

## MARKET STATEMENT OF THE CZECH REPUBLIC 2014

**Main trends of the macro economy development and development of selected sectors of manufacturing, building industry of the Czech economy in 2014 with focus on forestry and wood processing industry in the Czech Republic. Prediction of possible development for 2015 and 2016. Comparisons of economic development in the Czech Republic and in the EU. Stimuli, tasks and measures for wood and wooden products market development in the Czech Republic in 2014, sustainable forest management, energy from wood, ecological and carbon footprint in the Czech Republic.**

### **1. BASIC TRENDS OF ECONOMY DEVELOPMENT IN THE CZECH REPUBLIC IN 2014.**

#### **a) Main trends of macro-economic development and economy development in the Czech Republic in 2014.**

In 2014, the economy of the Czech Republic continues in the development of the 4<sup>th</sup> quarter of 2013 when the willingness of enterprises and entities as well as of the population to start spending was renewed and after two-year drop in the prosperity, the Czech economy returned to growth.

**In 2014, Gross domestic product of the Czech Republic (CZ GDP) grew year-on-year by 2% in constant prices after the year-on-year growth declined by -0.5% and -0.9% in 2013 and 2012. In 2014, the growth was stable. In Q1 2014, the GDP grew by 2.3%, in Q2 by 2.2 %, in Q3 by 2.2% and in Q4 only by 1.4%. This slowdown of the growth was caused by higher base due to the unequal collection of the excise duty as compared to 2013 as the duty on cigarettes was increased.**

**Domestic demand** was the main impulse of the Czech economy development in 2014, when domestic entities started spending for consumer goods and investments. Also the use of funds from structural funds had impact on the growth of the investments along with the positive economy development. Creating gross capital contributed by 0.8 p.p. to the overall GDP growth only thanks to the investment capital. Its growth by 4.5% can be credited to construction investments and investments in construction equipment, however, the investments into transportation means dropped and investment into apartment construction stagnated. The positive impact on the gross capital creation was reduced by the drop of the stock of goods and unfinished production. In 2014, the higher performance of the Czech economy can be credited to the domestic use, positive development of investments, employment growth and growth of available pensions with low inflation.

**Influence of the foreign trade growth on the GDP CZ generation in 2014** was reduced in spite of the indication of the beginning of 2014, namely by the drop in the sales of the Czech domestic production abroad. The main cause for the deviation of the foreign trade contribution to the GDP growth, which recorded a decline by -0.1p.p. instead of the growth by +0.5% p.p., lied in the dynamic import growth due to the recovery of domestic demand. The trend of higher import than export demonstrated already since Q2 2014; however this trend was declining in the goods balance till Q4, when both import and export grew identically, in service balance the scissors were opening in favour of the import. Depreciated currency due to the change in the currency policy of the Czech National Bank supported the price competitiveness of Czech export; however the effect was higher on the import side due to domestic demand.

The foreign trade in nominal figures was much more positive. In 2014, the export prices significantly overtook the import prices mainly in case of machines and transportation means. At the end of 2014, the import prices were influenced by the unexpected drop in oil process. The result of all that factors was the increase of the goods balance surplus that reached new Czech top value, namely 5.5% of GDP CZ. This lead to the surplus on the current account of the payment balance for the first time since 1993.

**Total Czech foreign balance reached** positive results in 2014 and it exceeded the top values from the last four years. The foreign balance turnover grew to 6 762.1 bil. CZK (i.e. year-on-year growth by 763.8 bil. CZK), the trade balance improved its previous historic surplus by the growth by 447.5 bil. CZK (year-on-year growth by 96.3 bil. CZK). The export in current prices reached excellent value, namely 3 604.8 bil. CZK, i.e. year-on-year growth by 13.5%, which exceeded the import amounting to 3 157.3 bil. CZK, i.e. growth by 11.8 %. The export figures are based mainly on the good situation on the European automobile markets and on the demand for products of various sectors of the manufacturing industry. In parallel, depreciated currency had positive impact on the result of the foreign trade. Its impact on import was reduced by the dropping of energetic raw materials prices; in spite of exchange rate of Czech koruna and solid domestic demand the prices were increasing.

The Czech National bank will be using the exchange rate as an additional tool for loosening the currency conditions.

**b) In 2014, the growth of industry production in the Czech Republic** returned after two years of recession, even though the recovery of the Czech economy started already in the second half of 2013.

**Industrial production index (IPI)** of the entire Czech industry including manufacturing industry as well as harvesting and mining and production and distribution of energy, gas, heat and air-conditioned air amounted to a significant year-on-year growth, namely by 5.0%.

**The main characteristics of the development** in the majority of sectors of the **manufacturing industry in the Czech Republic** was the stabilisation or growth of the production, whereas the production in harvesting and mining and in the sector of production and distribution of energy, gas, heat and air-conditioned air kept dropping also in 2014. The higher year-on-year growth in manufacturing industry as compared to the entire Czech industry was caused by the dropping IPI for harvesting and mining, namely by -2.8% and for production and distribution of energy, gas, heat and air-conditioned air by -2.4% in 2014.

**The key factors influencing the growth of the entire Czech economy** comprised the results of the Czech industry, mainly of the manufacturing industry. This is demonstrated by the listed figures. The gross value added (GVA) grew by 2.6% in 2014 as compared to 2013; in the manufacturing industry, GVA grew by 6.0% and its performance expressed in the GDP CZ growth grew by 2% year-on-year.

The manufacturing industry achieved a **year-on-year production** growth in 21 out of its 24 sectors (in 2013 it was only in 14 sectors). As for the manufacturing industry, the best production growth according to IPI was achieved in the production of computers, electrical and optical devices, namely by 18.1%, and in the production of motor vehicles (excl. motorbikes) and trailers, namely by 13%, the production of oil products by 11.8%, production of chemicals by 9.6%, furniture production by 7.9% and the electronic devices production by 7.2%.

**c) In 2014, the construction industry incl. apartment construction in the Czech Republic** finally changed.

In 2014, **construction production** recorded a year-on-year growth in constant prices on average by 4.3% after five-year decline. The most significant share in the growth can be credited to the engineering constructions, again with a year-on-year up to 6.4%. The production in building construction grew year-on-year by 3.4%. This is caused mainly by the renewed investment activities of the Government, new jobs in the private sector and better weather conditions in Q1 2014. 2014 was a successful year for the construction industry after a long time; nevertheless, its production is still below the level under the pre-crisis year of 2008 by 22.1%.

In 2014, **the construction index** in constant prices grew by 4.3% as compared to the year-on-year decrease by -6.7% in 2013. The highest growth of construction was reached from January to April, namely from 8.5% to 19.1% in March. May, July and December were in red numbers, as there was a decrease by -3% and -7% in July and December respectively. In Q1 2014 the construction production grew significantly, namely by 13.3%, by 5.6% in Q2 and only by 2.9% in Q3. The lowest growth of the production was recorded in Q4, when the construction exceeded the level of the previous year, however, only by 0.7%. The positive result of Q4 2014 marked the end of the five-year weak period.

The apartment construction recorded also a breakthrough in 2014. After six years of drops, the number of new apartments under construction grew by 10.1%. However, when compared to the 2007 figures, i.e. the peak year of the conjecture of apartment construction, the figures were lower by 44.4% in 2014. The number of new apartments under construction in blocks of apartments rocketed by 37.1% in 2014. However, they recorded a moderate decline in family houses, namely by -0.4%. However, the apartments in non-residential buildings grew by 42.4%.

#### **d) Development in forest management and wood-processing industry in the Czech Republic in 2014.**

**da) as for forest management**, the gross value added in constant prices of forestry and timber harvest grew by 0.61% and 0.62% in 2014 and 2013 respectively. The GVA in the Czech industry grew by 2.6% year-on-year in 2014 as compared to the decrease by -0.6% in 2013 and -0.7% in 2012.

