administration. Apart from universities, MBA programmes are also offered by other educational institutions (more at Czech MBA Schools Association). Foreign students may also study in the Czech Republic within the framework of the Erasmus Programme. There are also other exchange study programmes, such as CEEPUS – the Central European Exchange Programme, AKTION Programme, grant programmes within the framework of the International Visegrad Fund, and Master´s and Doctoral studies at universities in Brno supported by the South Moravia International Mobility Centre, and the Fulbright Programme. Czech universities also participate in several joint programmes, such as the Erasmus Mundus Joint Master Degree (EMJMD). Established by an international higher learning consortium, these programmes are distinguished by their academic excellence. In the framework of EMJMD, students can obtain a full study scholarship for a Master´s degree international study programme.

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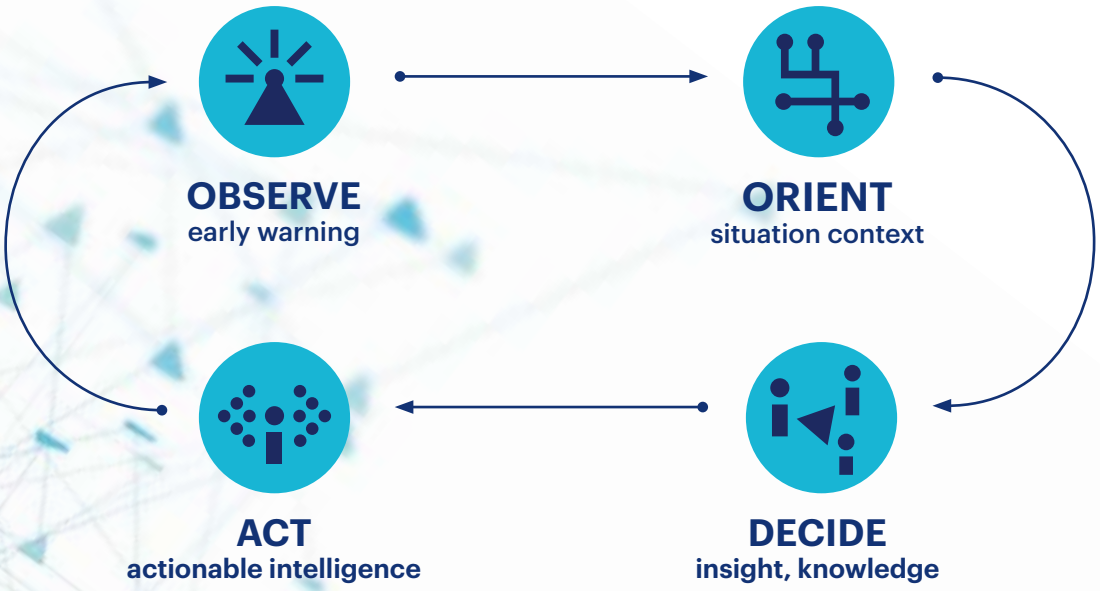

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CZECH RESEARCH AND SCIENCE AT THE WORLD´S TOP

The voice of Czech Science has always been heard loud in the world. Although a small country, the Czech Republic has achieved international renown in areas ranging from Egyptology to the treatment of civilisation diseases to high-tech technologies, such as, for example, nonwoven nanofibres. Currently, there are 9 Centres of Excellence in the Czech Republic, with more than 40 regional research centres. In addition, the Czech government recently launched a new innovation strategy for the years 2019-2030. The new strategy, named The Czech Republic: The Country for the Future, has set itself a rather ambitious aim: to become an innovation leader in Europe.

Public universities have always played, and continue to play, a very important role in research and development. Their greatest achievements include, for example:

- the development of a new method of treating cancer and haematological and urological diseases;
- development of new construction technologies;
- development of advanced materials and collaboration in international projects.

The development of the research infrastructure of universities is greatly assisted by contributions from the EU funds, which have helped to finance:

- the establishment of Centres of Excellence in research focused on the development of laser systems;
- biomedical and material sciences;
- energy research and comprehensive mathematical modelling in natural, medical, and technical sciences.

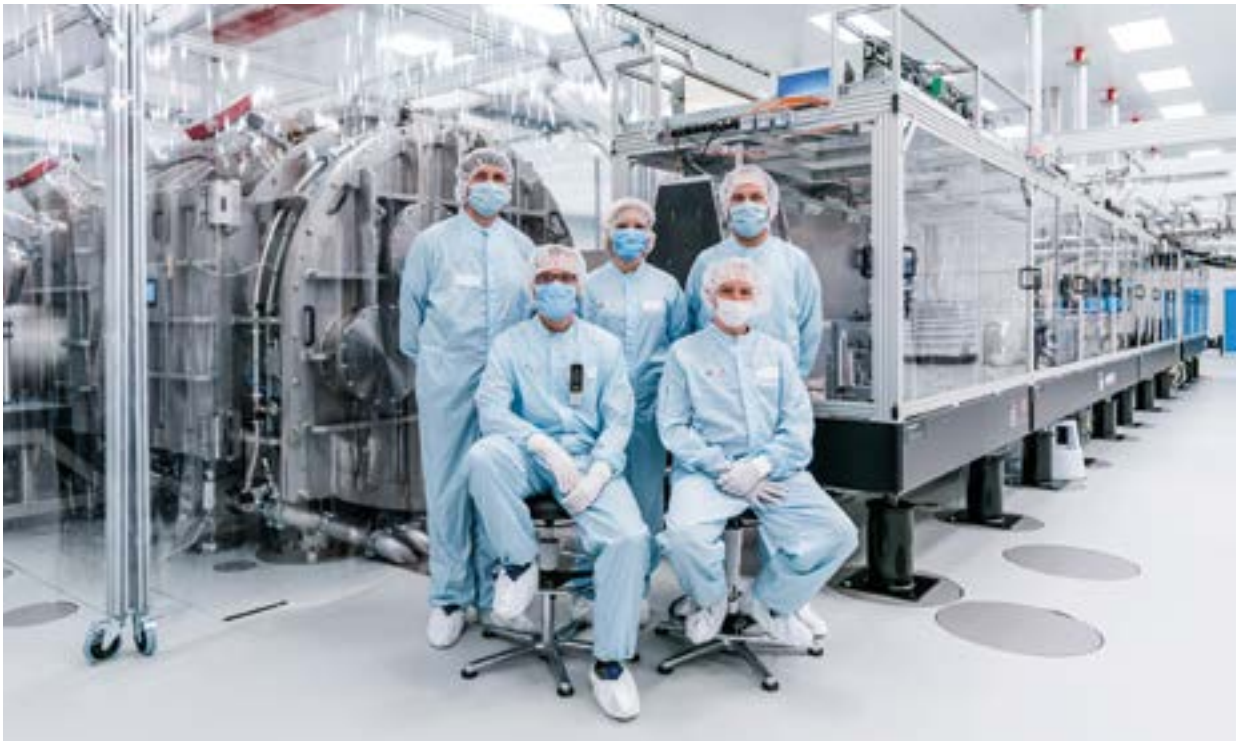
The strong orientation of the Czech Republic towards Science and Innovation has resulted in specific projects materialised by Czech Sciences and companies, such as:

- nanotechnological coating for improving the quality of the air;
- system of efficient draining of water from the desert air;
- condensers for Mars rovers;
- operation of the world´s most efficient laser;
- own superhub for artificial intelligence.

The Czech Republic is successfully building a unique and vast scientific base. Czech Science is interesting, not only for young students who have just completed their secondary school studies and have to make their choice of their further course of study, but also for experts from all over the world. The long-term endeavour of EU funds is supporting the mobility of young scientists and experts. This activity is also supported by a large number of other organisations assisting scientists to find employment in the Czech Republic, as well as in other countries.

CZECH REPUBLIC: COUNTRY OF THE FUTURE

The Czech Republic has recently launched a new innovation strategy for 2019-2030, named The Czech Republic: The Country for the Future, whose aim is to become an innovation leader in Europe. The strategic framework



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approved by the Academy of Sciences, the universities, company representatives, scientific institutions and ministries represents a comprehensive innovation programme providing all-ranging support from basic research to applied research and development, to industrial application and support of company innovation.

www.countryforfuture.com

CZECH ACADEMY OF SCIENCES

The Czech Academy of Sciences (CAS) was established by Act No. 283/1992 Coll. as the Czech successor of the former Czechoslovak Academy of Sciences. It is formed by a complex of 54 public research institutions, employing more than 8 000 people, over half of them university graduates.

The primary mission of CAS and its institutes is to carry out research in the field of natural, technical and social sciences and humanities. The Academy´s research workers also participate in educational programmes, especially doctoral courses of study for young scientists. The Academy supports collaboration with applied research institutions and industrial enterprises. The integration of Czech Science in international programmes is supported by a number of international research projects and exchange programmes for scientists of partner institutions in other countries.

www.avcr.cz

CAS TECHNOLOGICAL CENTRE

The CAS Technological Centre supports the involvement of the Czech Republic in EU research programmes. It prepares analytical and conceptual studies for research and innovation, participates in international technological transfer and supports the development of innovative firms.

www.tc.cz

CZEXPATS IN SCIENCE

The Czexpats in Science Platform has the following aims:

- to assist scientists in other countries to orient themselves in the environment of Czech Science and to facilitate the potential return of scientists into the Czech environment;
- to give scientists living abroad on a long-term basis the possibility to positively inspire and influence Czech Science;
- to support the mobility of Czech scientists, especially by sharing experience and information among Czech scientists in foreign institutions (including those who have already returned to the Czech Republic) with those who are preparing for a longer scientific stay outside the Czech Republic.

http://czexpatsinscience.cz

EURAXESS

With the aid of the web portal and EURAXESS centres, the organisation provides information and assistance to both incoming and outgoing research workers. The portal provides practical information about the professional and everyday life, information about working oppor-

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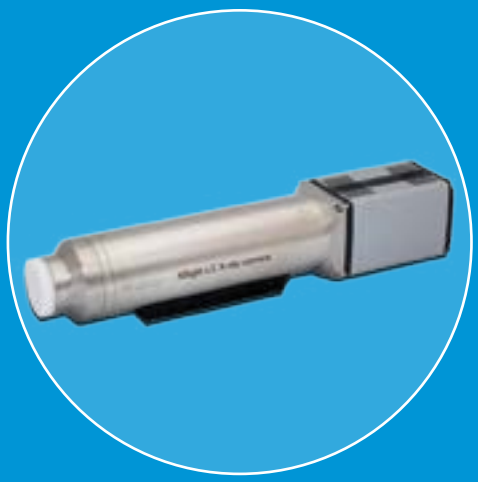
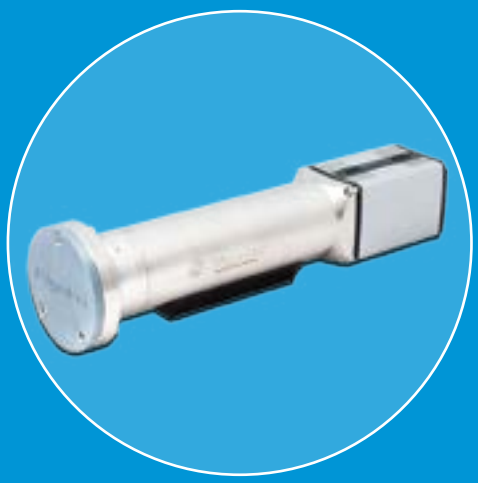
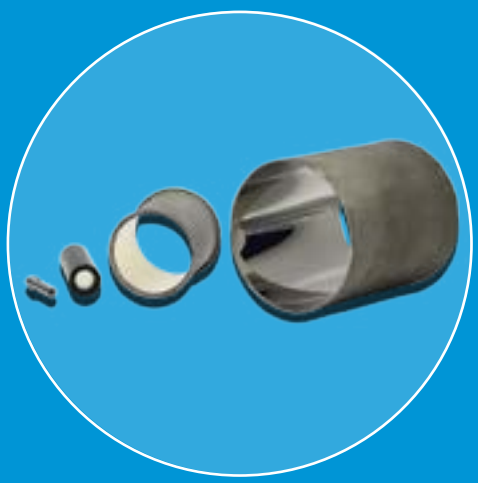
sales.prague@rigaku.com | **www.rigaku.com**







RITE is a subsidiary of Rigaku Corporation (with headquarters in Japan), hereinafter referred to as "**Rigaku**". RITE came into being as a specialised European branch for research, development and production focusing mainly on X-ray optics, X-ray detectors and other special products and is one of three key development and Innovation centres along with the research centres in Tokyo and Detroit.

RITE has developed and manufactures CCD and sCMOS X-ray imaging detectors both of which contain the highest spatial resolution commercially available. They are called XSight™ LC and XSight™ FC detectors. The XSight™ LC detector contains an interchangeable coupled lens, enabling users to change the field of view and the corresponding spatial resolution. The available field of view ranges from 0.9 x 0.7 to 14.4 x 10.8 mm, with a corresponding spatial resolution of 0.4 µm or higher.

The XSight™ FC camera is a fiber optics coupled camera that is more sensitive when compared to the XSight™ LC version.

RITE manufactures and sells rotational symmetric total reflection optics. RITE has mastered a unique manufacturing technology called replication. This manufacturing technique enables the production of X-ray optics with unique optical features such as low weight, high surface precision (low slope error) and low micro-roughness. Another interesting attribute of total reflecting optics is the use of various metallic layers as coating. The most commonly used materials are Ni, Au and Ru, making it ideal for EUV and soft X-ray applications.

tunities and funding possibilities. EURAXESS centres assist not only the research workers themselves, but also their families, with the preparation and organisation of their trips abroad and to give them comprehensive assistance in matters of their mobility. All services offered by the EURAXESS network are free.
www.euraxess.cz

CENTRES OF EXCELLENCE IN THE CZECH REPUBLIC

Top scientific projects at European and even international level have come into being in the Czech Republic. Their existence has largely been made possible thanks to the contribution of large sums of money from EU funds. Most of the large Czech research institutions, referred to as European Centres of Excellence, were founded in the framework of the Research and Development for Innovation Operational Programme (2007-2013), or were successfully modernised under the same programme.
Today, the Centres employ highly specialised international research teams, using the most advanced technologies. The following is some brief information about them:

- BIOCEV Centre, Vestec – https://www.biocev.eu/en
  In the context of Czech (and European) Science, BIOCEV represents a comprehensive top-level platform for the development of modern biotechnologies and biomedicine. The Centre has made it possible to link together traditionally strong disciplines in the area of technical and natural sciences, such as Virology and Chemistry. Leading scientists specialising in molecular and cell biology, phenogenomics, structural biology, tissue engineering and biomedicine, participate in five BIOCEV research programmes. BIOCEV has become the centre of excellent basic research, actively linked with the tuition and education of Master´s and Doctoral students, with an emphasis on collaboration with biotechnological companies in the form of contract research.
- CzechGlobe – Institute of Global Change Research, Brno – https//www.czechglobe.cz/cs/
  CzechGlobe Institute of Global Change Research focuses on the study of environmental issues, specifically global change (GC), which, by its nature and potential consequences, exceeds the scope of the basic thematic segments: atmosphere – ecosystem – socio-economic system. GC has become an ecological, sociological and technical problem of our time with a global reach, whose solution requires profound expert knowledge. From the regional point of view, CzechGlobe reduces the problem of the inadequate linkage of the scientific and application spheres, using the potential of education in ecological and eco-engineering disciplines, thus increasing the attractiveness of opportunities in the region and prompting new innovation procedures in the "clean energy" sector and "eco-engineering", and creates the potential for the emergence of new equipment and technologies and contributes to better environmental education at all levels.
- ELI Beamlines, Dolní Břežany – https://www.eli-beams.eu/cs/
  The principal aim of ELI is to build and operate the world´s most advanced laser system. This programme comprises research and application projects, incorporating the interaction of light with matter at an intensity which is about 10 times the currently achievable value. ELI produces ultrashort laser pulses lasting typically a few femtoseconds and generating an output of up to 10 PW. This will provide new knowledge potentially usable, for example, in medical imaging and diagnostics and in the construction of instruments for the development and testing of new materials and X-ray optics.
- FNUSA ICRC International Clinical Research Centre, Brno – https://www.fnusa-icrc.org/cz/
  FNUSA-ICRC is a scientific and research centre focused on translation research. Although FNUSA-ICRC is a relatively young research institution, it has worked its way to becoming a Centre of Excellence in a number of sectors of clinical, translation and basic research. Currently, it employs more than 200 people from 18 countries; 19 % of the researchers come from other countries. FNUSA-ICRC focuses on the improvement of healthcare and the quality of life, by combining clinical care, research and development, education and cooperation with industry.
- IT4Innovations National Supercomputer Centre, Ostrava – https://www.it4i.cz/
  The IT4Innovations National Supercomputer Centre, Technical University Ostrava, is a leading research, development and innovation centre in the area of high performance computing (HPC), data analysis (HPDA) and artificial intelligence (AI), operating the highest performance supercomputer systems in the Czech Republic. IT4Innovations, together with CESNET and CERIT-SC institutions, form the e-INFRA.CZ strategic research infrastructure of the Czech Republic.
- Central European Institute of Technology (CEITEC), Brno – https://www.ceitec.cz/
  CEITEC is a research centre oriented towards the area of live sciences, advanced materials, and technologies.

Photo: © FNUSA ICRC archives

It was established in 2011, based on the foundations of Brno´s six important universities and research institutions. Despite its short existence, the Centre has become one of the most advanced European scientific institutions. In 2020, CEITEC scientists became intensively involved in combating COVID-19. In spring 2020, CEITEC, in collaboration with the "3D Print against COVID-19" initiative, started printing protective shields. At first, the output was about 600 shields a day, which was later increased to 2 000 pieces a day. In 2020, CEITEC published information about their successful development of a new method that will make it possible to better distinguish colon tumours from blood. It also developed biomarkers anticipating the success of gene CAR-T therapy against cancer. The team of Jan Čechal, in turn, developed a new method of preparing nanostructures with a unique geometric structure. Details about their research were published by the prestigious Nature Communications magazine. Also worth mentioning is the research project termed by the Czech Grant Agency as excellent. Its outcome is the improvement of the properties of fine-grained advanced ceramics in using cold plasma.

- SUSEN Sustainable Energy, Řež u Prahy – http://susen2020.cz/
  The project, approved by the European Commission in December 2011, signifies the strengthening of the research infrastructure in the Czech power industry, which gives an important impulse to the development of teams and knowledge in the area of energy technologies.
- Institute of Theoretical and Applied Mechanics, Czech Academy of Sciences, Telč – http://www.itam.cas.cz/
  The Institute concerns itself with theoretical and experimental research in the area of solid phase mechanics (with an emphasis on building construction). Its orientation is mainly towards structural dynamics (stochastic dynamics, aerodynamics, aero-elasticity), non-linear mechanics, mechanics of materials (conventional and non-conventional), failure mechanics, micromechanics, biomechanics and soil mechanics, and towards the analysis of the properties of constructions, their elements and their reliability.
- NTIS – New Technologies for Information Society Research Centre, Plzeň – https://ntis.zcu.cz/cz/index.html
  The mission of the Centre is research, development and innovation in the framework of two priority sectors: information society and material research. Its work is focused on the development of cybernetic and mechanical systems and information and bio-engineering technologies. Its other specialisations include the development of new thin film materials and plasma sources, the processing of geo-space data and the development of mathematical structures for the support of system and process modelling. The NTIS Centre also supports the competitiveness of regional and national industry by means of technology transfer and collaboration with the application sphere.

World Leader in Nanotechnologies

For years, the Czech Republic has been among the world leaders in nanotechnology applications in industry and consumer goods' manufacture. Czech nanotechnology patents are gaining ever greater renown worldwide. This project started 17 years ago when a team at the Technical University in Liberec, led by Oldřich Jirsák, developed a unique technology enabling the industrial production of non-woven textiles formed by nanofibres, i.e. fibres with a diameter of from 20 to 500 nanometres. These materials are used in a wide range of sectors, from healthcare to the automobile industry, power engineering and construction, cosmetics and environmental protection. The first company in the world to start selling this technology, developed in Liberec and called Nanospider, was the Czech firm Elmarco, which placed the product in the market in 2005. Nanofibres have been used to manufacture unique products. For example, Contipro company in Dolní Dobrouč has developed innovative hyaluronic acid-based nanofibres enriched with other active substances. These nanofibres have the ability to supply the skin with multiple amounts of anti-aging substances in comparison with ordinary products. In addition, they are safer, as they contain no preservatives, stabilisers, colouring agents or perfumes. Czech nanotechnologies also make life easier for allergy sufferers by offering them anti-mite bedding with a nanofibre membrane. The principle is that the openings in nanofabrics are so small that they do not allow mites or their allergens to pass through. NanoSPACE, a firm based in Domažlice, was the first in the world to practically use this concept. Nanopharma in Pardubice, with development laboratories in Prague and Liberec, in turn, know how to produce substitute human tissues with the help of nanofibres. In addition, the nanotechnological self-cleaning coatings, developed by the Czech scientist Jan Procházka, are unique worldwide. The coatings protect the surfaces of buildings, including historical structures, such as the Toronto lighthouse, and are used to help maintain clean air in several European capitals and also at Las Vegas Airport. The functioning of these self-cleaning coatings is based on photocatalysis, a clean and ecologically friendly physical process eliminating exhalations, odours and harmful micro-particles from the air. They work without the use of chemical substances, with one application lasting many years. In addition,they clean and protect the surfaces of walls, not only on the exterior of buildings, but also in the interior. IQ Structures in Řež u Prahy is another successful firm, which is the first and so far the only nanotechnological firm in the world to have mastered both the development and manufacture of nano-optic objects.

NANOPTIQS

IQS NANOPTIQS s.r.o. is part of the IQS Group s.r.o. Its main product focus is micro & nanostructured optics, a unique solution for design, development and production of optical components. With application potential in many areas, including LED lighting, sensors, and automotive lighting.

These innovative optics provide luminaire manufacturers with new design options, including miniaturization and superb functionality often unattainable with classic solutions, whilst enabling material and energy savings. In addition to its own serial products, IQS NANOPTIQS also offers the development and production of new customized optical solutions.

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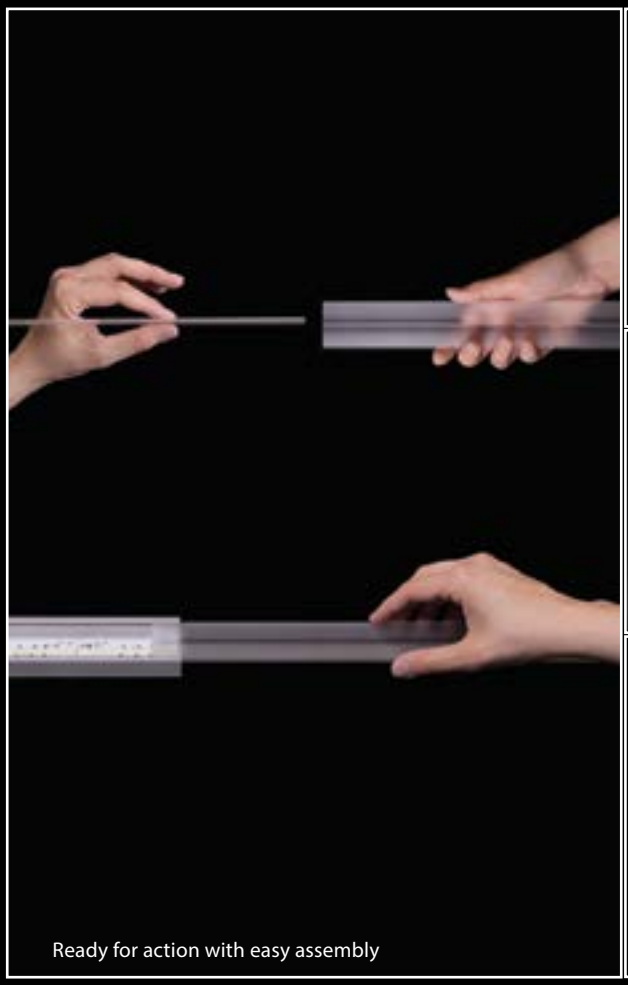
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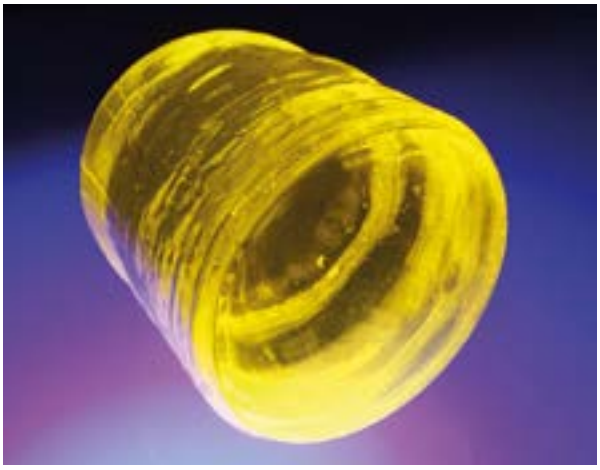
A WORLD WHERE UNUSUAL MATERIALS IMPROVE THE QUALITY OF LIFE

The Turnov Crytur Company is one of the few purely Czech technology companies with a large share of their own development and innovation. The company follows a long tradition of crystal growing and processing and today has a unique combined know-how and state-of-the-art technological background for the development and production of opto-electronic units for applications that remain hidden from what we see in everyday life.



