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economic quarterly

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ENTREPRENEURS FROM 2013

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### Czech Business and Trade

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SIGMA GROUP a.s.; ŠKODA PRAHA a.s.; TÜV SÜD Czech s.r.o.; ZAT a.s.; ZVVZ MACHINERY, a.s.

# Questions for Zdeněk Vališ, Director of Foreign Trade Section, Ministry of Industry and Trade



Last year, the government approved the Export Strategy of the Czech Republic for 2012-2020. In the first year of its operation, exports to the country's priority and special interest countries rose by 20%. This increase was partly due to the massive support from the Ministry of Industry and Trade (MIT) last year. In that year, for example, the Minister of Industry and Trade, Martin Kuba, visited 14 countries, MPO representatives participated in 23 mixed commissions and prepared intergovernmental and ministerial contracts with Ecuador, Iraq, and Thailand. What are MPO's plans in this area for this year?

The foreign visits of the Minister of Industry and Trade are seen as an expression of active support of exports translating the 2012-2020 Export Strategy into action. This year, the plan of visits includes the following countries (outside the EU): Algeria, Bangladesh, India, China, Israel, Morocco, Turkey, Kazakhstan, Russia, Bosnia, Serbia, the Ukraine, Azerbaijan, Georgia and the sub-Saharan states.

We will be sitting on 26 mixed commissions, and will carry on our work on intergovernmental treaties with countries such as Egypt, Bangladesh, and Nigeria, which offer great opportunities to our firms in getting a foothold in their markets, and which may serve as a gateway to neighbouring markets.

Marketing support of Czech firms abroad is one of MIT's traditional and important activities. Czech official participation in trade fairs and exhibitions abroad are among the most important and most efficient forms of this support, where individual exporters display their goods jointly on a single platform,

under the aegis of the Czech Republic, represented by MIT.

In 2012, MIT prepared three dozen official participatory events, in which more than 350 firms took part, and, in addition, it offered participation to more than 2 800 firms in 185 trade fairs within the framework of a specialised exhibition and trade fair programme. Altogether 32 official participations are planned for 2013.

Support of Czech exporters will continue this year, also under the project of Joint Participation in Specialised Exhibitions and Trade Fairs 2013-2014, organised by the CzechTrade Agency. Special support under this project will be given to small and medium-sized Czech enterprises in 90 foreign trade fairs.

In an effort to optimise the MIT foreign network, the offices of the CzechTrade and ChechInvest Agencies are being integrated and the networks will be strengthened in China, Brazil, and Turkey. In June 2013, the number of foreign representations will be increased to 70. Can you say which comprehensive services the existing and the newly opened networks will offer to potential foreign clients?

The Ministry of Industry and Trade will have the enlargement of its networks to 70 foreign representations completed by the end of this year. After last year's integration of the offices of CzechTrade and CzechInvest, the number of foreign representations now stands at 40, based in 32 countries all over the world. Currently, tenders have been invited for the staffing of representative offices in additional territories and the strengthening of some of the existing ones. The MIT network has been enlarged with the setting up of additional contact sites, for example in China, Brazil, and Turkey; in the near future, new representations will be opened in Peru, Columbia, Chile, and Indonesia.

For foreign firms, the network of the Ministry of Industry and Trade may serve as a partner both as regards investment in the Czech Republic and seeking out suitable contractors/partners from among the ranks of Czech exporters. Would-be partners may use on-line services offered by foreign representations, such as the portals: Czech Business Partner Search, Czech Exporters Directory, and BusinessInfo.cz. The services provided by foreign representations are now simpler and more easily accessible

and they comprise a well-functioning mix of the integrated CzechTrade and CzechInvest Agencies. Thanks to their joint foreign networks, cooperation with exporting and importing firms, which will from now on find information concerning services as regards export promotion and foreign investment "under one roof", has become more efficient. Their principal aim is to make reputable Czech suppliers better known not only in the form of presentations at international trade fairs, but also by giving assistance as regards outsourcing, organisation of trade talks with Czech firms and providing information about business and investment in the Czech Republic.

# Czech industry offers foreign partners high-quality and innovative products. Can you say which strategic sectors in the CR are attractive to foreign partners and why?

Czech products which are attractive to foreign partners can be divided into several categories. The first category includes the products where Czech added value is not too high, and affiliations are set up in the Czech Republic for reasons of cheaper labour (electrical engineering, automotive industry). This strategy was more often used in previous years. Czech industry has a tradition and the potential to succeed in foreign markets, so that currently interest is shown in traditional Czech sectors (engineering, transport, electrical engineering, chemical industry). In this case, the partners appreciate Czech experience and quality and the advantage of being able to use Czech contacts and the good name of Czech trademarks for expansion to foreign markets. Last but not least, the Czech Republic can offer innovative products with high added value, which sell well in foreign markets, nanotechnology products, and sophisticated products that can be used in aviation and space projects. This trend is largely due to the Investment Incentives Policy and the Enterprise and Innovations Operational Programme of the Ministry of Industry and Trade, which have attracted many investors to the Czech Republic and stimulated enterprises to invest in new technologies and applied research. This assumption is unequivocally confirmed by the figures: last year, Czechlnvest attracted some 16 billion crowns in investments to the Czech Republic.

### Changes Awaiting Entrepreneurs from 2013

Electronic Tax Returns, a Black List of unreliable VAT payers, and new rules in the area of distraints. We provide details of some of the changes which may have a bearing on business activities.

As every year, changes have occurred in taxes. For the purpose of this article, attention will rather be paid to technical matters, the different tax changes are dealt with in the text on page 6. The tax administration expects the changes to help increase the use of the electronic method for accounting documents by companies and entrepreneurs. This entails an innovation whereby some VAT payers will now be required to file their Tax Returns online. The electronic VAT Returns will not apply to tax payers doing business as natural persons whose annual turnover does not exceed CZK 6 million. Further, the VAT Act Amendment has put tax documents in digital form on a par with those on paper. Whereas until now invoices were required to carry advanced electronic signatures or be sent by means of the EDI (electronic data interchange) system, this duty has been abolished as from January.

In practice, this will mean that, after receipt, invoices will not have to be printed and filed in the classical paper form, but their digital storage will suffice. However, the consent of the customer to whom the invoice is addressed will still be required for the digital format.

### ■ BLACK LIST OF UNRELIABLE VAT PAYERS

From January 2013, domestic entrepreneurs will have to keep a careful watch on those they are doing business with. The government is introducing a Black List of unreliable VAT payers which will register persons by specified criteria. Those who trade with such an entrepreneur will automatically be liable for unpaid tax from the taxable supply they receive from such a payer. It will thus be essential to consistently monitor the information on unreliable payers. According to information from the Ministry of Finance, 23 000 to 28 000 entrepreneurs may find themselves on the 2012 Black List.

Changes are also made as from 2013 to the Labour Law regulations, where compensation for the use of vehicles is reduced and the average price of fuel is increased. According to Section 157 Para. 4 of the Labour Code, the basic reimbursement rate for 1 km travelled is the lowest, at CZK 1 for two-and three-wheeled vehicles and CZK 3.60 for passenger road motor vehicles. Accord-

ing to Section 158 Para. 3 sentence three of the Labour Code, the average price of 1 litre of fuel is CZK 36.10 for 95-octane car petrol, CZK 38.60 for 98-octane car petrol, and CZK 36.50 for diesel fuel.

No change occurs in the minimum wage, it remains at the same amount of CZK 8 000 (approx. EUR 320). But other changes are taking place, namely by Government Regulation No.246/2012 Coll., which abolishes Section 4 of Government Regulation No. 567/2006 Coll., on minimum wage, the lowest levels of guaranteed wage, definition of hazardous working environment, and extra payment for work in hazardous working environment. The above-mentioned Section enabled employers to set lower minimum and guaranteed wage rates for graduates, juveniles, and handicapped pensioners. As from 2013, the lower rates of minimum and guaranteed wages no longer apply to these persons. The lower rates were to motivate entrepreneurs to employ unskilled people or those without experience or the handicapped. Equal conditions (a ban on discrimination) will now receive priority over support for employment.

### ■ MAJOR CHANGES TAKE PLACE IN EXECUTIONS (DISTRAINTS)

A major change, which could save debtors large sums of money, is the duty to combine executions pursued by one creditor against one debtor. The merger will apply to executions carried out by one executor's office, as well as by various executors where proposed by the debtor. The new rule will apply especially to small claims. Executors will currently also be required to video-record the procedures of seizures of movable property. The recording must be made (if the executor does not decide to make it voluntarily) at the request of a person who is present, i.e. the debtor, his/her family, or e.g. the owner of the movables being seized. As from 2013, membership rights in housing cooperatives may be auctioned as well. At present, their value is determined by the settlement share as per the Commercial Code and often is far below the market value, which is equal in many cases to the value of privately owned flats. Thus, if a debtor loses a flat, this will redeem a major part of the debt.

A new form of seizures through the management (letting) of real estate is being introduced whereby, besides the sale, this



execution method will also allow the use of profit from the renting out of the real estate. Further, the possibility of seizing animals is being limited, namely executors will not be able to confiscate pets. The Amendment does not apply to breeding animals which can be included in the execution of the seizure. More precisely, the law states: "animals where the economic effect is not the main purpose of their keeping, and that serve man as companions". Another innovation in the area of claims is to prevent situations where debtors learn about their liabilities only after the amounts have swollen several times over. The Amendment introduces what is called a Pre-action Reminder, which requires creditors to contact debtors before starting legal action and to call on them to pay the debt. The Pre-action Reminder must be sent seven days at the latest before starting the legal action for debt recovery. In the

case of failure to send the debtor the abovementioned Reminder, the creditor shall be sanctioned by not being awarded reimbursement of the costs of the proceedings.

### ■ IMPROVEMENT IN CREDITORS' SITUATION

Finally, let us mention the possibility of selling a business share by auction. As from January 2013, the situation of creditors who are owed money by members of limited liability companies is improving. The law newly introduces the possibility of selling a member's ownership share in an auction. Thus far, it has been very difficult to exploit a business share in an execution. To date, the amount available to satisfy creditors has been what is known as a settlement share, which has been paid to the debtor after his forced withdrawal from the company. The settlement was to be carried out by the company itself, which had

to obtain the necessary finance. In practice, this resulted in unnecessary delays. What is more, the calculation of the settlement share was derived from the assets as ascertained from the financial statement, not from the real market value. Creditors thus fared badly, even if the debtor was a member of a successful company. As from January, the share can be auctioned first, which may guarantee a better yield. The price is set in collaboration with an Assessor.

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### Taxes in 2013: Changes in VAT Rates and Employee Taxation

Several Taxation Act amendments became effective as from January 2013. The changes concern both direct and indirect taxes, resulting in new obligations for taxpayers. The following is a survey of the most important changes.

### ■ VAT

With effect from 1 January 2013, the standard and the reduced VAT rates have been increased by one percentage point, to 21% and 15%, respectively. No changes, however, have taken place as regards the classification of goods and services in either the reduced or standard rate category, with the exception of the shifting of baby nappies and selected sanitary products into the standard VAT rate category. Also, a new obligation has been imposed on all VAT payers, who

are now required to state the numbers of their bank accounts used for their business activities in their applications for VAT registration. Another new provision is the starting of a new register, in which the tax administrator will log entities seriously violating their obligations, thus endangering the public interest in the due collection of taxes. The register, to be part of the VAT Payers Registration System, will be available as from 1 April 2013. The Tax Administrator is the only person to qualify a payer as unreliable. Whoever decides to do business with a payer listed in the register will consequently be liable for the unpaid amount of the tax on the taxable payment he/she has received from such a payer.

### ■ THE IDENTIFIED PERSON INSTITUTE

As from the beginning of 2013, persons liable for tax are not required to register as full VAT payers for reasons of exceeding the limit of purchasing goods in another EU member state or for accepting a service from a person registered in another EU member state or from a foreign person, or for providing

a service in a place located in another EU member state. Instead, a new institute has been established, the institute of "persons identified for tax", which provides for VAT liability on the purchase of goods and at the acceptance of a service in the case of cross-border transactions. In the case of domestic payments, however, the provision remains that they will be in the position of persons relieved of tax payment for reasons of not exceeding the turnover limit for 12 consecutive months.

### ■ MANDATORY ONLINE VAT RETURN FILING

It is also useful to mention the obligation of online VAT return filing (VAT registration application, tax return, reports and annexes to tax returns) to come into force on 1 January 2014, mainly to allow time for VAT payers to prepare all their documents. This obligation does not apply to natural persons whose turnover for the preceding 12 consecutive months at most does not exceed CZK 6 million (approx. EUR 240 000), unless such an obligation has been imposed on them by law.



### **EXCISE DUTY**

Although the "green diesel" preferential tax for farmers remains in force in 2013, a transitional mechanism has been introduced, making it possible to reduce the percentage of the excise duty refund from the current 60% and 85% to 40% and 57% respectively. In the Czech Republic, the excise duty is refunded on fuel consumed in primary agricultural production. However, only crop production, including hop and fruit growing, viniculture, vegetable and mushroom growing, flower and woody plant cultivation, and the cultivation of medicinal and aromatic plants grown on own or rented land, possibly on land cultivated for other reasons laid down by law, are qualified to receive preferential treatment. This treatment does not directly apply to animal production. In the case of motor fuel complying with the ČSN EN 590 standard (i.e. with a maximum 7% of the bio component content) the tax refund is 60%, and, in the case of mixed motor fuel (containing 30 or more per cent of the bio component), the refund is 85%.

### ■ REAL ESTATE TRANSFER TAX

In January 2013, the Property Transfer Tax rate was raised from 3% to 4% of the tax base. The new rate applies to cases where the ownership right to property was changed on and after 1 January 2013. If the change occurred on and before 31 December 2012,

the 3% tax rate applies. A change of property rights occurs, for example, on the day of the legal effects of the incorporation of the property in the Real Estate Register in the case of property registered there, on the effective date of contracts concerning property not listed in the Real Estate Register, or on the date on which the decision confirming or certifying the ownership rights to the property concerned came into force, in the cases not mentioned above.