**Harvest of coniferous and broad-leaved timber in total** amounted to 15.48 mil. m<sup>3</sup> as compared to 15.33 mil. m<sup>3</sup> in 2013 in the Czech Republic. In 2000, the timber harvest was the lowest in this century, namely 14.44 mil. m<sup>3</sup>. In 2006, the timber harvest was the highest in the Czech Republic, namely 17.68 mil. m<sup>3</sup>. In 2014, salvage felling significantly contributed to the total harvest (15 476 k m<sup>3</sup>), namely by 4, 5 mil. m<sup>3</sup>, i.e. 29%, which is a significant volume of salvage timber. This deteriorated the condition of planned management in Czech forests. In 2014 and 2013, the annual timber harvest per capita amounted to 1.47 m<sup>3</sup> and 1.46 m<sup>3</sup> respectively, as compared to 1.41 m<sup>3</sup> in 2000.

**The share of broad-leaved timber in the annual harvest** amounted to 12.9 % in 2014 as compared to 13.7 % in 2013. In 2000, the share totalled only to 11.0%. As for the total broad-leaved timber harvest, it amounted to 2.0 mil. m<sup>3</sup>, 2.1 mil. m<sup>3</sup>, but only to 1,59 mil. m<sup>3</sup> 2014, 2013 and 2000 respectively. The broad-leaved timber harvest grew mainly due to the demand on the market with raw timber and to the structure of available stock in mature stands.

**Situation of domestic consumption** of all utility timber was not satisfactory in 2014. It is documented by the following data comprising the total annual production of utility timber in the Czech Republic, the annual trade with those commodities and their annual domestic consumption: harvest and production of raw timber, i.e. coniferous and broad-leaved round wood and pulp wood in total (industrial round wood), plus charcoal, plus fuel wood, plus sum of wood chips, splinters, residues and waste wood for CO-products plus wood pellets and other agglomerates), their annual imports, exports and domestic consumption.

**Total annual production of utility timber** amounted to 17 979 k m<sup>3</sup> and 18 190 k m<sup>3</sup> in 2013 and 2014 respectively. The year-on-year production growth reached 211 k m<sup>3</sup>, i.e. 1.2%.

**Imports of similar utility timber** amounted to 3 545 k m<sup>3</sup> and 3 562.7 k m<sup>3</sup> in 2013 and 2014 respectively. The year-on-year growth of imports amounted to 17.7 k m<sup>3</sup>, i.e. a growth only by 0.5 % in the Czech Republic in 2014.

**The export of all utility timber** and identical or similar products amounted to 6 183 k m<sup>3</sup> and 7 085.7 k m<sup>3</sup> in 2013 and 2014 respectively, The year-on-year growth of the exports totalled to 902.7 k m<sup>3</sup>, i.e. a significant 14.6% in 2014 as compared to 0.5% of the annual year-on-year growth of imports in 2014.

**Domestic consumption of all timber in the Czech economy** totalled to 5 341 k m<sup>3</sup>, but only to 14 667 k m<sup>3</sup> in 2013 and 2014 respectively, i.e. an year-on-year annual drop in the domestic consumption of these materials by -674 k m<sup>3</sup>, and by -4.4 %. This annual drop in the domestic consumption of all utility timber in the Czech Republic represents 9.5% of the total of Czech exports of all utility timber. And this is not good when related to the entire Czech economy.

**In 2014 a relatively high growth of exports** – of raw timber as the key wood-processing material and its low import - meant the reduction of the internal consumption of all utility timber needed for undisturbed operation of selected sectors, mainly of the wood-processing sector. This situation is not unexceptional in the trade with forest production and it basically reduced the production of the wood-processing industry in the Czech Republic in 2014. The 2014 decline of the reduction of the wood-processing industry in the Czech Republic expressed in the industrial production index meant a year-on-year drop of its annual growth dynamics by -3.5%. In the previous year, this sector of the wood-processing industry recorded a year-on-year growth by the significant 8.4% with similar problems with

supplies and imports.

**The area of forest land** is growing in the Czech Republic. The growth can be credited firstly to the surplus of newly afforested land and secondly by refinement of data in the real estate cadastre. In 2013, the area of forest land totalled to 2,663,731 ha and to 2,666,376 ha in 2014. In 2010, the forest land in the Czech Republic equalled to 2 657 376 ha. The following regions have the largest forest land area: Central Bohemia and Southern Bohemia, namely over one million ha. The following regions have the smallest forest land area: Karlovy Vary and Liberec regions with only over 300 k ha.

In the Czech Republic, **forest land properties and quality** are represented in the common typological system for forest sites classification, by so called forest types. These forest types characterise sufficiently current growing condition for domestic forest stands and are represented by the forest vegetation zones and edaphic categories. They define tree species suitable to the climate conditions and their potential production, the way of their management such as thinning and the forest stands regeneration. The natural growing and management conditions of all Czech forest are mapped in details based of the forest types. The typological system is used as the base for all management-related decisions in the Czech Republic and it is the result of over fifty-year systematic investigation of natural condition in the forests. This Czech system is unique in the world.

**db) Wood-processing industry in the Czech Republic** has a long tradition and it is based on the CZ-NACE international specification and it comprises the sectors 16, 17, 18 and 31. In the wood-processing industry, the key roles play sector 16 along with paper industry. The basic material for wood-processing industry is the wood. This natural material is mainly only of domestic origin and it is the competitive advantage of these sectors in the Czech industry. Wood-processing industry is not dependant on the imports. Wood delivered from Czech forests to the Czech manufacturing industry is excellent as it comes from forests that have been duly managed for centuries. Round wood is the raw material for wood-processing industry and pulp wood for paper industry.

**Wood processing and production of wooden and other products** is marked by small companies and family enterprises in the Czech Republic. There are only 11 big companies (thereof 7 with foreign owners) processing wood and they mainly focus on sawmills. The wood-processing industry and the production of wooden another products – given the micro companies and the characteristics – employs over 70% of the owners. In 2014 the employment in the sector was reduced by -0.9% to the total of 31 908 in spite of opening new enterprises; in 2008 their numbers were reduced by -26.4 %.

The gradually growing prices of the raw material for the wood-processing industry in the last years demonstrated also in the growing prices of the products in 2014 (only the price for processing timber rose year-on-year by 6.7%) and in higher yield from the sales of own products. In 2014 the sale yields in current prices grew year-on-year by 10.2% and amounted to the total of 84.08 mil. CZK. In 2013 there was a year-on-year drop of the sales, namely by -0.1%. In 2014, 29.6% of the annual yields of sales were generated by sawmills and wood impregnation. The remaining 70.4 % were generated by other production due to the problems caused by limited supplies of raw wood to the Czech sawmills.

The competitive disadvantage in the offer of those products lies in lower added value in the Czech Republic. This reflects rather the old machines and technologies of small producers. This is caused by significant insufficient investment into this sector for a long time, when the investments were dropping over the last years and only in 2014, there was a recovery with a year-on-year growth by 22% to the total of 4.4 mil. CZK. However, this is till much less as invested in 2008 (7.1 mil. CZK). As the Czech Republic belongs to the main European exporters of raw timber, this result in insufficient supplies to domestic manufacturers; the missing balance is imported in lower quality for higher price, which further reduces the competitiveness of these products. Hence bigger support of small and medium enterprises, maybe under existing subvention programmes of the Ministry of Industry and Trade and Ministry of Agriculture - will be necessary in order to increase the competitiveness, achieve further development, fast implementation of newest technologies and techniques in those small enterprises, support of new acquisitions, investments and science as well as the development of the cooperation between industry and agriculture sectors in order to provide for fast implementation of priorities for processing the domestic timber.

**As for paper industry and production of paper products** in the Czech Republic, the number of employees has been dropping gradually. From 2008 to 2014, the number dropped by 2000, i.e. almost by 15%; and thereof 82% were employees in the production of paper products and card board. This production, paper products and cardboard, not the pulp production, are the production with the relatively high percentage of employed owners, almost 72% of the total number of employees; this is caused by the majority of enterprises being micro and small enterprises, often family businesses.