Single crystals, which are grown here in precisely defined environment, are the key component of a large part of the company's production. These crystals serve either as a source of laser radiation, as scintillators or as an optical/structural element. While lasers are quite imaginable nowadays, what exactly is a scintillator? Simply put, scintillation crystals convert invisible ionising radiation into visible light – so, for example, if we direct X-rays into the scintillator, then such a crystal will start shining. Light generated by the crystal can then be detected by light-sensitive sensors such as a photodiode or a photomultiplier which provide the electronically processed signal necessary for data or image output.
It is the scintillators that form the heart of modern opto-electronic units. These products are also mounted in the clean-room environment in Crytur, and in addition to crystals, very precise mechanical (metal, ceramic or plastic), parts and electronic components are also needed for their proper functioning. Crytur does not buy these parts outside, but manufactures them so that the final product is as efficient as possible. This creates top-of-the-line small series products, through which we, for example, obtain images in electron microscopy or receive detailed information on mineral deposits during geological exploration. Crystal-based detectors contribute to faster and more accurate quality control in the food industry or provide data for evaluating the quality of microchips in the semiconductor industry. Scintillation crystals are also used in scientific research. Some detectors used for particle research at CERN's research facilities are partly made of rings composed of scintillation crystals, and other detectors being built will not be able to provide scientists with the necessary data without a large number of precisely machined crystals. One can state without exaggeration that the crystalline materials and detection units that leave Crytur, in a hidden and unobtrusive way contribute to improving the quality of life around us.
The market in which Crytur operates provides a constant space for innovation, not only in the field of detection, but also in a much more civilian field – in lighting technology. Light sources and modules that use a single crystal as an element to change the colour of light will possibly represent a fundamental innovation in the development of light sources. They make it possible to create smaller and more compact light sources based on LEDs and laser diodes, thus pushing the boundaries, for example, in high power spotlights or projectors.

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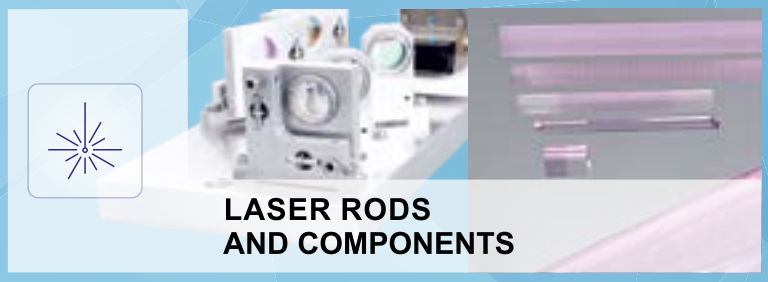
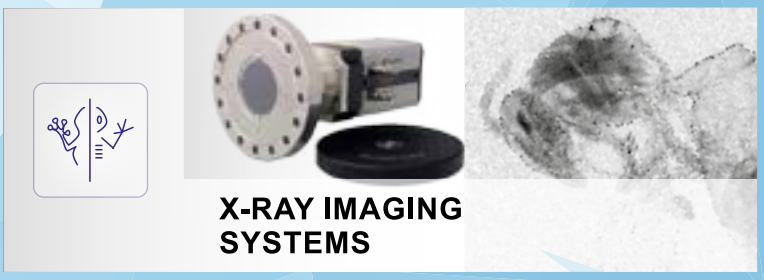
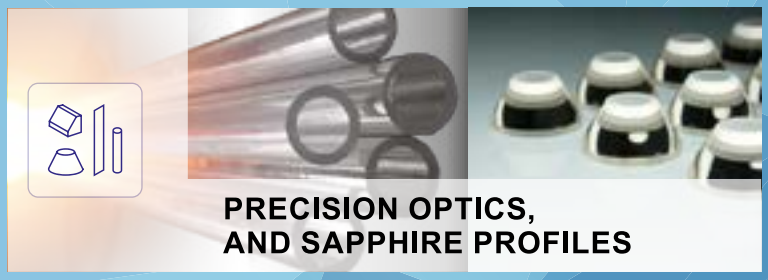


LASER RODS AND COMPONENTS



X-RAY IMAGING SYSTEMS



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INTEGRATED
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FOR APPLIED RESEARCH IN FUTURE

The Association of Research Organisations AVO, founded in 1990 with the aim to bring together institutions from various fields concerned with applied research and experimental development, has become an important establishment. Its principal aim is the advancement of Czech applied research and development as an indispensable source of knowledge and innovation for the needs of Czech industry, agriculture, construction and other sectors.

AVO´s extensive membership base with a number of experts in various fields makes it possible for Association representatives to participate in the councils and working groups of research programmes (especially the Ministry of Education, the Ministry of Industry and Trade, the Ministry of Agriculture, the Technological Agency of the Czech Republic), the Council for Research, Development and Innovation and its commissions and in different valuation committees. AVO collaborates closely with the Czech Technological Agency and its members are represented in commissions and councils of a number of programmes (TREND, NCK, ZETA, etc.). For several years, its cooperation with the Czech Academy of Sciences (CAS) has been realised in the framework of an AVO and CAS working group. The Association also has its representatives among members of the CAS Academic Assembly, and it collaborates with several CAS institutes, especially the CAS Technological Centre. It also has close contacts with the Engineering Academy and several universities, and the Confederation of Industry and the Czech Chamber of Commerce.

MEMBERSHIP SERVICES

The Association provides wide-ranging services to its members. Its active services are offered to the entire membership base as mentioned above, with focus on the enforcement of measures aimed at the creation of a suitable environment for the maintenance and development of applied research in the Czech Republic. As regards its specific services to individual members, their greater part concerns consulting in the realisation of research and development projects. The Association has created a publicly accessible database of Czech applied research institutions, which it manages. It practically supports networking between various research and development workplaces in the Czech Republic and it organises professional seminars and conferences for its members and also non-members, acquainting them with the latest achievements in research. The Association also mediates the participation of its members in domestic and foreign exhibitions and trade fairs with the aim to present and popularise the results of Czech applied research.

THE ASSOCIATION TODAY AND TOMORROW

Over the past 30 years, the Association of Research Organisations has gained much knowledge and experience in how to do things still better. Its long-term priority is the maintenance and development of applied research and development in the Czech Republic, whose important role in a competitive economy and successfully developing society is not adequately appreciated. Currently AVO has some 80 members with more than 7 000 employees engaged in the area of applied research and development.

AVO actively supports bioeconomics and transformation towards sustainable production. AVO is a member of the national BIOEAST HUB CZ (www.bio-hub.cz), an association of stakeholders striving for the support of bioeconomics and the use of opportunities offered by the European Green Agreement. The Czech national BIOEAST HUB CZ is the first of its kind in the BIOEAST Central and East European area. AVO members are actively involved in pilotage and workshops offering expert consulting, whereby AVO supports the active involvement of its members in the field of bioeconomics, which is an opportunity for economic restarts related to the covid-19 pandemics. AVO is developing a new business model in the field of bioeconomics for the support of small and medium-sized enterprises.

An important role in AVO´s life in the past few years has been played by projects especially in the field of popularisation and propagation of research and development, in which AVO has been a partner. In April 2019, AVO successfully completed is project Cooperation – Technological Platforms in the framework of the Business and Innovation Operational Programme (OP PIK), on which it worked from 2016. Its continuation is the project Platform AVO+, whose main output is roadmaps of applied research in two key areas – 14.0 and bioeconomics for defining areas and directions that will support the virtualisation of products and technologies and the development of software solutions, making possible transition to 14.0 in the conditions of small and medium-sized enterprises, and the support of environmentally friendlier production. AVO will continue its cooperation with the platforms EuMaT

and Manufacture, and the European Technology Platform for the Future of Textiles and Clothing.
The Association of Research Organisations currently participates in several international projects, including the INERREG CENTRAL programme in support of the implementation of the Industry 4.0 concept in the conditions of small and medium-sized enterprises. AVO participated in the INNO PROVEMENT international project supported by the INTERREG EUROPE programme, in which the Ministry of Industry and Trade is also taking part.
AVO is involved in a consortium led by the Mechatronic Cluster (Business Upper Austria), which prepared a project for the latest INTERREG CENTRAL call focused on Industry 4.0.
As a partner, AVO participates in the EURIPIDES2 2017 project. The recipient of the support is BIC Ostrava. The object of the project is the promotion of new international cooperation projects in research and development and the involvement of Czech research teams in international consortiums under the EUREKA programme. Their aim is to make the industrial public better informed and to support potential Czech experts in their efforts to participate in the EUREKA and EUROSTARS and cluster projects. Among them, special attention is focused on the EURIPIDES2 cluster project concerning research and development in the field of intelligent electronic systems. In the framework of the project, AVO has organised a number of information events, e.g. the "EURIPIDES Consultation Day" at the International Engineering Fair in Brno.

More at www.avo.cz

Bridge between Research and Practice

"AVO is and also wants to be in future a component which suitably and efficiently supplements the structure of institutions in the area of research and development in the Czech Republic with quality applied research, helping to build a bridge between the creation of knowledge and its practical use. Czech research organisations have achieved such good results that they can assert themselves even on the highly competitive European market, and AVO wants to maintain its position as a representative of research organisations focused on applied research and development and a supporter of innovative firms. We want to support a rightful environment and forthcoming and simple legislation that will serve the competitive abilities of the Czech Republic, and not partial interests and lobbyists," says Libor Kraus, President of AVO. "I personally am persuaded that the Association has built a firm place for itself as a representative of applied research pursued especially by private companies. AVO has joined efforts to support mainly small and medium-size enterprises, which it wants to help in these complicated times, also with its participation in international and national projects," Vice-President Jan Nedělník adds.

Photo: © AVO archives

AVO

AVO
PLATFORMA+

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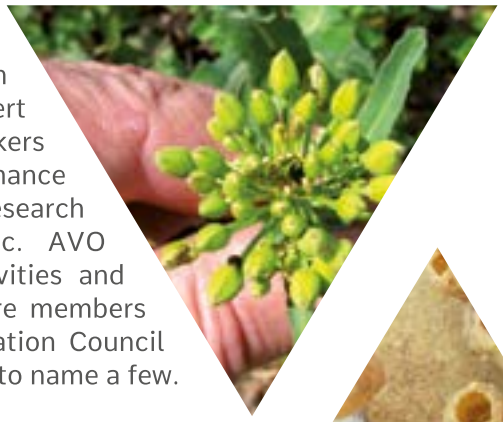
Evropský fond pro regionální rozvoj
Operační program Podnikání
a inovace pro konkurenceschopnost

MINISTERSTVO
PRŮMYSLU A OBCHODU

ASSOCIATION OF RESEARCH ORGANISATIONS (AVO) **PROFILE**

AVO was established in 1990. AVO's mission is to utilise the research results and use the full potential of applied research to support the competitiveness of the Czech Republic as a country. The seat of AVO is in Prague. AVO members are located in all regions of the Czech Republic and are based mainly in Engineering, Heavy Industry, Agriculture, IT development, Life Sciences, Chemistry, Social Sciences, and Health Care.

AVO has been actively **supporting applied research**, direct involvement of entrepreneurs (with a focus on SMEs) in research projects and programmes. AVO is an expert organisation providing consultancy services for policy makers with the focus on research and development performance measurement, direct and indirect public support of research and development activities in the Czech Republic. AVO members are also actively involved in the technology transfer activities and joint research activities with business sector. AVO representatives are members of various expert panels and committee like the Research and Innovation Council of the Czech Government or the committee of the national RIS strategy, to name a few.



AVO is a member of the BIOEAST HUB CZ (www.bio-hub.cz), that is the first national BIOEAST HUB in the BIOEAST region established in line with the BIOEAST Initiative Governance paper and with the support of the Ministry of Agriculture CZ. The BIOEAST HUB CZ is coordinated by the Agriculture Research Troubsko (www.vupt.cz) that is actively developing a few H2020 projects. AVO participates in the development of the national bioeconomy strategy, promotes the implementation of bioeconomy in the Czech Republic and also BIOEAST region. AVO supports technology transfer of new innovative bioeconomy solution and also is developing new bioeconomy business models.

WE WILL DO OUR BEST TO ENHANCE YOUR PROJECT!

As AVO represents the Czech research capacities and currently involves about 80 institutions and 8000 experts involved in R&D – AVO gathers experts, experience, and ideas. We are involved in projects focused on financial support of pree-seed activities and commercialisation of research and development results. AVO is developing a few projects financed both by the national and also EU funds focused both on the implementation of i4.0 for SME (Boost4BSO, www.interreg-central.eu/Content.Node/Boost4BSO.html), development of new bioeconomy business model (BE IN, www.avo.cz) or new innovative tools to support R&D activities and partnership between research and business (www.mapavin.cz). AVO members are developing the following H2020 projects – BIOEASTsUP (www.bioeast.eu), Formplanet (formplanet.eu) or EUCLEG (www.eucleg.eu), to name a few.

AVO is ready to participate in your project team! Please get in touch

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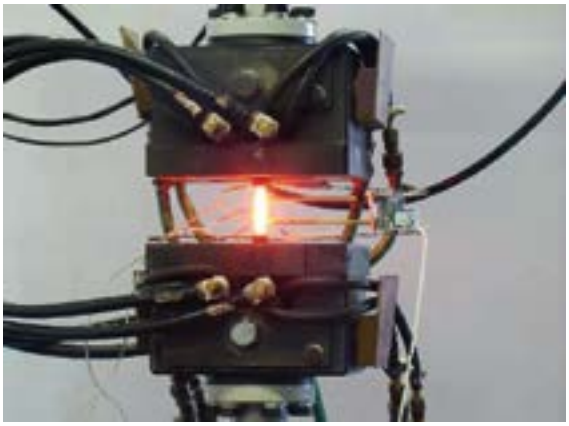

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PRAGUE REGION

Prague is one of the most attractive and successful regions in Central Europe. It represents a relatively dynamically developing and successful region, repeatedly ranked by Eurostat among the ten wealthiest regions in the European Union (measured by gross domestic product per inhabitant). In terms of the number of inhabitants, it is the 15th largest city in the EU, and, regarding area, Prague ranks among medium-sized cities in the EU, with an area of 496 sq. km.

Prague is an important cultural and artistic hub, its centre with an area of 1 106 hectares is included in the UNESCO Cultural Heritage List, which makes the city one of the most sought-after tourist destinations in the EU. In size, the city is the smallest region, while the number of its population is the second largest, with more than 15 % of its inhabitants being foreigners. The Region has the lowest unemployment rate on a long-term basis and the highest wages. Housing construction in Prague is the second highest, after the Central Bohemia Region. Altogether 113 000 students are enrolled in Prague´s universities, which accounts for 39 % of all university students in the Czech Republic. Prague´s collective accommodation facilities, with 93 000 beds, have the highest capacity of all the country´s regions.

ECONOMIC POTENTIAL

Prague generates about one-quarter of the country´s gross domestic product (GDP). Higher GDP creation rate is typical of capital cities, due to a number of factors, for example: a large proportion of people working in Prague and generating value added there, are not resident in the capital, most of the central bodies of the public and private sectors are concentrated in the city and a number of firms having their headquarters in Prague are not registered there, which also includes foreign affiliations of supranational companies. The indicators of net disposable income of households, i.e. values the households have for saving or consumption, however, show that Prague exceeds the per capita national average much less than is the national average. Prague is an economy oriented on services. Since the year 2000, services have been creating more than 80 % of the capital´s value added, with most of the employed people in the city (81 %) working in services. Prague is the hub of all the country's motorway routes and is also an important international railway junction. Prague Main Railway Station has undergone a total reconstruction, which was completed in 2011.

Passenger and air freight transport is operated mainly by Václav Havel Airport. At the beginning of 2021 the airport was prepared for a gradual comeback of airlines and passengers and the operation of direct air flights to more than twenty destinations. The operation of further direct flights will depend especially on the development of the epidemiological situation, which will decide about the potential release of travel restrictions. An important role will also be played by the extent and speed of vaccination in Europe and by uniform flying rules. In 2020, the airport operated 54 163 takeoffs and landings. The busiest month of the year 2020, taking into account the outbreak of the COVID-19 pandemic, was January, when altogether 1 051 028 passengers were processed, a historic record for that month. The largest number of passengers used regular flights to and from the UK, France, Italy, Russia, and Spain. The most popular destination in 2020, as in previous years, was London, with flights to and from all its six international airports, followed by Amsterdam, Paris, Moscow, and Frankfurt.

According to an analysis made by KPMG for the Prague Convention Bureau in 2017, the congress industry accounts for 15 % of Prague´s tourist traffic. At the same time, however, it is a sector affected most by the crisis provoked by the Covid-19 pandemic. According to the latest study of Economic Impact, company revenue in 2020 may fall by more than CZK 20 billion. This is 74 % less than the expected sum in normal conditions. The congress industry characterised by great international overspills was subdued already when the first information about the spread of the new virus appeared in other countries. The activities affected first by the necessary measures taken by the governments of most countries were mass get-togethers, including business ones. Prague congress industry generates around 80 % of the performance of the entire Czech Republic in the international association event sector on a long-term basis according to the International Congress and Convention Association (ICCA). In addition, before the outbreak of the crisis, Prague´s congress industry was on the rise and the Czech capital held its position among the world´s TOP 10 congress destinations for several years running. In 2019 it placed ninth ranking among destinations such as Paris, Berlin, Barcelona, London, Vienna, and Singapore. In addition, Prague is showing a steady increase in the number of events. In 2019, the number of conferences held in collective accommodation facilities once again broke the record, when altogether 5 668 events were held there, 25 % more than in 2008, according to the Czech Statistical Office, which is the highest number since 2009. Prague´s congress industry is a sector not only of key economic importance, but also of great social and scientific significance for the country and its people. Considering the fact that, according to the long-term statistics of Prague Convention Bureau, more than 50 %

Photo: © CzechTourism archives, Author: COEX.cz

Prague

of the events taking place in Prague are international undertakings, the further development of the congress industry will also depend on the situation in other countries. Another sector strongly affected in 2020 was the functioning of hotels and restaurants. Altogether 1.1 million guests were accommodated in collective accommodation facilities in the 1st quarter of 2020, 27.4 % less than in the same period the year before (-417 000 guests). Accommodation facilities in the other parts of the country also showed a decline (12.7 %). It can be said that the decline in the number of visitors is caused by epidemiological measures in force since March and restricting the provision of accommodation services. In comparison with the previous quarter, i.e. the 4th quarter of 2019, the decline was 46.5 %. Prague is the most visited destination in the Czech Republic. In the 1st quarter of 2020 altogether 36 % of all registered visitors to the Czech Republic were accommodated in Prague´s accommodation facilities.

PRAGUE IS ALSO FOCUSED ON INNOVATION PROJECTS, SUCH AS:

VZLÚ PRAGUE SCIENTIFIC AND TECHNICAL PARK

The VZLÚ Scientific and Technical Park in Prague focuses on the development of the aviation, space, defence and safety industries and the transfer of research and development results to practice; its services could be found useful by companies concerned with transport vehicles, power engineering, and construction. More at www.vzlu.cz/cz/ spolecnost/ vedeckotechnicky-park-vzlu-praha/vedeckotechnicky-parkvzlu-praha. The Czech incubator increasingly attracts foreign projects, for example from Switzerland, Slovakia, and India. The main attraction for them is the INNOVATION BIOMEDICAL CENTRE ÚEM AV CR. It is a business incubator for innovation firms concerned with biomedical sciences, and a centre for the support of the competitiveness of start-up firms concerned with Biomedicine. More at bioinova.avcr.cz/ o-nas/ibc.html.

ESA BIC Prague

Suborbital rockets, small drones, smart applications for pesticide sprayers, superlight bikes, X-ray apparatus for works of art and mobile applications for anglers – these are examples of products and services start-ups have entered in the ESA BIC space incubator in the Czech Republic. Twenty-five start-ups passed through the incubator in 2020. Twenty-one start-ups are concerned with the use of space technologies, four are enlarging the use of their products in the space industry. The technologies and areas they are concerned with include Earth observation, satellite navigation, space technologies, advanced materials and technologies, drones and simulation software. One of the start-ups which entered the ESA BIC affiliation in Prague in 2020 is Varistar, which analyses current data from the European Sentinel satellites and the American Landsat satellites, which it combines with historical data and information technologies in agriculture and creates maps of potential crops and yields. In this way it contributes to a marked decrease in the ecological burden. Varistar is clear evidence of how space technologies can influence something so “non-universal” at first sight as agriculture. The Czech incubator is increasingly used by foreign projects, for example those of Switzerland, Slovakia, and India. They are attracted not only by the local academic and industrial environment, but also and mainly the presence of GSA and the future EUSPA.

Prague – Václav Havel Airport

Technological Centre of the Czech Academy of Sciences

The Centre is an association of juristic persons – five institutes of the Academy of Sciences and the Technology Management Company. Its part is, for example, is the National Information Centre for European Research, which is a national information consulting and training workplace for EU research and innovation programmes. Another project, the TCK acceleration programme called Business Runway, is the continuation of numerous activities of the Technological Centre in the area of start-up support – operation of incubators. The first firm in the Business Runway programme was the Space Systems Czech start-up, concerned with the development and service of SW solutions for safe critical projects in a number of industrial sectors, such as space applications, healthcare, nuclear equipment or critical engineering. Another accelerated firm in TC is Stratosyst – a young Czech technological start-up in the rapidly developing pseudosatellite segment (Near Space and High-Altitude – HAPS). Using HAPS, the firm wants to offer services to clients in the area of telecommunications, navigation or remote observation of the Earth and outer space. More at www.tc.cz.

Prague Innovation Institute

Its role is to connect education, public space and business in Prague. It is the only centre in the Czech Republic focused on the development of education. Its plan is to support projects in the area of education, power industry, artificial intelligence and creative industry in the capital of Prague. More at www.prazskyinovacniinstitut.cz

The Region and the EU

The capital of Prague is in a different situation than that prevailing in the other Czech regions as regards drawing money from EU funds. Since the Prague Region exceeds the EU average in performance, money from the EU structural funds is provided under conditions other than those applying in the other Czech regions.
In the 2004-2004 programming period, Prague drew support from the structural funds under two programmes:

- Uniform Objective 2 Programme Document (JPD 2) and
- Uniform Objective 3 Programme Document (JPD 3)

JPD 2 focused on investment in transport, the environment, information technology, and support of the development of small and medium-size businesses in the capital, while JPD3 was an umbrella programme in the area of education, employment, and social integration. In the 2007-2013 period, two programmes were relevant for the projects: Prague – Adaptibility Operational Programme (OPPK) and Prague – Competitiveness Operational Programme (OPPA). OPPK covered projects focused on transport, the environment, scientific and business centres, and support of small and medium-size enterprises, while OPPA concentrated on the development of human resources in the area of education with the aim to help handicapped people find employment and also to further the development of secondary, higher-level technical and university education in Prague. The Prague – Growth Pole of the Czech Republic Operational Programme (OPPPR) for the 2014-2020 programming period was conceived as a multifund programme, i.e.intended to make possible project financing from both the European Fund for Regional Development and the European Social Fund. Thus, Prague could support both "hard" investment and "soft" non-investment projects. Total financial allocation amounts to EUR 403 million, i.e. approximately CZK 11 billion. Subsidies from this programme significantly contributed to the development of science and research, sustainable mobility and energy saving and supported social inclusion and education.