### ■ INCOME TAX

In the case of tax non-residents, the with-holding Income Tax payable for 2013 is raised from 15% to 35%. The raised with-holding tax rate applies to the incomes of the residents of all countries and jurisdictions with which the Czech Republic does not as yet have a double taxation prevention treaty. The withholding tax on the income of the Czech Republic's tax residents remains at the 15% level.

A new measure is the introduction of a 7% tax rate surcharge on that part of the income of natural persons derived from dependent activities and business activity which exceeds the cap on the assessment base for healthcare and social insurance premiums (for 2013, the amount is CZK 1 242 432/approx. EUR 50 000), i.e. 48-fold the average wage, under the provisions of the Social Insurance Act. The Act terms the surcharge a Solidarity Tax increase and its validity is limited to the period

from 1 January 2013 to 31 December 2015. In this connection, it has to be pointed out that after the end of the taxation period the employee (taxpayer) is required to fulfil his/her tax liability himself/herself on the basis of his/her tax return and the employer (tax-payer) cannot carry out his/her annual clearing of advances and tax preferences.

### **■ HEALTHCARE INSURANCE**

The cap on health insurance premiums has been abolished for the year 2013, and consequently, payers with incomes exceeding the cap will have to pay more. In 2012, the cap on healthcare insurance premiums was CZK 1 809 864 (approx. EUR 72 000). When the employee reached the cap for the calculation of the healthcare insurance premium in the course of 2012, neither he/she nor his/her employer were required to return additional payments on the amount exceeding the limit. The abolition of the cap also means that the employer's wage costs in the case of employees with above-standard incomes will also increase.

**Pavel Zachariáš** NEXIA AP, a.s.



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# Czech Scientists Confirm the Existence of the Tractor Beam

Czech scientists from the Institute of Scientific Instruments in Brno have proved that the tractor beam, known, for example, from the Star Trek and Star Wars films, really works. In addition, their experiment has shown that a stream of photons in laser light can not only attract objects, but also spontaneously sort and organise them. "We have shown that this system can be used to sort objects of different sizes and that, in laser light, the objects spontaneously organise themselves, forming optically bound matter," says Pavel Zemánek, head of the research team. The particles of such matter produce a combined effect of diffused and incident light, creating structures of different shapes. This discovery will find practical use in Biology and Medicine, for example, in sorting different types of bacteria or cells directly in the optical microscope. A more distant vision is, for example, micro robots, which will put themselves together automatically by the switching on of the light, and move spontaneously to a prescribed destination.

### NÁKUPNÍGALERIE



### Large Shifts in the Czech Retail Store Surface Market

The Czech retail store surface market has witnessed big shifts in the past two years. The largest owner of retail store surfaces (shopping centres and parks) in the Czech Republic as of December 2012 was the Tesco international supply chain, followed by the Ikea Group, the international furniture chain and shopping centre owner. Third position is held by the domestic shopping park developer, Intercora. The biggest step up the ladder was taken by the CPI Group,

a Czech investor and developer, which moved up from 9th to 4th position. Another big jumper is ECE, the German shopping centre owner, which moved up the ladder to the 9th rung from the previous 14th position. The Ikea Group showed an improvement of two positions. The ten largest players in the market own 1.85 million square metres of rentable surface, half of all the existing modern retail store surfaces in the Czech Republic.

### Czech Investors in Foreign Countries Primarily Interested in the Energy Sector

According to a TPA Horwath study, Czech firms operating in foreign countries invest mostly in the energy sector and food production, mainly in Slovakia and Germany. In the period from 2005 to H1 2012, Czech companies having business interests in foreign countries concluded 96 transactions (mergers and acquisitions in the Central and

Eastern European region), the usual transaction value being EUR 41 million. "Mostly larger Czech companies and groups penetrate foreign markets, purchasing stakes in local firms," says Igor Mesenský, partner in TPA Horwath. This is confirmed by the median size of transactions carried out by Czech investors, which is twice the size of

the usual transactions in the CEE region. In the period under review, the median size of those transactions was EUR 20 million. The study reveals that, in terms of the market dynamics – the number of mergers and acquisitions – Poland and the Czech Republic are the most active countries in the region on a long-term basis.



### The Czech Industrial Real Property Market is Stable

Around 600,000 sq. metres on an average of modern industrial hall surfaces are rented in the Czech Republic annually. This figure is supported by a survey carried out by the Cushman & Wakefield broker and consulting company, according to which 687,000 sq. metres of modern industrial surfaces were rented in 2012.

In the last quarter of 2012, a total of 247,000 sq. metres were rented, slightly above expectations. The industrial real property market thus received a boost in the last quarter, and the trend seems to be

continuing. The largest rental contracts in 2012 were concluded by the firms of MD Logistika, which extended its contract in VGP Horní Počernice (40,000 sq. m), VF Corporation, which extended its lease in Pointpark D8 (nearly 25 000 sq. m), and Electroworld, which has extended its stay in CTPark Modřice (24,500 sq. m). Another company, SAS Manufacturing, signed a new leasing contract with Goodman Park in Mladá Boleslav (over 22,000 sq. m), involving the construction of the largest newly built hall.



Your Business Partner in the Czech Republic

CzechTrade is a trade promotion organization, founded by the Ministry of Industry and Trade of the Czech Republic. Our main objective is to promote the internationalization of Czech companies by facilitating their cooperation links with foreign entrepreneurs.

The CzechTrade agency is an official contact partner for those foreign companies looking for qualified Czech-based suppliers of products, providers of services or investors.





### Amendment to Act on Investment Incentives Spurs Inflow of Projects

From January to 11 July 2012 Czech-Invest received seven investment-incentives applications. In contrast with that figure, the agency received a total of 41 applications between 12 July and the end of last year. This figure represents an increase of five investment projects over the total for 2011 and 27 more than in 2010. The watershed moment was the adoption of an Amendment to the Investment Incentives Act, which came into force on 12 July 2012.

"This shows that the Amendment to the Investment Incentives Act was a step in the right direction and that the Czech Republic is competitive," says Minister of Industry and Trade, Martin Kuba. "The investment projects received last year represent CZK 20 billion and nearly 5,500 new jobs, the greater part of which are in regions with high unemployment, such as the Ústí, Moravia-Silesia, and Olomouc Regions."

"In 39 cases, this involved expansions of existing firms; otherwise, these are investors who are investing in the Czech Republic for the first time or who have established an additional, completely new business here. This trend indicates that we have succeeded in attracting investments with long-term potential. Investors are coming to the Czech Republic and developing their business here, and not only in manufacturing, but also in Research and Development," adds Petr Očko, acting CEO of Czechlnvest and Head of the EU Funds, Research, and Development Section at the Ministry of Industry and Trade.

### **■ WHAT HAS CHANGED**

Both existing and recent incoming investors in the manufacturing industry, business support services and technology centres can receive tax relief for a period of ten years instead of five years (more about the Act in Czech Business and Trade 3-4/2012). The possibility of drawing tangible aid for job creation, training and retraining, and the investment incentive in the form of transfer of land and related infrastructure for a favourable price, remain unchanged. A completely new aspect consists of the introduction of the institution of strategic

investment events. This means that, besides standard investment incentives, designated projects can receive tangible aid for capital investment in the amount of 5% of costs. This support pertains to the manufacturing industry and technology centres.

### ■ ŠKODA AUTO NAMED INVESTOR OF THE PAST TWENTY YEARS

Johnson Controls, Red Hat Czech, and Výz-kumný ústav železniční have been named the 2011 Investors of the Year. In commemoration of Czechlnvest's twentieth anniversary, special Investor of the Past Twenty Years and Business Property of the Past Twenty Years awards were presented to Škoda Auto and the Nošovice Industrial Zone, respectively. "For Czechlnvest, 2012 was a record year in terms of the number of mediated investments. We have recognised the best of these and we believe that they will become an inspiration for companies that are considering investing in the Czech Republic," says Petr Očko, acting CEO of Czechlnvest.

### **■ CZECHINVEST 1992 - 2012**

A total of 1,991 decided investment projects in the value of CZK 719.9 billion (EUR 29 billion).

The projects represent a commitment to create a combined 232,889 new jobs.

The most attractive investment sectors		
Largest number of investment projects	IT and software development	399
	Vehicle manufacturing	324
	Mechanical engineering	267
Largest volume of investments	Vehicle manufacturing	CZK 295.8 billion (EUR 12 billion)
	Electronics and electrical engineering	CZK 78.7 billion (EUR 3.1 billion)
	Mechanical engineering	CZK 59.2 billion (EUR 2.4 billion)
Largest number of jobs created	Vehicle manufacturing	75,877
	Electronics and electrical engineering	51,046
	Mechanical engineering	21,222
The most active foreign investors		
Germany	13%	254 projects
United States	8%	154 projects
Japan	5%	101 projects
The most attractive regions		
Largest number of investment projects	South Moravia	399
	Moravia-Silesia	324
	Central Bohemia	267
Largest number of jobs created	Central Bohemia	38,143
	South Moravia	33,122
	Ústí nad Labem	31,527



# Czech Exporters Directory



FIND CZECH EXPORTERS

Czech Exporters Directory is the official on-line database of Czech exporters and the easiest tool to help you find potential business partners in the Czech Republic.

### FEATURES OF THE CZECH EXPORTERS DIRECTORY:

- Product and company presentations
- Availability in 13 foreign languages
- Sorted by product or company
- Output available in a PDF document with the company's profile







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### New Obligations for Building Owners

Amendment No. 318/2012 Coll. to Act No. 406/2000 Coll., on Energy Management, transposing the second recast of the European Directive on the Energy Performance of Buildings<sup>1</sup> has come into force as of 2013, with significant consequences for real estate ownership and rental in the Czech Republic. The Amendment marks a further step towards ensuring higher energy standards for buildings in the Czech Republic and is aimed particularly at a gradual reduction in the energy consumption of buildings and enhanced awareness of buyers and tenants of the operating costs of buildings and flats. At the same time, it introduces new obligations for real estate owners and builders.

### ■ BUILDING ENERGY PERFORMANCE CERTIFICATE

To start with, it may be useful to introduce the terms Energy Performance of a Building<sup>2</sup> and the related Building Energy Performance Certificate (hereinafter the "BEPC")<sup>3</sup> whose graphic representation is known to the public as the Energy Label of a Building<sup>4</sup>. The energy performance of a building means the calculated amount of energy needed to meet the energy demands made by the use of the building, especially for heating, cooling, ventilation, air humidity control, hot water, and lighting. The BEPC is a document issued by an energy expert which contains specific information about the energy performance of the building. Its content and form are set out in a decree implementing the Act<sup>5</sup>. Energy experts are natural persons authorised by the Ministry of Industry and Trade. The Ministry also maintains a publicly accessible list of these experts<sup>6</sup>.

### ■ WHICH BUILDINGS REQUIRE ENERGY LABELLING?

As of 1 January 2013, energy labels are required for all buildings which are new or have undergone major renovation, and also for flats offered for sale (including apartment buildings and family houses with an external ground area of more than 50 sq. m). For renting out parts of buildings, this new obligation will be effective from 2016. Existing buildings will be obtaining energy performance certificates in waves between 2015 and 2019, depending on their total energy reference area. The schedule is as follows:

- a) total energy reference area of more than 1,500 sq. m from 1 January 2016;
- b) total energy reference area of more than 350 sq. m from 1 January 2017;
- c) total energy reference area of less than 350 sq. m from 1 January 2018.

The obligation to place energy labels on buildings does not apply to buildings where the total energy reference area does not exceed 50 sq. m, to buildings used for religious



purposes, buildings located in protected monument reservations, monument zones and their conservation areas, and buildings designated for family recreation. The certificates are issued for entire buildings and apply to each separate unit.

In the event of major changes to completed buildings, these requirements do not have to be met if the builder, owner, or association of unit owners submit an energy audit certifying that the above-mentioned requirements are not economically relevant given the durability and operation of the building.

BEPCs are to serve as proof of the energy consumption of buildings and must be submitted when a building, apartment building, or flat is sold or rented out.

All buildings will eventually have energy labels, which will be reviewed every ten years.

In case of violation of the above rules, natural persons could face fines of up to CZK 100,000 (approx. EUR 4,000) and legal entities up to CZK 5 million (approx. EUR 200,000).

### ■ HOW MUCH DOES IT COST?

The price of BEPCs is contractual and depends on the size of the building and the complexity of its architecture and technical systems. For

example, in the case of family houses, prices range from approximately CZK 5,000 (approx. EUR 200) upwards.



D



### ■ BINDING OPINION OF RELEVANT INSTITUTION

The Amendment introduces the obligation for builders applying for a building permit for the construction of a new building, or submitting notification of a construction, to enclose an affirmative binding opinion of the relevant institution (the State Energy Inspectorate<sup>8</sup>) to prove that the requirements for the energy performance of the building have been met.

### **■ ENERGY AUDIT**

The Act on Energy Management now also regulates in detail energy audits, which must be executed:

- a) for buildings with a total average annual consumption in the last two calendar years exceeding the amount of energy consumption specified in the implementing regulation, and
- b) in the case of major changes to completed buildings if the requirements for energy performance are not met for reasons of technical or economic relevance, given the durability and purpose of operation of the building.

# ■ REDUCING THE ENERGY CONSUMPTION OF BUILDINGS

This Amendment implements a number of new obligations for owners of buildings and building units. The requirement to obtain

BEPCs, which are intended to assist tenants and buyers in obtaining more information about the energy performance of the real estate they are buying or renting and to enable them to easily assess the energy condition of such real estate, will gradually apply to all owners of buildings and building units in connection with their construction, sale or rental.