One can conclude that the paper industry – by its integration in global chains - became an integral part of the European paper industry eleven years after the Czech Republic joined EU.

Nevertheless, the development of the production of paper products and card board has been lacking behind. The year-on-year growth of investments by 8.2% into the paper industry is extremely low from the prospective of the production of paper products and card board and these products have to be imported even though we would be able to cover the domestic need from our own Czech-based operations. Hence, the decline of manufacturing product with higher or high value added is persisting in this sector. E.g. graphic paper dropped by -4% in 2014 and the same is valid also for the production of hygiene and tissue paper, where the production is extremely low, i.e. only 5.2 k tons. Hence, the majority of these products have to be imported for domestic consumption with the Government not being able to interfere.

#### **e) PREDICTION OF THE CZECH ECONOMY DEVELOPMENT IN 2015 AND 2016**

drafted by the Ministry of Finance assumes the following development:

**In 2015 and 2016 the growth of the Czech economy** will be supported by revival of foreign demand, opened currency conditions, positive cost influence of low oil price and recovery of Government investments. The continuing growth of the Czech economy will be supported also by the betterment of labour market in the next years. The number of employees will be growing and the unemployment and number of unemployed will be dropping in the Czech Republic. The growth of salaries of the entrepreneurs will be sped up and in 2015, the growth of salaries in other sectors will be sped up as well. In general, both the Czech and EU economy can expect a more often sequence of growing and dropping phases of the economic cycle. Currently, the Czech economy is stimulated by several one-off factors with the most important being the positive supply shock of low oil process on commodity markets, euro and koruna depreciation in relation to US dollar and persisting need of fiscal impulse. Nevertheless, those factors will be wearing off in 2016. Once the economy fundamentals of the recovery are reinforced and the Czech economy returns to positive production, the need of fiscal impulse will wear off and the economy should focus on the reduction of the governmental sector deficit in the Czech Republic. The oil price should have anti-inflation effects due to the impact on the company costs.

At the end of 2013 and 2014, the **recovery of the Czech economy** sped up the total economic growth of the Czech Republic. It was driven solely by domestic demand, both by household consumption and the Government and the generation of fixed capital. From the prospective of macroeconomic proportions, the year-on-year growth of real 2014 GDP CZ increased the value by 2%.

**In 2016, the growth of real GDP CZ is predicted to amount to 2.5 year-on-year**, i.e. unchanged as compared to the original 2.7% in 2015. This estimate should realistically reflect the internal standardised conditions that will be driving the development of the Czech economy in 2016 and it should reflect – not necessarily prosperous – influence on the potential of further economy development arising from uncertainties and risks surrounding the Czech economy. These risk may comprise persisting situation in Ukraine, tension or instability in Near East and in Northern Africa and uncertainty caused by the development of Chinese economy.

**Czech industry** incl. harvesting and mining and in the sector of production and distribution of energy, gas, heat and air-conditioned air according to the Industrial Production Index (IPI) could – after the year-on-year growth by 5.0% (in EU28 by 1.1% year-on-year and in EA 12 by 0.7%) – continue growing, i.e. by 5.1% according to IPI in 2015.

As for the Czech manufacturing industry, i.e. excl. harvesting and mining and in the sector of production and distribution of energy, gas, heat and air-conditioned air, – after the year-on-year growth by 6.7% – continue growing, i.e. by 6.8% according to IPI in 2015.

After the year-on-year drop by -3.5% in 2014, the IPI in the wood-processing industry could reach

-0.3% in 2015, IPI in the paper industry could reach growth up to 7.9% as compared to 6.9% in 2014 and the printing sector that recorded a growth by 10.6% in 2014, could drop by 0.2% based on the decline in the first half of 2015.

**Czech construction industry** - after the drop by -6.7% in 2013 and the improve of year-on-year growth by 4.3% in 2014 – could reach positive figures and the year-on-year growth could amount to 7.6% in 2015. The 2015 estimates comprise such growth in spite of the first half of 2015, when the growth totalled to 8.6% as the Czech construction industry has too many companies and hence inadequate capacities. Some companies do not do good job and skilled workers are leaving such companies. To recover this industry of the Czech economy, it is necessary to reduce capacities, start adequate pro-investment policy and to achieve an overall economy growth, which will not be possible to do immediately.

## **2. SIGNIFICANT STIMULI, TASKS AND MEASURES FOR MARKET DEVELOPMENT WITH TIMBER AND WOODEN PRODUCTS IN THE CZECH REPUBLIC IN 2014.**

### **a) Measures within economic stimuli and legislation of forest management in the Czech Republic.**

As for economic market support, Czech Government did not adopt any measures within forest management as well as any other sector of the Czech economy, like in the past, that would not be in line with the market economy relating to forest, wood-based or any other products. It was not necessary to adopt any non-market measures or any other administrative measures within the economic stimuli that would change, limit or support the free market in the Czech Republic. The Czech market with all products, i.e. incl. forest products, was and is based on free competition and it is in line with the existing offer and demand in the Czech Republic.

In 2014, the following forestry-related act were adopted:

- Act no. 64/2014 Coll., on amendment of acts relating to the adoption of Controlling Code, which modifies – in the part 17 – the act no. 289/1995 Coll., on forests and on amendment of other acts (Forestry Act), as amended. The provisions granting the title to official uniform to employees of the government supreme supervisory body managed by the Ministry of Environment, were revoked, i.e. the title ceased to exist.
- Act no. 357/2014 Coll., amending the act no. 449/2001 Coll., on hunting, as amended. The amendment set forth the competence of regional bodies to decide upon subsidies to hunting management from 1 Jan 2015. This competence lay with the Ministry of Agriculture till the end of 2014. The amendment also set forth that no subsidy shall be granted for hunting management in cases when subsidy has already been granted from national environmental fund, public funds or EU funds for the same purpose.

In 2014, in relation to the Act no. 232/2013 Coll., on amending the Act no. 149/2003 Coll., on trade in forest-tree reproductive material of forestry significant tree species and artificial cross-breeds for forest regeneration, afforestation and on amendment of related acts (Trade in Forest-Tree Reproductive Material Act), as amended, the following decrees were adopted:

- The Decree of Ministry of Agriculture no. 132/2014 Coll., on marketing of forest reproductive material and protection and reproduction of forest tree genetic resources, effective from 1 August 2014;
- Principles of the Ministry of Agriculture of 24 July 2014 issued in relation to the Section 2j under Act no. 149/2003 Coll., stipulating the conditions for granting subventions for protection and reproduction of forest tree genetic resources from 2014 to 2018, effective from 27 August 2014, and
- Strategic document of the Ministry of Agriculture for the National programme of protection and reproduction of forest tree genetic resources for the period from 2014 to 2018 and

effective from 1 July 2014.

**b) Measure for climate change mitigation and supporting timber market.**

**Every year, Czech Republic**, as the contracting party of the United Nations Framework Convention on Climate Change (UNFCCC) and its Kyoto Protocol and Land Use, Land-Use Change and Forestry (LULUCF), **prepares the emission inventory of greenhouse gases.**

In the Czech Republic the emission inventory according to UNFCCC is based on the definition of areas and changes of six basic land-use categories according to the Intergovernmental Panel on Climate Change (IPCC) such as Forest Land, Cropland, Grassland, Wetlands, Settlements, and Other Land that are monitored on the level of individual cadastrals in the Czech Republic. In the second step of the emission inventory, the emission and drops of greenhouse gasses such as carbon dioxide (CO<sub>2</sub>) released or stored in ecosystems and carbon storages are quantified as well as CH<sub>4</sub> a N<sub>2</sub>O pursuant to the LULUCF.