USEFUL CONTACTS:
Prague City Council – www.magistrat.praha.eu
Portal of the Capital City of Prague – www.praha.eu
Tourist Portal of the Capital City of Prague – www.praguewelcome.cz
Economic Chamber of the Capital City of Prague – www.hkp.cz

Photo: © Václav Havel Airport archives; © CzechTourism archives, Author: Michal Vitásek

Kutná Hora

CENTRAL BOHEMIA REGION

With its geographic position in the central part of the Czech Republic, the Central Bohemia Region forms a ring around the territory of the capital city of Prague, which is its only internal border. A specific feature of the Region within the regional system is the fact that, within its centre, it encloses the capital, which is a separate region. The Central Bohemia Region does not contain its regional city and the Region's administrative centre does not lie within the territory of the Region. Together with the capital of Prague, the Region forms a natural agglomeration linked together economically, historically, and culturally.

The Region is divided into 12 districts with 10 district towns. The largest in the area is the District of Příbram (15 % of the regional area), and the smallest is Prague-West (5 % of the regional surface area). There is a large number of historically valuable monuments and sights and several protected landscape areas within the territory of the Central Bohemia Region. The greatest concentration of historical monuments can be found at Kutná Hora (St. Barbara Cathedral, the Italian Court, Hrádek, housing the Museum of Mining, the Ossuary, entered in the UNESCO World Cultural Heritage List). Kolín is another town, besides Kutná Hora, figuring in the Czech list of urban historical reservations in Central Bohemia. The most famous castles in the Region are Karlštejn and Točník (Beroun District), Křivoklát (Rakovník District), Český Šternberk (Benešov District), and Kokořín (Mělník District).

ECONOMIC POTENTIAL

In the Central Bohemia Region, the economy is growing at a faster rate than is the average rate in other EU countries. In addition, the Region has been one of the economically most advanced regional territorial units in Central and Eastern Europe on a long-term basis. Developed agricultural and industrial production is characteristic of the Region. Agricultural production benefits from the excellent natural conditions of the Region's north-eastern part. The Region is especially successful in plant production, including the growing of wheat, barley, sugar beet, and, in suburban areas, the cultivation of fruit, vegetables and flowers. Machine building, chemical, and food-processing are pivotal industries. Besides traditional fields, new and demanding fields and services are being successfully developed. The most important industries in the Region are engineering, the chemical industry, and food processing. The Škoda Auto factory has become an enterprise of nationwide significance. Other industries in the Region are glass and ceramics production and printing. The previously traditional sectors of coal mining, steel production, and the leather industry are on the decline. The intensity of economic activities is heavily influenced by the Region's location and easy access to main

transport corridors. In the Central Bohemia Region, this is especially true of places in the vicinity of the capital with connections to main roads, especially the highways. Water is another mode of transport: some three-quarters of the Labe-Vltava waterway passes through the Region's territory and is used for both domestic and international transport. The Region offers a wide range of investment opportunities. Industrial parks make it possible for investors to realise their new projects in either vacant or partly occupied parks. There are several industrial parks in the Central Bohemia Region. A strong position in the Central Bohemia Region is held by the automotive sector, owing to the presence of two major car manufacturers, Škoda Auto and TPCA. An important investor in the Region is LEGO Production s.r.o., which employs about 2 500 workers in its plant on the outskirts of Kladno. In 2013, Amazon company opened a Return Centre in Dobrovíz and, in 2015, it launched a large Distribution Centre there, occupying an area of 95 000 sq. m. Another company expanding its activities is Mars Wrigley Confectionery based in Benešov, Central Bohemia. In 2018, the factory celebrated the 20th anniversary of its existence. Many investment parks benefit from favourable locations near international highways and main roads. These parks include, for example, Průhonice and Čestlice-Nupaky Industrial Parks (both near the D1, which connects Prague and Brno), Rudná-Nučice (near the D5, which runs from Prague through Plzeň to Germany), and Hostivice-Jeneč and Tuchlovice. Many parks have been established in the vicinity of larger towns such as Kladno, Slaný, Kutná Hora, Příbram, Nymburk, and Rakovník. The Central Bohemia Region is a partner in large scientific projects – the ELI (Extreme Light Infrastructure) and the Biotechnological and Biomedicine Centre of the Czech Academy of Sciences and Charles University based in Vestec (for example, in April 2020, a team of scientists in the Biocev Centre promptly introduced methods enabling a reliable detection of the SARS-CoV-2 virus). ELI is a centre focused on the use of laser technology; its components are four lasers. A vast nuclear technology base is in operation at Řež near Prague. Its SUSEN project has greatly strengthened presumptions for the inclusion of the Czech research and development technological community in the development of Generation IV nuclear and fusion reactor technologies. Two business incubators, Nymburk (www.inkubator-nymburk.eu) and "VTP Zlatníky–Hodkovice", have been established with the assistance of the Central Bohemia regional authorities. Other scientific and technical parks being prepared or already operating in the Region include, for example, the Březno u Mladé Boleslavi technological park and incubator, VTP SVÚM (Čelákovice), Scientific and Technical Park Mstětice, Scientific and Technical Park Roztoky, Roztoky Park of Science, TECHNOPARK Kralupy (VŠCHT), Prague Innovation Centre (Innocrystal, Hodkovice), Engineering Scientific and Technical Park Buštěhrad, CEROP Kolín, Applied Research Centre Dobříš, UVR Mníšek pod Brdy, and VTP and PI Řež.

Photo: SUSEN archives

THE REGION AND THE EU

The Region´s cooperation with European and non-European regions takes place especially in the fields of tourism, regional development, innovation technologies, investment opportunities, culture, education and sport, and to a lesser extent in the area of social sciences. Very important for the local government are meetings and information exchanges with partner regions, which bring both sides opportunities to get mutually interesting incentives for their everyday work. The Central Bohemia Region is therefore promoting, on a long-term basis, foreign relations and international cooperation with European and non-European regions. The Central Bohemia Region has signed several Memoranda of Cooperation. Its first international agreement was signed in 2001 with the French region of Burgundy. In 2003, a four-party statement on cooperation was signed between the Central Bohemia Region, the Burgundy Region, the Opole Voivodeship in Poland and the German Federal State Rhineland-Palanitate. At the time of its founding this Four-Party Agreement was the first project to associate participants from full and candidate EU members. In recent years partnerships and cooperation agreements were set up with the Swedish region of Västra Götaland, the Italian Venice Region, the Mazowieckie Voivodeship in Poland, and the Russian Astrakhan Region, and an Agreement on a Future Agreement was signed with the Moscow Region. In 2013, a partnership agreement was concluded with the Bratislava Self-Governing Region.

In September 2015, an Agreement on the Establishment of Friendly Regional Relations, a Memorandum on Exchange and Cooperation in the Area of Healthcare and a Memorandum on the building of friendly cooperation between the Regional Development Section of the Central Bohemia Region and the Tourism Administration of Sichuan Province were signed in China. On the basis of previous cooperation, a Memorandum of Cooperation was signed with the Italian Marche Region in 2016. Also signed in 2016 was a Memorandum with Grodno Region in Belarus. The Memorandum on cooperation between the Central Bohemia Region and Sichuan Province was enlarged with the addition of a plan for the development of relations between the two regions in the next three years. The document was signed in May 2015. A partnership agreement with the Lower Silesia Voivodeship in Poland was signed in September 2018, and in 2019 a partnership agreement was concluded with the Kiev Area (Ukraine). There, the Region cooperates, for example, on projects such as Innovation and Smart Solutions, cooperation in the area of business and development and in sharing the cultural heritage.
At the beginning of 2019, communication was started with representatives of Pest County, which, the same as the Central Bohemia Region, encircles the capital city. In November 2019, a delegation of the Region visited Pest County, where it discussed possibilities of cooperation in the areas of regional development, tourism, innovation, brewing and education. In 2020 the Central Bohemia Region organ-

Škoda Museum Mladá Boleslav

ised a historically first meeting of leading representatives of the V4 regions.
Another form of partnership is the Capital Region Exchange project, whose members are Brandenburg, Helsinki-Uusimaa, Lower Austria, and the Kiev region. In its framework, the Region focuses on digitalisation and power engineering. Worth mentioning is the signing of a cooperation agreement between the Chinese Zhejiang Province and the Association of Czech Regions, signed in 2016. The Central Bohemia Region is a member of the European Alliance for Apprenticeships (EAfA), which has set itself the aim to propagate and develop apprenticeships training in the EU.
The Central Bohemia Region is the only one in the Czech Republic to have obtained a subsidy (EUR 2.4 million) for financing the services provided under the Smart Central Bohemia Region (Smart CEBOREG) project with the European Investment Bank (EIB) in the framework of the ELENA financial instrument comprising the preparation of energy saving projects (involving 120 buildings in the Central Bohemia Region) using the Energy Performance Contracting (EPC) method. The realisation of the partial projects is planned for the years 2023-2026 with the use of subsidy sources from the Environment Operational Programme in the framework of the 2021-2027 programming period. In 2020, the Region successfully completed 146 projects worth CZK 3.4 billion. This included 39 projects in the area of transport for the construction, reconstruction and modernisation of roads and 66 projects in the area of education, which cost CZK 717 million in the framework of IROP, OP ŽP, and Erasmus programmes. The most important projects are the VBT Slaný grammar school – modern barrier-free spaces for teaching, vocational and industrial schools and the commercial academy in Čáslav – modernisation of workshops and classrooms and reducing the energy intensiveness of several schools. The Central Bohemia Region has further completed 41 projects in the areas of social affairs, the environment and culture. Currently it has in hand 522 projects with estimated costs of CZK 15.4 billion. One of the financially most important projects in the area of social services and the environment is the modernisation of household heating sources. In education, the Region has prepared the implementation of its new Central Bohemia Educational Action Plan.

USEFUL CONTACTS:
Central Bohemia Regional Office – www.kr-stredocesky.cz
Central Bohemian Regional Chamber of Commerce – www.khkstrednicechy.cz
Website about Region – www.centralbohemia.eu

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PLZEŇ REGION

The Plzeň Region is the Czech Republic's third largest in terms of surface area. Since its inception Plzeň (Pilsen), a city founded in 1295 by order of King Wenceslas II of Bohemia at the confluence of the rivers Radbuza, Mže, Úhlava, and Úslava, has been the natural centre of the Region. The industrial and technological development of the city began in the middle of the 19th century, and step by step it became one of the most important cities in the country. At present, Plzeň is the fourth largest city in the Czech Republic. It has about 172 000 inhabitants, more than 30 % of the population of the Plzeň Region. Besides Plzeň, the role of district centres is played by the towns of Klatovy, Domažlice, Tachov, and Rokycany. Given the low population density, also smaller towns, such as Sušice, Stříbro, Plasy, Kralovice, Horšovský Týn, Přeštice, and Nepomuk play an important role.

The Region is one of the economically most developed territories in the Czech Republic, combining industry and agriculture, with vast belts of forests stretching across the border mountains. Forests cover 40.4 % of the Region´s total surface area. From this point of view the territory of the Region can be divided into two parts: the Plzeň industrial agglomeration and areas formed by the Šumava and Bohemian Forest Mountains, which are attractive especially for tourists. Farmland accounts for 49.3 % of the total surface area of the Region, 66.9 % of which is arable land. As a part of Western Bohemia, the Plzeň Region has the 5th highest GDP per capita in the country. It is the third largest region in the Czech Republic, and the ninth most populous, accounting for 5.4 % of the country's total population. A great amount of the area's highly skilled workforce comes from this region, especially thanks to the University of West Bohemia in Plzeň, which provides 11 000 students/ year with a wide variety of in-depth study possibilities, primarily in the machine-building and electrical engineering sphere.

ECONOMIC POTENTIAL

One of the traditional industries of the Plzeň Region is engineering, building on the history of the ŠKODA Company, today represented by the companies ŠKODA

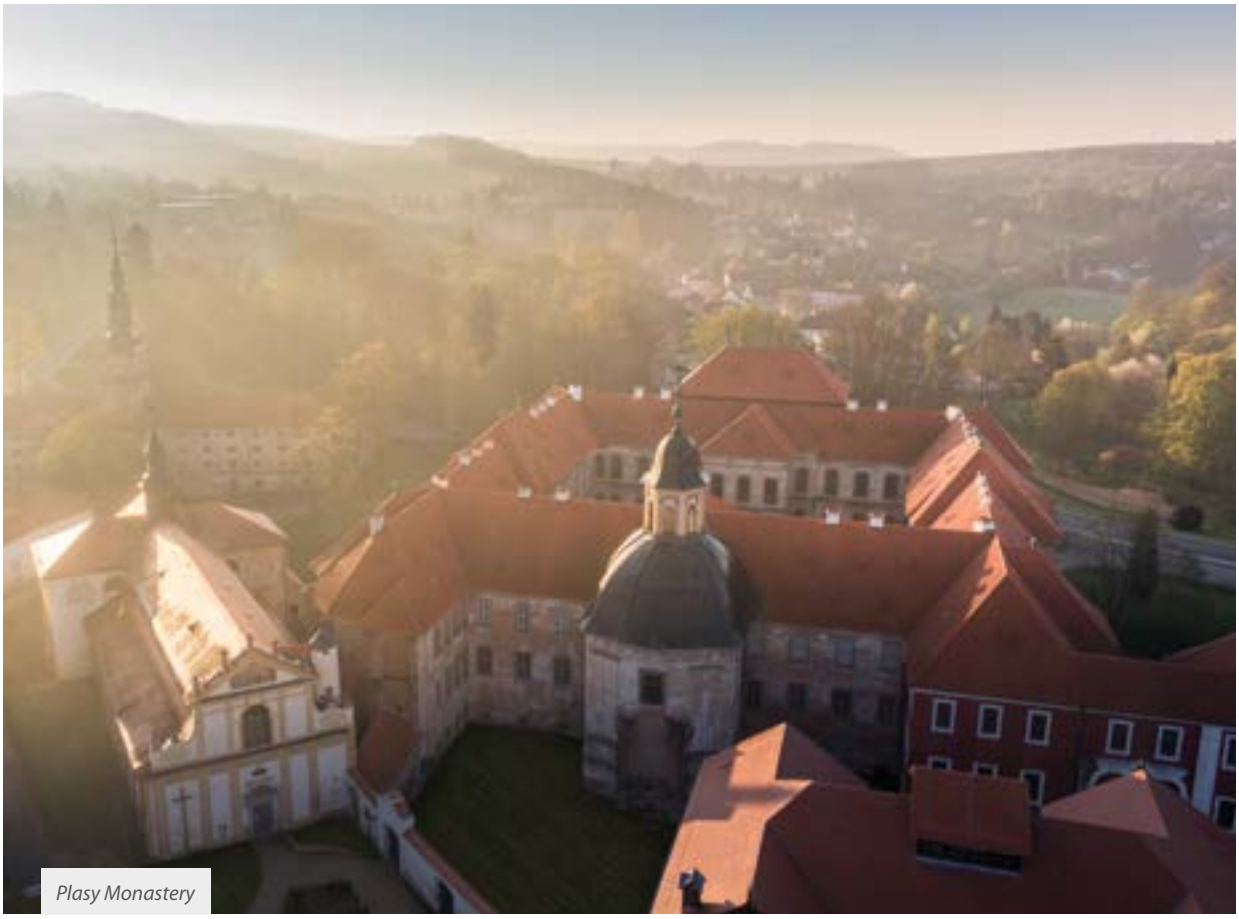
Kozlovna Pub

Photo: Plzeňský Prazdroj archives; pixabay.com

Plzeň

TRANSPORTATION, ŠKODA MACHINE TOOL, and GTW BEARINGS. Another important sector is the food industry with its rich brewing tradition and with Pilsner Urquell at the forefront. The Region´s other traditional sectors are power engineering, with the firms Doosan Škoda Power, BRUSH SEM, and ŠKODA JS. Another industry with a long tradition in the Region is the building materials and ceramics industry, represented by LASSELSBERGER in Chlumčany. The Region´s strategic position is mainly responsible for the development of the automobile sector on its territory, with the companies VIZA AUTO CZ, Shape Corp. Czech Republic, MBtech Bohemia, JTEKT Automotive Czech Plzeň, International Components Group, Faurecia Plzeň, IDEAL AUTOMOTIVE Bor, Eissmann Automotive Česká republika, KDK Automotive Czech, and GRAMMER CZ. Other important industries in the Region are electrical engineering, represented by the firms ŠKODA ELECTRIC, Daikin Industries Czech Republic, and Panasonic AVC Networks Czech, and the aviation and space industries with the companies ZODIAC GALLEYS EUROPE, Aerotech Czech, recision Castparts CZ and Workpress Aviation. The Plzeň Region, together with the South Bohemia Region, form a territorial unit, NUTS II Southwest. The Region is the seat of more than one hundred scientific, research and development groups created by the Region´s university faculties, institutes and scientific workplaces. They include, for example, the Regional Technological Institute (RTI), the NTIS Research Centre – New Technologies for the Information Society, the Regional Innovation Centre for Electrical Engineering (RICE), New Technologies – NTC Research Centre, and the Biomedical Centre. In addition, a number of private institutions with a long tradition and transnational ties, such as COMTES FHT and the Plzeň Research and Testing Institute, concern themselves with top research and development. For several years, the City of Plzeň has been working on the improvement of the life of its inhabitants using smart technologies. Under the Smart City Plzeň programme, the city has launched or has prepared dozens of projects in the areas of environmental protection, transport, information technologies, education and safety and has become one of the pioneers of the Smart City initiative in the Czech Republic.

Demand for industrial and logistic real property in the Plzeň Region is at about the same high level as in Prague and its environs. The Plzeň Region has long been a much sought after locality, attracting especially German companies. Thanks to its good quality transport infrastructure and a sufficient supply of skilled labour, the Region has become an industrial base especially for German car factories. A large part of the demand for industrial and logistic real estate comes from e-commerce firms, besides the automotive industry. E-shop operators find West Bohemia advantageous, mainly for its suitable geographical position at the crossroads of European distribution channels. Investors wishing to start or enlarge production prefer to locate their businesses in industrial parks along the



Plasy Monastery

D5 motorway, where they find sufficient vacant surfaces. These surfaces are mainly used for the location of warehouses, manufacturing enterprises, development centres and logistic service facilities. Industrial parks play a key role in programmes to attract foreign investors to Plzeň and the Plzeň Region. The Plzeň Borská pole city industrial park covering an area of 105 ha is located in the south-western part of the city near the premises of the University of West Bohemia in Plzeň and the ŠKODA industrial park.

Plasy Monastery

Another industrial park is CTPark Plzeň, covering an area of 30 ha. It is situated west of Plzeň Borská Pole Park and is easily accessible from the D5 motorway and by individual passenger and public transport from the city centre. A number of major international companies have located various types of business operations in the area. The park is ideal for companies locating high-tech, R&D and product development centres in the Region. CTPark is a leading project in the Region, oriented towards hi-tech companies. It locates modern logistic centres and rental halls for light industry production, services and trading. There are also warehousing companies and domestic and international freight haulage and distribution firms. One of CEE's most successful business parks, CTPark Bor is strategically located in Western Bohemia, 50 km from Plzeň's city centre, with excellent highway connectivity and only 15 km from the German border. The routes and important trade paths lead through not only Germany, but even further, to Italy. It is an ideal location for manufacturers in the auto supply chain and for logistics providers in e-commerce serving the Czech and/or German markets.

A great advantage of the Plzeň Region is the ample supply of skilled labour. The Region offers a wide range of secondary institutions in the branches of electrical, mechanical, and civil engineering, as well as in transport. Another source of skilled workforce is the University of West Bohemia in Plzeň (UWB – ZČU in Czech). The University seeks collaboration with the business sector and targets the specialisations of its branches of study so as to meet the demands of the labour market. UWB has

Blovice Chateau

nine faculties (e.g. Mechanical and Electrical Engineering, Economics, Applied Sciences). In 2016, the University opened a new institution, the Regional Innovation Centre for Electrical Engineering (RICE). The University has hundreds of projects to its credit, which have greatly contributed to the development of new technologies or their innovation. Another specialisation in which it has achieved good results is social sciences. Another interesting project of the University is the development of the CIIRC RP 95 respirator. Its production has increased from the initial several hundred to up to the current 10 000 pieces a day. The respirators are intended to protect especially the medical staff from the new Coronavirus infection. Standing at the head of the project are scientists of the Czech Institute of Informatics, Robotics and Cybernetics (CIIRC) of the Czech Technical University (CVU) and experts of the Faculty of Electrical Engineering of the University of West Bohemia in Plzeň. The aim of the CIIRC scientists was to develop a respirator that can be made and immediately used anywhere in the world. The intention was to use 3D print in its production with injection of the plastic into moulds enabling large-scale production. According to experts, the respirator has higher protection ability than the FFP3 respirator. Great merit for the development of the key components of the respirator is due to a group of experts of the Electrical Engineering Faculty of the University of West Bohemia and their know-how in the manufacture of the polymer parts of the respirator. They participated in the development of the silicone exhalation valve and the silicone sealing material of the respirator.

THE REGION AND THE EU

Between 2014 and 2020 the Plzeň Region obtained around CZK 30 billion from EU funds. The money went mainly into transport and other infrastructure projects. In their realisation the Plzeň Region uses the Integrated Territorial Investment (ITI) financial instrument. It is an instrument serving territorial development, which makes it possible to solve key problems in the regions in a more comprehensive way. Thanks to ITI the regions can open new bus terminals facilitating passengers changing from trains to buses. In connection with European funds the Region also concerns itself with the future of the Czech-Bavarian programme. Under this joint programme financed from EU funds, the Czech Republic and Bavaria support minor projects of regional importance. Some 120 projects have already obtained support and hundreds of smaller ones have been realised in the area of research, development, innovation, the environment and tourism.

USEFUL CONTACTS:
Plzeň Region Portal – Regional Office – www.kr-plzensky.cz
Municipality of the City of Plzeň – www.plzen.eu
BIC Plzeň – Business and Innovation Centre – www.bic.cz
Chamber of Commerce of the Plzeň Region – www.hkplzen.cz
Regional Development Agency of the Plzeň Region – www.rra-pk.cz

THE PLZEŇ REGION IS AN AREA WITH INNOVATIVE POTENTIAL

The Plzeň Region is an area with traditionally strong industrial players, innovative firms, important university institutions and new research centres. Its fifth position in the Czech Republic in per capita GDP ranking places it among leading regions in economic performance; it also ranks high in the area of education. The proportion of university trained employees is increasing and in the area of research, development and innovation the number of research workers is growing, with more than 60 % of them working in the company sector. Worth mentioning is also the high proportion of export-oriented firms in the manufacturing industry and the high-tech sectors, and the low unemployment rate in comparison with other regions. A great advantage is its geographical proximity to Bavaria, one of the most advanced European regions. This opens up possibilities of cross-border cooperation in research, development and innovation, including cooperation with Bavarian clusters and professional chambers.

THE PLZEŇ REGION'S SPECIALISATION DOMAINS

New materials
Intelligent Production Systems
Smart Mobility
Biomedicine and Technical Equipment in Healthcare

PLZEŇ REGION IN FIGURES

Surface area: 7 649 sq km
Population: 589 900 (at 1 Jan. 2020)
Population in productive age:
378 500 (at 1 Jan. 2020)
Unemployment rate:
3.4 % (at 31 Dec. 2020)

REGIONAL INNOVATION STRATEGY

The Plzeň Region wants to take the best advantage of its innovation potential. This is the aim of the Regional Innovation Strategy for Intelligent Specialisation. The Strategy comprises four domains, in which the Region has good prospects to excel.

THE REGION'S INDUSTRIAL PAST

The Plzeň Region has a more than 150-year long industrial history. The people living in the Plzeň Region are proud of the local traditional firms, which turn out highly specialised products, such as locomotives, tramcars, troleybusses, turbines and other power generating equipment.

TECHNOLOGICAL SOPHISTICATION

Advanced innovative companies using and themselves devising modern technologies are also faring well in the Plzeň Region, besides traditional firms with a history of production. How did this happen? The Region´s industrial traditionand technical experience are at the base of the people´s creatuve potential. The people simply have the innovative potential in their blood.