As of 1 January 2021, all buildings in the Czech Republic should be constructed as nearly zero-energy buildings which should result in the greatest possible reduction in heat consumption, energy consumption for hot water, cooling, ventilation, and the lighting of buildings. At the same time, as much of the energy consumed as possible should be obtained from renewable sources.

Kateřina Kulhánková, Associate Tomáš Rychlý, Partner WOLF THEISS Attorneys-at-Law E-mail: katerina.kulhankova@wolftheiss.com

Directive 2010/31/EU of the European Parliament and the Council of 19 May 2010 on the energy performance of buildings, which replaced the original Directive 2002/91/EC of the European Parliament and the Council of 16 December 2002 on the energy performance of buildings

<sup>&</sup>lt;sup>2)</sup> in Czech Energetická náročnost budovy

<sup>&</sup>lt;sup>3)</sup> in Czech Průkaz energetické náročnosti budovy

<sup>4)</sup> in Czech Energetický štítek budovy

<sup>&</sup>lt;sup>5)</sup> Decree 148/2007 Coll. of 18 June 2007 on the energy performance of buildings

<sup>6)</sup> http://www.mpo-enex.cz/experti/ExpertList.aspx

<sup>7)</sup> in Czech celková energeticky vztažná plocha

<sup>8)</sup> In Czech Státní energetická inspekce



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# State Energy Concept – Strategic Goals and Priorities of Czech Energy Sector

By endorsing the update of the State Energy Concept in November 2012, the Czech Government approved the main points of the energy strategy which lays down the long-term vision of the Czech Republic's energy sector and its strategic objectives, such as security, competitiveness and sustainability.

The domestic energy sector has experienced a long development. At present, the Czech transmission system is solidly interconnected with neighbouring countries, the ratio of the total available transfer capability to the Czech Republic's maximum load exceeds 35% in the export direction and 30% in the import direction, with increasing quantities of up to 30% of maximum load transiting in the north/south direction. The energy consumption of the Czech Republic is more than 50% covered from domestic primary energy sources. The indicator of the Czech Republic's energy import dependency (including nuclear fuel) thus amounts to less than 50% and is one of the lowest in the EU. In the situation of the global emphasis on energy security, this is one of the assets of the domestic energy industry. The structure of electricity sources is stable as well.

The chief purpose of the State Energy Concept is to ensure reliable, secure, and environmentally friendly energy supplies for the needs of the Czech Republic's population and economy, at competitive and acceptable prices and standard conditions. At the same time, it must ensure uninterrupted energy supplies in crisis situations on a scale essential for the functioning of the most important elements of the state infrastructure and survival of the population.

# ■ SOME OF THE STRATEGIC PRIORITIES OF THE STATE ENERGY CONCEPT ARE THE FOLLOWING:

- A balanced mix of sources based on their extensive portfolio, effective use of all available domestic energy sources and maintaining the surplus capability balance of the system with sufficient reserves. Maintaining available strategic reserves of the domestic forms of energy.
- Enhancement of energy efficiency and achievement of energy saving in the economy and households.
- Development of the Czech Republic's network infrastructure in the context of the central European countries, enhancement of international cooperation and integration of the electricity and gas markets in the region, including support for the development of an efficient and functional internal energy policy of the EU.
- Support for research, development, and innovation ensuring competitiveness of the Czech energy sector and support for education with the aim of a necessary generation change and improvement of the quality of the technical intelligentsia in the energy sector.
- Enhancement of the Czech Republic's energy security and resilience and strengthening of the ability to ensure the necessary energy supplies in cases of accumulated failures, multiple attacks against the critical infrastructure, and in cases of extended fuel supply crises.

### ■ PRIORITIES IN ELECTRIC POWER PRODUCTION:

Strengthening of the role of nuclear power in electricity production and the maximum use of nuclear waste

- heat (construction of 2 new units at the Temelín nuclear power plant, extended operation of the existing four units, and construction of a new fifth unit at the Dukovany nuclear power plant, territorial determination of sites for the possible development of nuclear energy after 2040).
- Development of economically effective renewable sources with the gradual removal of financial subsidies for new sources, and with efficient state support in the area of access to the network, permission processes, support for the technological development and pilot projects and, simultaneously, public acceptability of renewable sources' development, with the aim of attaining a more than 15% share of renewables in electricity production.
- Substantial increase in the use of waste in facilities using waste for energy production, with the aim of attaining an up to 80% usage of the combustible part of wastes after their sorting by the year 2040.
- Maintaining electricity production from coal at a declining extent (with the target amount in the range of 15-20 TWh/year), partial renewal of coal-fired sources with assured coal supplies; subsequently, new and renovated sources exclusively with high-efficiency production or cogeneration.
- Maintaining a slight export surplus in the area of electricity trade (target of up to 10% of domestic consumption, with possible fluctuation depending on the development of sources).
- Development of the networks, including control and measuring elements of intelligent networks.

### **Energy Mix**

The Czech energy industry is dominated by coal-fired facilities which supply, as base load sources, almost 60% of electric power and a great part of heat for district and individual heating systems. The second important energy source in the Czech Republic, currently used mainly for electricity production, is nuclear sources. At present, these supply over 33% of the electricity generated in the country (two nuclear power plants, in Dukovany and Temelín, are in operation in the Czech Republic). Another important energy source is gas sources, whether for electricity production or district and individual heating. Natural gas is used directly for heating by about 27% of households. Renewable sources account for about 8.3% of the gross domestic electricity consumption.

### The Energy Concept Is Seeking the Best Solution



How does Dana Drábová view the energy future of the Czech Republic? And where is the CR's nuclear power industry aiming? Interview with an important Czech nuclear physicist and Chairwoman of the State Office for Nuclear Safety (SÚJB) You are one of the members of the Czech Government Council for Energy and Raw Materials Strategy. What, in your opinion, are the strengths and weaknesses of the new state energy concept?

The energy concept debated by the Government of the Czech Republic at the end of last year is strong in that it is reasonably trying to free itself of ideology and the effort to satisfy the interests of different lobby groups. It is pragmatically seeking the best possible solution that can be achieved in our conditions, while not rejecting any of the potential sources without reason. At the same time, however, it does not endow any of them with unrealistic expectations. I myself would like to see still greater emphasis being placed on energy saving, the support of local sources wherever it makes sense, and on the broadest possible care for the countryside, which is often the loser as a consequence of power generation related activities.

# Where, in your opinion, is nuclear power generation in the CR aiming in comparison with the EU? What are the prospects for nuclear power in the CR?

The EU is strongly divided as regards nuclear power. There are countries which continue planning its development as an important part of their energy mix, other states which intend to abandon the nuclear programme gradually, countries that have never used and are not planning to use it in future, and still other countries that want to start exploiting it. This differentiation shows the strength of the EU, the same as in other areas, I think. Different geographical, geological, and climatic conditions require different energy concepts and a different structure of sources. With its stable sources, such as its nuclear power stations, and the construction of a solid transmission system, the Czech Republic can tackle the problems arising as a consequence of unfavourable weather conditions affecting the operation of renewable energy sources.

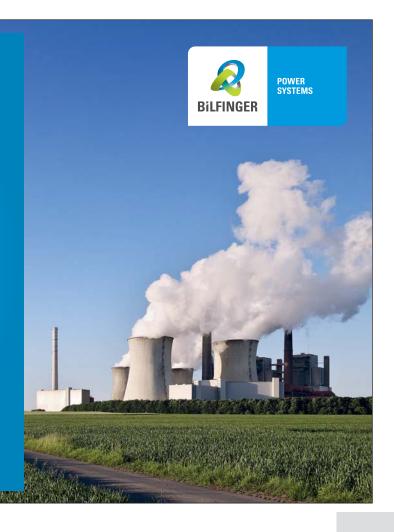
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# Can you assess the safety of the CR's two nuclear power stations – Temelín and Dukovany?

From the safety point of view, we operate our nuclear blocks duly and properly. At the same time, however, we know we must pay continuous attention to them, without being tempted to rest on our laurels, and have our eyes open at all times. Attention must be paid even to items which in other operations are considered routine, since in nuclear power generation nothing can be considered routine. This concerns the operators in particular, as well as the supervisors, as knowledgeable supervisors can also contribute their part to safety, while we, as protectors of the public interest, undoubtedly also play our part. From the safety parameters' point of view, all our six blocks are fully comparable with what is considered a good global standard.

### What are the priorities of your office for the year 2013?

As in previous years, the primary task of our office in 2013 is ensuring adequate regulation of risks related to the use of nuclear technologies and ionising radiation sources in all areas of human activity.

Our control and assessment activities will continue to be focused especially on the safe use of nuclear energy and ionising radiation in all the six nuclear blocks being operated at Dukovany and Temelín, on three research reactors, two nuclear waste disposal sites, 215 workplaces with open radionuclide emitters, including 45 nuclear medicine workplaces, the handling of approximately 3,000 closed radionuclide emitters, including 55 radiotherapeutic workplaces, gamma knives, and two industrial irradiators and 11,000 X-ray stations, more than 9,000 of which are used in medicine. For SÚJB, the Fukushima nuclear catastrophe, which occurred under the influ-

ence of a natural disaster, will continue to be a warning. One of its priorities therefore will be to bear in mind at all times the lesson learned from what happened in Fukushima and to ensure that the knowledge is applied conservatively to all the nuclear blocks we operate and those we are planning to build.

In 2013, SÚJB will be faced with yet other important tasks in pursuing its nuclear safety supervision activities, such as proposing the amendment of certain acts (especially the Atomic Act and related implementing regulations) to take into account new findings and experience from international practice; the assessment of proposed safety documentation on the location of a new nuclear source (intended construction of another two blocks) at Temelín, and continuing preparation of approval processes and maintaining and increasing the credibility of the office at home and abroad, as well as the widest possible communication with the public.

### Construction of Energy Facilities Orchestrated by Czech Industry

Czech industry has left an indelible footprint in the area of power engineering. Electric power plants in which Czech suppliers have participated on various levels can be found on four continents.

The range of involvement is wide indeed, from suppliers of components and producers of complex technological elements, to turnkey deliveries of complete plants. The most important Czech firms focused on the construction of energy facilities include the ŠKODA PRAHA company, a power plant builder with a 60-year tradition. For example, as a general supplier of technology, it has delivered all the 12 Czech and Slovak nuclear power units. Under its leadership, Czech industry has supplied energy units with a total capacity of 40,000 MW to 25 countries.

The construction of conventional fossil fuel power stations, combined cycle power plants, nuclear power plants and, recently also, smaller renewable source facilities constitute an extensive know-how which can justifiably be the foundation on which to build the ambitions of not only ŠKODA PRAHA, but also the entire related Czech industry.

### ■ PROJECTS FOR RENEWAL OF MAJOR POWER PLANTS

The company's major projects include the ambitious programme, launched in 2005, for the extensive renewal of the production capacities of the ČEZ Group. The programme features four projects with a total investment exceeding EUR 4 billion. In all these projects, ŠKODA PRAHA has the role of EPC contractor and Czech industry supplies over 80% of the technology. The project includes comprehensive renewals of the Tušimice and Prunéřov power plants, which involves the delivery of practically all the decisive operating sets and a complete overhaul of the original building

structure of the power station. The complexity of the work is increased by the fact that the installation is carried out in parallel with production operation of the other units.

Part of the project is also the construction of new energy generating facilities. Following the trend of the use of the best available technology, the project for a new source at the Ledvice power station is designed as a 660 MW supercritical unit. The CCGT power plant at Počerady, with a total capacity of 840 MW in a multi-shaft configuration, with two gas turbines, two heat recovery steam generators (HRSG) and one steam turbine, will be the largest facility of its kind in the Czech Republic.

For all those seeking efficient and flexible solutions to their energy projects, Czech industry offers the wide range of this experience and its traditional reliability, supported by an innovative approach and the use of state-of-the-art and efficient technologies.

**Daniel Jiřička** General Director ŠKODA PRAHA

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As a supplier to foreign and domestic industrial enterprises, it operates in a number of sectors such as the petrochemical industry, heavy engineering, foundry industry, water management, oil extraction, and the mining and processing of minerals. However, the core of its production is the manufacture of pumps for the classic and nuclear energy industries, a sector where the company ranks among the world leaders. It thus successfully continues the long-standing tradition of pump manufacture in the region of Central Moravia - the company's history dates back to 1868, and the enterprise is therefore marking the 145th anniversary of its founding this year. It is a holder of the quality certificate according to EN ISO 9001, leader of the Czech Pump Manufacturers' Association,

and member of EUROPUMP (the European Association of Pump Manufacturers).

### **■ GLOBAL SUPPLIER**

SIGMA GROUP a.s. supplies its products worldwide: to Western and Eastern Europe, South America, Asia, Russia, and the USA. SIGMA GROUP a.s. experts are ready to meet any requirements of the most discerning customers and answer their guestions concerning the production process and reliable operation and maintenance of the pumps. One of the most important areas in the market activities of SIGMA GROUP a.s. is the energy industry. The firm supplies pumping machinery, as well as offering deliveries of complete investment units on a turnkey basis. Recently, it has made a large number of deliveries of pumping technology in the nuclear and non-nuclear energy sectors both at home and abroad. An important market for the company is Russia, where SIGMA GROUP a.s. supplies products for nuclear energy units being built and reconstructed in the Russian Federation. SIGMA GROUP a.s. started its cooperation in the nuclear programme run by the Russian Nuclear Energy Ministry as early as the 1970s. Successively, it became involved in the construction of nuclear units in the territories which are now the Czech Republic, Slovakia, Germany, the Ukraine, and Russia.