Kyoto protocol rules set forth that the LULUCF contribution to the reduction commitment of the Czech Republic shall be reflected in the final balance at the end of the entire first monitoring period of Kyoto protocol. Moreover, the reflected contribution of forest management shall be significantly capped by 0.32 mil. tons C/year (i.e. -1.173 mil. tons CO<sub>2</sub>).

In 2014, the net LULUCF drops in the total greenhouse gas emissions were reduced by 7.3 mil. tons of CO<sub>2</sub> eq. in the Czech Republic, i.e. approx. the greenhouse gas emissions originating from the agriculture. One can assume that the drops in the forest management will be decreasing in the future. The reasons for that lies mainly in the age structure of forest stands in the Czech Republic and the planned increase of broad-leaved species share. This should provide for forest stand stability and carbon storage in long term. In the future, one can also expect a higher use of biomass for energetic purposes and higher share of carbon stored in wooden products.

**c) Government stimuli for wood energy production and its use in the Czech economy.**

**Producing renewable energy has been always supported by the Czech Government.**

Wood and harvest residues for energy production have no own standard to be used for energy production in the Czech Republic, but they are included in the term of renewable energy production. Modern and efficient use of wood energy, i.e. sawdust originating from wood-processing industry, is supported in the energy sector both by the Government and the Ministry in the Czech Republic.

In order to achieve the planned biomass supplies, it is expected to use also the agriculture land for growing crops used for energy production. Based on the calculation, only 2 070 000 ha cropland out of the total of 3 480 000 ha should be enough to maintain 100% food self-sufficiency. The free agriculture land of 1 120 000 ha could be used for growing energy crops to be used for direct combustion, bio gas and liquid fuel production for electricity and heat production and use in transportation. The 1 120 000 ha are divided into 680 000 ha cropland and 440 000 has of grassland.

The harvest residues are dominated by two groups, namely by wood chips and wood pellets.

In the Czech Republic, 726 k m<sup>3</sup> and 733 k m<sup>3</sup> of chips splinters were produced in 2014 and 2013 respectively. The annual export of this commodity was by 25 to 30% higher and compared to the import in 2014. In 2013 the export almost equalled to import and it amounted to 420 and 530 k m<sup>3</sup> respectively. The use of wood chips for renewable energy production can be improved in the Czech Republic as it amounts to 85%.

In the Czech Republic, new bio technologies conversion to bio fuel, energy and other products with higher value added are developed and they should help the Czech manufacturing industry in strengthening competitive position and providing for sustainable development. As for the bio mass in general, it is one of the most important renewable sources in the Czech Republic with the share amounting to 75% of the grow renewable energy production. Sawdust originating from the wood-processing industry is the other type of the wooden waste used for the production of wooden pellets. Debarked saw dust is used for the production of the highest quality pellets (A1 class), saw dust with the bark then for the lower quality pellets (A2 class). In the Czech Republic the annual production of these products amounted to 630 k m<sup>3</sup> and 670 k m<sup>3</sup> in 2013 and 2014 respectively.

The annual production of pellets can be derived from the annual timber harvest in the Czech

Republic. Approx. 15 to 17 mil. m<sup>3</sup> timber is harvested every year, approx. 6 to 7 mil. m<sup>3</sup> thereof are exported and over 6.5 mil. m<sup>3</sup> are imported. The annual increment amounts approx. to 20 mil. m<sup>3</sup>. The area covered by forests has been growing slightly with the annual increase approx. 2 k ha. The utilisation rate of sawn wood ranges from 50 to 60%, the remainder is chips, saw dust and bark. If saw dust is pelleted, the annual production with the break-down of 1 mil. m<sup>3</sup> is sufficient for approx. 80,000 tons of pellets. Given the annual break-down, the productive saw mills could produce will over 600,000 tons of wooden pellets. This is in line with the actual production of wooden pellets, as 671 k tons were produced in the Czech Republic in 2014. The majority of wooden pellets produced in the Czech Republic are also exported. In 2014, the export amounted to 701 k tons, however, 299 k tons of pellets were imported, but in lower quality as compared to the export.

**d) How does the involvement of the research and development support higher market efficiency in the Czech Republic.**

In the Czech Republic, **the issues of competitiveness support** and mainly reaching higher efficiency are dealt with by all relevant central bodies, research and development institutions, universities and other experts and a whole range of private organisations. The same applies to production. Technical institutes and educational entities contribute also greatly and regional agencies take part as well. The task focuses on searching suitable and perspective partners for Czech trade and cooperation relations with partners in EU countries and worldwide, incl. USA; mainly there where the ability to master competition has been proven. The aim is to provide to both partners highly effective international cooperation within science and technics for both sides and to maintain and protect the intellectual property both in production and in mutual trade.

Participation and actual tasks for the bodies listed above, organisations and institutions leading to higher market efficiency and involvement of these issue also into research and development are defined under the document called Analysis of the Competitiveness of the Czech Republic, drafted by the Ministry of Industry and Trade. The analysis reveals many initiatives and proposals of measures that are to be adopted in this area. There is follow-up document, namely Strategy of International Competitiveness, also drafted by the Ministry of Industry and Trade. This strategy justifies and specifies the focus of development priorities of the Czech economy after 2014 in order to be modified and adapted to the changes in the global economy and the position of the open and export-dependent Czech economy in the future.

As for the wood-processing industry in the Czech Republic, the support of small and medium enterprises proves to be necessary as well as profitable for the Czech economy. Czech Republic has a high quality wood-processing material, in sufficient volumes also in the future, skilled, experience and productive labour force and all the prerequisites for efficient use of wood-processing products to the benefit of the Czech republic and export. Moreover, small and medium enterprises in the Czech Republic, mainly those processing timber, desperately need new technologies, machines and equipment in order to apply modern ways of production with innovative construction. This would allow them to produce more and more sophisticated products with high value added and with reasonable price in the international trade, not only in the wood-processing industry. The fact that the sectors of Czech wood-processing industry generate in total 2.5% of the annual GDP CZ must not be pretext for some central bodies to neglect their efficient development.

**e) Measures for increasing responsibility of social associations (corporations).**

**The area of associations remained unchanged in 2014 as compared to 2013.** Generally, the issues related to social responsibility are handled by the responsible ministry under the unified approach and pursuant to the provisions valid for the entire Czech Republic. They are also elaborated in the National Forestry Programme as a task to support the improvement of social situation of forestry employees.

Social associations and corporations registered in forestry in the Czech Republic are voluntary, non-profit and non-government organisations. Their task is to protect the interest of citizens, workers and employees in forestry, support in increase of producers operating within forest management and for sustainable forest management. These individual voluntary, non-profit and non-government associations

within Czech forestry should help the forestry employees with maintaining social securities and dealing with social issues, legal and other consultancy, cooperation and solving problems with local authorities as well as issues of economic management and handling forest property in order to educate due managers in this area. The Government does neither regulate, nor steer, nor finance these associations. Hence, the Government does not issue any guidelines or adopts measures for their activities incl. social, financial or any other support.

#### **f) Measures taken in the field of research and development in order to boost the timber and wooden product market.**

**In the Czech forestry, the research and development of is financed by the Government and it is desired.** Nevertheless, it is missing within the wood-processing industry, as the transformation into private entities after 1989 lead to the termination of the wood-processing research facilities mainly due to the engagement of many international value chains and later lack of orders and finances. Small and medium enterprises of the wood-processing industry do not order research, mainly due to financial reasons, even though they would need it. If research is required, it is realised by individual professional organisation within the wood-processing industry and relevant programmes run by the Ministry of Industry and Trade.

In the Czech Republic, the activities in this field are performed by organisations such as the Academy of Sciences, research institutes, universities and science institutes.

The issues of the basic, technological and applied research within the forestry focuses on strengthening the competitiveness, sustainability and development of forestry sectors, on perfection of new approach to planning and optimisation of wood transportation technologies in forest and extending ecological management. The research also focuses on the forest and landscape ecosystems, forest and forest environment assessment, increase of the forest resistance to climate change as well as on new management procedures, new forestry possibilities and water and watering systems. It also focuses on increasing the management quality in forestry companies, issues related to economic efficiency of low forest, economic efficiency of cultivation, development and modelling of growth processes. Last, but not least, it focuses on landscape use in Central Europe, ecophysiology of tree species etc.