TOP RESEARCH

The Plzeň Region prides itself of excellently equipped research centres focusing on material research, IT, electronics, engineering and biomedicine. A unique institution in this respect is the Biomedical Centre of the Medical Faculty in Plzeň coming under Prague´s Charles University, which cooperates closely with the Plzeň Teaching Hospital. The University of West Bohemia has its own research centres, which carry out acedemic research and which also cooperate with the private sector. Research work is also cariied out by the private sector, with fewer, but well financed firms.

ENVIRONMENT FOR INNOVATION

The Plzeň Region provides a good environment for research, development and innovation. Support organisations provide expert services and motivate prospective founders to start new, innovative firms, while helping existing ones to grow. The Region also supports the construction of innovative infrastructure.

THE UNIVERSITY CITY OF PLZEŇ

The regional city of Plzeň offers quality higher-learning education at its University of West Bohemia and the Medical Faculty in Plzeň of Prague´s Charles University. Both the city and the Region provide ample opportunities for cultural, sporting, free time and other activities.

More information about the Plzeň Region as an innovation area can be found at www.inovujtevpk.cz, Get Smart profile and LinkedIn profile Smart Pilsen Region.

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SOUTH BOHEMIA REGION

The Region of South Bohemia used to be seen as an agricultural area with developed fish farming and forestry. Industrial development oriented towards manufacturing activities only started to appear in the Region during the 20th century.

With its 10 057 sq. km, the Region takes up 12.8 % of the entire Czech Republic. More than 7 000 ponds, the overall surface area of which today comprises over 30 000 hectares, were built within the Region's territory in the past. A significant part of the Region's border is formed by the state border with Austria and Germany (total length of 323 km). The Region's border character provides opportunities for efficient cross-border cooperation in the area of manufacture, as well as in the area of services, together with the development of the tourist trade, which utilises the overall attractiveness, unspoilt nature, and many cultural monuments of the Region. The Region is an important tourist and recreational area, attracting visitors who come to see its many beauty spots, unspoilt countryside dotted with ponds (Rožmberk, Svět) and to experience the unique atmosphere of its historical towns (České Budějovice, Tábor, Jindřichův Hradec, Český Krumlov, Prachatice, Písek). Exceptional natural wonders can be seen in the Šumava National Park, where the greatest attractions are Boubín and Žofín virgin forests. Those seeking recreation will appreciate stays in the vicinity of Lipno Dam and on the banks of the Vltava River. Of the Region's seven districts, the District of České Budějovice, which is home to almost 30 % of the Region's inhabitants, has the highest population density. This is mostly due to the concentration of population in the city of České Budějovice itself, which has around 95 000 residents.

ECONOMIC POTENTIAL

The prevailing crops in agricultural production are cereals, oleaginous seeds, and forage crops, followed by potatoes. In livestock production, the main focus is on cattle breeding and pig rearing. Industrial production is concentrated mainly in the České Budějovice District. The principal industrial sector is the manufacturing industry, specifically the automobile industry (Faurecia Automotive Czech Republic, DURA Automotive CZ, Linde Pohony) and the food industry (VISCOFAN CZ, MADETA). The priority sectors in the Region, in accordance with the South Bohemia Regional Innovation Strategy, are the areas of biotechnology, engineering, mechatronics and electrical engineering, and the automobile and textile industries. The Region of South Bohemia is not an area rich in raw materials. Most importantly, there are almost no sources of power-producing raw materials. However, the extensive forests are an important natural treasure, especially the Bohemian Forest and forests in the Novohradské hory Mountains. The forests are mostly coniferous, spruce and pine. The greatest wealth of raw materials comprises deposits of sands and sandy gravels, brick clay, aggregate, and glass sands. Other important raw materials include peat and, in some locations, also limestone, diatomite, and graphite. There is a number of educational and scientific research institutions in the South Bohemia Region. The most important include the University of South Bohemia in České Budějovice, which comprises a public university-type institution. The Region has always had the character of a recreational area, rather than an industrially developed one. The efforts to preserve the natural environment are reflected in the establishment of the Šumava National Park. In agriculture, crop farming is mostly oriented towards cereals, oil crops, and fodder crops. Animal breeding is dominated by cattle and pig farming. The Region has a long tradition of fish farming. The overall surface area of ponds used for fish husbandry is approximately 25 000 ha. The ponds supply more than half of the overall fish production in the Czech Republic. The Region also has a significant share in the farming of aquatic poultry (ducks and geese). Industrial production is mainly concentrated in the vicinity of České Budějovice, with significant portions of industry also in the Districts of Tábor and Strakonice. South Bohemia is easily accessible from the northern and eastern parts of the Czech Republic and from neighbouring Austria by the E55 motorway (Prague – České Budějovice – Linz), to which local roads are linked. International railway lines pass through České Budějovice; Veselí nad Lužnicí is an important railway junction. An international airport is located at a distance of approximately 6 kilometres from České Budějovice. In mid-2015, work began on its modernisation, with the aim of transforming it into an airport offering the full range of services for charter, tourist, business, international, and national cargo transport. The airport is expected to become an international public airport soon. Linz, Upper Austria, is the nearest public international civilian airport. The exhibition grounds in České Budějovice host various kinds of exhibitions throughout the year. The international "Bread Basket" agricultural fair and the "HOBBY" exhibition are the most popular. Many types of cross-border collaborations have developed in recent years. One of these is the Šumava/Bayerischer Wald/Mühlviertel Euroregion, which covers an area of 16 000 sq. km with 1.3 million people. The Euroregion associates 111 Upper Austrian, 107 Bavarian, and 95 Czech municipalities (of which 56 municipalities are from the South Bohemia Region). The objective of the

Český Krumlov

South Bohemian Agency for Support to Innovative Enterprising is to support innovative projects in the South Bohemia Region, i.e. the application of research results in practice and support of enterprises pursuing these activities. An important project is the administration of the information portal concerning Czech biotechnologies Gate2biotech (www. gate2biotech.cz/) and the operation of the South Bohemian Scientific and Technical Park. The South Bohemian Scientific and Technical Park, opened in 2014, offers equipped offices and laboratories, including laboratory instruments, technological halls, lecture and conference rooms, and other facilities. It also invites competitions for the best business project – in 2018, for example, the competition was won by BCF with its Virtual Lab start-up project, which assists managers with their problems in public speaking. In 2020, VIRTUAL LAB became part of the HACK THE CRISIS virtual hackathon, organised by CzechInvest Agency with the purpose to help to mitigate the impacts of Covid-19. VIRTUAL LAB came forward with its VRJIPka application, facilitating the safe training of the medical personnel in virtual reality. Already in the first round of evaluation, VIRTUAL LAB was included in the best evaluated projects category. Another interesting firm located in the park is, for example, LARX s.r.o, concerned with the development of the environment with smart household software controlling different household elements by mobile phone. In direct cooperation with the Austrian firm, which owns a licence for the LOXONE operating system for the control of smart households and is the manufacturer and sole owner of the entire system of LOXONE household automation technology, it is developing an upgrade for the user interface of this system (smart household control by telephone, tablet, etc.). Fiedler AMS, s.r.o., in turn, specialises in the manufacture and development of electrical equipment for applications in water management and environmental protection. The firm cooperates in the research and development of new systems with scientific workplaces. The monitoring and measuring systems developed by Fiedler AMS, s.r.o. are widely used in the Czech Republic within the sector and, owing to their modular character, they have a good chance to succeed also in other branches.
Temelín is a community in South Bohemia where the Czech Republic´s largest electricity supplier, Temelín Nuclear Power Station, covering one-fifth of domestic electricity consumption, is located.
The Temelín nuclear power station has the third most successful year in energy production behind it. In 2020 it generated 15.75 terawatthours more than Dukovany, the second power station of the same type in the Czech Republic. Last year, the South Bohemia power station mastered an extremely demanding installation of new separators in its second production block, whereby the plant´s output increased. Taken together, in 2020 the Dukovany and Temelín power stations generated more than one-third of the total electricity output in the Czech Republic. If the same

South Bohemian pond

amount of electricity were to be generated by burning coal, it would mean releasing more than 22 million tonnes of carbon dioxide into the air.
The Region has several industrial parks (locations at http://invest. kraj-jihocesky.cz) and cluster initiatives. One of the largest and most attractive industrial parks in the Region is Písek-Čížovská Industrial Park. With its surface area of 50 ha, this is the second-largest park in the Region and one with the best links to the motorway system. The largest park, with a surface area of nearly 62 ha, is Domoradice-Český Krumlov Industrial Park. Smaller industrial parks in the Region can be found in other towns – České Budějovice, Milevsko, Protivín, Soběslav, Strakonice, Třeboň, Jindřichův Hradec, and Nové Hrady.

THE REGION AND THE EU

The South Bohemia Region is pursuing intensive cross-border cooperation. Its closest ties in this respect are with the Federal Republic of Germany, the Lower Bavaria Government Region and two federal states of the Republic of Austria – Upper and Lower Austria. Other partners of the South Bohemia Region in foreign countries are the Swiss Canton Bern, the Košice Self Government Region in Slovakia and Loire Land, France.
Between 2014 and 2018 the South Bohemia Region drew more than 20 billion Czech crowns from European funds. A great part of this money went into the construction of the railway corridor on the České Budějovice – Prague railway line between Sudoměřice and Tábor and the D3 Tábor – Veselí nad Lužnicí motorway.
EU funds were used to realise a number of other projects in the Region, for example the Lower Austria – South Bohemia Cross-border Mutual Healthcare Provision Project. Cross-border projects make it possible to overcome borders and provide medical services in the particular region disregarding the state border. The goal of the project is to enable people living in the border regions, in this case the České Velenice – Gmünd area, to make optimum use of medical services on both sides of the state border.
EU funds have also been used for the reconstruction of several castles and chateaus. For example in Český Krumlov large sums of money have been invested in the revitalisation of monasteries, specifically the unique 14th century monastery complex situated in the centre of the historical core of the city, and the construction of a cultural and educational centre offering new, modern cultural and educational services making the historical core even more attractive for both the city inhabitants and visitors, as well as investors.

USEFUL CONTACTS:
South Bohemian Regional Authority – www.kraj-jihocesky.cz
South Bohemian Chamber of Commerce – www.jhk.cz
South Bohemian Agency for the Support of Innovation Businesses – www.jaip.cz
University of South Bohemia – www.jcu.cz
City Authority of České Budějovice – www.c-budejovice.cz

KARLOVY VARY REGION

The Region of Karlovy Vary lies in the westernmost part of the Czech Republic at the border with Germany. When it comes to size, it belongs among the smallest of all Czech regions, but when it comes to historical monuments, exceptional experiences, and natural wealth, it ranks among the most beautiful and the most tourist-attractive regions.

In the Middle Ages, small settlements began to appear in the Krušné hory (Ore) Mountains and silver, later other ores, were mined in their vicinity. At the end of the 19th century, mining operations in the surroundings of the town of Jáchymov were literally put on the map thanks to the discovery of the radioactive element of radium in the uraninite from the local mines by Marie Curie-Sklodowska. Likewise, rich deposits of kaolin triggered the foundation of prominent porcelain factories. Other premium local produce that has gained world repute includes glass made by Moser Glassworks or Becherovka herbal liqueur from Karlovy Vary. For more than 650 years, the Region has been inherently tied to spa treatment, which utilises local natural resources, such as thermal and cold mineral springs, mud, peat, and gas. The renown of the Region of Karlovy Vary has always been closely bound up with balneology. Not only the best known Czech spa of Karlovy Vary is located on its territory, but also other significant spa towns, i.e. Mariánské Lázně, Františkovy Lázně, Lázně Kynžvart, and Jáchymov. The spa resorts and hotels offer their guests a wide variety of wellness stays and spa programmes that are based on the tradition of exploiting natural healing resources. Their favourable effects have been verified by centuries of experience, as well as by modern scientific methods.

You may find a vast number of notable architectural sites and monuments on the territory of the Region of Karlovy Vary. The most significant ones include Bečov Castle and Chateau with the unique Reliquary of Saint Maurus, the spa colonnades in Karlovy Vary, Mariánské Lázně, and Františkovy Lázně, Loket Castle, the Premonstratensian Monastery in Teplá, Cheb Castle – the only imperial palatine in the country, and many more. Tourist resorts in the Krušné hory Mountains and many sports areas and complexes throughout the Region allow you to spend your holiday actively in any part of the year. The most popular winter resorts are Boží Dar and nearby Klínovec, as they offer a great variety of downhill courses, cross-country skiing trails, and snowparks. In addition, hundreds of kilometres of tourist paths and cycle paths are available to hikers and bikers in the remaining seasons of the year. Golfers will undoubtedly enjoy 10 golf courses and several indoor golf centres. Those keen on tennis, water tourism or climbing will also have a great time.

ECONOMIC POTENTIAL

The current economy of the Region is characterised by the large share of the services sector in the Region´s gross added value creation. Most responsible for this high share is the spa business in combination with tourism. The Karlovy Vary Region accounts for nearly 50 % of the number of spa patients spending their time in the Czech Republic, with nearly 95 % of this number being foreign guests. As regards the manufacturing industry, the most important sectors in term of their shares of revenue and employment are the manufacture of metal constructions and metal products, engineering, the automotive industry (across a number of industrial sectors, which also include a large proportion of automobile industry suppliers), the manufacture of other non-metal mineral products (porcelain, glass, ceramics, building materials), the electrical engineering industry, chemical industry, the manufacture of rubber and plastic products, textile production, and the production of beverages. The last mentioned is a locally specific sector of industry due to its use of natural mineral waters from local springs occurring in the Region in very high concentrations. There are only very few large firms (especially manufacturing ones) in the Region and a substantial part of its economy is formed by small and medium enterprises, which account for the decisive part of most of the local sectors of industry. Many of the firms in the Region cooperate actively with scientific and research institutions, for example the firm Synthomer in Sokolov cooperates with the Chemical Processes Institution of the Academy of Sciences, the technical universities in Prague and Brno, Synpo Research Institute and other institutions at home and abroad. Regular cooperation is pursued by WITTE Nejdek engineering firm, which has its own development department and cooperates with the Engineering and Electrical Engineering Faculties of the University of West Bohemia in Plzeň and the Engineering Faculty of the Technical University.

Just as the entire civil aviation segment, the Karlovy Vary airport, too, recorded a massive drop in traffic in 2020 as a result of the COVID-19 pandemic. Instead of the planned 80 000 passengers, it processed only 159 commercial flights and 17 234 passengers. In 2020, as in previous years, its key business partner was the Russian company Pobeda, which operated flights between Vnukovo airport in Moscow and Karlovy Vary until 13 March 2020.

The Region offers a number of industrial parks and zones. Especially successful in this respect are Cheb and Ostrov, in addition to a number of other towns and localities. For example, Aš Industrial Park, on the territory of the town of Aš (13 090 inhabitants) is

Mariánské Lázně

a 'greenfield' project. The land, with a total area of 108 hectares, is designated for sale or lease to companies which will engage in economic activities here in the areas of light industry, trade and crafts, without any negative effect on the environment. The town of Aš and its surroundings is a traditional area for the textile industry. But there are also several major enterprises concerned with engineering production. The town is situated on the border with Germany (Aš–Selb border crossing). The Region's advantage is a low-cost and experienced workforce, especially in mechanical and electrical engineering and textile production, in addition to having a good knowledge of the German language. The 35-hectare Cheb Industrial Park is situated on the eastern edge of the town of Cheb, near a high-speed bypass, a mere 8 km from the Pomezí/Schirnding border crossing to Germany. The plots, owned by the Cheb municipality, are designated for the siting of production facilities, logistics centres and commercial or service buildings, preferably for investors who will ensure production with a higher value added. Cheb Industrial Park is rated as the best in Central Europe by the experts who compared industrial parks across Central Europe as a part of the CIJ Awards 2017 competition. Cheb gained the Best Industrial Park rating, thanks to investments by the Accolade financial group in industrial rental buildings for DHL, BWI, and Tchibo companies. Staré Sedlo Industrial Park is situated near Sokolov (24 177 inhabitants) and Staré Sedlo (820 inhabitants). Given the good transport links, the area is designed as a site of strategic importance for the Karlovy Vary Region. The town of Sokolov is situated in the central part of the Sokolov basin, at the foot of the Krušné hory Mountains. The brown coal reserves of nationwide significance, and the related power production, make the Sokolov District a major energy hub of the national and international transmission systems. The town is situated on the R/6 high-speed road, on the international Nuremberg - Cheb - Sokolov - Karlovy Vary - Prague international route. An important role is also played by the Cheb - Karlovy Vary - Ústí nad Labem regional railway. Skalná – a locality suitable for investment construction in the area of industrial and small-scale production, within easy reach of existing engineering networks. The local authority is open to further investment and cooperation with the business sector. The BSS Industrial Park of Báňská stavební společnost s.r.o., covering an area of 14.3 ha, is situated right in the town of Sokolov, in Chebská Street linking Sokolov with Dolní Rychnov. The compound comprises administration buildings, halls, and warehouses. It can be reached by local roads, with a link to the R6 Cheb-Karlovy Vary road. The Park has its own railway siding. It is suitable for public utilities, industrial production, or as a logistics centre, etc. In 2020, a plan was announced to build a giant industrial park on a surface area of 120


Svatošské Skály Rocks

hectares east of the town of Cheb in the vicinity of D6 motorway. The park will also comprise a research and development centre. Another industrial park, Cheb South, opened in Cheb in 2020, where Panattoni completed one of the halls for the German on-line retailer, Real Digital, who will build a distribution centre for the German market in the park. Real Digital is planning to create 150 jobs there. "Cheb has attracted our attention by its strategic geographic position near the German border and the readiness of all the facilities needed, with guaranteed timing. In addition, we appreciate the fact that thanks to the revitalisation of the former industrial compound no arable land or surfaces in the open countryside will be taken up. The new distribution centre meets all our requirements," said Terry Rogers of Real Digital. The company operates one of the largest internet shops in Germany. Pavel Sovička, Managing Director of Panattoni for the Czech Republic and Slovakia, pointed out that despite the fact that the key phase of the park development took place while the company was coping with the Coronavirus pandemic, the time schedule of the park construction was observed.

THE REGION AND THE EU

In the next few years, the Karlovy Vary Region will have a great chance to obtain billions of crowns from the EU to cope with the recovery of the Region after the phasing-down of the operation of its brown coal mines and to create new jobs. The Region has more than 100 projects in 11 districts ready to be launched, worth more than CZK 70 billion. The projects include, for example, the revitalisation of the industrial parks Silvester and Friendship in the Sokolov District, the resocialisation of Medard-Lage, where housing construction and the preparation of the lake surroundings for recreational use are planned, the Battery Value Chain Sokolov projects for the processing, manufacture, and recycling of lithium batteries in the sludge lagoons, train transport transshipment facilities in the place of the railway depo in Sokolov, and a facility for energy recovery from waste in the Region, the development of the integrated rescue system infrastructure including its digitalisation, with the therapeutical development of the landscape, and balneological and tourist development projects. The Just Transformaton Fund Operational Programme is to be started at the beginning of 2022.

As regards international relations, the Karlovy Vary Region has always been oriented towards its immediate neighbour – Germany. The common border of the Region with Germany is 232 109 km long (132 968 km with Saxony and 99 141 km with Bavaria]. There are 8 international road border crossings with Germany in the Region (5 with Saxony and 3 with Bavaria). Joint projects in the border areas have always been considered useful and needed for regional development and better integration of the Karlovy Vary Region in the common European area. This includes, for example, the establishment of further cross-border connections.

USEFUL CONTACTS:

Karlovy Vary Regional Authority – www.kr-karlovarsky.cz
Regional Chamber of Commerce for the Poohří Area – www.rhkpoohri.cz
Internet portal for investors in the Region of Karlovy Vary – www.karlovyvary-region.eu
District Chamber of Commerce in Cheb – support for entrepreneurial activities – www.ohkcheb.cz
City Authority of Karlovy Vary – www.mmkv.cz

Bohemian Switzerland

ÚSTÍ NAD LABEM REGION

The Ústí nad Labem Region, one of the Czech Republic's most industrialised areas, has been the country's main energy supplier for years. After the phasing out of intensive coal mining in the 1990s and the revitalisation of the countryside, the Region is regaining its reputation as an area of European significance with unique natural resources. Its efforts to improve the environment still further and to revitalise vast new areas are continuing.

The city of Ústí nad Labem, a transport junction of national and international significance, where important European roads, railway lines and waterways cross, is the centre of the Region. The Ústí nad Labem Region is divided into seven districts (Děčín, Chomutov, Litoměřice, Louny, Most, Teplice, and Ústí nad Labem). In addition, there are four areas in the Region which differ from each other significantly. One of these is the area in the foothills of the Krušné hory Mountains with strongly developed industry, comprising the Districts of Chomutov, Most, Teplice, and a part of Ústí nad Labem. The dominant industries here are power generation, coal mining, engineering, the chemical industry, and glassmaking. The Ústí nad Labem Region has a number of attractive localities for tourists. The development of tourism is one of the Region's priorities. The best-known natural attractions of the Region include the Bohemian Switzerland National Park, covering an area of 7 900 ha, established in 2000, the Bohemian Highlands, and the Labe Sandstones protected landscape areas, a part of the Kokořín area, and the Lužické hory Mountains, the lovely pathway along the Labe River with Porta Bohemica, the Tiská Walls rock formations, and many others.