In the last four years, for example, it has supplied pumps to the Kalininskava, Novovoronezhskaya, Beloyarsk, Leningradskaya, and Baltiyskaya nuclear power plants. The importance of the Russian market for the firm is also documented by the fact that, since 1 January 2013, SIGMA GROUP a.s. has had an official branch in Moscow. The company sees it as its crucial task for the immediate future to win the supply of its pumps for the project of the construction of the most modern units of the MIR.1200 type for the Baltiyskaya nuclear power plant. Naturally, its eyes are also on the completion of the Temelín nuclear power station, now under preparation, where this latest design of the units might be applied.

### ■ EMPHASIS ON RESEARCH AND DEVELOPMENT

Basic and applied Research and Development in pumping technology and the implementation of new development trends in production are carried out by the subsidiary, SIGMA Výzkumný a vývojový ústav, s.r.o., which operates an experimental and testing laboratory for model tests of pumping machinery. The result of the close connection between the development and production sites is the offer of a wide range of high performance and efficient feeding, cooling, condensate and other pumps for use in practically all operational sections of power stations and heating plants. This year, with assistance from European funding, the firm is investing about CZK 100 million in the expansion of its Research and Development facility by adding a hot water pump testing unit. The SIGMA GROUP a.s. management expects this massive investment to improve its competitiveness in the supply of pumping machinery for the nuclear power and heating industries. Its own research facilities, production plants with modern equipment and an extensive service base, combined with many years of experience, enable the company to offer its customers comprehensive supplies of complete units in the area of pumping technology on a turnkey basis.



OVERVIEW OF SELECTED DELIVERIES IN 2010 - 2012

Domestic supplies in the Czech Republic: Vřesová Power Plant, Prunéřov Power Plant, Třebovice Power Plant, Počerady Power Plant, Ledvice Power Plant.

Exports abroad: Obrenovac Power Plant - **Serbia**, Laziska Power Plant, Zespol Elektrowni Patnow, PGE Gornictwo i Energetyka - **Poland**, Kraftlangen - **Germany**, Sisak - **Croatia**, Adler, Nyaganskaya Power Plant, Balakovskaya AES, Novovoronezhskaya AES, Beloyarsk AES, Leningradskaya AES, Kalininskaya AES - **Russia**.



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### REFERENCES:

Alstom, ArcelorMittal, Atomstrojexport, Belenergo, ČEZ, Enel, Mosenergo, Siemens, Slovnaft, Škoda Power, U.S. Steel; The long-standing and rich history and tradition of the company resulted in many references not only in Europe, but also in Asia, Africa, and South America.

### **EN ISO 9001:2008**



### SIGMA GROUP A.S. PERFORMS FOLLOWING ACTIVITIES AND SERVICES:

- consulting
- elaboration of offers and projects
- deliveries of pumps including accessories
- project and deliveries of pumping stations
- erection, supervision
- commissioning, testing
- maintenance, overhauling
- training of operating staff



- conventional and nuclear power engineering
- water management systems
- water treatment plants
- chemical and petrochemical industries
- mining and metallurgy
- agriculture, irrigation and drainage systems
- mechanical engineering and civil industry
- special categories for ecological, rescue and fire applications

### Emphasis on Energy Security and Competitiveness

The present energy consumption in the Czech Republic is more than 50 per cent covered by domestic primary energy sources, thus making the indicator of energy import dependency one of the lowest in the EU. In the situation of world-wide emphasis on energy security, this is one of the assets of the domestic energy industry. But what is its future? "From 2013 to 2020, the Czech energy industry will experience an important change. The outdated coal-fired energy production will be phased out and partly transformed to more efficient sources", says Ms Zuzana Solcová, Executive Director of the Association of Energy Managers.

The Ministry of Industry and Trade has prepared a draft Update of the State Energy Concept (USEC) of the Czech Republic and a draft of the country's new Raw Materials Policy. Are you satisfied with this proposal, and what advantages or disadvantages do you see in this concept?

The USEC outlines the basic starting points and expected trends in the Czech energy development in the context of development in the EU and the region, including an analysis of the risks and opportunities. On this basis, it formulates the priorities and measurable objectives for the different areas, including the strategy to achieve them. The time frame for this conceptual part does not extend much beyond 30 years, given the fast development of the technologies and the external environment. The expected energy development is quantified in the basic parameters of the structure of sources, consumption and impacts on the economy and the living environment, including social aspects. It sets the future balanced mix of sources ensuring energy security and competitiveness in an environment characterised by a high degree of uncertainties and its sustainability in rela-

tion to the living environment, as well as its economic and social impacts. It is obvious that the priorities include the transformation of the heating sector, the renewal and enhancement of the infrastructure (including the development of intelligent networks and international integration systems), the construction of new blocks of the Temelín nuclear power plant (and perhaps the Dukovany nuclear power station), the creation of conditions for the further development of renewable sources, while achieving their competitiveness. It significantly accelerates the area of energy efficiency and saving and, last but not least, the enhancement of resilience and crisis mechanisms of the energy sector (off-grid systems, interlinking of the crisis mechanisms and their regular check-ups). The raw materials policy of the CR is tied to the State Energy Concept and advocates the sensible and environmentally friendly extraction and use of strategic and energy raw materials.

**Energy companies in the Czech Republic** are doing well - their profits and revenues are rising. According to an analysis made by the Soliditet company, the revenues of the major players in the energy sector increased by 4 per cent between the years 2010 and 2011, and their overall economic results rose by 19 per cent. What is it that enables the companies in the branch to succeed despite the economic recession? Between 2010 and 2011, it was not only energy firms that did well, as the economy started to come out of the recession. Unfortunately, this trend was not maintained in 2012. In many energy firms, the main profit factor is depreciated equipment and low operating costs.

### How, in your opinion, will the electricity price develop?

The price of electricity will probably stagnate in the next few years. After this, it should start increasing, because the present market price of electricity does not reflect the long-term production costs of any source. According to the European Commission, the electricity price will increase up to 2030, and then will decline somewhat. This means prices on the wholesale market, and they depend on how the European regulation in the area of price subsidies develop in the next few years (renewable energy sources, capacity mechanisms subsidising also other sources to stabilise the investment climate, etc.). In my opinion, the final electricity

price will increase at least over the next 4 to 5 years, albeit not dramatically (2 to 4 per cent increases annually). After 2025, it may start to decline, due to a market stabilisation on the one hand and to a drop in the subsidies paid for renewable sources on the other.

A law providing for the introduction of auctions of emission allowances has been in effect as of this year. Lately, energy firms must obtain emission allowances, as required by the EU regulations. However, the government can allocate a part of the allowances to companies free of charge. They are to invest money saved in this way in ecological measures. From 2013 to 2020, 645 million allowances will be available in the Czech Republic. What will be the practical effect of these measures? Between 2013 and 2020, the Czech energy sector will see a significant change. The obsolete coal-fired energy generation will be partly phased out and partly transformed to more efficient sources. Overall, the capacity of more than 3,500 MW will be decommissioned, over 2,500 MW will be overhauled and new facilities exceeding 1,500 MW will be put into operation. Coal consumption, as well as emissions, will be down to less than half of the present volume. The investment total will probably be significantly higher than the overall value of the allowances handed out free.

According to the Energy Regulatory Office (ERO), the number of Trade Licences issued in the energy branches totalled 15,720 at the end of last year, which represents an annual increase of 1.7 per cent. The highest increase (229) was recorded in electricity production licences, 158 of these for photovoltaic facilities. Heat distribution followed with 663 licences and gas storage with 619 licences was next. What trend do you expect for the future? Owing to the support, the capacity of the production facilities in the category of photovoltaic sources and biogas stations has been rising at present. However, purchase prices will drop drastically as from 2013 and no subsidised prices will be set for these new sources from 2014. The year-on-year growth rates in the number of licences will thus fall significantly. In the long term, the photovoltaic systems will start developing again, but no longer with support. In my opinion, small domestic systems (up to 20





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- · lifting and hoisting equipment,
- steel structures and construction products.



to 30 kW) should operate in a regime that would not require licensing as production units, with the condition of restriction on supplies to the network (i.e. equipped with their own storage systems), so that especially medium and large sources are again considered production facilities. Nevertheless, the decentralised energy production will continue to grow, whether in the form of medium-sized photovoltaic systems or gas-fired microgeneration.

The European Commission wants the Czech Republic to couple its energy infrastructure more with Poland, Germany, and Austria. By means of this, the Czech Republic will be more involved in the single European energy market, which is to be established by the year 2014. Is this a good vision? The Czech Republic has one of the most interconnected infrastructures of the EU states. The proportion of the cross-border transmission capacity to the maximum of the domestic systems exceeds 35 per cent, only Slovakia and Switzerland have higher proportions. Indeed, the Czech Republic is the second largest electricity exporter in the EU, which would not be possible without the coupling. The problem is that the CR is a transit country across which wind electricity supplies flow from the north of Germany to the south of Europe and even the capacity of this size is not sufficient. Links have to be built especially in the north-south direction in Germany, which is considerably lagging behind in this respect. Another element is coupling of the markets. In this, the Czech Republic is the motor of integration in Central Europe and

is part of a market zone with Slovakia and Hungary which, hopefully, will be joined by Poland in 2013. The Czech CEPS company has been trying for the third year to persuade the German operators to couple Germany with the zone as well and, thanks to the interest of the European Commission, this may be attained in 2014 at the latest. This is also a strategic objective of the State Energy Concept. Given the Czech Republic's geographic position and the country's open economy, integration with the surrounding markets is highly desirable. However, because of the considerably high risks, protective measures to ensure our resilience against failures must go hand in hand.

# Do you see any risk factors threatening business activities in the energy sector in the coming years?

Business will be threatened by the high rate of regulatory risks. The constantly changing European and national legislations, the contradictory political goals of the EU (the support for renewable sources, a non-discriminatory energy market, the collapsing allowances market) and the high market deformations are a barrier to investment in the energy industry. Nowadays investment is possible only in the regulated activities, and it is not free of risk even there.

Jana Pike

### We Put the Following Questions to Kamila Skálová from the Kovosreal Company



You are a leading company in thin sheet metal working, your customers are in the electrical engineering industry as well as in the area of air conditioning and ventilation. Do you see any strong trend impacting on your business sector?

In the last few years, our company has specialised largely in subcontractual deliveries of sheet metal work (cutting, bending, punching, welding), and we thus depend on demand mainly in the areas of air conditioning and ventilation technology. This is why the customers in this branch are crucial to us. Thanks to the state-of-the-art production technology, we are capable

of reacting almost immediately to market changes and innovation. Our strategy is focused primarily on supplying 100% quality to our existing customers.

# Have you been successful in foreign markets, e.g. Germany, and what, in your opinion, is the reputation of Czech products abroad?

In the more than a decade of operation in foreign markets, our company has fortunately received only good response to its work. Certainly this is due to our honest and responsible approach to every single contract and to the personal contact with customers. Besides Germany, where our

most important customers include the Festool company - the producer of hand tools, and AlB Kunstmann for which we manufacture battery cabinets, we have also succeeded in Belgium, where we supply post boxes. Also worth mentioning is Sweden, where we deliver construction units, and Italy with supplies of tool cases. After many years of our experience, it is obvious that the most important aspect in maintaining a position in a foreign market is clearly the quality of the supplied product, and then naturally its price, regarding which we are still an important supplier, for instance, to the German market.

# ZAT — Global Supplier of Control Systems for the Energy Industry

The Czech ZAT company is a well-established firm in the area of technological process automation in the Czech Republic and abroad. Founded 50 years ago, it is one of the firms with the longest presence worldwide in the automation business.

ZAT has its own development base, does its own project designing, has its own production facilities and carries out the installation and servicing of electronic equipment, control systems, and components thereof. Its programme is focused mainly on the energy industry, the control of industrial processes and transport systems, whole plant deliveries and systems integration.



### ■ ZAT FOR THE ENERGY INDUSTRY

Half of ZAT's orders are for deliveries intended for nuclear power stations, where ZAT supplies type and comprehensive solutions for the control of the primary and the secondary circuits and auxiliary systems, ensuring functions connected with the operation and the impact of the operation of nuclear power equipment, even in the highest safety category. "In future, we are expecting orders for the reconstruction of nuclear power stations and for participation in the construction of new nuclear blocks in the Czech Republic and abroad, for example, in the expansion of the Temelín nuclear power station," says Mr Ivo Tichý, member of the ZAT Board of Directors. ZAT's important clients are primarily the operators of large energy blocks and their sub-contractors, such as ČEZ a.s., ŠKODA JS a.s., I&C ENERGO a.s., and, in Slovakia, SE ENEL a.s. The firm also supplies control systems for conventional power stations requiring high reliability and safety of the equipment; here, it carries out different kinds of projects, from small to big, including entire blocks. Its other deliveries are for heating plants, the railways, open-cast mines, and automatic systems in engineering.

# ■ NEW CONTROL SYSTEM FROM THE WORKSHOP OF CZECH DEVELOPMENT ENGINEERS

ZAT is one of few firms to have developed its own control systems, which it uses in its deliveries. In 2011, it placed its SandRA (Safe and Reli-



able Automation) control system on the market, with special application for excitation control systems. These systems are intended for the control of all types of synchronous generators used in the energy industry. Their parameters and algorithms are designed so as to meet the strictest requirements for the stabilisation and load of the energy systems and are of the highest world standard in their category. "Besides our own development, we also support the research and development work of Czech universities and research institutes," says Ms Vladislava Česáková, member of the ZAT Board of Directors. If its client or investor so requires, ZAT also uses the systems of other manufacturers, e.g. Siemens, GE Fanuc, and Saia. For superior computer systems, it uses the hardware of firms such as HP, DELL, IEI, Advantech and Kontron, in which ZAT's visualisation applications work on the basis of Wonderware, Reliance, and other products.

### ■ ZAT AROUND THE WORLD

ZAT systems are used to control technologies all over the world, for example, in South America and Mongolia, as well as in Finland, Sweden, Turkey, and Slovakia. For the 2012 fiscal year, ZAT is expecting to have achieved record revenues in the history of the firm.