In the area of boosting the wood and wooden products market, the research focused on intentions of boosting the interest in modern wooden houses in the Czech Republic and on implementing new methods of design and production of wooden constructions and their parts in order to increase the automated and integrated production manners. In 2014, Czech Republic stressed more elaborated and ways of the most realistic increase of performance and efficiency of forestry and wood-processing sectors, mainly of small and medium enterprises. Nevertheless, the final effects did not provide expected results, in spite of dealing simultaneously also with the issues of material supplies from domestic forest to Czech small and medium enterprises. Along with the efforts to boost the timber market in the Czech Republic, the issues of fast growing tree species for other but wood-processing purposes, mainly for energy production, are tackled.

### **3. HOW DOES THE DEVELOPMENT OF THE MARKET WITH THE PRODUCTS OF THE WOOD PROCESSING, PAPER, POLYGRAPHY AND FURNITURE INDUSTRY FOSTER THE OVERALL DEVELOPMENT OF MANUFACTURING INDUSTRY OF THE CZECH REPUBLIC.**

Based on the data provided by the Czech Statistical Office and the Ministry of Industry and Trade of the Czech Republic, in 2014, the entire wood-processing sector (wood-processing industry) employed 86 586 employees as compared to 86 126 employees in 2013. The overall employment in wood-processing industry amounted to 8.1% and 8.2% in 2013 and 2014 respectively. In 2014, there were 45 352 enterprises active in wood-processing industry, i.e. 26.4% from the total number of enterprises within manufacturing industry; in 2013, there were 44 555 enterprises, i.e. 26.6%.

In wood-processing industry, the sales of own products and services grew year-on-year by 8.8%. In manufacturing industry, this meant an increase of 10.0% as compared to 2013. In absolute figures, wood-processing industry sales amounted to CZK 217 246 537 CZK as compared to 199 736

727 CZK in 2013. The sales of own products and services generated by manufacturing industry equalled 3.762 b CZK, however 3.420 b CZK in 2013. Wood-processing industry increased the added value by 11.6% in year-on-year comparison. The manufacturing industry increased this indicator by 15.2%. In absolute figures, wood-processing industry generated the added value of 61 023 869 CZK as compared to 54 707 665 CZK in 2013. The manufacturing industry succeeded in generating the added value of 932 254 490 CZK as compared to 809 108 837 CZK in 2013. The manufacturing industry generated the gross operating surplus of 471 574 908 CZK in 2014; however in 2013, it amounted to 372 727 658 CZK.

In 2014, the added value per employee in wood-processing industry and in the manufacturing industry recorded a year-on-year increase by 10.5% and 12.4% respectively. In 2014 absolute figures, wood-processing industry generated the added value per employee of 706 302 CZK as compared to 639 190 CZK in 2013; the manufacturing industry generated the added value per employee of 864 741 CZK as compare to 769 719 CZK in 2013.

In 2014, wood-processing industry delivered to domestic consumption (DC) of the Czech economy products equalling to 176 672.5 k CZK as compared to 162 590.6 k CZK in 2013; i.e. a year-on-year growth by 8.7%. In 2014 and 2013, the wood-processing industry supplies to DC amounted to 81.3% and 81.4% of the total wood-processing industry production respectively. As for the DC in the manufacturing industry, it delivered products amounting to 3 320 521.8 k CZK and 3 072 066.3 k CZK in 2014 and 2013 respectively, i.e. a year-on-year growth of 8.1%. Nevertheless, the supplies of the manufacturing industry to DC amounted to 88.3% and 89.8% of the total manufacturing industry production in 2014 and 2013 respectively.

The assessment above shows that the year-on-year increments of all production indicators of wood-processing industry recorded a lower growth dynamics as compared to the manufacturing industry in 2014. In parallel to the bad development of production indicators, wood-processing industry recorded a clear decrease of share of the supplies to DC in the overall wood-processing industry production, namely from 81.4 % in 2013 to 81.3 % in 2014. However, one should not forget that the share of DC supplies on the overall wood-processing industry production amounted to 89.8% in 2009.

In spite of not being able to document the wood-processing industry supplies to respective sectors of the manufacturing industry in individual years, one can conclude – based on the real growth dynamics – that the market with wood-processing industry products is surely contributing to the development of the entire manufacturing industry, even though with deteriorating dynamics.

Certain drops in production and market growth dynamics in wood-processing industry closely relate to the development and impacts of financial indicators. This is documented by the differences in the relation both between achieved gross operating surplus in wood-processing industry and the manufacturing industry and between individual years.

#### **4. DEVELOPMENT OF TIMBER AND WOODEN PRODUCTS MARKET IN THE CZECH REPUBLIC IN 2014.**

**a) Market with raw wood in 2014.** In 2000, 2013 and 2014 the total timber stock of the Czech Republic amounted to 630.5 mil. m<sup>3</sup>, 687.2 mil. m<sup>3</sup> and 689.0 mil. m<sup>3</sup> respectively. The total timber stock in the Czech forests has been increased twice as compared to 1930. In the Czech Republic, the average stock per one hectare of forest stands incl. harvested areas amounts to 265 m<sup>3</sup>, i.e. it grew by 1 m<sup>3</sup>.

15.33 mil. m<sup>3</sup> and 15,48 mil. m<sup>3</sup> of raw coniferous and broad-leaved timber originating from the Czech timber stock above were delivered (without import) in 2013 and 2014 respectively. The year-on-year increase of the harvest was caused mainly by salvage felling. 2014 was an adverse year in terms of forest protection. Mainly the area of Moravia and Silesia was influence by wind-fall. Hence, in 2014 the salvage felling amounted to 4.5 mil. m<sup>3</sup> as compared to 4.2 mil. m<sup>3</sup> in 2013.

In 2014, the share of broad-leaved timber in the overall harvest dropped year-on-year by 0.8%.

The ratio between coniferous and broad-leaved timber is defined by the structure of available mature forests stands as well as by the growing market demand for this raw timber.

2014 also showed that the conditions for planned forest management deteriorated due to the wind-fall. However, as the salvage felling was fast, better conditions for forest management were created. This effect was positively contributed by reducing the so called exhalation felling, i.e. felling of forest stands influenced by immissions; the exhalation felling has been on decline in the Czech Republic.

Exhalation felling has been on decline, however, contemporary forest damage is growing, which results gain in unplanned harvest. The contemporary forest damage comprises the impact of flushed and sprayed road salt in winter, soil damaged by immissions in the past, negative influence of various nutritive deficient and others. Dozens of thousands of hectares are damaged. In the Czech Republic, the Ore Mountains and the Orlické Mountains suffer from this contemporary damage.

In 2013 and 2014, the total raw timber export amounted to 6 183 k m<sup>3</sup> and 6 917 k m<sup>3</sup> respectively. This means a year-on-year increase by 11.9%, i.e. by 734 k m<sup>3</sup>. The 2014 export to Germany, Austria and Slovakia amounted to 3 245 k m<sup>3</sup>, 3 430 k m<sup>3</sup> and 151 k m<sup>3</sup> respectively.

As for the entire import of raw timber in 2014, the import in the same categorisation as the export amounted to 3 563 k m<sup>3</sup> as compared to 3 541 k m<sup>3</sup> in 2013. In spite of higher imports in 2014 as compared to 2013, the demand for these commodities persisted in the Czech wood-processing sector. Hence, 38.4% of the coniferous round wood and 85.2% of domestic coniferous sawn wood were exported in 2014.