ECONOMIC POTENTIAL

An important role in the economy of the Region is played by brown coal mining and related power generation. The largest coal power plants in the Czech Republic (Prunéřov, Tušimice, Ledvice, and Počerady) are to be found in the vicinity of the opencast mines in the Most coal basin (formerly North Bohemia Brown Coal Basin). An equally important role is played by the chemical industry, with UNIPETROL refinery located in nearby Záluží u Mostu. Unipetrol Group is the largest refinery and petrochemical company in the Czech Republic. Its focus is on oil processing and the production, distribution, and sale of fuels and petrochemical products, mainly plastics and fertilisers. In all these areas it ranks alongside important players on the Czech and Central European markets. Unipetrol Group comprises refineries and manufacturing plants in Litvínov and Kralupy nad Vltavou, Paramo Company with its brand name Mogul in Pardubice and Kolín, Spolana in Neratovice and two research centres, in Litvínov and Brno. Unipetrol, which also has its own network of filling stations across the Czech Republic and Slovakia, and Benzina with 418 filling stations, form the largest gas filling chain in the Czech Republic. Unipetrol is also

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Powder coating

Modern paint room for the surface treatment of iron, aluminum or zinc products

Tool production

Workshop offers shearing, bending, hauling, combined tools, punching units, tools for hand and mechanic press machines

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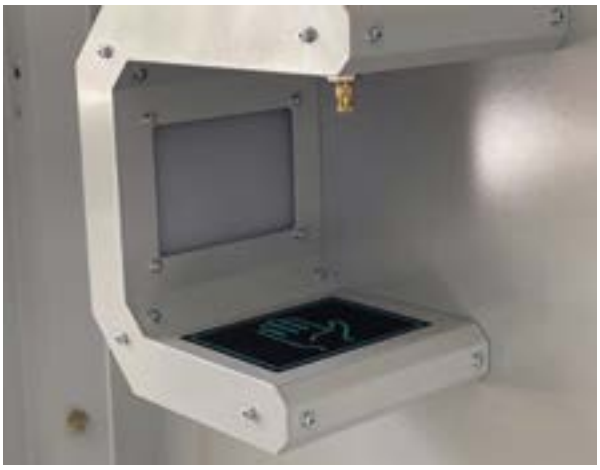

one of the largest firms in terms of turnover.
Mondi Štětí, located in the vicinity of Roudnice nad Labem, is the largest Czech manufacturer of paper for the production of packing materials. Mondi is also a majority exporter of Czech paper and a leading manufacturer among other factories of Mondi global group. The daily output of the Štětí compound is between 1900 and 2000 tonnes of final products – paper and pulp – a day.
SPOLCHEMIE, a well-known manufacturer of epoxy resins and polyesters, based in the Ústí nad Labem regional centre, has been one of the key players within the European chemical industry for more than 160 years. It is the world´s first company to obtain the internationally recognised environmental certificate EPO for epoxy resins. The firm´s success rests in the innovation and development of new materials and chemicals. Two research teams based directly in SPOLCHEMIE in Ústí nad Labem are directly linked with the company´s production and business divisions. The teams concerned with the research and development of resins and inorganic substances are developing systems for composites, building materials, paints, and chlorine derivatives. The Synpo, .a.s. research institute, in turn, is a top research workplace, which in 2020 developed a special face mask using the photoactive dye principle, whereby it is protected against undesirable pollutants.
Another successful firm in the Region is Glencore Agriculture Czech, focusing on the manufacture of food oils. Lovosice, in turn, is the seat of Lovochemie, a company which is the largest manufacturer of fertilisers in the Czech Republic. Currently its core programme is the production and sale of nitrogen and compound fertilisers in solid and liquid form. Another important traditional sector, which has passed or has been passing through a process of modernisation oriented on new products is the glass industry. The largest exporter of flat glass is AGC Akutomotive Czech. The firm Czech Porcelain in Dubí is known for its manufacture of blue onion porcelain. This firm, with its ROYAL DUX works in Duchcov, oriented on figural and decorative porcelain, has been on the domestic market for more than a century. A new feature in the Region´s industrial efforts in recent years has been the development of the engineering industry and metalworking under the influence of foreign investors. The companies in this line of production include the manufacture of motor vehicle components (KS Kolbenschmidt Czech Republic, Pierburg, Benteler Automotive Rumburk) with follow-up sectors, such as the manufacture of plastics and non-metal products (SSI Technologies, RAI MOST, TRCZ).
Another progressive firm is PARDAM NANO4FIBERS s.r.o. in Roudnice, which has developed, produced and certified a nanofiber respirator meeting the criteria of

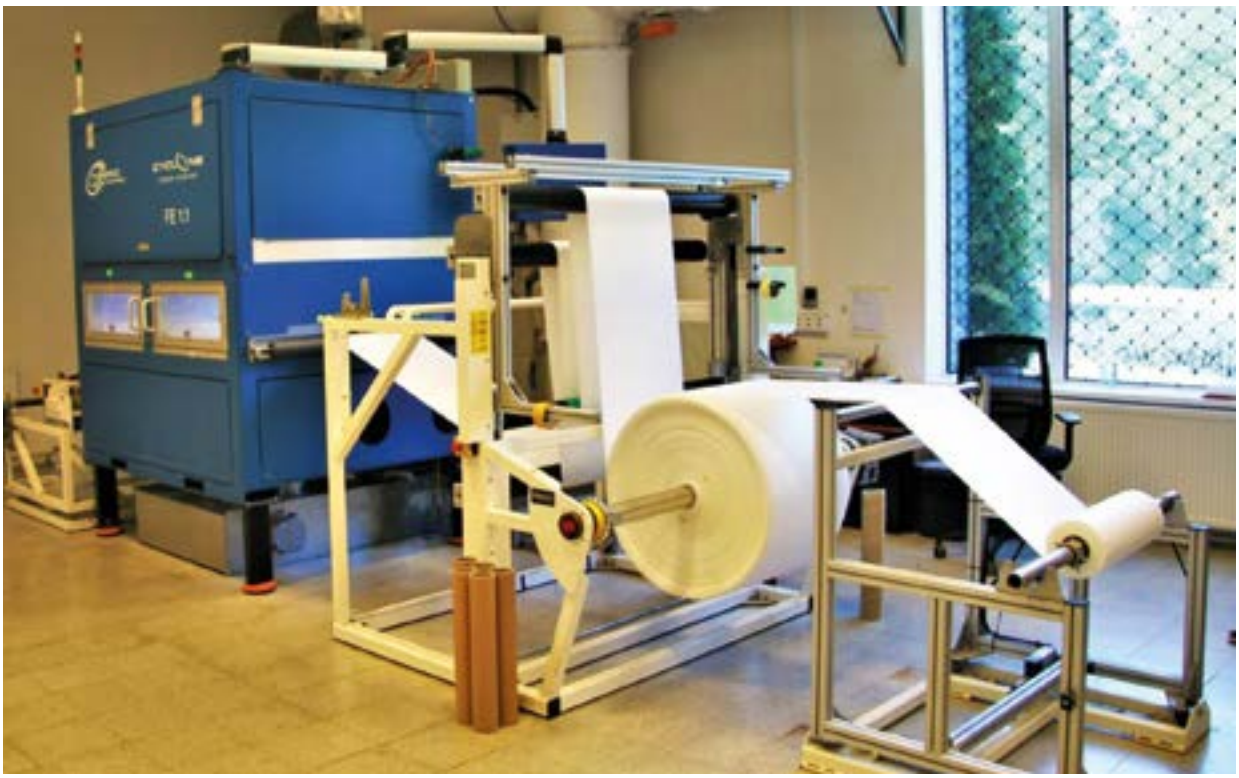

Photo: © Ústí nad Labem Regional Authority archives

the highest protection class FFP3. It is the first reusable valveless respirator, protection class FFP3. Thanks to the support from the RISE-UP project, the company has significantly increased its production capacity and efficiency. Currently its production capacity is 800 000 pieces a month. The BreaSAFE(R) CLASSIC FFP3 is unique not only because the nanofiber it uses is produced by the spinning technology, which Pardam has been developing for more than ten years and which lends it unique properties as regards the seizure rate, but also that thanks to the exceptionally breathable material used, the respirator does not need an expiration valve, which is typical for FFP3 respirators. The absence of the exhalation valve means that the respirator protects not only the person wearing it, but also the environment, because its user exhales no potential viruses or bacteria into the ambient air. In addition, the nanomembrane increases resistance to humidity, and if properly used and taken care of, the respirator can be used for several days as protection against viruses and bacteria.

In 2020, the company VDED in Ústí nad Labem placed in the market its disinfection gates, which serve firms, shopping centres, health institutions and other facilities in combating Coronavirus. The gates are mobile cells disinfecting incoming persons and animals to the premises. Its components are made in Europe and their suppliers include firms in Ústí nad Labem. Their assembly is provided by VDED.

There are several research institutes based in the Region, for example UniCRE, which concerns itself with research and development in the area of industrial chemicals and environmental technologies, and the Brown Coal Research Institute and the Balneological Research Institute.

The Ústí nad Labem Region holds great allure to foreign investors as a region with a lot to offer to investors, including strategic industrial parks (SIP). One of these is Joseph SIP, located in Havraň, Most District, some 8 km from the town of Most with a population of 67 500. It covers an area of 196 ha. The companies located in Joseph SIP and pursuing business activities there are, for example, Nemak Czech Republic, s.r.o. and AFSI Europe, s.r.o. The Triangle Strategic Industrial Park is located in an area whose boundaries overlap three Districts – Chomutov, Most, and Louny. CTPark Teplice consists of three industrial halls. The total utility area of all the buildings taken together is 35 400 sq. m. The space is suitable for warehousing, logistics, light manufacturing, and assembly.

THE REGION AND THE EU

The Ústí nad Labem Region participates actively in EU programmes. One of them is the RECAPTURE THE FORTRESS CITIES (RFC) project, financed from the Interreg EUROPE regional development programme. The RFC project aims at sustainable revitalisation of heritage buildings by improving the coexistence of fortified cities and neighbouring forts within urban regions and their use at minimum cost. The Ústí nad Labem Region, which is the leading partner in the project, will share its experience gained in the reconstruction and revitalisation of the historical fortress of Terezín and the use of new forms of cooperation with local and regional institutions, and its experience in managing the site in harmony with other projects realised in the Region. The project focuses on the employment of innovative ways of using the fortress with the aim to facilitate its maintenance and include it in the life of the city. Currently the project finds itself in the middle of its implementation. So far, four international meetings have taken place, at which the partners, with their stakeholders, have presented their intentions, giving examples of good practice, followed by discussions concerning the action plans, with emphasis on issues as regards the actual existence of fortresses, which are often viewed as detached structures and mere historic objects needing maintenance. Other RFC partners are the cities of Komotini, Greece, the North-West Regional Development Agency, Romania, the Self-Governing Region of Prešov, Slovakia, Teruel Province, Spain, and the city of Magdeburg, Germany.

Another project, financed from the Interreg CENTRAL EUROPE fund, is ECOSAN4IN (Cross-border Ecosystem for Industry 4.0). The current situation in the labour market has intensified the firms´ interest in advanced industrial automation, in particular digitalisation, termed “Industry 4.0”. This will have an impact on the regional economy, both positive and negative. In this respect, the Ústí nad Labem Region is one of the most endangered, according to an analysis of the Czech Government Office. One of the risks is that unlike other regions its economy will not be able to take full advantage of this opportunity. That is why the Ustí nad Labem Region has initiated an international project intended to seek solutions in advance. Thanks to the possibility of communication with advanced regions, the Ústí Region can get a better idea and understanding of the expected impacts of the automation of industry. The aim of the project is to prepare the business and public environment (especially education and public administration) for the advent of advanced automation and digitalisation of industry. The Ústí nad Labem Region, the leading partner in the project, cooperates on the ECOS4IN project with Ca Foscari University in Venice, Italy, the Pannonian Regional Innovation Agency, Hungary, the Upper Austria Innovation and Invstment Agency, Enter Koprivnica d.o.o., the Business Incubator, Croatia, FONDAZIONE GIACOMO BRODOLINI –National Italian Foundation focusing on industry, the labour market and incubator management (Milan, Torino), Italy, and the Lesser Poland Development Agency Krakow, Poland.

USEFUL CONTACTS:
Ústí nad Labem Regional Authority – www.kr-ustecky.cz
North Bohemian Association of Communities – www.seso.cz
Regional Development Agency of the Ústí nad Labem Region – www.rra.cz
Czech North – www.usteckonadlani.cz

LIBEREC REGION

The Liberec Region, situated at the northern tip of the Czech Republic and bounded by a 20-km-long stretch of frontier with Germany and a 130-km stretch with Poland, has easy access to the large industrial and administrative centres, Prague and Dresden, Germany, with developing links to the main European transport lines of Berlin - Prague - Vienna (Multimodal Corridor IV) and Leipzig - Dresden - Wroclaw (Multimodal Corridor IIIA).

The large number of historical buildings and other sights, as well as cultural institutions, are witness to the Region's rich cultural and historical tradition. Institutions of regional importance include a number of museums and galleries in different parts of the Region. With respect to the glassmaking and fashion jewellery production in the area, tourists are invited to visit glassmaking museums in Nový Bor, Kamenický Šenov, and Železný Brod, and the Museum of Glassmaking and Costume Jewellery in Jablonec nad Nisou. The Bohemian Paradise District Museum in Turnov houses its own collections, covering the areas of Geology, Mineralogy, and Goldsmithery and Jewellery, which are unique, not only on the national, but also the pan-European level. There are two spa resorts in the Region: Libverda and Kunratice. Besides cultural and historical sights, visitors can admire the natural beauties of the Region – its exceptional countryside and rock formations. From the natural science point of view, the Liberec Region is important for its great variety of natural ecosystems, a high concentration of protected areas and rare localities of great botanical and zoological importance. There is one National Park in the Region (Krkonoše National Park), as well as five Protected Landscape Areas (Bohemian Highlands, Jizerské hory Mountains, Lužické hory Mountains, Bohemian Paradise, Kokořín), seven National Nature Reserves, eight National Natural Monuments, 35 Nature Reserves, and 56 Natural Monuments.

ECONOMIC POTENTIAL

The diversity and natural character of the Liberec Region are characteristics influencing business activities. Great population density in the centres of industry, hilly terrain, and restrictive environmental limits do not allow for the development of new large-size areas. The driving force in the Region is the automotive industry, both as regards the actual manufacture of separate parts such as brakes, undercarriage parts, seats or buffers, and the manufacture of moulds, tools, and whole production lines. The most important firms include Adient Czech Republic (car seat covers), Magna Exteriors (buffer production), DENSO MANUFACTURING CZECH (production of air conditioning units), Fehrer Bohemia (manufacture of side parts and seats), Benteler ČR (manufacture of undercarriages and safety elements) and TRW Automotive Czech (manufacture of car brakes). From the historical point of view, the traditional sectors in the Region are glassmaking and the textile industry. Both sectors have undergone a period of slowdown. Nevertheless, two world-renowned glassmakers (PRECIOSA, LASVIT) and two textile machine manufacturers (ELMARCO and the Textile Machines Research Institute Liberec – VÚTS) located there continue their successful existence. The greatest concentration of business activities and foreign capital can be found in Liberec and its environs, especially in the sites of traditional industrial production. The development of various forms of collaboration between business firms and their link-ups with research and development facilities is of great importance for the strengthening of economic competitiveness. There are various professional associations operating in the Region, as well as clusters, as geographically close groups of linked-up enterprises, contractors, service providers and professionally related institutions, brought together by common and complementary interests. These include, for example, the CLUTEX "Technical Textiles" cluster, and the Czech Membrane Platform, o.s., based in Česká Lípa, associating experts and institutions focusing on the research, development, realisation and use of membrane operations in technological processes. Scientific and technical parks are centres where research and development projects can best be developed.
There are eight industrial parks in the Liberec Region, with a total surface area of more than 450 hectares, according to the Centre for Regional Development of the Czech Republic. The parks are located in the vicinity of or directly on the territory of Liberec, Nový Bor, Hrádek nad Nisou, Turnov, Ralsko, and Stráž pod Ralskem. Most of them are used by investors. For example Park P3 Liberec, which is situated north of the Liberec Industrial Park, in close vicinity of D10 mo-

Christmas Decorations on UNESCO List
In 2020, the unique Christmas blown glass and beaded decorations of the glassmaking firm Rautis in Poniklá, situated in the foothills of the Giant Mountains, was added to the UNESCO list of the immaterial cultural heritage of mankind. This is the seventh Czech item inscribed in the list, after the Slovácký Verbuňk Dance, Shrovetide Processions and Masks, Falconry, Moravian Ride of Kings, Puppetry, and the Textile Blueprint Technique.

Photo: © CzechTourism archives, Author: Libor Sváček

torway running from Prague to Dresden. With the city centre, the Park is connected by public transport. The Park, whose construction started in 2008, now has seven buildings. The largest tenants of the Park are the companies Grupo Antolin Bohemia, Knorr-Bremse, NIKA Logistics, Pekm Kabeltechnik, and TI Automotive. Denso Manufacturing is the largest employer in the Liberec-South Industrial Park. Its largest customers are car manufacturers group Volkswagen, Ford, BMW, Suzuki and TPCA Kolín, as well as Mercedes-Benz and Lamborghini.
In 2019, Trumpf Liberec enlarged its plant in the South Industrial Park with the aim to increase the manufacture of pallet exchangers for laser technology. The project, called Palettenwechsler, was transferred to Liberec from the company´s German affiliation in Neukirch. The company has invested EUR 7.1 million in the production and administration hall. The firm, founded in Germany in 1923 as a mechanical workshop, has developed into a world leader in the manufacture of machine tools, lasers and electronic systems for industrial applications. It employs 13 400 people worldwide, with 125 of them in Liberec. Other two large companies – Ontex, an important manufacturer of hygienic products, and SFS intec., manufacturing connecting materials – have chosen Vesecko Industrial Park near Turnov. One of the largest investment projects mediated in the Region by CzechInvest Agency has settled in Hrádek nad Nisou Industrial Park: Drylock Technologies, specialising in the manufacture of disposable hygienic items.

THE REGION AND THE EU

Over the more than 15 years, i.e. since the Czech Republic joined the European Union, the Liberec Region has received billions of crowns in subsidies from the EU. The money has been used for the modernisation and construction of water treatment plants, sewage and water supply systems, the modernisation of railways and the reconstruction and construction of roads. Thanks to EU money the Region could repair the decrepit baths in Liberec, which made room for a modern gallery. The millions of crowns from the EU helped improve the care for the sick and disabled, and contributed towards the improvement of technical education. One of the most costly projects was the modernisation of the railway junction in Česká Lípa, which cost approximately one billion crowns and included also the construction of a new railway line from Liberec to Tanvald and on to Poland; other railway lines in the Region underwent modernisation worth hundreds of millions of crowns. In 2015, thanks to EU subsidies, it was made possible to renew railway connection to Poland via Harrachov, where the operation of the railway line was suspended after the Second World War. The EU has also contributed towards the deployment of low-floor Stadler trains on regional lines.
Another major recipient of hundreds of millions of crowns from EU funds was the Liberec Technical University, which used the money, among others, for the construction of a research and development centre for nanomaterials and advanced technologies. In turn,

MemBrain company at Stráž pod Ralskem took advantage of EU money for building a unique innovation centre for membrane technologies used, for example, in water treatment. Another company,VÚTS, used EU money for the construction of a development centre in the North Industrial Park in Liberec.
The Region´s collaboration with neighbouring Germany and Poland is successfully continuing. The Neisse-Nisa-Nysa Euroregion project has been in place for more than 25 years. It is actually the first Euroregion in Central and Eastern Europe. Thanks to the Euroregion´s working groups and projects cooperation was started, and has been developing, in a number of areas, including the environment, transport, tourism, crisis proceedings, education, and cooperation between local libraries. The European Union has been supporting crossborder cooperation financially since the 1990s. The Czech-German-Polish Tri-Border area situated in the Liberec Region is witness to changes which Central Europe has gone through over the past 70 years. It was established in 1945, on the basis of the Potsdam Agreement. At that time, the state border between Germany and Poland was shifted westward in the direction of the Oder-Neisse line. After that, the Tri-Border area was inaccessible for years. The state border, albeit between friendly countries of the former socialist bloc was closed and strictly guarded. This was changed only after 1989, when new border crossings were opened. In 2004, Tri-Border became a witness to the "Stellar Momemt of Europe", a grand celebration of the enlargement of the European Union. The opening of the frontier was a process, which was completed in 2007, when the Czech Republic and Poland became part of the Schengen Area. Now, the Czech-Polish frontier can be crossed along a footbridge across Oldřichovský potok Brook.

USEFUL CONTACTS:
Liberec Region – www.kraj-lbc.cz
Liberec Regional Office – www.liberec.cz
Liberec Regional Chamber of Commerce – www.khkliberec.cz
Technická univerzita Liberec (Liberec Technical University) – www.tul.cz

HRADEC KRÁLOVÉ REGION

The Hradec Králové Region is situated in North-East Bohemia. More than one-third of its boundary, a stretch of about 208 km, forms the Czech Republic's state frontier with Poland. The Region consists of five districts – Hradec Králové, Jičín, Náchod, Rychnov nad Kněžnou, and Trutnov.

As regards the number and importance of natural assets, the Region is one of the richest in the Czech Republic. Many areas and localities are extremely valuable and there is a large number of protected areas. From the point of view of areas of natural beauty, the most valuable are the Krkonoše National Park and the Orlické hory Mountains, Broumov and Bohemian Paradise Protected Landscape Areas. The rich and varied natural and cultural wealth of the Hradec Králové Region, its attractive natural localities and the well-preserved environment are good prerequisites for the development of tourism. Especially attractive areas are those with a high natural potential, areas boasting a rich cultural heritage of historical sites, as well as several renowned spa resorts. To meet the requirements of the massive development of cyclotourism and its growing popularity in recent years, new cycle trails of regional and supraregional importance are being built and marked. Hiking trails, too, have a long tradition in most areas of the Hradec Králové Region. The Region also boasts several spa resorts, the most popular of which is Janské Lázně, known for the treatment of diseases and disorders of the nervous system, the motor system, and skin diseases. The spa town is also a well-known winter sport resort.

ECONOMIC POTENTIAL

The Hradec Králové Region can be characterised as being an agricultural and industrial area with well-developed tourism. Industry is primarily concentrated in towns, while agricultural production thrives on the land bordering the Labe River. From the sectoral point of view, employment is high in branches such as car making, manufacture of electrical equipment, engineering, textile production, healthcare, and the rubber and plastics sector. The main export items are products of the automotive and engineering industries and electrotechnical components. Exports are dominated by motor vehicle components and cars, which account for more than one-quarter of total exports. More than 3 % of total regional exports is accounted for by rotating electrical machines and parts thereof, ferrous products, circuit switching and breaking devices, pumps, cisterns, textiles, and rubber products. Sectors with the highest sums spent on research and development in the Region include Information Technologies (software development) and architectonic and engineering activities (development and construction of components for the automotive and engineering industries, development and supply of technological wholes for the chemical industry, power engineering, coke production, and food processing), which together account for more than 30 % of the expenses. This is followed by the manufacture of components and accessories for motor vehicles and their engines (especially braking and windshield wiping systems), research and development in the area of natural and technical sciences (breeding, textile materials, and biotechnologies), manufacture of other special purpose machines (printing machines, mining and building machines, machinery for pharmaceutical and food processing plants, and power generating equipment), manufacture of rubber products, medical devices, and other items. There are several clusters operating in the Region. The IT cluster in Hradec Králové focuses on the use of new information and communication technologies in the development of products manufactured by the cluster members, distributed backups, automatic control of the development of information systems, information systems' safety and the housing server. The Hradec Králové TECHNOLOGICAL CENTRE participates in the realisation of projects financed from EU funds, the aim of which is to raise the level of education and competitiveness in the Region and, in particular, to facilitate students' entry into professional life. Within the framework of these projects, the Technological Centre cooperates with recognised research and educational institutions in the Czech Republic (Hradec Králové University, Masaryk University, the Association of Scientific and Technical Parks). One of the firms having their seats in the Hradec Králové Region is Elceram, the only firm in the Czech Republic specialising in the manufacture of ceramic printed circuit boards and sensors. There are at most five such specialised companies in Europe. The manufacture of ceramic printed circuit boards is historically linked with the local Research Institute of Electroceramics. The firm is building on the tradition of the Czech-Japanese capital investment project, which used the experiences of the Tesla Hradec Králové company. Besides the electrical engineering industry, it also supplies its products to engineering firms and the auto motive sector. Ceramic printed circuit boards are used, for example, in ABS automobile units and ceramic components help to reinforce tank armour. Various projects are realised in the Technological Centre. For example, in 2020 the Czech company TRILAB was developing special shields there. Currently it is distributing a completely new model of protective shields, which greatly surpass shields printed on 3D

Photo: © Regional Office of the Hradec Králové Region archives

printers in price, compactness, protection, lightness, and comfort of use. The shield, named masq and made by vacuum pressing, can also be mass-produced. In comparison with typical Perspex shields and 3D alternatives the new shield protects its users from more sides, is comfortable to wear and can be adjusted to any shape of the face.

THE REGION AND THE EU

The European Union subsidises the development of Czech regions, and the Hradec Králové Region is no excepion. The money goes into local infrastruture and schools, as well as into private enterprises. The Hradec Králové Region knows how to draw funds from the EU and make good use of them, as can be seen, for example, on the condition of roads in the Region or the thermal insulation of school buildings and other institutions. EU money is also used to repair cultural structures, for example the Gayer Barracks, serving the Museum of East Bohemia as depository. Also financed with EU money is the extension of the building and the repair of its interior and exterior, modernisation of the depository, and the building of a barrier-free entrance into the building. The Barracks will house new restoration workshops, research laboratories and space for the public. The work is to be completed later this year. The Gayer Barracks, however, are certainly not the only cultural project to be reconstructed in Hradec Králové thanks to EU funds. The aim is to create a modern museum campus in the heart of Hradec Králové, and the Gayer Barracks will not be the only structure inside it: its neighbour will be the Vrbenský Barracks complex.

Another project to be supported with EU money is the Všestary Archaeological Park. The park is designed so as to acquaint visitors with life in prehistoric times using an interactive and illustrative form. Different programmes are arranged to bring the Park back to life, such as Days of Live Archaeology and Creative Workshops, even on ordinary visiting days. The building of the museum and the prehistoric village are designed in a way to suit all age categories, individuals and school excursions.

The Všestary Archaeological Park is the outcome of cooperation of the Hradec Králové Experimental Archaeology Company, the Hradec Králové Region and the Hradec Králové University. EU money was also used to support the construction of a new, digital planetarium in Hradec Králové, replacing the original planetarium, built in 1957. The new planetarium covers a surface area of 818 sq. m. The projection screen in the shape of a hemisphere comprises a digital all-sky system and an additional projection system. The interactive thematic exposition visualises the structure and functioning of the universe, with interactive exhibits demonstrating the most important physical phenomena and their manifestation in natural processes.