# ZAT works in the following fields

- o nuclear power generation
- heat-power generation
- hydro-power generation
- technology process automation
- production of industrial electronics
- maintenance and service
- automation devices for technology process control
- specialised medical devices

www.zat.cz



# Electrical Engineering and Electronics: Traditional Branches of Czech Economy

Electrical engineering is one of the largest branches of industry in the world, and it still has a great potential for growth in the European Union. On the other hand, it has also, along with the engineering industry, suffered the hardest impact of the global economic crisis. The crisis caused a significant decline in production, revenues, employment rates, and other economic indicators.

Being one of the most important and decisive branches of the processing industry, electrical engineering has an important position in the economy of the Czech Republic. The Czech Republic is one the countries in the European Union in which the position of electrical engineering, based on basic industrial production indicators, exceeds the EU average.

Electrical engineering is an important supplier for other industrial fields, especially for the automotive industry and engineering. Electrical engineering production consists of a broad range of products. On the one hand, it includes demanding productions and on the other, highly productive automated productions as well. Electrical engineering and electronics production is a part of two sections in the CR (CZ–NACE 26 and 27).

# ■ MANUFACTURE OF COMPUTERS AND ELECTRONIC OR OPTICAL DEVICES

The production assortment of CZ-NACE 26 includes the manufacture of computers, peripheral devices, communication devices, and similar electronic products, as well as the manufacture of components for these products. The section also includes the manufacture of consumer electronics; measuring, testing, navigation, and control equipment; radiation, electromedicine, and electrotherapeutic devices; optical instruments and photography apparatus and equipment, and the manufacture of magnetic and optical media. Important manufacturers in the CR, based on revenues, include SCHOTT Solar CZ, s. r. o. (manufactures photovoltaic modules), which is a subsidiary company of the German company SCHOTT Solar AG, Foxconn CZ, which provides complete solutions in IT and manufactures consumer electronics and communication and electronic instruments, Andrew Telecommunications, s. r. o., which manufactures telecommunication devices and also manufactures and exports telecommunication electronic instruments, such as terrestrial microwave antennas, broadband and wireless antennas, television broadcasting antennas, and cable systems, or Fei Czech, s. r. o, which dominates the manufacture of raster electron microscopes and is the main supplier of electron and ionic optical instruments for a broad range of customers, developers, and manufacturers who work in nanometres. Meopta optika, s. r. o., is a world-class manufacturer of optics, which specialises in design, development, construction, manufacture, and assembly of optical, optomechanical, and optoelectronic systems.

### ■ MANUFACTURE OF ELECTRIC APPLIANCES

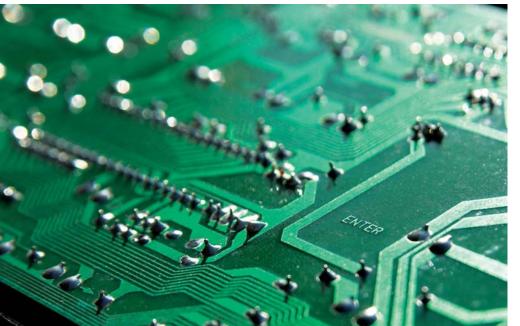
CZ-NACE 27 includes a broad range of products used by the processing industry (production and distribution of electric power, transportation, etc.) and by the consumer sector. This section includes the manufacture of products that generate, supply, and utilise electric power and also the manufacture of electric lighting, signal devices, and electric appliances for homes. Important companies from the field include, for example, Siemens Elektromotory, s. r. o., which is one of the world's leading suppliers of low-voltage asynchronous electric engines, Johnson Control Autobaterie, s. r. o. (manufactures electrochemical power supplies and their accessories), Automotive Lighting, s. r. o., (manufactures lighting apparatus for means of transport), Hella Autotechnik Nova, s. r. o. (manufactures, installs, and services electric machines and appliances), or AVX Czech Republic, s. r. o. (manufactures tantalum and niobium capacitors).

### ■ INDUSTRIAL PRODUCTION

In 2012, only five branches of the processing industry recorded year-on-year growth, and the overall industrial production decreased by 1.2% when compared to the year before. The most important force in industrial production was the field of car, trailer, and semi-trailer manufacture. Nevertheless, the field of electric appliances did not do badly as well (the year-on-year growth amounted to 5.8%, which meant a contribution to the overall year-on-year growth of 0.4 percentage points). On the other hand, the decline of industrial production was largely contributed to by the manufacture of computers and electronic and optical instruments (decrease of 11.8%, contribution of -0.4 p.p.).

### **■ REVENUES**

Revenues from industrial activities in current prices saw a year-on-year growth of 1.1% in 2012, and the manufacture of electric appliances contributed considerably to this fact (growth of 4.4%, contribution of 0.4 p.p.). However, revenues were negatively influenced by the manufacture of computers and electronic and optical instruments and devices, which experienced a significant decline (decrease of 6.2%, contribution of -0.7 p.p.)



# Investment Opportunities in the Electronics Sector

The Czech Republic's long tradition in the electronics sector, together with its solid educational system and strategic location, has attracted numerous foreign electronics companies, which are evenly distributed across the entire country.

The EE/electronics sector has grown rapidly, particularly due to the boom in the FPD industry and the presence of well-known manufacturers. The former is represented by such companies as Panasonic, Wistron, and Tatung; the latter by Foxconn, Honeywell, ABB, Siemens and many others. The cutting edge of the consumer electronics industry is symbolised by the Czech production and R&D branch of Bang & Olufsen. The

solar industry maintains its production lead in Europe thanks to the local facilities of Kyocera, AU Optronics, and Schott Solar. Moreover, automotive electronics suppliers benefit from the vast and long term growth of the Czech automotive sector in general.

### ■ R&D CASE STUDY

### **Eaton Corporation**

On 19 January 2012, Eaton Corporation announced the opening of its fifth and newest global Innovation Centre, its only R&D facility in Europe. The Innovation Centre will conduct cutting-edge research focused on the development of more energy-efficient power systems and the electrification of transportation, as well as vehicle and aircraft applications. Working closely with its partners at the Czech Technical University in Prague, Eaton plans to recruit up to 50 highly skilled engineers within the first year of the facility's opening and to increase the total workforce to about 300 in the next four to five years.

### EE/electronics R&D and Technology Centres 2003 - 2012

	Number of incoming R&D projects	Total Capex (in mil. EUR)
Germany	43	711.7
Poland	8	91.3
Czech Republic	6	112.1
Slovakia	3	83.7
Hungary	3	59.0

### ■ INVESTMENT CASE STUDY

### **Panasonic**

The story of one of the most successful investments in the Czech Republic began in 1996, when Matsushita Electric Works broke ground in the town of Plzeň, West Bohemia, for its Panasonic television factory, one of the first large greenfield investment projects in the Czech Republic. Having started with the production of CRT televisions, the Panasonic plant in Plzeň switched to the advanced LCD and PDP technologies in 2004. In 2010, the innovation progress continued with the commencement of 3D television production. Besides TVs, which are exported to all European countries and to Russia, Panasonic also runs a 1,200-person facility in the city of Pardubice, where it manufactures car audio systems, and produces electronic relays in the town of Planá in West Bohemia.

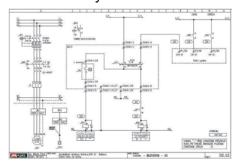


### WITH TOP-CLASS SPECIALISTS ON THE PEAK

Firm with long-time tradition and references across all Europe and nearby regions offers complex supplies in electrical engineering

- · Electrical projects, device production, mounting, cabling, putting into operation and repairs
- · Industry automation control systems based on PLC technologies
- specialisation on food processing industry, transport of powdery materials
- Building technologies / HVAC control systems







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### Industrial Automation Is Now Part and Parcel of All Technologies

Automation is successfully advancing, particularly in the engineering industry. "Of course, other sectors are not lagging behind, let us mention the energy sector, the electrical, chemical and food industries, transport, construction (with what are known as intelligent buildings increasingly gaining ground), the textile and printing industries, and a breakthrough is particularly evident in medicine, where we are witnessing great progress in diagnostics and surgery," says Stanislav Maňas, President of the Czech-Moravian Society for Automation (CMSA).

### In which sectors in the Czech Republic is automation developing most quickly?

This is a difficult question. I do not know about any institution that would be collecting data on the development of automation in the different sectors. I can only express my opinion that automation is developing most quickly in the areas of production technology, the power industry, electrical engineering, electronics and robotics, naturally with the contribution of information technologies. The greatest impetus for this development comes from the automotive industry. However, the other sectors are probably not lagging behind much either, and are trying to keep abreast at least of the European and world average.

### What tasks are Research and Development workers facing in your opinion?

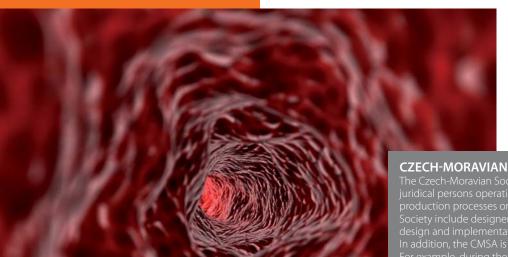
Research and Development in the area of automation technology will definitely focus on the possibilities of modelling production and processes in such a way as to obtain as much knowledge as possible on the future properties of automatic machines and equipment before their actual realisation. Here I mean particularly the increased use of the new CAE/CAD systems with the possibility of simulation and optimisation. Increasing efforts will be made to use new materials (e.g. composites) in the implemented structures. The linking of information technologies with machines and equipment will be constantly improved and less energyintensive drives will be increasingly used.

Energy saving will have top priority in the operation of all automation equipment and will be an important parameter in the competitiveness of our newly developed products. Development is increasingly heading towards the integration of the production machine and auxiliary equipment with the required degree of automation according to the user's wishes, where the highest degree of automation is represented by unmanned workplaces. Modular structures will increasingly gain ground with use in more than one type or size of machines.

### What is the situation like in education in this sector in the Czech Republic?

Automation technology has a bearing on almost all spheres of human activity, just as information technology does. Therefore we must realise that very good experts in Automation, Mechatronics, Electronics, Robotics and Informatics are needed for the development of our economy.

The path to a higher value added leads by way of new original innovations of production technologies, materials, and the products proper. However, these can be assured only by well-trained experts. For innovations to be applied in our enterprises on the broadest possible scale, we need educated, creative young people who are enthusiastic about their profession. We need the largest possible numbers of the most talented young people to study the technical branches at secondary schools and universities. The framework educational programmes at secondary vocational schools focused on the Engineering and Electrical Engineering branches include Automation in their study programmes. Naturally, subjects such as Automation, Mechatronics, Electrical Engineering, Electronics, Robotics, and Information Technology are included in the study programmes of all technical universities.



### CZECH-MORAVIAN SOCIETY FOR AUTOMATION

The Czech-Moravian Society for Automation (CMSA) groups natural and juridical persons operating in the area of automation of engineering production processes or interested in these issues. Members of the Society include designers, development workers, teachers, managers, design and implementation firms, vocational schools, universities, etc. In addition, the CMSA is also engaged in the preparation of textbooks. For example, during the last decade it published a four-part textbook on Automation, a textbook on Mechatronics, and recently also a two-part textbook on Automation. In addition, it co-organises other events directly linked to automation. These are, above all, the annual AraP conference (Automation, Control and Processes) at the Faculty of Mechanical Engineering of the Czech Technical University in Prague (ČVUT), and the CyberRobot competition at the Faculty of Mechatronics of the Technical University in Liberec. Seminars are also being held, mainly to provide information on new trends in automation.

### Could you give your opinion on the further prospects of automation?

After the economic recession, automation is coming quite quickly to the forefront again, as is indeed evident from the statistics of the VDMA (Der Verband Deutscher Maschinenund Anlagenbau – German Engineering Federation). According to these data, in 2010, less than a year after the decline in the global economy, 118,000 robotic units were delivered on an international scale, which was twice as many as in 2009, and the supplies increased by another 18% in 2011. The forecast for 2012 to 2014 is for another 6% increase in new annual applications, up to 167,000 units. In 2014, there should thus be about 1.3 million industrial robots and some 17 million service and assistance robots in the world. The fastest dynamics in this respect are recorded by China, South Korea and the ASEAN countries. An important indicator of the rate at which industrial robots are used in production in the different countries is the number of these robots per 10,000 workers in industrial manufacturing. The world average is 50 robots per 10,000 workers. In this comparison, the list is topped by Japan, South Korea, and Germany with robot density from 250 to 300. The level of automation in the Czech industry is below average, with the figure at 37. A comparison of these data also shows, e.g., that even countries with such a great potential as Russia, China, or India do not even reach the number of 20 in the evaluation of their

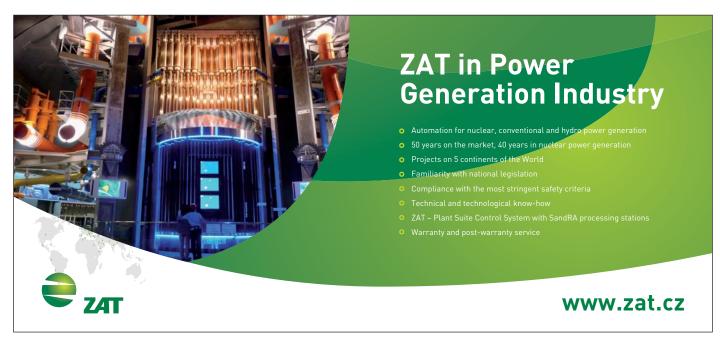


production in this respect. On the other hand, this is an encouraging motivation for robot manufacturers.