Positive price development of all timber and growing demand for this commodity abroad also in 2014 caused the export of raw material to grow. In parallel, they caused the harvest and timber supplies to the Czech economy to grow, even though the growth was negligible. E.g. coniferous round wood and coniferous pulp wood supplies to the Czech economy grew only by 0.4% and 7.8% respectively in 2014. Nevertheless, in some regions, domestic sawmills and paper factories suffered from a shortage. Therefore, the commodities were imported from Slovakia, Poland and Germany.

**b) Market with round wood, incl. pole and mining timber in 2014.** The round wood, the basic timber for sawmills, originates mainly from domestic supplies in the Czech Republic. Czech sawmills import timber only exceptionally and they always compensate high exports of the round wood realised by foreign-based forest owners.

The production (supplies) of raw coniferous and broad-leaved round wood amounted to 8 548 k m<sup>3</sup> and 8 645 k m<sup>3</sup> in 2014 and 2013 respectively. The coniferous round wood supplies amounted to 7 955 k m<sup>3</sup> and 7 925 k m<sup>3</sup> in 2014 and 2013 respectively. Due to the lower demand for broad-leaved round wood, the supplies dropped by -7.6% in year-on-year comparison, i.e. they amounted only to 593 k m<sup>3</sup> as compared to 720 k m<sup>3</sup> in 2013.

In 2014, the export of coniferous round wood amounted to 3 058 k m<sup>3</sup> as compared to 2 797 k m<sup>3</sup> in 2013 and as compared to 2 571 k m<sup>3</sup> in 2012. The export recorded a year-on-year growth of 9.3% and 8.8% in 2014 and 2013 respectively. Nevertheless, e.g. Austria exported by -9.1% of this commodity less in 2014 as compared to 201. The import amounted to 1 044 k m<sup>3</sup> as compared to 1 146 k m<sup>3</sup> in 2013 and as compared to 1 000 k m<sup>3</sup> in 2012; i.e. 13.1% of the annual production was imported in 2014 as compared to 14.5% in 2013.

In 2014, the broad-leaved round wood export amounted to 156 k m<sup>3</sup> as compared to 234 k m<sup>3</sup> in 2013 and as compared to 233 k m<sup>3</sup> in 2012. Hence, the export recorded a year-on-year decrease by 66.6% due to the dropping demand in 2014. The import amounted to 149 k m<sup>3</sup> as compared to 108 k m<sup>3</sup> in 2013. 25.1% of the annual production was imported in 2014 as compared to 15% in 2013.

In 2014, the domestic consumption of coniferous round wood amounted to 5 941 k m<sup>3</sup> as compared to 6 274 k m<sup>3</sup> in 2013, i.e. a year-on-year decrease by 333 k m<sup>3</sup>. Over the last three years, the domestic consumption has been dropping by 399 k m<sup>3</sup> per year and since 2011 even by 643 k m<sup>3</sup> per year, which is no positive development for the Czech Republic. The domestic consumption of coniferous round wood dropped year-on-year by -1% in 2014 but by -5.3% in 2013.

The domestic consumption of broad-leaved round wood is oscillating in the Czech Republic. In 2014, it amounted to 586 k m<sup>3</sup> as compared to 594 k m<sup>3</sup> in 2013 and as compared to 567 k m<sup>3</sup> in 2012.

The production of broad-leaved round wood from domestic forests amounted to 720 k m<sup>3</sup> in 2013, but only to 593 k m<sup>3</sup> in 2014. The domestic consumption figures reflect the impact of foreign trade. The domestic consumption of broad-leaved round wood grew year-on-year by 5.4% in 2013 but in 2014, it dropped by -1.3%.

The share of export of coniferous round wood in the overall production amounted to 38.4% in 2014 as compared to 35.3% in 2013. The share of export of broad-leaved round wood in the overall production amounted to 26.3% in 2014 as compared to 32.5% in 2013

Similarly to the 2013 market report, these two figures make the Czech Republic one of the biggest exporters worldwide of this green commodity in relation to the domestic harvest; however, the situation is not improving. In 2013 and 2014, the ratio between export and harvest of the coniferous round wood amounted to the following figures in the countries or world regions listed below: Czech Republic exported 35.3% and 28.4% of its annual harvest of coniferous round wood in 2013 and 2014 respectively. Austria 5 % and 4 %, Finland 1,7 % and 1.9 %, France 12 % and 9.8 %, Germany 6.5 %, and 5.9%, Poland 10.4 % and 10.9 % and Rumania 6.4 % and 5.2 %; North America (incl. USA and Canada) 5.8% in 2013 and 5.5 % in 2014, the Russian region (Russia, Belarus, Ukraine and Kazakhstan) 14 % in 2013 and 15.1 % in 2014 and Europe (EU and other countries in the region) 7.9% in 2013 and 8.5 % in 2014.

### **c) Market with pulp wood incl. ground wood in 2014.**

In 2013 and 2014, the production of coniferous and broad-leaved pulp wood amounted to 4 504 k m<sup>3</sup> and 4 817 k m<sup>3</sup> respectively. In 2012, the total production amounted to 4 420 k m<sup>3</sup>. The production recorded a year-on-year increase by 7% in 2014, as compared to 1.9% in 2013.

The production of coniferous pulp wood has been growing over the last three years in the Czech Republic, namely in 2014 by 7.8 % to the total of 4 351 k m<sup>3</sup> and in 2013 by 2.2 % to the total of 4 037 k m<sup>3</sup>. In 2012, the production of coniferous pulp wood amounted to 3 949 k m<sup>3</sup>. The production of broad-leaved pulp wood amounted to 471 k m<sup>3</sup>, 467 k m<sup>3</sup> and 466 k m<sup>3</sup> in 2012, 2013 and 2014 respectively. The production of broad-leaved pulp wood recorded a year-on-year decrease of 5 k m<sup>3</sup>, i.e. by -1.1 % as compared to 2012.

The Czech Republic imported 1 014 k m<sup>3</sup>, 1 020 k m<sup>3</sup> and only 749 k m<sup>3</sup> of coniferous pulp wood in 2012, 2013 and 2014 respectively. The year-on-year decrease of the growth amounted to 0.6% in 2014; in 2013 there was a growth of 36.2%. The import amounted to 23.3% of the total production in 2014 and to 25.3% in 2013. The export of coniferous pulp wood amounted to 1 543 k m<sup>3</sup> and 1 189 k m<sup>3</sup> in 2014 and 2013 respectively. This means a year-on-year export growth of 29.8%, but in 2013 the growth amounted to 36.2%. The export amounted to 1 040 k m<sup>3</sup> in 2012.

The import of broad-leaved pulp wood amounted to 232 k m<sup>3</sup> and 168 k m<sup>3</sup> in 2014 and 2013 respectively. In 2012, only 36 k m<sup>3</sup> of broad-leaved pulp wood were imported. The import has been growing inadequately as compared to 2012 figures, i.e. in 2014 it was 6.4 times bigger, i.e. by 196 k m<sup>3</sup>. The import of this commodity was growing in the individual years as follows: in 2014 by 38.1% year-on-year and in 2013 4.7 times. Czech Republic exported 174 k m<sup>3</sup> of broad-leaved pulp wood as compared to 72 k m<sup>3</sup> in 2013. In 2012, the export amounted only to 68 k m<sup>3</sup>. The export of broad-leaved pulp wood grew mainly after 2013; in 2014 2.6 times of the 2012 figures.

The domestic consumption of coniferous pulp wood has been the same since 2013 and in 2014, it amounted to 3 822 k m<sup>3</sup> as compared to 3 868 k m<sup>3</sup> in 2013 and as compared to 3 658 k m<sup>3</sup> in 2012. The domestic consumption of broad-leaved pulp wood amounted to 524 k m<sup>3</sup> in 2014 as compared to 563 k m<sup>3</sup> in 2013 and as compared to 439 k m<sup>3</sup> in 2012 due to high imports.