A subsidy of nearly half a billion Czech crowns obtained from EU funds made it possible to reconstruct a real pearl of Baroque architecture, the Kuks Hospital national cultural monument, opened in 2015. The dominant structure of the Baroque complex of the patron of arts, count František Antonín Špork, is famous for its statues of Virtues and Vices by Mathias Bernard Braun, one of the greatest European Baroque sculptors. This historical monument regained

Všestary Archaeological Park

Adršpašské skály Rocks

its luster and found its new use thanks to a grant from the Integrated Operational Programme.
An interesting Czech-Polish cooperation project is Aqua Mineralis Glacensis, realised by four partners, Náchod, Kudova-Zdroj, Hronov, and Duszniky-Zdroj financed from EU funds. The objective of the project was the creation of a Czech-Polish spa trail and the propagation of the unique local mineral waters.
Another example of cooperation is the Czech-Polish ridge trail Hřebenovka highlighting the natural and cultural wealth of the border areas of the Hradec Králové, Liberec, Pardubice, and Olomouc Regions and the Lower Silesia Vojvodeship. The aim of the project is the renewal of the historical hiking trail with several border crossings.
The strategic project of the Czech, Moravian and Kladsko – Glacensis Euroregion, named Secrets of the Military Undergrounds, was completed in 2019. Its aim was the broadening of Czech-Polish cross-border cooperation, support of tourism and, mainly, restoring the fortress to its original state and the opening of new expositions. In 2021, the Glacensis Euroregion marks twenty-five years of its existence. The association brings together the territories of the Hradec Králové, Pardubice, and a part of the Olomouc Regions on the Czech side and the Lower Silesian Voivodeship on the other side. The Euroregion finances its projects mainly through the Czech-Polish cross-border cooperation programme subsidised from EU funds. The Secrets of the Military Undergrounds project took advantage of the cultural heritage using the remains of the military structures of the 1930s and 1940s. The project made possible the reconstruction of several structures and their opening to the public. On the Czech side this included the artillery cabin of the Hanička u Rokytnice fortress and the Stachelberg u Turnova fortress. In terms of the cubic capacity of concrete used the interior of the Hanička artillery cabin is the largest fortress structure of the Czechoslovak pre-war fortification system.
Within the EU, the Region cooperates mainly with the Lower Silesian Voivodeship in Poland and the Banská Bystrica self-governing region in Slovakia.

USEFUL CONTACTS:
Regional Office of the Hradec Králové Region – www.kr-kralovehradecky.cz
Hradec Králové Technological Centre – www.tchk.cz
University of Hradec Králové – www.uhk.cz
Regional Development Agency of the Hradec Králové Region – www.cep-rra.cz
Regional Chamber of Commerce – North-East Bohemia – www.rhkhradec.cz
Hradec Králové City Authority – www.hradeckralove.org
Glacensis Euroregion – www.euro-glacensis.cz

PARDUBICE REGION

The Pardubice Region is located in the eastern part of Bohemia, and, together with the regions of Hradec Králové and Liberec, forms the North-East Cohesion Region (NUTS 2). A part of the Region's north-eastern border also forms the border between the Czech Republic and Poland. The land area of 4 519 sq. km (5.7 % of the area of the CR) makes the Pardubice Region the fifth smallest region in the country. The Pardubice Region consists of four districts – Chrudim, Pardubice, Svitavy, and Ústí nad Orlicí.

The Region is characterised by its diversity of natural conditions, population density, and industrial and agricultural production. Future development of the Pardubice Region will benefit from the Region's advantageous location, which is good for transport links. There are 542 km of railway tracks in the Region, the most important railway hubs including the towns of Pardubice and Česká Třebová, which form a part of the international railway corridor, Berlin-Prague-Brno-Vienna. Pardubice Airport, which serves both military and civilian air traffic, is key to the regional air transport. In 2017, Pardubice Airport reversed the unfavourable trend of the falling number of passengers cleared, when it processed 88 490 passengers, 180 per cent more than the previous year. Besides the Russian travel offices operating flights from Pardubice to St. Petersburg, Samara, Yekaterinburg, Ufa, and Kazan, the positive results are partly due to the continuously fully occupied line operated by Ryanair to London and to the Red Wings airline with its flights to Moscow. The Pardubice Region has many prerequisites for the development of the tourist trade. The Region comprises beautiful landscape of both flat and mountainous character, a favourable climate and many opportunities for swimming, water sports, walking tours, cycling, and winter sports. Attractive tourist locations include the northern and eastern parts of the Ústí nad Orlicí District – the foothills of the Orlické hory Mountains, Buková hora Ski Region, and Sněžník Dolní Morava Ski Resort. Agrotourism, especially with an emphasis on traditional horse breeding, is developing throughout the entire Region (in the foothill areas). Every year, many visitors come to see the national stud farm in Kladruby nad Labem. Besides regular tours, the stud farm also organises various events for horse lovers. Tourist highlights in the Svitavy District include Svojanov Castle and Litomyšl Château, which has been on the UNESCO World Cultural Heritage List since 1999. The Pardubice racetrack, where the Velká Pardubická Steeplechase takes place, is the Region's most famous sporting venue. In addition, the Region is the leader in many other sports.

Kladruby nad Labem Stud Farm

Litomyšl Château

ECONOMIC POTENTIAL

The Region's economy mainly depends on general engineering and electronics. The following industries are also represented: chemical, textile, clothing, leather manufacturing, and food-processing. However, the chemical industry, which has the highest share in national production, is the most important. The Region also has a tradition in the area of electrotechnical and electronic industries, linked with the Tesla trademark, on which a number of other companies also build. These companies have benefited primarily from the existing research and development base and skilled labour. Industry in the Pardubice Region is broadly diversified. In addition to the IVECO bus manufacturers, the automotive sector also plays an important role. Other important employers include AVX Czech Republic in Lanškroun (electrical engineering), Iveco Czech Republic in Vysoké Mýto, Synthesia Pardubice (chemical industry), Saint-Gobain Adfords CZ in Litomyšl (glassmaking), Rieter CZ in Ústí nad Orlicí (manufacture of textile machines and a sub-supplier to the automotive industry), OEZ in Letohrad (electrical engineering), KIEKERT-CS Pardubice with its centre of operations in Přelouč (automotive industry), Panasonic Mobile & Automotive Systems Pardubice (manufacturer of mobile phones and audio-visual equipment), Automotive Safety Components International in Jevíčko (sub-supplier to the automotive industry), and REHAU, s.r.o., in Moravská Třebová (automotive and plastics industries). Enterprises with well-known names include Paramo in Pardubice, Eta in Hlinsko, and Korado in Česká Třebová.

Among the innovative companies with a global range of operations, the best known are the biotechnological Contipro Company, manufacturers of pursuit systems and radars (ERA a.s., RETIA, ELDIS Pardubice), and firms engaged in the area of explosives (Explosia, OZM Research). Start-ups with an ambition to set foot in world markets are usually firms engaged in the area of information technologies. In addition, there are hundreds of small and medium-sized enterprises and individual businessmen in the Region operating in production and services. Clusters play an important role in the development of modern technologies and in improving competitiveness. The Region comprises approximately 20 industrial parks. Businesses can make use of 'brownfields', i.e. space that has lost its original economic use. Brownfields tend to be large premises in bigger towns (most of them are available in Pardubice). The largest brownfields in the Region are usually former military areas.

Pardubice City Industrial Park is situated on the western outskirts of Pardubice, some 6 kilometres from the city centre. It lies in the cadastre of Staré Čivice village, between the I/2 highway leading to Kolín and Prague and the Prague - Pardubice railway line, which is a part of the Berlin - Prague - Vienna international high-speed rail corridor. The Park is home to the Pardubice Scientific and Technological Park.

THE REGION AND THE EU

The Pardubice Region has several partner regions in other countries with which it cooperates on the basis of contracts. Between 2001 and 2004 contracts were

signed with the following regions: Prešov Self-Governing Region in Slovakia, Lower-Silesian Voivodeship in Poland, Region Centre in France, Tübingen Government Region and Reutlingen District in the Baden-Würtemberg Federal State in Germany and Abruzzo Region in Italy. In recent years the Region has significantly strengthened cooperation with another two regions, which are seeking to become engaged in the broader European area, specifically with the Transcarpathian Region of Ukraine (pojects for strengthening capacity) and with Guria Region in Georgia. Still before that the Pardubice Region realised a development project with another Georgian region, which was oriented on cooperation in education, tourism, and agriculture. It also cooperates with the Lower Silesia Vojvodeship in Poland, with which the Pardubice Region has a common border. Their cooperation is oriented especially on joint activities in the border regions, including the building of the infrastructure, modernisation of municipalities and the development of tourism and mutual cultural activities. Currently preparations are in progress to launch eleven projects within the ReactEU initiative. The most important of them is the construction of a pavilion for central urgent reception of patients with the centralisation of acute surgeries in the Pardubice hospital. Projects which have already been realised include, for example, the modernisation of road II(3 – bypass of Chvaletice, the Pardubice regional hospital company – multidisciplinary pavilion, revitalisation of the historical building of the Regional Museum in Litomyšl, opening of the Dašická sporting grounds, modernisation of a children´s home in Dolní Černá and the installation of an energy-saving system in the building of the Secondary Vocational School in Chrudim.

In 2020, the European Investment Bank (EIB) announced their plan to grant the Pardubice Region a loan to the amount of CZK two billion (approx. EUR 79.3 million) for financing the Region´s investment programme. Forty-five per cent of the loan, in combination with EU grants, will go into the sector of transport, 37 % into healthcare, 9 % into culture, and 9 % into energy saving projects. These investments will help to improve the quality and safety of roads in the Region, which until now have been underfunded for a long time. They will also be used for the renovation of key public buildings, which are physically obsolete and do not meet the required low energy performance standards, or they lack the necessary equipment for the provision of healthcare and social services, education, culture, and public administration. "The support provided by EIB, focused on connectivity within the Region, communication safety and improvement of healthcare in the Region will substantially help to raise the standard of living in the Region and improve its competitiveness," said Lilyana Pavlova, Vice President of EIB, and added: "Also in connection with the Covid-19 pandemic we are glad that in the framework of this new programme of cooperation with the Pardubice Region we can give more than one-third of the financial costs for the modernisation of infrastructure in the area of healthcare. We also welcome the plans for the modernisation of buildings serving cultural and educational purposes, which is in harmony with EU priorities in the area of regional development and cohesion."

Projects for which the loan will be used include the construction of the central building for urgent reception of patients in the Pardubice hospital, the construction of a new aftercare hospital building in Moravská Třebová, modernisation of Winternitz automatic mills and projects for the reconstruction of lower-class roads. For a number of them, it is not possible to use subsidy from the Integrated Regional Operational Programme or the State Transport Infrastructure Fund.

The new loan is another project, already the fourth, realised in the framework of long-term cooperation between EIB and the Pardubice Region. The total amount of money to be used for financing the modernisation of the infrastructure of the Pardubice Region with the help of EIB loans will be nearly CZK 5.5 billion (approximately EUR 202 million) over a period of 13 years.

EXAMPLES OF PROJECTS TO BE SUPPORTED WITH LOANS FROM EIB:

Healthcare Area

Pardubice Hospital – construction of a pavilion for central urgent reception of patients and concentration of acute surgeries

Aftercare hospital in Moravská Třebová – construction of a new hospital building

Transport Area:

Modernisation of road No. II/337 between Seč and Třemošnice (crossroad III/33741)

Modernisation of road No II/315 between Skuhrov and Lanškroun (roundabout)

Cultural Area:

Reconstruction of Winternitz mills to become a regional gallery; Pardubice Castle – use and reconstruction of the castle surroundings and the castle interiors

Education Area:

Secondary School of Agriculture and Secondary Vocational School Chrudim – rainwater management and reconstruction of the roofs of Polička grammar school

Energy Saving Area:

Reconstruction of Vocational Pedagogical School and Secondary Pedagogical School in Litomyšl and Secondary Medical School in Svitavy

USEFUL CONTACTS:

Regional Authority of the Pardubice Region – www.pardubickykraj.cz

University of Pardubice – www.upce.cz

Regional Chamber of Commerce of the Pardubice Region – www.khkpce.cz

City Authority of Pardubice – www.pardubice.eu

Regional Development Agency for the Pardubice Region – www.rrapk.cz

VYSOČINA REGION

The Vysočina Region has an advantageous central location not only within the Czech Republic, but also in the whole of Europe. The D1 motorway, the E59 road, and the Vysočina railway corridor offer the opportunity to reach important European transport hubs and major cities quickly. The closest airport, Brno-Tuřany, can be reached by car from most of the towns in the Region in one to two hours, and Václav Havel Airport Prague can be reached in two hours. Vienna International Airport is 2.5 hours away. The territory of the Vysočina Region is administratively divided into five districts.

The Region is characterised by its rugged terrain, high altitude, and low population density. The Region is attractive because of its comparatively low levels of air pollution and relatively healthy forests. The Vysočina Region also offers many fine opportunities for summer and winter stays, as well as the possibility of visiting a number of valuable historical and cultural monuments. There are three UNESCO monuments in the Vysočina Region. They are the historical centre of Telč, the Pilgrimage Church of St John of Nepomuk on Zelená hora near Žďár nad Sázavou, and the Jewish Quarter with Cemetery and Basilica of St Procopius in Třebíč. Besides urban tourism, the future of tourism in the Region will undoubtedly rest on various forms of tranquil, environmentally-friendly stays. This is supported by a dense network of tourist trails (approx. 2 900 km), the development of bicycle routes, and the gradually emerging agrofarms providing accommodation.

ECONOMIC POTENTIAL

The Region accounts for more than one-third of the total potato production in the Czech Republic. The Region also holds first position in the harvesting of fodder crops cultivated on arable land and in maize production (17 % of national output). With regard to livestock production, the Vysočina Region specialises in cattle and pig rearing. As concerns economic growth, the Region's most important economic sector is industry. In the past few years, industrial production in the Region has been very dynamic and has favourably influenced the entire regional economy. Much credit for this is due to the intensive development of industrial parks along the D1 motorway (Jihlava, Humpolec, Velké Meziříčí), which was followed by massive direct foreign investment in industrial output in the Region. The most important industrial sectors in the Vysočina Region are metalworking, engineering, and the automotive industry, specifically the manufacture of car components. The leading industrial enterprise in the Vysočina Region is Bosch Diesel, which manufactures diesel fuel injection pumps for the automotive industry. Another important engineering enterprise in the Region is Motorpal Jihlava, which has a similar production programme to Bosch Diesel. The largest clothing manufacturing enterprise in the Region is the traditional underwear manufacturing firm, PLEAS Havlíčkův Brod, owned by the international SCHIESSER GROUP AG, based in Switzerland. An important industrial employer in the Havlíčkův Brod District is Futaba Czech, the supplier of components for the automotive industry, which started production in the Havlíčkův Brod-Baštinov locality in 2005. The construction of this plant on a greenfield site was the first investment project of the Japanese concern in continental Europe. Another foreign investor to locate a plant in the Region, specifically in the Pelhřimov District, is Valeo Compressor Europe — an important employer in the Region — manufacturing compressors for car air-conditioning units. Its customers include leading global car manufacturers (Renault, PSA Peugeot Citroën, Mercedes, Toyota, Volvo, Nissan, and others). Engineering is represented in the Pelhřimov District by the traditional manufacturer of agricultural machinery, AGROSTROJ Pelhřimov. In recent years, the firm has significantly broadened its production range and increased its output. ŽĎAS company is a prominent industrial enterprise in the Žďár District. It is one of the most advanced Czech engineering firms. For more than 65 years, it has been a modern and reliable manufacturer of forming machines, rolled products' processing machines, metallurgical products, and pressing tools. Its production halls are fitted with high-quality machines for heavy- and light-duty machining, assembly, and product testing. The firm supplies its products to nearly 50 countries worldwide. The Vysočina Region has the most vast timber reserves in the Czech Republic, with a well-developed woodworking industry. The most important enterprises in this area are Stora Enso, Kronospan, and Sapeli – the largest and historically the oldest door manufacturer in the Czech Republic. DDL – Dřevozpracující družstvo cooperative – is another large firm operating in the timber production and wood-processing sector, with a 60-year tradition in sawn wood and wood-based panel manufacture. The glass industry is a traditional manufacturing branch in the Region, represented by smaller export-oriented firms, such as CRYSTALITE BOHEMIA s.r.o. Another manufacturing firm is Bohemia Machine at Světlá nad Sázavou, the cradle of original Bohemian crystal cut glass. It is a recognised manufacturer and supplier of high-quality glassmaking machines, to which it has recently added the manufacture of luxury modern-style crystal products under the BOMMA trademark. Another interesting project

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Třebíč

undertaken by Nuvia in Třebíč is an order for the modernisation of four nuclear power stations in Ukraine. The project will be realised in conjunction with the company´s Ukrainian partners for the Ukrainian enterprise, NAEK Energoatom. The modernisation will involve the key safety systems of the power stations, including reactors, turbines, and back-up diesel generators. Nuvia obtained the order after winning an international tender as the tenderer best meeting the technical conditions. The company´s stability and, not lastly, the price were also important factors.
The Region has several industrial zones. One of these, Jihlava Industrial Park, is situated in the northern part of the city of Jihlava, in the close vicinity of the D1 motorway, linking up with the city's industrial agglomeration, in which important firms such as Bosch Diesel, Automotive Lighting, and Kronospan have their manufacturing facilities. Žďár nad Sázavou-Jamská Industrial Park lies on the south-eastern outskirts of the city, linked to important road and railway lines. Bystřice nad Pernštejnem Industrial Park is situated on the south-western outskirts of the town of Bystřice nad Perštejnem (10 000 inhabitants), in close proximity to the railway station. The Pelhřimov District also has a number of industrial parks. Among them, the CTPark Invest in Humpolec has a strategic position beside the D1 motorway linking Prague and Brno.

THE REGION AND THE EU

Under the 2018-2021 Working Programme, based on the Cooperation Agreement between Lower Austria, the South Moravia Region, the South Bohemia Region, and the Vysočina Region, teams composed of regional office representatives, representatives of the Lower Austria Provincial Government and the embassies of the two countries cooperate in 13 areas. One of those thematic groups is the Economy and Digitalisation group.
The Vysočina Region is the contact place for the Interreg V-A Austria – Czech Republic Cooperation Programme. Under this programme, bilateral cooperation projects of Upper and Lower Austria, Vienna, the South Moravia, the South Bohemia, and the Vysočina Regions are financially supported, in agreement with the aims of the programme (one of the priorities of the programme is strengthening research, technological development and innovations). The contact place supplies information about the implementation of the programme, organises consultations with applicants, and processes their applications.
The Vysočina Region is also a member of the Danube-Vltava European Region (ERDV) group, which cooperates with six other regions in Germany (Oberpfalz, Lower Bavaria), Austria (Upper Austria, Lower Austria), and the Czech Republic (Plzeň Region, South Bohemia Region). The subjects tackled by the group include the ERDVmedium-term strategy Space for 4.0 society and Industry 4.0, Healthcare and Tourism.
The Vysočina Region has six partner regions, three of which are in the EU: Austria – Lower Austria, France – Grand Est, Slovakia – Nitra Self-Governing Reion.
The Vysočina Region cooperates with Lower Austria also bilaterally, but the main communication platform is 3 + 1 format cooperation, i.e. three Czech regions – South Bohemia, South Moravia and Vysočina, and on the Austrian side Lower Austria. The 3 + 1 working programme covers all important areas with regional and land competence.
With the French Grand Est Region cooperation focus-

es on secondary education, i.e. general and vocational training, and culture. Both sides would like to extend their cooperation to also cover the economic sphere and the use of new technologies in public administration. In this respect the Vysočina Region also cooperates with the French-Czech Chamber of Commerce.
Its cooperation with the Nitra Self-Governing Region mainly concerns education, culture, and agriculture.
With the South Moravia Regional Development Agency, the Lower Austria Region, and the South Bohemia Regional Development Agency, the Vysočina Region cooperates in the framework of the Interreg V-A Austria – Czech Republic project called DigiVill. Its main purpose is improving the quality of life in the countryside and in the Czech-Austrian border region by improving the access of the population and the communities to digital technologies and verify which applications can be used for communication with citizens and for the joint planning of the development of the area. With this project, the Region follows up on the previous very successful projects Local Agenda 21, which also include the Committed Citizens project and MAG 21.
Together with the Upper Austria Federal State, the Vysočina Region realises a project called Cross-Border Transfer of Knowledge in the area of Industry 4.0, financed by the Interreg V-A Austria-Czech Republic Small Project Fund. The objective of the project is to increase the competence of the target groups (mainly small and medium-size enterprises, secondary schools and universities, potentially other institutions) in the area of digitalisation and Industry 4.0 on both sides of the Austrian-Czech border.
In past years the Vysočina Region was a partner to the RUMOBIL (Mobility in European rural regions affected by demographic changes) project financed from the Interreg CENTRAL EUROPE programme, which was realised by a consortium of 12 partners from seven Central European countries. The consortium prepared a common supranational strategy for the optimisation of public transport and realised pilot activities for testing and verifying specific innovative solutions in public transport in the partner regions.

HERE ARE SOME EXAMPLES OF THE REALISED PROJECTS:

Roštejn Castle – opening of new expositions (2017 – 2020)
Bypass of Velký Beranov; bypass of New Veselí; bypass of Salačova Lhota
Gradual modernisation of II/602 copying D1 practically its whole length (Pelhřimov – Velké Meziříčí)
Reconstruction of key Brno Bridge in Jihlava on road II/602
Children´s hospital pavilion in Nové Město na Moravě – new structure
Surgery Pavilion in the Třebíč Hospital
Training and education centre of the Vysočina Region´s Medical Rescue Service
Regional hospital information system set up by the Vysočina Region
Household heating boiler subsidisation programme
Renewable energy sources study centre at the Žďár nad Sázavou Secondary Technical School and the same type of centre at the Secondary School of Construction in Jihlava
Transformation of social housing, thermal insulation of public buildings
Construction of a new hall for machine storage in the school farm in Humpolec, construction of facility for small-scale pig breeding and fattening
Gradual revitalisation of parks created by the Vysočina regional administration

USEFUL CONTACTS:
Vysočina Regional Office – www.kr-vysocina.cz
Jihlava Municipal Council – www.jihlava.cz
Regional Chamber of Commerce – www.hkjihlava.cz
Vysočina Regional Development Agency – www.rrav.cz

Photo: Vysočina Regional Office archives; © CzechTourism archives, Author: MARK BBDO

SOUTH MORAVIA REGION

South Moravia ranks among the regions with major economic potential. The created gross domestic product of the Region accounts for one-tenth of the Czech Republic's total gross domestic product, its area taking up 9 % of the CR territory. The Region is divided into seven districts (Blansko, Brno-City, Brno-Country, Břeclav, Hodonín, Vyškov, and Znojmo).

The natural catchment hub of the whole of South Moravia is the Regional Capital of Brno, situated at the confluence of the Svratka and Svitava Rivers. The city with an important regional position, at the junction of motorways in the directions of Prague, Vienna, Bratislava, and Olomouc, is the centre of traditional international exhibitions and trade fairs, which underscore its status as a busy international commercial hub. Two sites in the Region's territory are included in the UNESCO World Cultural Heritage List. The most significant is the Lednice-Valtice complex, as an example of an area of forests, meadows and lakes, splendidly complemented with romantic structures of churches and gazebos, and primarily the Lednice and Valtice Chateaux. The other unique phenomenon is the modernist architecture of Brno of the period between the two World Wars, represented by the singular Functionalist project of the family villa by the German architect Ludwig Mies van der Rohe, who designed this house commissioned by Greta and Fritz Tugendhat, in 1928. Important areas of the South Moravia Region also include two UNESCO-listed biosphere reserves, namely Lower Moravia and the White Carpathian Mountains. The eventful history of the South Moravia Region is documented by the local archaeological sites, chateaux, castle ruins, churches, and synagogues.