I would also mention security, which is first and foremost in automation. The present trend in the development and establishment of robotised workplaces follows the path of higher technical parameters of robots and systems, including the lowering of energy intensity, as well as the path towards greater flexibility of robots, involving the creative thinking of man. The activity of robotised workplaces is increasingly connected with machine image processing and machine vision. The offer of suitable tools for image processing is expanding along with their compatibility with the programme equipment of the robot and its use not only for monitoring of the parameters of the finished product, but also for measurement during the production process, including 100% inspection.

### And what is new in the design?

Practically every year the technical standard rises, even with some new elements appearing in the structure of robots. An interesting application of the current time is the implementation of a decades-old idea of the 1970s for the motion of mobile robots, both industrial and service robots, by means of omni-directional wheels. Their advantage is manoeuvrability in a limited space, including turning on the spot. Work is also underway on the EU task, calling for the development of robotic combinations from extremely light to extremely heavy ones. Robotic hands are also experiencing development, as mechatronic systems start to receive preference over pneumatic ones, and robots with parallel cinematics are appearing as well. It is to be expected that the trend will be towards greater precision, especially in assembly robots, increased speed of robots, increased reliability and inclusion of remote diagnostics.



### Heat Pump Segment is Seeing Great Development

"The near future will bring sophisticated equipment which will save energy and contain ecological refrigerants. Their development, service, and maintenance will place higher demands on the final price of the equipment and the professional staff, which is increasingly lacking," Štěpán Stojanov, Secretary of the Association for Cooling and Air Conditioning Technology says.

Could you assess the development in the area of refrigeration and air conditioning technology in the Czech Republic?

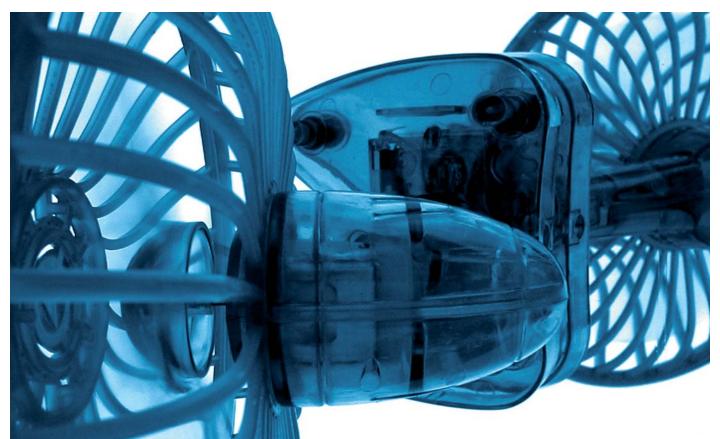
After 1989, and the privatisation of Stateowned enterprises in the sector, such as Kovoslužba, Frigera, and ČKD, many small and medium-sized companies emerged and had to find their place in the market environment. In the 1990s and the first decade of the new century, a large number of foreign and multinational firms came to the Czech Republic. The period of the construction of the supermarket and hypermarket network was the golden age for the whole segment of industry connected with commercial and industrial cooling. The construction boom also brought many contracts to companies specialising in air conditioning for industrial and residential buildings. The demand from households for residential air conditioning has been rising gradually and the segment of heat pumps is seeing a great development because, with the ever increasing prices of energy for heating, they represent a good alternative to the traditional methods of heating. The 2009 crisis affected particularly firms involved in construction, the other parts of industry were not hit so hard by the crisis. Similarly to other sectors, the firms have been struggling with a lack of qualified staff in the last few years.

### What successes can members of your Association boast?

The Cooling Technology Association (SCHT) has over 700 members and thus it is difficult to choose among the successful ones, but one example that can be mentioned is the Linde/Carrier refrigeration technology company, nowadays number one in the installation and servicing of refrigeration for supermarkets in Central and Eastern Europe. Sinop CB and JDK, manufacturers of industrial cooling equipment, export to the whole world, and in the segment of heat pumps, I can mention the successful domestic producers, TC Mach and PZP. But there are many others that we can be proud of.

# Are Czech firms in your sector successful on foreign markets, and could you say which ones?

Yes, definitely. I have already mentioned the installation and servicing of cooling and air conditioning equipment. Many Czech firms score success with the skilled work of their employees, especially in Central and Eastern Europe and in post-Soviet countries. In addition, manufacturing firms are focused mainly on the EU market, and several subsidiaries of multinational firms are based here and export their products to the whole world.





### Do you cooperate with similar associations abroad?

Yes, and we can state very intensively so. Traditionally, we have good relations with the Slovak Cooling Association, and we are an associate member of AREA (The Air Conditioning and Refrigeration European Association), the European grouping of professional associations in cooling, air conditioning, and heat pumps. We hold regular consultations with foreign associations and to some extent influence European laws and standards.

# Are your members using European subsidies for their projects and, if so, in what programmes are they particularly involved?

The SCHKT association is currently implementing two projects under the ESF (European Social Fund) focused on education and the improvement of the skills of our members' employees. Individual members use allocations especially from the Innovation and Development funding. Through other channels, they also take advantage of support for exports for participation in trade fairs abroad. In this context, I have to ex-

### AWARD-WINNING INVESTMENTS IN THE SECTOR

In the Czech Republic, there are also numerous investors operating in the manufacture of air conditioning and cooling technology. For example in 2007, some companies in the branch won awards as investments with the greatest innovation potential. They were Emerson Climate Technologies, which was praised for its project of a centre for the development of compressors for air conditioning, refrigeration equipment and heaters, and Visteon-Autopal, which develops and manufactures components for air conditioning and cooling technology for the car-making industry. Its major customers include Ford, VW, PSA, Jaguar Land Rover, GM and Mercedes. With almost 2,000 employees, Visteon-Autopal operates two technology centres and manufacturing plants in Nový Jičín, Hluk, and Rychvald. The company grew from a small tinsmith's workshop founded by Josef Rotter. In 2000, Autopal became part of the international Visteon Corporation. Visteon-Autopal's product portfolio includes air conditioning hoses, batteries, condensers, and etc. Other investors in air conditioning are e.g. Valeo Výměníky Tepla (part of the French concern, Valeo), which manufactures air conditioning heat exchangers for a number of car-makers, or Valeo Compressor Europe, specialising in the manufacture of rotary and piston compressors for automobile air conditioning systems.

press our indignation at the method of the use of financial resources worth hundreds of millions of crowns that have been sent by companies in the sector for dozens of years as charges for the import and use of Freon coolants. This money has gone to the State Environmental Fund, to be tied to projects linked with the protection of the ozone layer. A minimal amount of this money has so far been released back into the refrigeration industry.

### Do you perceive any strong trend or expectations influencing this sector?

Currently our sector is influenced by two main trends, which are connected with the reduction of greenhouse gas emissions. The EU is pushing strongly for the use of coolants with zero or little influence on global warming and, at the same time, on the reduction of electric energy consumption. Manufacturers are seeking optimum solutions to combine these two aspects.

# ZVVZ — Trademark of International Renown in Environmental Engineering



The ZVVZ GROUP is a traditional Czech firm, which has been operating successfully in the market for 65 years. Since 1948, the year in which it was founded, the firm has been based in Milevsko, a town situated some 100 kilometres south of Prague.

With its turnover of nearly CZK two billion (approx. EUR 80 million), ZVVZ GROUP holding is one of Europe's largest manufacturers and suppliers of industrial gas purification equipment. It consists of six firms, the most important of which are the trading and engineering joint stock company, ZVVZ – ENVEN ENGINEERING and the manufacturing joint stock company, ZVVZ MACHINERY. The firms' ambition is to expand in Europe and to strengthen their position as respected suppliers of environmental engineering products and equipment for the protection of the environment.

### ■ ONE OF THE ELITE WHOLE PLANT SUPPLIERS

For the first time last year, thanks to excellent references with regard to its dust and solid pollutant separation systems, ZVVZ-ENVEN ENGINEERING joined the elite of general desulphurisation technology suppliers, i.e. suppliers of equipment purifying smoke

gas from sulphur oxides. The most valued order, obtained after winning an international tender, was from ArcelorMittal Ostrava for the desulphurisation of four boilers in its energy plant. In addition to the delivery of this technologically demanding desulphurisation equipment, the contract also comprises an order for the reconstruction of five electrical separators and the construction of a smokestack 120 metres high. This makes it possible for the firm to develop another, its third, business project line, raising its status and taking it among the elite of whole plant suppliers. The company provides its clients with comprehensive services - from project designing to the construction and assembly of the technological wholes, to putting them into operation. In the Czech Republic, it ranks alongside the most important firms, such as the ČEZ energy group (Tušimice, Ledvice, Prunéřov coal-fired power stations) and the Třinec iron and steel works, which ZVVZ-ENVEN ENGINEERING supplies with heavyduty air conditioning and dust exhausting systems.

### **■ FOREIGN EXPANSION**

However, ZWZ-ENVEN ENGINEERING sees its future especially in foreign expansion. Its targets are Russia, the Ukraine, and Kazakhstan, where it has its affiliations, as well as the Balkans. The firm has been operating in those markets for a decade and, together with Alstom and Rafako, is one of the three most re-

nowned firms. The ZVVZ trademark has a very good name and enjoys the best references. In those markets, ZVVZ-ENVEN ENGINEERING figures as a modern, technically advanced firm with a great history and a promising future, whose ambition it is to enter the market with deliveries of whole incinerating plants and complete air conditioning and ventilation systems for nuclear power stations.

# ■ THE FIRM'S SPECIAL PROGRAMME IS VENTILATORS FOR CLIMATIC WIND TUNNELS

ZVVZ MACHINERY has its own development and production facilities. The capacity of one-third of those facilities is filled with the orders of its affiliated company, ZVVZ-EN-VEN ENGINEERING. The rest is covered by its own production. Its core business is also the manufacture of dust exhausting and solid and gaseous pollutant separation equipment for different sectors of industry, especially ventilators. Its special products are ventilators for climatic wind tunnels. The firm is one of the world's three manufacturers of this type of equipment. Its clients are the German Audi and BMW car factories, the Czech University of Defence, and the Oshawa University, Canada, where the Automotive Centre of Excellence is located. Other ventilators the firm has manufactured are part of the wind tunnels at the Slovak Technical University in Bratislava and the Scientific Centre of the Academy of Sciences of the Czech Republic in Telč.

The firm also manufactures ventilators for road and railway tunnels and for underground railway and mine ventilation systems. Its most important orders are for ventilators to be installed in the Blanka road tunnel system in Prague and Prague ring road. ZVVZ MACHINERY also specialises in pressure vessel manufacture. Its other products include air conditioning and ventilation piping systems, large-size lorry containers for loose materials and the manufacture of ISO containers.

ZWZ MACHINERY has its own modern production base and provides its clients with excellent services based on its perfect knowhow, skilled employees and experienced management. The high quality of order execution is a matter of course. That is why it has such good trading results in other countries. For example, it recently delivered a part of the technological whole, a prilling tower, for a new ammonium nitrate plant in Novomoskovsk, Russia.



### Supplier of Environmental Equipment

ZVVZ-Enven Engineering, a.s., a member of ZVVZ Group, is a business-engineering company that plans, designs, delivers, and installs:

- Plants for treatment of waste gases, to remove the solid and gaseous pollutants
- Equipment for pneumatic transport of loose materials
- Equipment for air-conditioning and ventilation of nuclear power stations
- Equipment for air-conditioning of buildings and ventilation of industrial workshops and mines









**ZVVZ-ENVEN ENGINEERING, a.s. | SAZINOVA 1339 | CZ – 399 01 MILEVSKO**PHONE: + 420 382 551 111\* | FAX: + 420 382 522 158 | E-MAIL: info@zwz-enven.cz | WEB: www.zvvz-enven.cz



### Own development and production

- Axial and radial fans
- Pressure vessels and pressure parts
- Components for nuclear power plants
- Aluminium semi-trailers and ISO containers
- Shutters and valves
- Components for stationary pneumatic transport
- Steel structure, ducts, pipes and stacks







# Region of South Bohemia — Attractive Region with Picturesque Nature

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 has only started to appear in the Region during the 20th century.



With its 10,057 sg. km, the Region takes up 12.8% of the entire Czech Republic. More than 7,000 ponds, whose overall surface area is more than 30 thousand hectares today, 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 for opportunities for efficient cross-border cooperation in the area of manufacture as well as the area of services, together with the development of the tourist trade, which makes use of the Region's overall attractiveness, unspoilt nature and the many cultural monuments.

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 density of population. This is mostly caused by the concentration of the population in the city of České Budějovice itself, which has 94.8 thousand people. Other big towns include the following: Tábor (35.3 thousand people), Písek (29.9 thousand people), Strakonice (23.0 thousand people) and Jindřichův Hradec (22.4 thousand people). Almost one-third of all people in the Region live in these towns.

### **■** ECONOMIC POTENTIAL

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 in the Bohemian Forest and the Novohradské hory Mountains. The forests are mostly coniferous, with spruce and pine. The greatest raw material treasure is formed by 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.

### **USEFUL CONTACTS:**

South Bohemian Regional Authority www.kraj-jihocesky.cz

South Bohemian Chamber of Commerce www.jhk.cz

South Bohemian Agency for Suppor of Innovation Businesses **www.jaip.cz** 

Regional Development Agency, RERA, a. s www.rera.cz

University of South Bohemia www.jcu.cz

City Authority of České Budějovice www.c-budeiovice.cz



**Statistical Data**Population

Unemployment

Source: Czech Statistical Office

Gross wage

1/1/2013

1/1/2013

1-4st Q. 2012

There is a number of educational and scientific research institutions in the South Bohemia Region. The most important ones include the University of South Bohemia in České Budějovice, which comprises a public university-type school (more at pages 40-41). The Region has always had the character of a recreation area rather than an industrially developed one. The effort to preserve the natural environment is reflected in the establishment of the Šumava National Park. In agriculture, crop farming is mostly oriented towards cereals, oil crops, and fodder crops. Animal production 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 farming is approximately 25,000 ha. The ponds supply more than half of the overall production of fish 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 the industry also in the Districts of Tábor and Strakonice.