Similarly to round wood, it is suitable to compare the annual export with the annual domestic harvest and to compare the figures with some EU countries. When comparing the 2014 figures with the 2013 ones, Czech Republic exported 35.5% of its annual coniferous pulp wood production and 29.5% in 2013; Austria exported 8.9 % in 2013 and 10.7 % in 2014, Finland exported 2.1 % in 2014 and 1.7% in 2013, France 29.3 % and 31.7 %, Germany 8.6 % and 8.6 %, Poland 9 % and 8.4 % and Rumania 15.8 % and 14.3 %; North America exported 0.6 % of its annual coniferous pulp wood production in 2014 and 0.7 % in 2013; Russia 19.2 % and 18.1 %, Europe exported 10.9 % in 2014 and 10.8 % in 2013.

**d) Breakdown of coniferous and broad-leaved round wood in 2014.** The domestic consumption of coniferous round wood has recorded a decrease due to the year-on-year increasing exports and basically stagnating production lately. Therefore, the supplies to be broken down by Czech sawmills are dropping. This results in lower break down of round wood, sawn wood production as well as production of high added value products.

The impact of this adverse development in this wood processing sector is disturbing as shown by the data below.

In 2014, the dropping break-down of sawn wood amounted year-on-year to -4.5 % as compared to -1.5 % in 2013. The negative impact lies in the wood processing enterprises being located in areas without developed industry, they are not equipped with modern technologies, machines and devices and hence they cannot compete with global companies. The entrepreneurs rather close their operations due to lack of income or bankruptcy which they have to face. This again results in unemployment and it has great impact and consequences for the population.

The total round wood production amounted to 8 548 k m<sup>3</sup> in 2014 and 6 400 k m<sup>3</sup> thereof were broken down and the total of 3 861 k m<sup>3</sup> of coniferous and broad-leaved sawn wood were produced. The total of 3 610 k m<sup>3</sup> of coniferous and 251 k m<sup>3</sup> of broad-leaved sawn wood was produced. The year-on-year drop in the production dynamic amounted to 4.4 % and -5.2 % in 2013 and 2014 respectively. As for the coniferous and broad-leaved sawn wood, the year-on-year drop reached -4% and -9.4% respectively.

In 2014, the total of 3 075 k m<sup>3</sup> and 569 k m<sup>3</sup> of coniferous sawn wood were exported and imported respectively. The domestic consumption of this sawn wood amounted to 1 104 k m<sup>3</sup> and 934 k m<sup>3</sup> in 2014 and 2013 respectively. In 2012, the domestic consumption amounted to 1 589 k m<sup>3</sup>.

As for broad-leaved sawn wood, the total of 224 k m<sup>3</sup> was exported and 177 k m<sup>3</sup> were imported. In 2013, the domestic consumption reached 214 k m<sup>3</sup> broad-leaved sawn wood and the export and import amounted to 243 k m<sup>3</sup> and 180 k m<sup>3</sup> respectively.

The ration between the export and production of coniferous sawn wood amounted to 85.8 % and 85.2 % in 2014 and 2013 respectively. Let alone that the trade with this commodity is profitable for every country, there is no other country showing such a big disproportion between the export and domestic consumption, moreover with dropping imports. The comparison of the ration shows that Austria reported 61.1 % and 54.9 % in 2013 and 2014 respectively; Finland reported 63.2 % in 2013 and 69.3 % in 2014, France 11.8 % and 12 %, Germany 31.3 % and 33.3 %, Poland 12.2% and 13.8 % and Rumania 69.4 % and 72.2 %; North America reported 33.2 % in 2013 and 34 % in 2014, Russia 59.9 % and 60.1 % and Europe 47.7 % in 2013 and 48.4 % in 2014.

Similarly to coniferous sawn wood, also the ratio between the export and production of broad-leaved sawn wood in the Czech Republic is high. This ratio amounted to 87.7 % in 2013 and 89.2 % in 2014. Austria reported a high ratio, but as compared to the Czech Republic it amounted only to 80 % in 2013 and 81.3% in 2014, Finland reported 25 % in both years, France 23.5 % in 2013 and 30 % in 2014, Germany 55.2 % and 65 %, Poland 20 % and 19.6 % and Rumania 55.1 % and 55.9 %; North America reported 20.9 % in 2013 and 21.2 % in 2014, Russia reported 36.6 % in 2013 and 36.8 % in 2014 and Europe 38.4 % and 38.8% in 2014.

**e) Market with fuel wood in the Czech Republic in 2014.** In 2014 and 2013, the total production of fuel wood amounted to 2 111 k m<sup>3</sup> and 2 182 k m<sup>3</sup> respectively. In 2014, the total production of coniferous and broad-leaved fuel wood amounted to 1 166 k m<sup>3</sup> and 945 k m<sup>3</sup> respectively. In 2013, the total production of coniferous and broad-leaved fuel wood amounted to 1 267 k m<sup>3</sup> and 915 k m<sup>3</sup> respectively. The year-on-year production of coniferous fuel wood amounted to 8% and the broad-leaved fuel wood production grew by 3.3% year-on-year.

In 2014, the total import of coniferous and broad-leaved fuel wood amounted only to 22 k m<sup>3</sup> as compared to 56 k m<sup>3</sup> in 2013. The export of all fuel wood amounted to 69 k m<sup>3</sup> and 172 k m<sup>3</sup> in 2014 and 2013 respectively. The year-on-year decrease in import reached 60.7% and -1.7% in import. The domestic consumption of fuel wood amounted to 1 964 k m<sup>3</sup> in 2014 as compared to 2 066 k m<sup>3</sup> in 2013 and 1 958 k m<sup>3</sup> in 2012. Nevertheless, the Czech market was fully supplied with fuel wood in 2014.

## **5. Certification of forest products in the Czech Republic in 2014.**

The main idea of establishing certification systems in the Czech Republic – same as worldwide – is the support of sustainable forest management. The sustainable forest management was defined at the Second Ministerial Conference on Protection Forests in Europe, in Helsinki in 1993, as the management and use of forests and forest land in a way and scope that maintains their biodiversity, production and regeneration capacities, vitality and ability to comply with relevant ecological, economic and social functions on local, national and international level which do not harm other ecosystems now and in the future.

In the Czech Republic, There are two certification systems - FSC (Forest Stewardship Council) and PEFC (Programme for the Endorsement of Forest Certification Schemes).

**a) PEFC Czech Republic.** Over 264 mil. ha of forest were certified worldwide under the PEFC system. This means an increase by 6 mil. ha, i.e. 2.3%, as compared to 2013. In the Czech Republic, over 70% of forests are certified (450 individual forest owners) and 218 entities participate in the processing chain. In the Czech Republic, the Czech PEFC system assessed new Czech standards by the international independent certification body, Form International, and they are approved by the of International PEFC Council. The requirements of the most common forest certification system were adapted to the local priorities and conditions. Then, the entire Czech Republic was re-certified according to the new standards.

Once the EU regulation no. 995/2010, known also as the European Union Timber Regulation, was without delay transposed into Czech legislation, the PEFC certification in the Czech Republic focused on implementing this EU legislation in first place. The European Union Timber Regulation covers import and bringing illegally imported wood and wooden products on the EU markets, i.e. on the Czech market. Companies and enterprises importing or bringing timber on the Czech market for the first time are obliged to have so called due diligence system in order to prevent criminal activities. In the Czech Republic, the European Union Timber Regulation applies also to the domestic timber production, i.e. also to wood and wooden products imported to the Czech Republic. Czech Republic succeeded in coping with these issues. In 2014, concepts for promotion of products marked with PEFC ČR logo with BAUHAUS hobby market were elaborated intensively. Many Czech forest owners – regardless the ownership type and forest size – showed interest in PEFC certification and in acquiring independent confirmation of correct forest management.