ECONOMIC POTENTIAL

The South Moravia Region is noted for its great economic potential. Its created gross domestic product accounts for 10.9 % of the national gross domestic product. The dominant position in the Region known for its industrial tradition is held by the manufacturing industry. The prevailing sectors are engineering (KRÁLOVOPOLSKÁ, companies of groups ZKL, Zetor, ČKD Blansko a.s., ABB s.r.o.), the electrical engineering and electronic industries (Thermo Fisher Scientific, TESCAN Brno, Siemens, branch company Industrial Turbomachinery, Siemens Electric Ma-

Brno

chines). These sectors, together with the metalworking industry, account for 20 % of the private sector in the South Moravia Region. Brno is the centre of software firms, space and aviation oriented branches and other highly innovative sectors. Companies such as Kiwi.com, Y SOFT Corporation, and Kentico have become generally known and have witnessed a sky-rocketing growth. In recent years the South Moravia Region has become an incubator of large investment groups, which greatly influence the economy of the Region and the entire Czech Republic. These include, for example, Jet Investment, which owns shares in engineering firms, PBS Industry Group, Hoeckle Poldi Group, Composite Group and Tedom Company, or DRFG, which have become household names in the Czech Republic. The centres of the engineering industry are Brno, Blansko, Kuřim, Boskovice, and Břeclav. The electrical engineering industry has a tradition of more than 100 years in the Region, and is now developing in new industrial agglomerations on the outskirts of Brno, Blansko, Vyškov, etc. The food industry is based mainly in the south and east of the Region, in Znojmo, Břeclav, and Mikulov, where large agrarian enterprises linked to the local farm production are situated, such as fruit and vegetable canning companies. The northern and eastern parts of the Region are well-known for firms processing meat and manufacturing meat products and other foods from grain. There are four large breweries in the Region (Brno-Starobrno, Černá Hora, Vyškov, and Znojmo-Hostan) and numerous wine producers (Znojmo, Valtice, Čejkovice, Velké Pavlovice). The chemical and pharmaceutical industries in the Region are concentrated mainly in Brno and on the lower reaches of the Morava River, e.g. in Hodonín. South Moravia is another region that is becoming a technological incubator, which has an excellent rail and road infrastructure and a university background. Another asset of the Region is that global partners have entered many local firms. One of these is Kordárna, leading European manufacturer of cord fabrics for the rubber industry and technical fabrics for transport conveyers. The company´s cord fabrics, accounting for approximately 75 % of its output, are exported to more than 15 countries in Europe, North and South America, and Asia. An important partner to South Moravia companies is JIC Innovation Agency. The Agency supports, for example, Garage Angels, an informal group of angelic investors, which has a 25 per cent share in Senzoor Czech, a technological leader in the area of smart sensors. Senzoor sensors operate in the framework of the LPWAN (low-power wide area) network, i.e. in an attractive and rapidly growing sector referred to as the Internet of Things (IoT). The Garage Angels group, which came into being in Brno at the beginning of 2019, associates mainly successful regional businessmen and investors. Its emergence was mainly due to the gap in the investment eco-system, where, despite a number of smart and capable start-up businessmen and a relatively sufficient supply of funds for investment in the later phases of the lives of firms, real business angels ready to supply the initial and the most needed risk capital is missing. In 2020, JIC supported several companies with interesting projects – for example Sportbalance with its medical device for improving shoulder surgeries, the firm Labdeers, which develops an apparatus for the analysis of plant seeds, PlasmaSolve and its user-friendly MatSight computer software for material engineers developing nanocomposite materials and the firm Cactux with its special manipulator for computer tomography.
The South Moravia Region has a number of interesting investment projects to its credit. Honeywell, concerned with aviation technologies, supplies its products to other branches of industry, Infosys, the company´s Shared Services Centre, provides its clients with IT services, and the Thermo Fisher Scientific firm develops and manufactures electron microscopes. The most important service centre of the South Moravia Region is undoubtedly the City of Brno. More than 70 % of its workforce employed in various service sectors, as well as its significant knowledge potential (the highest share of university graduates in the Czech Republic, availability of workforce with foreign language capabilities, etc.) rank the city among the most competitive locations not only within the Czech Republic, but also within the Central European region. The city owes this reputation to the strong inflow of foreign investments, such as IBM and Siemens, both having their software design centres here, and companies such as Honeywell (Global Design Center, automation and control solutions), Red Hat Czech (software development), FEI (electron microscopes), BMT (medical technology) with their research and development centres in Brno. Altogether, there are more than 20 development centres established by multinational companies in the Region. An important player in the service industries in Brno is the Brno Exhibitions (Veletrhy Brno; BVV) – the largest company specialised in fairs and exhibitions in Central Europe makes Brno an important centre of international trade. Major companies have established their shared services centres, customer support centres, and research centres there, such as: Vodafone, SolarWinds Czech, Lufthansa, PPG Industries, and Zebra Technologies. In 2020 Contera development company began to build a business park in the industrial zone in Hustopeče, Břeclav District, oriented on light industry production and logistics. The project links up with the local historical tradition of industrial production and benefits not only from the vicinity of the D2 motorway, but also from its location in a lively town with a good quality of life.

THE REGION AND THE EU

European funds allocated to the Region go especially to science, research, and modern technologies. Brno in particular is a city of innovation, where smart solutions, often unparalleled in the rest of the country and sometimes even anywhere else in the world. Greatly responsible for this are the local universities and research centres, and other institutions. In

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future, the money from EU funds is planned to flow mainly into projects in the area of research, development and the support of business and innovation, aimed at the fulfilment of two main tasks. The first is climate protection and the other the creation of a more intelligent Europe, i.e. support of science and the development of modern technologies. The "More intelligent Europe" project provides for the creation of opportunities to further develop the local innovation ecosystem. This applies not only to the city of Brno itself, but also to the entire South Moravia Region, which can profit from Brno´s innovative environment. The aims the Region has set itself are outlined in its Regional Innovation Strategy (RIS), which is coordinated by the South Moravia Innovation Centre (JIC). While in previous years the strategies concentrated primarily on the creation and support of start-ups and research centres, such as the Central European Technological Institute (CEITEC), the new strategy places emphasis primarily on the interconnection of actors in the innovation ecosystem, such as universities and firms, or innovations in public space. Interesting projects supported by the EU include support of St Anne Hospital, which in 2018 obtained money from European funds for the "Engineering of new biomaterials and biopharmaceuticals for diagnosing and treatment of cerebrovascular and neurodegenerative diseases" programme, on which it cooperates with other partners. Nearly CZK 75 million will be made available from the Research, Development and Education Operational Project by the end of 2022. The money will be used for the development of new laboratory methods, biomaterials, biopharmaceuticals and microfluidic chips, which enable the manipulation of very small volumes of solutions. All these innovations are intended to help to prevent, diagnose, and treat cerebrovascular and neurodegenerative diseases. The first category includes stroke, and the other, for example, the Alzheimer and Huntington diseases and amyotrophic lateral sclerosis (ALS).

A number of institutions in the Region cooperate with partners in Lower Austria, thus contributing to the development of the Region. In the past this type of cooperation was supported by the programmes PHARE CBC, INTERREG IIA, INTERREG IIIA and the Austria – Czech Republic Crossborder Cooperation Programme.

USEFUL CONTACTS:

South Moravia Regional Development Agency – www.rrajm.cz
Brno Regional Chamber of Commerce – www.ohkbrno.cz
South Moravia Innovation Centre – www.jic.cz
South Moravia Regional Office – www.kr-jihomoravsky.cz
Business and Innovation Centre – www.bicbrno.cz
Technology Park Brno – www.technologypark.cz Brno
University of Technology – www.vutbr.cz

ZLÍN REGION

The Zlín Region, with its long industrial tradition, is linked with the name of Tomáš Baťa, a businessman who in the first half of the 20th century turned Zlín into a shoemaking empire. Still today, the Zlín Region is one of the most industrialised parts of the Czech Republic, at the same time boasting a healthy environment, a good prerequisite for the development of tourism.

The Zlín Region is situated in the eastern part of the Czech Republic, stretching along the border with the Slovak Republic. Even though it is one of the Czech Republic's three smallest regions (with a surface area of 3 964 sq. km), it is quite unique among other Czech regions with its charming diversity of landscape, folklore, historical and technical sights. No other tourist area can simultaneously offer visitors mountains, garden architecture, spas with healing mineral springs, vineyards, remnants of the Great Moravian Empire, numerous monuments and historically valuable buildings, and unique modern Functionalist architecture. Its three ethnographic entities – the fertile Haná, hospitable Slovácko, and distinctive Valašsko – add to the originality of the Region. The beautiful Podzámecká and Květná Gardens and the Archbishopric Chateau in Kroměříž are world renowned, being on the UNESCO List of World Cultural Heritage Sites. The statutory City of Zlín is the natural industrial, business, and cultural centre of the whole of South-East Moravia. As a Garden City set harmoniously in a natural environment, it is a unique example of Functionalist and 20th-century urban architecture, the heritage of Tomáš Baťa. The city is linked with the existence of film studios, whose importance was enhanced by the success of animated films produced here in the latter half of the 20th century. Each year, the city is the venue for the International Film Festival for Children and Youth and the Barum Czech Rally motoring competition. An important aspect of Zlín are its cultural and educational endeavours. The materialisation of these endeavours are the Cultural and University Centre, built between 2006 and 2011 to the design of Eva Jiřičná, and the 14|15 Bata Institute – newly reconstructed factory buildings, which were opened in 2013 as a new venue for the Regional Art Gallery, the Museum of South-East Moravia, and the Regional Library.

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ECONOMIC POTENTIAL

The Zlín Region has always been looked upon as an economically strong area with a high concentration of industrial enterprises. The emergence and development of a large part of the industrial manufacturing plants are linked with the name of Tomáš Baťa. In the past, the main manufacturing sector was the footwear industry with other allied sectors, such as the rubber industry and engineering developing in parallel with it. The Region is also known for its aircraft industry and allied branches. These activities were traditionally primarily linked with Zlín, the centre of the Region, and its hinterland. In the course of time, other strong economic centres emerged in the Region, such as Vsetín, Uherské Hradiště, Kroměříž, Valašské Meziříčí, Rožnov pod Radhoštěm, and Uherský Brod. The current industrial potential of the Region is based on the existence of the original key manufacturing enterprises and foreign investors in industry. The most important among these are suppliers for the automotive industry, e.g. rubber manufacturing companies (producing mainly car tyres), plastics companies (producing plastics and composite parts of vehicles), machinery, industrial forging, and chemical companies (producing specialised parts for the safety of passengers). Another important branch is the aircraft industry, represented by prominent Czech aircraft manufacturers and their suppliers, companies focused on electronics (R&D and production of semiconductors, photovoltaic systems, and intelligent control systems), precision machinery (vertical and horizontal machining centres, special tooling for machine production), electrical and mechanical engineering (generators, motors and their components), production of weapons, initiation systems for blasting operations, as well as furniture manufacture. In the past few years, intensive development has been witnessed by the ICT sector, mainly in the field of safety (development of anti-terrorist safety systems, electronic transaction technologies, and road traffic technologies). The strong domain

CZ | For those who know

Ceska zbrojovka Uhersky Brod - 85 years at the top

Ceska zbrojovka, based in the city of Uhersky Brod (CZUB), is not only the largest manufacturer of small arms in the Czech Republic, but also one of the world's most important companies in this field. For the past 85 years, its models have been among the best on the global market.

The CZ factory in Uhersky Brod (southeast part of the Czech Republic) was built in 1936 when the western borders of then Czechoslovakia were being threatened by Nazi Germany. Its original production program was the supply of high-end automatic weapons for domestic armed forces, as well as for export. Production of civilian firearms started shortly thereafter.

The turbulent 20th century brought countless challenges to CZUB. Decisions on its focus and volume of production were severely limited after 1948, and it only had minimal contact with international customers. Nevertheless, it still managed to be very successful and many of its products became globally respected legends, such as the vz. 58 and vz. 61 Scorpion submachine guns, CZ 75 pistols, ZKM rimfire rifles and ZKK centerfire rifles. Unfortunately, only a few of its many hundreds of thousands of satisfied users around the world knew where these models were manufactured. Before 1989, the Uhersky Brod factory was only allowed to put the three-letter code „she" on its service weapons, while trademarks of „older" Czechoslovak firearm manufacturers were used on its civilian models.
After the fall of the communist regime, and with the subsequent establishment of the joint-stock company Ceska zbrojovka Uhersky Brod, a dramatic change occurred that immediately introduced a new system of "CZ" branding on its models. Although its post-revolutionary development was also difficult, CZUB was soon on the right track. A major turning point came in 2006 when the company had a majority Czech shareholder and was led by CEO Lubomir Kovarik, MBA. At this time, CZ was rapidly transformed into a highly efficient and modern company. The new generation of CZ guns received an enthusiastic response from customers and CZUB was definitively placed among the world's most respected firearm manufacturers. Its already impressive position in 2018 was further strengthened by CZ's integration into the international holding company CZG - Ceska zbrojovka Group SE, headed by the former CEO of CZUB Lubomir Kovarik. With the recent acquisition of the American firearm company Colt, CZ now ranks among the world's most important firearm manufacturing groups.

CZ's current firearm portfolio includes polymer „striker-fired" pistols from the CZ P-10 series, modern versions of the ageless CZ 75 (led by the extremely successful CZ SHADOW 2 model), CZ 527 and CZ 557 centerfire rifles, CZ 457 and CZ 512 rimfire rifles, CZ SCORPION EVO 3 A1 submachine guns and CZ BREN 2 assault rifles (civilian semi-automatic models are also available). CZUB is a proud partner of many domestic and international armed forces, and exports its extensive range of weapons to more than 90 countries around the world. In 2020, CZG reported record sales of 467,463 firearms, with the vast majority being CZ branded products.

of the region are progressive design approaches that are applied in products, technologies and processes across a number of industries mentioned above. In this respect, a strong ecosystem has developed in the Region. Companies that apply design-oriented approaches are associated in the Zlín Creative Cluster. The Zlín Region offers skilled and flexible labour at very reasonable wage costs.

The most important foreign investors in the Zlín Region (according to the number of employees) are the companies of Continental AG from Germany and ON Semiconductor from the USA. In addition, there are numerous successful foreign industrially-oriented investors from Germany, Japan, the USA, the Netherlands, Spain, the UK, France, Canada and other countries. One also finds significant investments in the Zlín Region by local companies, mostly oriented towards R&D and innovation of their products. Potential investors are able to find suitable plots for their investment projects in a couple of industrial parks or in the database of mapped suitable brownfields in the Zlín Region. The most important development area is the Holešov Strategic Industrial Park, where the construction of infrastructure started in 2008. The chosen area to the south of the town of Holešov fulfils all the conditions for successful projects, positively influencing the future growth of the regional economy as well as that of the whole of the Czech Republic. With its 360 hectares, the Holešov Strategic Industrial Park is one of the largest prepared development areas in the Czech Republic. Investors can choose plots ranging in size from 0.5 to 100 hectares and may take advantage of the perfect access to the Czech and European highway networks. There are a few public airports, including international ones, in close proximity to Holešov as well. The area has all the necessary technical infrastructure, with the backbone transport communications of the Industrial Park being connected with the regional transport network. The area is flat with good conditions for the establishment of basic structures. The competitive advantage of this locality is the industrial tradition of the Region and the Progress Technology Park situated in the heart of the area. This Technology Park significantly broadens the possibilities for investors, mainly those innovation-oriented or start-up companies for which the purchase of a plot and the construction of premises could be a distinctive barrier to starting a new business. Such companies may find their new address as well as the required services in the Technology Park.

THE REGION AND THE EU

More than CZK 41 billion was paid out to the Zlín Region in the 2007-2013 programming period from operational programmes. Adding to it all financial means obtained from the European Union, not only from Czech operational programmes, the total sum amounts to some CZK 45 billion. The largest volume of finance went into the construction and repair of roads and motorways and environmental protection projects. Also important was the support of research, development and innovation. The Central Moravia Regional Operational Programme also supplied several billion crowns for the development of tourism, urban revitalisation, education, social services, and healthcare. The most important revitalisation project was the reconstruction of the former Baťa complex, which helped towards the development of culture and tourism in the Region. Other projects included energy saving, replacement of obsolete heating boilers in households and environmental and healthcare improvements. For example in 2020, the Region obtained more than CZK 54 million from EU funds for the purchase of 13 new ambulances. Part of the project was also the purchase of 28 devices for indirect cardiac massage and four devices for artificial lung ventilation.

In future, the Region is planning to invest massively in transport infrastructure, e.g. the construction of two motorways, railway corridors, with the electrification of the Zlín–Otrokovice railway line, and several bicycle paths. One of the Region´s priorities is the support of research, development and innovations, in particular the development of Tomáš Baťa University research centres and the building of new development and innovation facilities in firms. From the Region´s point of view it is also important to invest in new hospital buildings, social services, environmental protection and a number of other areas.

From the inception of its establishment, the Zlín Region has been maintaining and developing international cooperation with different regions and areas in other countries. At first, the Zlín Region logically focused on its immediate neighbour – Slovakia, specifically the Trenčín and Žilina Regions. In 2003 it began to cooperate with the Subcarpathian Voivodship, Poland, and the Lviv area, Ukraine. Among European regions it signed a cooperation contract with Piomonte Region, Italy, and Vas County, Hungary, a protocol on mutual cooperation with Hedmark Region, Norway, and in 2011 an agreement on the accession of Zlín Region to the Cammini d´Europa (European trails) network. The European cultural trail of St Cyril and Methodius (EKSCM), created by the association with the participation of the Zlín Region has the ambition to become a Cultural Trail of the Council of Europe.

USEFUL CONTACTS:
Zlín Region – www.kr-zlinsky.cz
City of Zlín – www.zlin.eu
Regional Chamber of Commerce of the Zlín Region – www.khkzlin.cz
Technology Innovation Centre Ltd. – www.ticzlin.cz/en
Tomáš Baťa University in Zlín – www.utb.cz
Holešov Strategic Industrial Zone – www.zonaholesov.cz

OLOMOUC REGION

The Olomouc Region stretches along the Morava River. The Region itself consists of five districts: Jeseník, Olomouc, Prostějov, Přerov, and Šumperk. The Region's administrative centre is the city of Olomouc, situated 275 km from the capital, Prague. The Olomouc Region has a rich cultural tradition and is an important tourist centre with a large number of historical sites and unique natural features.

The Region is known for its attractive countryside, with a large number of historical sights. One of the most popular places is the Zoo at Svatý kopeček (Holy Hill), which is visited by about 400 000 people yearly. The ten most visited places and attractions in the Region include the Flora Olomouc Exhibition Grounds, the Aquapark and the National History and Geography Museum in Olomouc, Bouzov Castle, Olomouc Museum of Modern Art, Helfštýn Castle, Olomouc Archdiocesan Museum, Šternberk Castle, and the Hand-made Paper Mill and Paper Museum at Velké Losiny. The regional city of Olomouc is most visited by tourists, with the second most valuable historical city reserve in the country, comprising a vast compound of historical buildings and architectural monuments situated on the well-preserved grounds of the medieval city.

Olomouc

ECONOMIC POTENTIAL

A traditionally strong position in the Region is held by agriculture and the related food industry, which accounts for more than thirty per cent of the total volume of the sector. In spite of this, the dominant role is played by general engineering, metalworking, and the manufacture of electrical and optical devices. Also important are the textile and glass industries and the production of building materials. Good conditions for industrial activities exist in what is called the local Business Triangle, formed by the cities of Olomouc, Prostějov, and Přerov and their environments. An advantage is their relative closeness – the distance between them being approx. 20 km. The Region's other tradition is the processing of metals, which used to be mined there in the past. Over the years, metallurgy became a basis for the development of metalworking and engineering production. After 1989, most of the local manufacturing plants were taken over by foreign investors, who modernised them and incorporated them in their portfolios. The largest companies in this area are Miele technika s.r.o. (white goods), Edwards (pumps and vacuum systems), SSI Schäfer (logistic and warehousing systems), Honeywell Aerospace (aircraft engine parts), and MUBEA (suspension and lightening of vehicle bodies). Electrical engineering has become an especially rapidly growing industry in recent years. Other fast-growing sectors are optics and precision mechanics, which include both traditional and new firms.

The most important among these are HELLA AUTOTECHNIK (headlights), Siemens (electric motors and drives), Meopta (optical instruments), and EPCOS (magnetic parts). The food industry also holds an important position in the Region, where agricultural production plays a significant role in the economy. The largest companies located in the Region are SOUFFLET AGRO (cereal products), Nestlé Česko (sweets), OLMA (dairy produce), MJM Litovel (cereals), and ORRERO (cheeses). The textile and clothing industry, the Region's traditional sector, maintains its position as an important manufacturer and supplier. Other traditional sectors are construction and building materials production based on the supply of local materials. Other large firms located in the Region include ŽPSV (concrete sleepers), Saint-Gobain Construction Products (insulating and building materials), Cement Hranice (cement and building mixtures), and TONDACH (roofing).

CzechTourism archives, Authors: Vendula Burgrova; Eva Hobzová; pixabay.com

Olomouc

Zdeněk Zapletal´s company, Laski, is one of the world´s leading manufacturers of municipal technology equipment. Another firm, based in Zábřeh, the innovative manufacturer of Sulko windows, has gained renown in prestigious markets in Germany and Switzerland. The Region is the seat of Farmak, a purely Czech chemical and pharmaceutical company concerned with the development, production, and marketing of medical substances and chemical intermediates and specialties. The Olomouc Region offers potential investors a number of industrial parks, as well as modern office space. Olomouc-Hněvotín Technological Park provides investors with 950 000 square metres (95 ha) of development surfaces, designed for the location of investment projects, mainly in the area of pure innovative technologies, the manufacturing industry and light production, strategic services, shared services, administration, warehousing, and storage surfaces. The Science and Technology Park of Palacký University in Olomouc has been renting offices and manufacturing spaces and providing consulting services since 2000, making it possible for its clients to use the instruments and know-how of Palacký University under advantageous conditions.

There are good conditions for the development of services in the centre of the Region, where new strategic centres (BSS centres) are coming into being. The ABSL survey shows that Olomouc will play a key role in the development of the company service sector in the Czech Republic. This is mainly due to the strategic position of the city in the centre of Moravia, its excellent transport connections with important domestic and international business centres, the good availability of office space totalling 77 000 sq. m, and a highly skilled and educated workforce. A great potential for investors is based on the workforce recruited from among the graduates of Palacký University in Olomouc, which turns out some 2 000 young people each year. The number of these graduates, with good foreign language skills, is a very important factor for company service centres seeking new employees. Investors will also appreciate the lower costs in the Region. To help to raise competitiveness, support innovation, and stimulate demand for the results of scientific and research work and their commercialisation, an institution – the Science and Technology Park – has been established at Palacký University in Olomouc (VTP UP). Part of the Park is the Technology Transfer Centre, whose task it is to promote the commercialisation

of the University's scientific research and to provide patent services. Another workplace is the Technological Centre with laboratories of the Applied Research Centre. There are several projects in the Olomouc

Olomouc

Region whose task it is to support scientific research in the Region. One such example is BIOMEDREG – Biomedicine for Regional Development and Human Resources (the project is concerned with the biomedical research of tumours and infectious diseases). On the basis of the research results, the Centre develops new medications and outlines individual therapy for patients. (More at www. biomedreg.eu). One of the tasks of Haná Regional Centre for Biotechnological and Agricultural Research is to transfer advanced plant biotechnologies to enterprises in the Region. As a part of this vast project, new facilities destined for scientific research will be built on a surface area of more than 7 000 square metres. (More at www. cr-hana.eu). RCPTM – The Regional Advanced Technology and Materials Centre – supports the start-up of new firms using sophisticated technologies and applied physical, optical, and chemical research, with a special focus on nanotechnologies.

THE REGION AND THE EU

Ever since its establishment, the Olomouc Region has been developing partnership contacts with regions in other countries. In addition to these relationships, it cooperates with organisations whose task it is to help promote communication between EU member states (e.g. Permanent representation of the Czech Republic in the EU, Europe Direct Olomouc or Eurocentrum Olomouc). The purpose of its cooperation with European regions is to gain and to share experience, and at the same time to present the Region as a reliable and attractive foreign partner. Currently the Olomouc Region cooperates with 10 partner regions in other countries, specifically the Autonomous Region of Vojvodina (Serbia) – news service in the Czech language at Newbalkan.com, Kostroma Region (Russian Federation), Landkreis Würzburg (Germany), Opole Vojvodeship (Poland), Reggio Emilia Province (Italy), and Baranya County (Hungary).
The Region´s Strategic Development Department cooperates mainly with Polish cross-border regions, which are engaged in joint projects with partners in the Olomouc Region. In the framework of the Interreg V-A Czech Republic – Poland cross-border programme this project includes the regions of Lower Silesia, Opole and Silesian Voivodeships. Communities, non-profit organisations and the Region implement different types of projects, such as the reconstruction of roads, cooperation of integrated rescue units, exchange of experience, organisation of cultural events, and partner networking. The Olomouc Region is a member of the Praděd Euroregion, Glacensis Euroregion, and the European Group for Territorial Cooperation Novum, which are also integrated in cross-border cooperation programmes and support the development of the Bohemian–Polish border area.
An interesting EU cooperation project to be launched in the near future is the Czech-Polish Hřebenovka – Eastern Part ridge hiking trail, in which the Region acts as a partner. The aim of the project is to build a long-distance trail connecting the peaks of the mountains of Ještěd, Sněžka, and Praděd, to be provided with modern infrastructure and parking

facilities. Another project, called How do you organise your rescue system?, brings together Polish and Czech healthcare rescue services, which have formed a partnership named ESUS Novum. The Olomouc healthcare rescue service is also its partner. Its programme is the organisation of joint training courses and the exchange of teams, with the aim to intensify mutual cooperation of the Czech and the Polish rescue systems. The projects Písečná–Nysa crossborder project and the Hanušovice–Stronie Slaskie project are targeted at road reconstruction so as to create conditions for the development of tourism in the border area and promote business activities in the area.
The leading partner in both projects is the Olomouc Region. The Safe Border Area project ensures the cooperation of Polish and Czech fire fighting brigades in the border regions and voivodeships; the Olomouc fire-fighting organisation is also its partner. The mission of the project is language education, meeting of experts, training, purchase of equipment, strengthening communication, crisis management, coordination of joint actions, and rescue of people.