### **CONTACTS TO DISTRICTS:**

### MAGISTRÁT MĚSTA ČESKÉ BUDĚJOVICE

(České Budějovice City Municipality Office Náměstí Přemysla Otakara II 370 92 České Budějovice E-mail: posta@c-budejovice.cz www.c-budějovice

### MĚSTO ČESKÝ KRUMLOV

(Český Krumlov Municipality Office) Náměstí Svornosti 1 381 01 Český Krumlov E-mail: posta@mu.ckrumlov.cz http://obcan.ckrumlov.info/

### MĚSTSKÝ ÚŘAD JINDŘICHŮV HRADEC

(Jindřichův Hradec Municipality Office) Klášterská 135/II 377 01 Jindřichův Hradec E-mail: podatelna@jh.cz

### MĚSTSKÝ ÚŘAD PÍSEK

(Písek Municipality Office) Velké náměstí 114/3, 397 19 Písek e-mail: e-podatelna@mupisek.cz www.mesto-pisek.cz

### MĚSTSKÝ ÚŘAD PRACHATICE

(Prachatice Municipality Office) Velké náměstí 3, 383 01 Prachatice E-mail: e-podatelna@mupt.cz http://mesto.prachatice.cz/

### MĚSTSKÝ ÚŘAD STRAKONICE

(Strakonice Municipality Office) Velké náměstí 2, 386 21 Strakonice E-mail: posta@mu-st.cz www.strakonice.eu/

### **MĚSTO TÁBOR**

(Tábor Municipality Office) Žižkovo nám. 2, 390 01 Tábor E-mail: posta@mutabor.cz www.taborcz.eu

However, the Region is not a crucial industrial area for the Czech Republic. The share of revenue of all industrial enterprises in the CR was just 3.8% in 2010. The manufacturing industry is the most prominent and within it the manufacture of motor vehicles (excluding motorcycles), trailers and semi-trailers, and the production of food. The Region's construction firms specialise in new build-

ings, reconstruction and modernization. The Region registers increasing levels of traffic intensity, especially on the roads. While no main railway corridors go through the Region, there are several important hubs. The road network ensures sufficient basic transport accessibility for municipalities, but the Region is not currently connected to the national motorway network.





- At the beginning of 2012, a total of 11,000 foreigners were employed in the South Bohemia Region. More than 60% of these are employed in the manufacturing industry and nearly 15% in construction. The largest proportion of employed foreigners nearly 50% are Slovaks. Among self-employed foreigners, the largest groups are the Vietnamese
- The South Bohemia Region accounts for 5% of the Czech Republic's GDP, with the high-
- The Region has the highest number of hotels and other accommodation facilities and the second highest number of beds, after Prague.
- 111 workplaces in the Region are related to Science and Research, with 81 of these being in the business sector and 12 in the university sector.
   Direct export revenue of South Bohemian industrial enterprises declined in 2009 year-on-year, but already in 2010 it had increased by 14%, the same as in 2011. The proportion of direct export revenue of the total revenue from industrial activity in the Region is increasing; while in 2008 the proportion was 49%, in 2011 the figure rose to 63% (on the national scale, the proportion was 50% and 53% respectively).

The Region has several industrial zones (zone locations at http://invest.kraj-jihocesky.cz) and cluster initiatives. The exhibition grounds in České Budějovice host various kinds of exhibitions throughout the whole year. The most popular ones are the international agricultural fair, "Bread Basket", and the "HOBBY" exhibition. Around 300 thousand people visit these exhibitions annually. Many types of cross-border cooperation have been developing in recent years. One of them is the Euroregion Šumava/Bayerischer Wald/Mühlviertel, which covers an area of 16 thousand 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). Benefits can be seen in the creation and realization of joint projects, especially in the area of transport, services, and the tourist trade, and in the mutual exchange of experience.

### Transport Links

### **■ BY ROAD**

South Bohemia is easily accessible from the northern and eastern parts of the Czech Republic and from neighbouring Austria by the E 55 motorway (Prague – České Budějovice - Linz), to which local roads are linked.

### **■ BY RAIL**

International railway lines pass through České Budějovice; Veselí nad Lužnicí is an important railway junction.

### **BY AIR**

An international airport is located at a distance of 6 kilometres from České Budějovice, in the direction of Český Krumlov. It is the only location in South Bohemia facilitating air connections with the whole world.

It has a licence to operate flights as a nonpublic international airport. The thorough modernisation and reconstruction it is currently undergoing will rank it alongside standard international airports. When



completed, the České Budějovice Airport will be prepared to handle medium-sized transport planes and to operate regular and charter flights. (www.airport-cb.cz). The nearest public international civilian airport is in Linz, Upper Austria. Other airports of international significance are in Prague, Vienna, and Munich.

### Wealth of Historical Monuments and Other Interesting Landmarks

When coming to the South Bohemia Region on business or for other commercial purposes, do not forget to see the Region's cultural, technical, and industrial attractions.

### ■ URBAN CONSERVATION AREAS

As far back as the 12th and 13th centuries. Royal towns sprang up in South Bohemia as centres of business and education and as defence barriers against the invaders of Bohemia's territory. Over the centuries, these have turned into a treasure trove of unique historical monuments recalling the rich history of the entire Region. Later, the best preserved town centres – Český Krumlov, Jindřichův Hradec, České Budějovice, Tábor, Třeboň, Slavonice, and Prachatice - were declared protected urban conservation areas. In 1992, the historical core of Český Krumlov, visited by tourists from all over the world, was included in the UNESCO World Heritage List for its great artistic and architectural value.

### ■ RURAL CONSERVATION AREAS

South Bohemia is a region with the highest proportion of rural population. Its snow-white farmhouses with richly decorated facades are typical features of the South Bohemian countryside and lifestyle in the vicinity of České Budějovice, Třeboň, and Veselí nad Lužnicí. The rural areas were formed over several centuries and reached their highest prosperity at the turn of the 18th and 19th centuries, when an original style of architecture developed here, called Rural Baroque. In it, elements of several distinctive styles of architecture, especially Baroque, Renaissance, and Classicism, are combined in a unique form.

### **■ FISH PONDS**

The South Bohemian landscape presents itself as a colourful mosaic, dotted with the glittering surfaces of lakes and fish ponds. The fish ponds were created as an increasing number of people came to settle here over the centuries and began to cultivate the land by draining the marshlands. The first fish ponds were built in this area as far back as the 12th century. This was followed by the

massive development of local fisheries from the 14th to 16th centuries, when fish in the rivers and brooks were becoming scarce. The total surface area of the more than 7,000 South Bohemian fishponds is nearly 30,000 hectares. The fishpond systems add a harmonious appearance to the landscape, increasing the ecological value of the entire South Bohemia Region. The long tradition of local fisheries is highlighted each year during the popular autumn fish harvests and the special selection of renowned local fish restaurants throughout the year.

### **■ REVOLVING STAGES**

South Bohemia can pride itself on two special technical attractions: the revolving stages, one at Týn nad Vltavou, constructed by local amateur actors, and the renowned revolving stage installed in Český Krumlov Castle Gardens, in the very centre of the urban conservation area featured on the UNESCO World Heritage List. For more than half a century, this stage has been recognised on an international scale as an important and specific example of an open-air theatre.

### **■** FORTIFICATIONS

Preparations of the former Czechoslovakia against potential aggression by Nazi Germany in the latter half of the 1930s comprised the construction of a system of iron concrete fortifications along the state border. This consisted of light and heavy fortifications and artillery

### SOUTH BOHEMIA'S "BEST..." WITHIN THE FRAMEWORK OF THE CR

- lowest population density per sq.km 61.8
- highest percentage share of water surfaces of
- largest dam Lipno I 4870 ha largest fishpond Rožmberk 489 ha
- largest lake Black Lake in the Šumava 18.4 ha
   largest National Park Šumava National Park
   685.2 sq.km www.npsumava.cz
- oldest nature reserves Žofín Virgin Forest (1838) and Boubín Virgin Forest (1858)
- highest-lying castle ruin Vítkův Hrádek (1035
- oldest and best-preserved water mill Hoslov-
- highest-lying observatory in Bohemia Kleť
- oldest stone-built lookout tower Kleť (1084
- oldest reservoir Jordán (1492)
- oldest preserved stone bridge Písek (1348)
- oldest electrified railway line Bechyně-Tábor
- oldest horse-drawn railway České

### NATURE AND THE COUNTRYSIDE

- Šumava National Park www.npsumava.cz
- Šumava Protected Landscape Area
- <u>Třeboňsko Protected</u> Landscape Area
- <u>Bl</u>anský <u>Les Forest</u> Landscape Protected Area
- 24 National Nature Reserves and National



bunkers. The first line of the light fortification system is still to be seen in some places in South Bohemia, for example in the surroundings of Slavonice, where well-preserved bunkers and fortifications are to be found.

### **■ POWER STATIONS**

From the very beginning, South Bohemia has been one of the regions with the most advanced electricity system in the Czech Lands, and even in Central Europe. Thanks to František Křižík, inventor of the arc lamp, the South Bohemian town of Písek became Bohemia's first town to have electric street lighting. The power for this lighting was supplied by a hydroelectric power station built here at the end of the 19th century, the oldest plant of its type in the country. Due to the advantageous profile of the river beds, the construction of guite a large number of hydroelectric power plants followed in the Region, to supply even small industrial manufacturing plants in remote corners of the Šumava mountains with power. Gradually the small power stations were replaced by more efficient plants, today the most advanced of which is the nuclear power station at Temelín.

### LARGE NUMBER OF FOREIGN VISITORS

During the first 9 months of 2012, nearly 886,000 guests from abroad were accommodated in hotels and other accommodation facilities in the South Bohemia Region, more than 8% of the national total. The South Bohemia Region thus ranks third in the number of foreign visitors, after Prague and the South Moravia Region. In the structure of foreign visitors, the main role is played by guests from Germany; an interesting point is the growing number of visitors coming from Asia; for example, the proportion of guests arriving from China in the 3rd guarter of 2012 exceeded that of visitors coming to the Region from Austria.

### **■ BREWERIES**

The Czech Lands have a rich beer brewing and distilling tradition, which also applies to South Bohemia. For example, the world-renowned brewing colossus, Budějovický Budvar, is located in České Budějovice, and a large number of smaller, often family breweries, can be found in the Region. Some of them have been brewing beer for more than a century. A visit to these will take tourists back to the tumultuous era of the beginning of massive industrial development. At that time, beer was brewed in nearly every town and larger village. In the course of the 20th century, most of the breweries ceased to exist. However, during the past two decades, small breweries have been witnessing a new renaissance.

### **■ TRANSPORT STRUCTURES**

With the technical development at the beginning of the 19th century, the idea surfaced to connect the Danube River basin with that of the Vltava. The materialisation of this idea was the construction of the unique

work documenting Czech technical skills in the framework of the entire Austro-Hungarian monarchy, of which the Czech Lands were a part. In the years 1827-1836, the first horse-drawn railway in Europe, leading from České Budějovice to Linz, Austria, started operation. The turn of the 19th and 20th centuries was the age of the steam engine, which penetrated every corner of the country. Some of the regional railway lines have preserved the charm of olden times to this day and often run tours in period carriages. One such line is the narrow-gauge railroad from Jindřichův Hradec to Nová Bystřice and Obrataň.

### **■ LOOKOUT TOWERS**

South Bohemia will arouse the interest of visitors at first sight with its harmonious land-scape, crowned by the peaks of the Šumava Mountains. Its beauty has attracted tourists for decades. To enjoy the breathtaking views of the countryside, lookout towers have been built in many places, some of which date from the beginning of the 19th century.

# South Bohemia Region — Gateway to the Šumava Mountains and a Location Offering New Investment Opportunities

The South Bohemia Region is often viewed, erroneously, as a purely agricultural region with developed forestry and fisheries based on its vast natural wealth. In addition to all this, however, the Region is also very attractive in view of its well-developed industry, in particular manufacturing.

Skilled labour, a dense railway network, support of technical branches, top-standard university tuition, lower unemployment rate in comparison with other regions, and the strategic position of the Region bordering on Austria and Germany – these are the basic attributes adding to the attractiveness of the South Bohemia Region as a location for the realisation of investment activities.

Between 1993 and mid-2012, Czechlnvest Agency helped to attract more than 70 foreign investment projects to the South Bohemia Region, worth nearly CZK 23 billion (approx. EUR 920 million).

# ■ NEW OPPORTUNITIES BENEFITING FROM THE REGION'S STRATEGIC POSITION

The South Bohemia Region, with a long section of its border forming the State frontier

with Austria and the Federal Republic of Germany, offers new possibilities of cross-border cooperation, not only in production and services, but also in Science, Research and Development. Worth mentioning is the Region's efforts to enlarge the České Budějovice Airport, which will ensure the further strategic development of the entire Region as an integral part of the regional transport infrastructure. Other planned projects that will have a great influence on the development of the Region include the enlargement of the Temelín nuclear power station, to which another two reactors are to be added.

### ■ GREAT POTENTIAL IN SCIENCE AND RESEARCH, INNOVATIVE INFRASTRUCTURE

The large number of its educational, scientific, and research institutions lend the

Region great potential for further progress in this field. In addition, the Region has a welldeveloped infrastructure, with facilities designed to support innovation and the trans-

### **CZECHINVEST AND ITS ACTIVITIES IN THE REGION**

Czechlnvest Agency can also be an important assistant and mediator for investors wishing to base their activities in the Region. As part of its programme, the Agency concerns itself with identifying suitable business property for investment projects in the Region. With the help of its extensive commercial property database, it can find suitable construction sites and buildings, plants, halls, offices, brownfields, as well as industrial compounds and science and technology parks to suit investors' requirements. The Agency also assists investors in resolving specific problems they may be faced with, for example, in mediating contacts with the local authorities and dealing with them on the investors' behalf, helping to solve their transport problems, etc. Czechlnvest also supplies information on how to apply for business support grants. For investors, this concerns in particular information about investment incentives or the mediation of contacts with subcontractors through the contractor database. The Agency keeps in touch with investors, even after their investment projects have been completed, by providing them with after-care services.

### LIST OF INDUSTRIAL PARKS IN THE SOUTH BOHEMIA REGION

One of the largest and most attractive industrial parks in the Region is the Písek-Čížovská Industrial Park. With its surface area of 50 ha, it is the second-largest park in the Region and one with the best links to the motorway system. Currently it is fully occupied. The largest park, with a surface area of nearly 62 ha, is the Domoradice, Český Krumlov Industrial Park. Currently, this Park is filled to about 80% of its capacity.

### PÍSEK-ČÍŽOVSKÁ NORTHERN INDUSTRIAL PARK

Size: 50 ha, Size of surface area prepared for investment: 0 ha, Total number of investors: 11

### ČESKÝ KRUMLOV – DOMORADICE INDUSTRIAL PARK

Size: 61.3 ha; Size of surface area prepared for investment: 43 ha; Total number of investors:

### BLATNÁ – SÁDLOV INDUSTRIAL PARK

: Size: 10 ha; Size of surface area prepared for investment: 10 ha; Total number of investors

### PRACHATICE - KRUMLOVSKÁ ULICE INDUSTRIAL PARK

Size of park: 10.25 ha; Size of surface area prepared for investment: 9.53 ha; Total number of investors: 8

Smaller industrial parks in the Region can be found in other towns – České Budějovice Milevsko, Protivín, Soběslav, Strakonice, Třeboň, Jindřichův Hradec, and Nové Hradv.

More information about the Czechlnvest Agency is available at www.czechinvest.org.

### **TOP 20 COMPANIES RANKED BY TURNOVER (m/EUR)**

Company	Location	Sector	Turnover	Employees
E.ON Energie	České Budějojovice	Production of electricity	1 840	100 – 199
Robert Bosch	České Budějovice	Manufacture of motor vehicles	335	2,000 -2,499
Madeta	České Budějovice	Operation of dairies	224	1,500 – 1,999
Dura Automotive	Blatna	Manufacture of motor vehicles	203	1,000 – 1,499
Silon	Planá nad Lužnicí	Real estate	135	500 – 999
TRW – DAS	Dačice	Manufacture of motor vehicles	124	500 – 999
Schneider Electric	Písek	Manufacture of control apparatus	112	500 – 999
Faurecia Components	Písek	Manufacture of chemical products	96	200 – 249
Viscofan CZ	České Budějovice	Manufacture of plastic plates, sheets, tubes	74	250 – 499
Heluz	DolníBukovsko	Manufacture of bricks	62	250 – 499
Fezko Thierry	Strakonice	Weaving of textiles	61	250 – 499
EGE	České Budějovice	Manufacture of other electrical wires and cables	61	500 – 999
Wienerberger	České Budějovice	Manufacture of bricks	60	250 – 499
Magna Cartech	České Velenice	Powder metallurgy	59	250 – 499
Groz – Beckert Czech	České Budějovice	Machinery for textile leather	59	500 – 999
ZVVZ	Milevsko	Manufacture of cooling equipment	45	1,000 – 1,499
Aisin Europe Manufacturing	Písek	Manufacture of machinery	43	250 – 499
Engel strojírenská	Kaplice	Manufacture of ovens, furnaces	40	100 – 199
Linde Pohony	Český Krumlov	Manufacture of motor vehicles	40	200 – 249
EGEM	České Budějovice	Electrical distribution and control apparatus	40	100 – 199

# University of South Bohemia — Linking Science, Research, and Innovation

With more than 13,000 students, the University of South Bohemia in České Budějovice (founded in 1991) is the largest educational and scientific institution in the Region (by national comparisons, it is a medium-sized university). The University offers a wide range of study courses run by eight faculties — Economics, Philosophy, Education, Science, Fisheries and Protection of Waters, Theology, Agriculture, and Health and Social Studies.

The University is mindful of being based in the South Bohemia Region and wants to be useful to its home region. One of the ways of doing this is intensive collaboration with the key regional and supraregional partners in the public and entrepreneurial sectors. This was the aim of the recently completed three-year project called Bridge4Innovation (b4i) - a joint project of the University of South Bohemia in České Budějovice, the South Bohemian Agency for Support to Innovative Enterprising, and the Biological Centre of the Academy of Sciences of the Czech Republic, v.v.i. - financed by the EU Social Fund. Bridge4Innovation assists firms, research workers, inventors and talented students. It mediates the link of the University and the scientific and research institutions in the Region with the business sector, with an emphasis on the commercial utilisation of the results of Research and Development. One of the outcomes of the project is the www.b4i.cz portal, with its comprehensive survey of available services, instruments, technologies, and specialists.

### ■ BUILDING A TECHNOLOGY TRANSFER CENTRE

The South Bohemian University and Academic Technology Transfer Centre is a project linked to the b4i project. Its realisation began in May 2012. As in the case of the previous project, the University of South

Bohemia and the Biology Centre of the Academy of Sciences of the Czech Republic, v.v.i., participate in its realisation. The outcome of the project will be a technology transfer centre to provide a full range of services, from mapping out the possibilities of the practical application of research results and the preparation and realisation of project aims, to the acquisition and drawing up of long-term contracts and joint projects with partners. The main area of collaboration will be biotechnologies in the broad sense of the word, with the South Bohemia Region and neighbouring regions being the natural centre of the project.

### ■ INNOVATION DEVELOPMENT ON A REGIONAL SCALE

The South Bohemian Science and Technology Park (JVTP-www.jvtp.cz) has been in operation since 2008. The principal aim of realising this project was to support the spread of technology innovation and transfer from the public research sphere to the Region's economic sector, in particular to create conditions for the start-up and development of small and medium-sized firms. The project will make it possible for firms to use the know-how and educational potential of the University of South Bohemia and the Biology Centre of the Academy of Sciences. The first stage of the development of the Park, which is owned by the University of South Bohemia, is the cornerstone of a future relatively large complex of laboratory and administrative buildings and pilot plants, planned to provide the strategic infrastructure services in the area of innovation covering the entire Region.

### ■ DISSEMINATION OF SCIENTIFIC KNOWLEDGE

Another way in which the University contributes to the future development and growth of the Region is the popularisation of the latest achievements in Science and Research and scientific work as such. At the moment, popularisation activities are focused on the ZOOM Science Project, the main purpose of which is the dissemination of scientific knowledge in an attractive form, easily accessible to the general public. A number of activities – popularisation workshops, seminars, roadshows, and talent development projects – have been prepared for all those interested.

### **■ EUROPEAN PROJECTS**

The University participates in a number of European projects concerned for example with investment or human resources development and the improvement of tuition. The two most important investment projects currently being realised focus on the development of research and tuition facilities for the Natural Science and Technical branches. They are run by the University's Faculty of Science, Faculty of Agriculture, and Faculty of Fisheries and Protection of Waters. The principal part of both projects, supported by the Research and Development for



Innovations Operational Programme, is the construction of new buildings for several faculties of the University of South Bohemia and the provision of instruments and other equipment for the new facilities.

### ■ BASIC AND APPLIED RESEARCH

The faculties of the University of South Bohemia offer courses in both basic and applied research. The most perceptible evidence of the excellence of the research work carried out by the University is its own research bases in Papua New Guinea, where specific issues concerning tropical ecology are being studied, and in Svalbard-Spitsbergen. The arctic base in Spitsbergen is a temporary facility, and negotiations are in their final phase for the construction of a permanent base. In agreement with Norwegian State authorities, a site has been chosen and project documentation for the station is currently being prepared. Basic research is in progress in other areas of Natural Science - traditionally good results have been achieved, for example, by research on ticks and tick-borne disease. The high level of the research work carried out at the University is confirmed, among other things, by the prize awarded for extraordinary research results to Professor Julius Lukeš of the University's Faculty of Science in 2011 by the Minister of Education. Other branches,



too, can pride themselves on their results in both basic and applied research. The University's Faculty of Education, for example, participated in the MARS 500 international research project concerned with interplanetary space flights; under the project, scientists of the University's Faculty of Education studied the sources of man's resistance in critical situations. The same faculty participated in another international project - ROBO M.D., in the framework of which a robot was developed, which facilitates the continuous monitoring of selected life functions of the person being monitored. The international educational collaboration of the University of South Bohemia is as equally extensive and geographically diversified, as is its research collaboration. Its partners are institutions in Austria and Germany and other European states, as well as researchers in America, Asia, Africa, and Australia. Two cross-border specialisations are unique in the framework of the University's international collaboration. In 2007, the first joint cross-border study programme concerning biological chemistry was launched, in collaboration with Johannes Kepler University in Linz, and in 2011, the Faculty of Science, again in collaboration with the partner, Johannes Kepler University, obtained accreditation for the cross-border specialisation branch of bioinformatics.

The development plan of the University of South Bohemia envisages the promotion of collaboration not only with the political, entrepreneurial, and cultural representation of the South Bohemia Region and the statutory city of České Budějovice, but also with its closest university partners abroad – in particular with the University in Passau and the Johannes Kepler University in Linz, especially in the preparation of other joint study programmes.

### From Invention to Practice

The South Bohemian Agency for Support to Innovative Enterprising (JAIP) focuses primarily on the creation of conditions for the promotion of Research, Development and innovative enterprising in the South Bohemia Region. In particular, the Agency supports the practical application of the results of Research and Development, the transfer of know-how, and the protection of intellectual property.

The Agency's core activities include the operation of the South Bohemian Science and Technology Park in České Budějovice, networking with related institutions and science and technology parks within the framework of the Czech Republic and other regions in the EU, and the operation of the www.gate2biotech.cz, www.gate2biotech.com portal concerned with the spread of information on Czech biotechnologies.

To learn more about JAIP's activities, we approached its Director, Ms Petra Vachová.

Can you give us more information about the South Bohemian Science and Technology Park (JVTP)?

In our Park, every firm or natural person (research worker, student), will find support in areas concerned with the practical use of research results – from simple advice in topics such as the protection of intellectual property rights, starting new companies, active participation in those processes and finding suitable partners, and even the provision of the required research background and continuing care. Since 2008, besides the rented space (with supported rent scaled according to the duration of occupation) and operating services, JVTP has been offering a wide range of consulting and other specific services concerned with Research and Development in the broadest sence of the word.

Another, no less important, activity pursued in the framework of JAIP/JVTP, is the support of education. For example, the SPINNET project addresses students in different sectors, who in the last stage of the project will be offered the possibility of on-the-job training in science and technology parks, business incubators and innovative firms. In this way, students will become part of a system promoting cooperation between the academic and application spheres, while gaining the required skills, know-how and motivation to develop this collaboration still further. In addition, enterprising students have the opportunity of collaborating in innovative projects in the form of teamwork under the supervision of experienced consultants. Students thus become prospective employees with long-term practice, prepared to carry out their future professions.

### Which firms have already become established here?

Since 2008, one of JVTP's clients has been Gen-Trend, which collaborates with leading experts, particularly from the University of South Bohemia (more about the University on page 40-41) and the Biological Centre of the Academy of Sciences of the Czech Republic, in developing new technologies, for example, in the production of biologically active molecules, or the development of new diagnostic methods for human and veterinary medicine. Another important firm with its headquarter in JVTP is i2L Research Ltd - Central Europe, a branch of the British company, i2L Research Ltd. In collaboration with the Entomological and Parasitological Institute of the Academy of Sciences, this company concerns itself with the testing of the efficiency of insect repellents. Surface



Treat, which has its business premises in JVTP, is collaborating with the Chair of Experimental Physics of the Pedagogical Faculty of the University of South Bohemia on a project concerning the applied Research and Development of modern surface finishing technologies. Its main interest is the development of the processes and equipment for plasma surface finishing technologies. The company holds the prestigious Visionary 2012 Award for placing on the market a unique environmentally friendly system for the plasma surface treatment of powder materials to facilitate their dispersion and adhesion, thereby reducing the consumption of powder chemicals.

### Do you expect further development of JVTP?

From the very beginning, the JVTP project has been conceived as a multi-stage one, where the first stage is considered the pilot stage, designed to verify the viability of the project. Evaluation of the results achieved during the first stage has shown that JVTP has met and continues to meet expectations.

The project, however, has reached a stage where its further activity is limited by lack of available area. Therefore, no further clients wishing to locate their premises in JVTP can currently be satisfied. JVTP, however, collaborates with them and provides services to them in a "virtual" form – without them having their premises located in the Park. The further development of JVTP now depends on the successful realisation of the second stage of construction.

### You also participate in international projects.

Besides the administration of the South Bohemian Science and Technology Park, JAIP is also involved in project design and evaluation. Among the most interesting projects are Innofun /Funding Policies to bring Innovation to finance/market/people/, which examines the possibilities of making the evaluation of the grant seekers' projects more efficient, and the MSB-Innocat project-, which tests the potential transfer of the Upper Austrian concept of supporting innovative businessmen and entrepreneurs under the conditions of the South Bohemia Region (more at http://www.jaip.cz/media/upload/files/Prilohac2A.pdf

### Do you also offer your services to foreign businessmen and entrepreneurs?

The South Bohemian Agency for Support to Innovative Enterprising has been set up primarily with the purpose of supporting regional businessmen, but this does not mean it cannot collaborate with foreign enterprises. For example, there is the possibility of mediating contacts with regional research organisations and providing information on the state of business conditions in the South Bohemia Region and in the Czech Republic as a whole.





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