EXAMPLES OF COMPLETED PROJECTS FINANCED WITH EU FUNDS

Heritage of Vincenz Priessnitz in Czech-Polish Border Regions

www.priessnitz.cz/cz/volny-cas/62-balneopark-vincenze-priessnitze.html
Locality: Town of Jeseník
The Balneopark is a much-sought after resort used for water therapy and tourism. The project to promote the resort has won a number of prizes in public competitions and ranked first in the Most inspirative 2007-2013 Czech-Polish Cross Border Cooperation Project.

Litovel Moravia House of Nature

www.dumprirody.cz/dum-prirody-litovelskeho-pomoravi/
Locality: Horka nad Moravou
The Litovel Moravia House of Nature is situated in Horka nad Moravou, in the "Sluňákov low-energy house" centre. Visitors to the centre can enjoy the beautiful nature and attend lectures and other events in the Nature Gallery located within the Litovel Moravia Protected Landscape Area.

Archbishop´s Palace Olomouc – Valuable Cultural Sight

www.arcibiskupskypalac.cz/cs/
Locality: Statutory City of Olomouc
The project comprises the restoration of the building and the purchase of interior furnishing. After reconstruction and refurbishing, the Palace became a much sought-after tourist attraction, offering sightseeing tours, including specialised tours for visitors with visual impairment. Conference space inside the palace can be rented and used for various cultural events.

Modern Railway Cars for the Olomouc Region

www.cd.cz/default.htm
Locality: Olomouc Region
Three new railway cars have been put into service on the Olomouc backbone railway line, making travelling there more attractive and comfortable. The cars are designed so as to meet the requirements of handicapped passengers. Another favourable aspect is that their operation is friendly to the environment.

Reconstraction of a Pavilion in the Prostějov Social Services Centre

www.csspv.cz/
Locality: Statutory city of Prostějoov
The newly reconstructed facility provides care for Alzheimer patients in the form of a home. The pavilion has been built in the place of an unused structure in the premises of a former hospital. The pavilion provides care for 29 senior patients and it has given work to 23 new workers and assistants.

USEFUL CONTACTS:
Olomouc Regional Office – www.kr-olomoucky.cz
Olomouc land price maps and other information for businessmen, including information about industrial parks – www.olomoucko.cz
Science and Technology Park, Palacký University, including information about the Business Incubator – www.vtpup.cz
Palacký Univerzity Olomouc - https://www.upol.cz/en/

WORLD PLAYER IN THE ELECTRIC HEATING SYSTEMS MARKET

The Czech firm, Fenix, is one of the largest European manufacturers of electric heating systems, as well as an important exporter. The company exports its products to more than 70 countries across 5 continents and was ranked first in the "Large Company" category in the 2020 Czech Exporters' Awards Competition. Its core business is the manufacture and sale of electric heating systems, with ECOFILM floor and ceiling heating foils, heating cables, cable mats and ECOFLOOR antifreeze systems, ECOSUN radiant heating panels, and recently also AES battery storage facilities for household and industrial use as the backbone of the group´s production programme.

The firm, which started as a small garage workshop making electric radiant panels, has become an important player in the market with a turnover of more than CZK 1.7 billion. In addition, this is a company which can justifiably serve as an example of showing the usefulness of including the younger generation in the company management. For the whole duration of its existence, the company´s head has been the father, Cyril Svozil, Director and owner of the holding. His daughter, Kateřina Jezerská, has several years behind her of successful employment in the position of Executive Director of the Spanish affiliation of CEILHIT. Since January 2017, she has been Director of Fenix Trading s.r.o., generating the highest revenue among the firm´s subsidiaries. The Director's son, Cyril Svozil Jr., who spent 8 years in France as head of the company´s affiliation, ACSO, now heads the department concerned with the development and manufacture of battery storage facilities and is gradually taking over the management of the entire Fenix Group.

"The year 2020 was for us one that can be characterised as a year of investment, which we estimate at about CZK 180 million. Last year, the Fenix Group was joined by the Serbian company of Elmark. We are enlarging production lines in the Spanish company of Ceilhit and are increasing automation in our plant in Jeseník. There, the biggest investments were the purchase of a Salvagniny automatic punching line, to be put into operation later this year, the purchase of a railing and a welding robot, an extrusion line for the manufacture of heating cables, and a painting line. The construction of a new Fenix plant in Slovakia has been postponed until later this year, due to the Coronavirus pandemic," said Kateřina Jezerská, Director of Fenix Trading, adding:

"We are preparing for Expo Dubai, postponed until October 2021. It will be our first international exhibition, at which we will exhibit in the Middle East."

Besides comfortable heating in residential houses, heating cables and panels have also proven themselves in agriculture and industry, e.g. for heating the soil in greenhouses, protection of vines in vineyards against frost and heating livestock stables. In recent years, heating cables have found their use in heating football pitches. They are becoming popular in the European market, in the heating of playground surfaces with artificial grass. In 2018, for example, Fenix supplied heating cables for 4 football pitches with artificial grass in Norway and, in 2019, heating rugs were installed on 11 fields. The response from the clubs using the heating systems are very good; the players prefer training on fields with electric heating, which they find much more comfortable. Long-term experience shows that electric heating responds very quickly to today´s frequent temperature changes and using this type of heating is therefore much more economical. In addition, hot water systems are unable to ensure such flexibility and such precision of small amounts of heat supplies as electric heating. Currently, the holding has affiliations in 9 countries, in addition to the Czech Republic also in Slovakia, France, Spain, the UK, Norway, Germany, and Poland, and since 1 January 2021, also in Serbia. The firm employs 325 people in these countries (180 in the Czech Republic).

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MORAVIA-SILESIA REGION

The Region's border characteristics provide opportunities for efficient cooperation in the manufacturing sector, infrastructural development, cultural and educational activities, and especially in the area of tourism. For this purpose, four Euroregions are currently active in the Region – Praděd, Beskydy, Silesia, and Cieszyn Silesia.

The Region has an area of 5 427 sq. km and consists of six former districts (from the West: Bruntál, Opava, Nový Jičín, Ostrava-City, Karviná, and Frýdek-Místek). The Moravia-Silesia Region is the third most populous of the Czech Republic´s 14 regions. In addition, nearly 60 % of its inhabitants live in towns with a population of more than 20 000, which is quite exceptional in comparison with all the other regions. This concentration may be one of the necessities of its survival – in spite of great shifts in the labour market, more than one-third of the employed people work in industrial enterprises, many of which have closed down, but many others have come into being. The regional city of Ostrava is considered as the Region's commercial and cultural centre. It has large shopping and exhibition centres, luxury hotels, pleasant cafés, and theatres. The tourist trade also benefits from the extensive network of cycling tracks through the interesting surroundings. The Region's traditional cultural centres are Ostrava, Opava, and the Těšín District, with the important Polish minority in Český Těšín. The internationally renowned Janáček Philharmonic Orchestra is based in Ostrava. The Region is characterised by its conditions for industrial tourism (Tatra Technical Museum in Kopřivnice, Museum of Wagon-Making in Studénka, Museum of Mining in Ostrava-Petřkovice, Dolní Vítkovice, National Cultural Heritage Site of Michal Coal Mine). The Region's spa industry is based on utilising the curative effects of the iodine-bromine water in the Darkov Spa and Rehabilitation Centre. A new spa sanatorium with architecturally interesting buildings has been operating in Klimkovice since the beginning of the 1990s. Watersport fans enjoy boating down the Moravice and Odra Rivers, and those who prefer recreation on the water's edge visit the Žermanice and Těrlicko dams, or, less frequently, the dam in Slezská Harta. There are golf courses of various levels of difficulty in the Region, starting with courses featuring short holes, all the way to courses where championship tournaments are played. Whatever the course, you will always be playing in beautiful natural surroundings with the magical backdrops of the Beskydy Mountains or

Ostrava

Photo: © CzechTourism archives, Authors: Lenka Jamnická; Jan Miklín

Beskydy

historical castles. The courses at Čeladná, Ostravice, Šilheřovice, Kravaře, and Ropice have won the favour of many local and foreign players.

ECONOMIC POTENTIAL

More than a half of the Region's area is occupied by agricultural land, and another part of over 35 % is taken up by forests (especially in the mountainous areas of the Jeseníky and the Beskydy). Besides natural wonders, the Region has rich deposits of raw materials – mainly a crucial domestic deposit of hard coal – and deposits of natural gas, as well as other raw materials, such as limestone, granite, marble, slate, gypsum, sandy gravels, sands and brick clays. In the past few years, the heavy industry has been gradually replaced by branches of the manufacturing industry accompanied by a considerable growth of the services sector. The development of the free market environment has changed the structure of business beyond recognition. A large number of the restructured enterprises have been purchased by foreign investors, while domestic firms have found their opportunities in the area of information and innovation technologies, electronics and the automotive industry. In addition, there are many smaller and larger firms in the Region, which concern themselves with both traditional artisan production and top technologies with hi-tech products. This category includes firms operating in the automobile industry (Hyundai Motor Manufacturing Czech, Mobis Automotive Czech, Continental Automotive Czech Republic, BROSE CZ, Varroc Lighting Systems), the information technologies sector (Tieto Czech, CGI IT Czech Republic, K2 atmitec, OKIN BPS, Stora Enso Wood Products Ždírec), electrical engineering (ELCOM, OSRAM Česká republika, Siemens, Tymphany Acoustic Technology Europe), and the pharmaceutical industry (Mölnlycke Health Care, Teva Czech Industries, WALMARK). The number of scientific and research workplaces, too, is increasing, with a corresponding increase in the number of expert workers. For example, the national engineering cluster (NKS) is concerned with collaboration in international partner networks and it also supports the preparation of joint international R & D projects in the framework of the CORNET, HORIZON 2020, and INTERREG V-A programmes. The IT4Innovations national supercomputer centre affiliated to the Mining University, Ostrava, is a strategic research institution which, together with another two infrastructure projects, CESNET and CERIT-SC, form a single e-infrastructure unit in the Czech Republic named e-INFRA CZ. This institution provides the most up-to-date supercomputer technologies and services for both Czech and foreign research teams of the academic and private spheres.

The regional material and technological research centre is focused on the preparation of extra pure materials, special alloys, biomedical materials, the development of materials for high temperature

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applications and energetics, preparation of materials by advanced powder metallurgy technologies (magnetic materials, friction materials, composite materials etc.), preparation of nano crystalline materials on the basis of non-ferrous metals, their alloys and steels prepared by extreme plastic deformation, research of processes in the liquid phase taking place in reactors and having an influence on the utility properties of materials, physical and mathematical modelling of forming material processes including forging, and the application of new knowledge to the research and development of forming components for nuclear energy equipment.

THE REGION AND THE EU

In the 2014-2020 programming period, the Moravia-Silesia Region completed projects worth CZK 11.4 billion. Most of the money, specifically CZK 3.1 billion, went into transport. Another important area which received significant support was education, with an allocation of CZK 1.9 billion, followed by the area of social affairs, allocated the same amount. Altogether CZK 2.7 billion was invested in the modernisation of local household heating in the form of "heating boiler" subsidies, which comprised nearly two hundred projects.

In the area of education, important projects focused on the modernisation of teaching technical, natural science, craft and language disciplines. Another important project was Professional, Career and Polytechnical Education in the Region, the aim of which is to popularise and increase the attractiveness of polytechnical and vocational education in secondary schools. Thanks to financial support from EU funds regional schools have been provided with modern equipment. Six schools have received virtual reality laboratories worth CZK 30 million, which make it possible to use 3D interactive teaching applications, visualisation of models created by pupils and online cooperation between schools in a common 3D environment. Another project, Tuition for Industry 4.0, is very exceptional in extent. Six industrial schools joined this project, under which school laboratories have been fitted with modern industrial collaborative robots. With their help, secondary school students will be prepared to use robotics in industry, which has become a strongly progressive area. Thanks to EU resources, a number of schools can boast new language classrooms, ICT classrooms, natural science classrooms, CNC instruments, measuring technology laboratories, and new welding equipment.

In the area of culture, the largest project to be materialised will give rise to a new Tatra Car Museum.

In the area of environmental protection, the projects focus on localities of European significance and the implementation of the Natura 2000 System. The projects focus on the protection of endangered species, such as the brown stink bug. In the area of transport, the projects being realised concern the reconstruction and modernisation of roads. An example of international cooperation is RESOLVE – Sustainable Mobility and the transition to a low-carbon retailing

economy project, whose aim it was to reduce carbon dioxide emission arising in connection with transport operated by retail units in the town centres. The leading partner of the project was the city of Roermond, the Netherlands. Other partners, besides the Moravia-Silesia Region, were Kroneborg, Warsaw, Almada, Maribor, Reggio Emilia, Manchester, and Erasmus University, Rotterdam.

In addition to the above-mentioned cooperation projects, the Moravia-Silesia Region also cooperates with the Žilina Self-Governing Region (Slovakia) on projects popularising historical, cultural and natural sights, on the basis of the V-A SK-CZ Interreg Programme. With the Opole Voivodeship, the Region cooperates on projects to increase the attractiveness of tourist sights in the border regions stretching along the River Odra. With the Silesia Voivodeship, the Region cooperates on projects aimed at improving the quality of the air in both regions under the V-A Czech Republic-Poland Interreg Operational Programme.

Thanks to the Erasmus Programme, cooperation is taking place in the area of education. The project Cooperation in Vocational Training for the European Labour Market is based on international cooperation. Its programme was cooperation with the regions Loraine and the Lublin Vojvodeship in the area of vocational training and improving the preparation of technical school graduates for entering the labour market by arranging foreign internships for them. Another project was Supporting the attractiveness of health and social care professions in the regions. Its purpose was the exchange of experience and sharing good practice with the partner regions Grand Est in France, Wojewodztwo Lubielskie in Poland, and Gelderland Province in the Netherlands. In all, the Moravia-Silesia Regions cooperates with 16 partner regions in 11 countries in and outside of Europe.

USEFUL CONTACTS:

Moravia-Silesia Regional Authority – www.kr-moravskoslezsky.cz
Ostrava City Authority – www.ostrava.cz
The Regional Council of the Moravia-Silesia Cohesion Region – www.rr-moravskoslezsko.cz
Ostrava Science and Technology Park – www.vtpo.cz
Chamber of Commerce of the Moravia-Silesia Region – www.khkmsk.cz

Photo: © CzechTourism archives, Author: Jiří Zerzoň

ANACOT CAPITAL

Anacot Capital a.s. is an investment company based in Ostrava, which is searching for interesting acquisitions in the Czech Republic. In 2014 it began to develop its business activities in the area of acquisition. Within its concern portfolio (ANACOT CAPITAL Group) it owns the following production companies: ELFE, s.r.o. V-NASS, a.s., Triangolo spol s r.o., and Trestles, a.s.

The company is owned by two shareholders – Mr. Pavel Drobil and Mr. Jaroslav Čánek. In 2020, the aggregate turnover of all the ANACOT CAPITAL concern companies was approximately CZK 2 billion per year.

Presentation of the Companies within the Concern:

ELFE, s.r.o.

Products of ELFE Firm are used by international suppliers engaged in the areas of oil and mineral extraction (surface mining), gas transport and marine handling and transport equipment. The firm manufactures welded steel structures and engineering units, including final assembly, such as hydraulic components. Drawing documentation and meticulous output control are also part of the process.

Main Facts:

a) business area: welding, CNC working, bending, surface finishing, varnishing
b) foundation year: 1993
c) number of employees: 121
d) share of exports: 98 % (main export destinations: Germany, Norway, the USA, the UK, France)
e) year of incorporation into Anacot Concern: 2016
f) company headquarters: Krnov, Bruntál District, Moravia-Silesia Region, Czech Republic

V-NASS a.s.

V-NASS a.s. is engaged in extra high precision and technologically demanding production of parts of machines for subsea oil extraction, nuclear power plants, and wind power stations.

Main Facts:

a) business area: CNC, NC and conventional machining and milling, TIG welding, heat treatment, grinding, 3D quality control, etc.
b) foundation year: 1917
c) number of employees: 137
d) share of exports: 90 % (main export destinations: the UK, the USA, Malaysia, Brazil, China, Canada, etc.)
e) year of incorporation into the Concern 2016
f) company headquarters: Ostrava-Vítkovice, Moravia-Silesia Region, Czech Republic

ANACOT CAPITAL

www.anacot.cz
www.elfe.cz
www.v-nass.cz
www.triangolo.cz
www.trestles.cz

Triangolo spol. s r.o.

The company´s core business is customer production and production of small and medium-size production series of forgings. Its product portfolio can be divided into two basic parts: forgings for the engineering industry (manufacturers of building equipment, energy equipment, manufacturing machines, bearings, etc.) and forgings for rail transport (hoops for trams, trains and the underground railway, thrust rings, axles, etc.)

Main Facts:

a) business area: industrial forge (forging, annealing, blasting, refining, machining, etc.)
b) foundation year: 1955
c) number of employees: 110
d) share of exports: 85 % (main export destinations: Germany, Slovenia, Spain, Slovakia)
e) year of incorporation into the Concern: 2017
f) company headquarters: Hulín, Kroměříž District, Zlín Region, Czech Republic

TRESTLES, a.s.

Purely Czech, prospering and globally oriented manufacturing company whose primary activity is large-series metalworking, mainly the manufacture of screwless racks, handling equipment, construction stands, transport carts and other specific metal products.

Main Facts:

a) business area: metalworking and surface finishing (manufacturing of shelves, shelving systems and storage systems, trestleses, sack trucks, stands, handling equipment, carts, building vehicles, etc.)
b) foundation year: 1994
c) number of employees: 430
d) share of exports: 95 % (main export destinations: Germany, Austria, Poland, France, Spain, Denmark, the UK, Sweden, the Netherlands, Croatia, Switzerland, Russia, Israel, Canada, and the USA)
e) year of incorporation into the Concern: 2020
f) company headquarters: Dětmarovice, Karviná District, Moravia-Silesia Region, Czech Republic

CENTRAL AND OTHER KEY BODIES OF THE CZECH REPUBLIC

SUPREME BODIES

Office of the President of the Czech Republic
Kancelář prezidenta ČR
www.hrad.cz

Parliament of the Czech Republic
Parlament České republiky

Chamber of Deputies
Poslanecká sněmovna ČR
www.psp.cz

Senate of the Parliament of the Czech Republic
Senát Parlamentu ČR
www.senat.cz

Office of the Government of the Czech Republic
Úřad vlády ČR
www.vlada.cz

MINISTRIES

Ministry of Foreign Affairs
Ministerstvo zahraničních věcí
www.mzv.cz

Ministry of Industry and Trade
Ministerstvo průmyslu a obchodu
www.mpo.cz

Ministry of Finance
Ministerstvo financí
www.mfcr.cz

Ministry of Transport
Ministerstvo dopravy
www.mdcr.cz

Ministry of Agriculture
Ministerstvo zemědělství
www.mze.cz

Ministry of Regional Development
Ministerstvo pro místní rozvoj
www.mmr.cz

Ministry of the Interior
Ministerstvo vnitra
www.mvcr.cz

Ministry of Justice
Ministerstvo spravedlnosti
www.justice.cz

Ministry of Defence
Ministerstvo obrany
www.army.cz

Ministry of the Environment
Ministerstvo životního prostředí
www.env.cz

Ministry of Labour and Social Affairs
Ministerstvo práce a sociálních věcí
www.mpsv.cz

Ministry of Health
Ministerstvo zdravotnictví
www.mzcr.cz

Ministry of Education, Youth, and Sport
Ministerstvo školství, mládeže a tělovýchovy
www.msmt.cz

Ministry of Culture
Ministerstvo kultury
www.mkcr.cz

DIPLOMATIC MISSIONS OF INTERNATIONAL ORGANISATIONS

Representation of the European Commission in the Czech Republic
E-mail: comm-rep-cz@ec.europa.eu
www.evropska-unie.cz

Organisation for Security and Co-operation in Europe Prague Office of the OSCE Secretariat
E-mail: quest@osce.org
www.osce.org

United Nations Information Centre Prague
E-mail: unicprg@osn.cz
www.osn.cz

European Parliament Information Office Prague
E-mail: eppraha@europarl.europa.eu
www.evropsky-parlament.cz

Representation of the European Investment Bank
E-mail: Prague@eib.org

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THE MOST IMPORTANT WEBSITES

General information on the Czech Republic	www.czech.cz	Official site for the CR
BusinessInfo	www.businessinfo.cz	Official site for professionals searching for information, assistance, or business contacts in the CR
Doing Business in the Czech Republic	www.doingbusiness.cz	General information about business climate, structure, and development of the Czech economy
Portal of the Public Administration	www.vlada.cz	The electronic gateway for the public to administration and government services
Company Contact Information		
ARES	wwwinfo.mfcr.cz/ares/ares.html	Access to Registers of Economic Subjects/Entities
Business Register	www.justice.cz	Public directory
Business Register	www.rzp.cz	Trade Licensing Register
European Databank	www.edb.cz	Telephone and companies directory
CRIF – Czech Credit Bureau	www.informaceofirmach.cz	Companies Directory
HBI	www.hbi.cz	Companies Directory
Legislation		
Iuridika	http://iuridica.eunet.cz	Directory of legal services and official bodies
Portal of Czech judiciary	www.justice.cz	Course of legal proceedings
Finance		
Czech National Bank	www.cnb.cz	Monetary, financial, and macroeconomic data
Prague Stock Exchange	www.pse.cz	Prague Stock Exchange data
RM-System	www.rmsystem.cz	RM-System Czech Stock Exchange
Czech Insurance Association	www.cap.cz	Directory of insurance companies operating in the CR
Register of Excise Duty Payers	www.cs.mfcr.cz/spd_internet/	Directory of taxpayers registered under individual tax identification numbers (DIČ)
Chamber of Tax Advisers of the CR	www.kdpcr.cz	Database of tax advisers
Statistics		
Czech Statistical Office	www.czso.cz	Official statistical data and information covering different subjects
Fairs and Exhibitions		
BVV – Brněnské veletrhy a výstavy/Trade Fairs Brno	www.bvv.cz	List of exhibitions in Brno and relevant information
Association of Fair and Exhibition Organisers of the CR	www.czechfairs.cz	Exhibition centres and companies organising trade fairs in the CR and abroad
Miscellaneous		
The Industrial Property Office	www.upv.cz	Patents, trade marks, utility models, and industrial designs
The Czech Science Foundation	www.gacr.cz	Awards grants to the best projects of basic research in all branches of science
The Register of Advertising Agencies	www.registrra.cz/rra	Expert assistance in choosing and working with advertising and communication agencies in the CR
Česká pošta (the Czech Post)	www.ceskaposta.cz	Incl. postcodes of municipalities and its districts (PSC), philately etc.
Residence of Foreigners in the CR	www.domavcr.cz	Advice for living in the CR
CzechInvest	www.czechinvest.org	Business and Investment Development Agency
Association for Foreign Investment	www.afi.cz	Support for entry of foreign investors
Cadastre of Real Estate	www.cuzk.cz	Information system, contains data on real estate in the CR
Road toll in the CR	www.premid.cz	Information on toll and charges
Portal of the Regional Information Service	www.risy.cz	Information website on the regions
The Czech Association of Hotels and Restaurants	www.ahrcr.cz	Directory of hotels in the CR

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