**b) FSC® Czech Republic.** The FSC® ČR institution is the Czech representative of the international organisation Forest Stewardship Council® (FSC) that created and maintains the certification system for forest and wood-based products under which over 183 mil. ha are certified. There are 28 248 entities certified in the follow-up processing chain. FSC® ČR provides forest owners, foresters and wood processors in the Czech Republic with universal and supporting information service relating to the certification. It also focuses on the consumers and their education. Also FSC® ČR adapted to the provisions of the Timber Regulation. This is an excellent tool both for foresters and wood processors when documenting the legality of timber.

In general, the orientation and the activities of both certification organisations in the Czech Republic were similar and they both achieved equal results in 2014. FSC created also web pages with information about workshops for public. At the end of 2014 the following forest estates were certified by FSC® ČR: Mendel University Brno, Masarykův les Křtiny School Forest Enterprise, Town Hall of the Capital city of Prague, Administration of National Park Giant Mountains and the group certification of Nestátní lesy Svitavsko. The number of certificates in the follow-up processing chain grew from 189 in

2013 to 218 in 2014. The area of certified forests was refined due to some inaccuracies incurred in 2013.

## **6. Market with other wooden products in the Czech Republic in 2014**

In the Czech Republic, this market with sophisticated products concerns basically the market with agglomerated products such as particle boards incl. OSB, fibreboards and plywood.

**a) Particle boards incl. OSB in total.** In the Czech Republic, the production of this commodity amounted to 1 036 k m<sup>3</sup> in 2014. In 2008, the Czech Republic produced 1 436 k m<sup>3</sup> of particle boards incl. OSB. In 2010, the production dropped by 351 k m<sup>3</sup> as compared to 2008. In 2011, 2012 and 2013 the production of this commodity amounted to 1 052 k m<sup>3</sup>, 1 033 k m<sup>3</sup> and 1 032 k m<sup>3</sup> respectively. In 2014, the production recorded a year-on-year growth, however, only by 0.4%. As compared to 2008 and 2010, the production of this highly sophisticated product dropped by -27.9% and -4.5% respectively.

The export of particle boards incl. OSB amounted to 1 342 k m<sup>3</sup>; this means the year-on-year growth by 5.2% in 2014. The export amounted to 1 335 k m<sup>3</sup> in 2012 and 2013. In 2014, the import of this product amounted to 690 k m<sup>3</sup>, i.e. by 8.2 % more as compared to 2013. In 2013, there was a year-on-year growth by 32.9%. The domestic consumption of this product amounted to 384 k m<sup>3</sup>, i.e. a year-on-year growth by 14.6 % in 2014. The growth of the domestic consumption was immense between 2012 and 2014. Due to the low import, namely 480 k m<sup>3</sup> the dynamic grew by up to 88.2 %.

**b) Fibreboards** are different from the particle boards issue in the Czech Republic. Firstly, its annual production is traditionally low as compared to particle boards incl. OSB and secondly this product is traded with foreign countries with different balance as compared to particle boards incl. OSB. The annual production of fibreboards amounts to 41 k m<sup>3</sup>, third year in a row; its import is six times higher as its production; the exports are 2.2 times higher as compared to the production of fibreboards. The development of this indicator shows that the production of fibreboards is not profitable in the Czech Republic. The annual imports are stable and range from 235 to 236 k m<sup>3</sup>. The exports of fibreboards range around 91 k m<sup>3</sup>. In 2014, the export and import amounted to 91 k m<sup>3</sup> and 236 k m<sup>3</sup> respectively. The domestic consumption amounted to 186 k m<sup>3</sup> in 2014 and it grew by 0.5% as compared to 2013.

**c) Plywood.** In the Czech Republic, the production of plywood has been growing gradually over the last three years. In 2012, 2013 and 2014 the production totalled to 178 k m<sup>3</sup>, 180 k m<sup>3</sup> and 181 k m<sup>3</sup> respectively. The annual production grew by one half to one and half per cent. In 2014, there was a year-on-year growth by 0.6% and the production reached 181 k m<sup>3</sup>. The import grew by 5.1% year-on-year and totalled to 82 k m<sup>3</sup>. In 2014, the export of plywood reached 124 k m<sup>3</sup>, i.e. an annual growth by 4.2%. The domestic consumption of plywood amounted to 139 k m<sup>3</sup> in 2014, i.e. the same figures as in 2013. The export and import of plywood amounted to 68.5% and 45.3% of the production in 2014.

## **7. Issues related to wood energy production in the Czech Republic in 2014.**

The Directive of the European Parliament and Council no. 2009/28/EC on the promotion of the use of energy from renewable sources stipulates the target of 20% share of energy produced from renewable sources used in the transportation for the entire EU by 2020. EC set for the Czech Republic the target of the minimum of 13% share of renewable energy in the gross final energy consumption. Meeting this target must provide also for at least 10% share of renewable sources in transportation.

The Czech Biomass Action Plan is a follow-up of the updated National Energy Concept defining the role of biomass in the main areas of energetic use of biomass and it proposes suitable measures for sustainability of this area to 2020. Contrary to the National Action Plan for Renewable Energy Sources, it does not stipulate a binding volume of renewable energy, but it gives a realistic potential of individual biomass types for efficient energy utilisation. National Action Plan for Renewable Energy Sources assumes that the shares defined by the European Commission, namely 14% of renewable energy in the gross final energy consumption and 10.8% share of renewable energy in gross final consumption in transportation, will be reached. The objectives of the action plan are to meet and to exceed the 2020

target values set forth under the Directive and if meeting the 23% share of renewable energy in the gross final energy consumption in the respective period no further operating support shall be granted to any new renewable sources in the next period. When adopting the National Action Plan for Renewable Energy Sources, Czech Government also took notice of the update of the Czech National Energy Concept.

One should not omit that the Czech Government, when taking notice of the update of the Czech National Energy Concept, it also decided to incorporate the concept in the environmental impact assessment; it also took notice of the key elements of the energy strategy formulate under the Czech National Energy Concept. The concept comprises the strategy of energy production to 2040. The main pillars of the strategy comprise the boost of nuclear energy production incl. the maximum use of the waste heat, reducing coal energy production, development of efficient energy from renewable sources with gradual reduction of financial support of new sources and focusing on reaching the renewable energy share in electricity production exceeding 15 % and last, but not least, use of waste in facilities using waste for energy production and to reach up to 80% of the combustible part of the sorted waste by 2040.

### **8. Added value of wood products in the Czech Republic.**

The added value of the entire wood-processing sector production has been fluctuating in the last years. This demonstrates mainly the year-on-year growth of the added value per employee in wood-processing industry. In 2009, the year-on-year growth amounted only to +0.9%; in 2010 the year-on-year growth amounted to +6.5% and in 2011 they reached red figures, namely -0.7%. Since 2012, the year-on-year growth of added value per wood-processing industry employee has been positive, but the values vary in individual years. In 2012, 2013 and 2014, the year-on-year growth of the value added per employee in wood-processing industry amounted to +0.3 %, +5.8 % and +10.5 % respectively.

The ratio between the achieved average of the value added per employee in wood-processing industry and the average of the manufacturing industry is not oscillating as in wood-processing industry. Nevertheless, since 2009, except for 2013, the ratio shows dropping values. Whereas in 2009 the ratio between the value added per employee in wood-processing industry and the value added per employee in manufacturing industry amounted to 91.7%, in 2010 the ratio amounted only to 88.6%, in 2011 to 83% and in 2014 the ratio dropped to 81.7%, i.e. the value from 2012.

When comparing the year-on-year growth of value added per employee in wood-processing industry, the year-on-year growth in absolute figures differ in the same period. This concerns also value added both in wood-processing industry and in manufacturing industry. In both cases the dynamics of both added value growths was less favourable as the dynamics of the annual growth of value added per employee. As for the value added per employee in wood-processing industry, the drops of this indicator were negative from 2008 to 2012.

The development trends of the annual value added in current prices measured in year-on-year increments from 2007 to 2014 and monitored in individual years demonstrate the situation of the economic position in time of the entire Czech wood-processing sector mainly in relation of the results of this indicator and the results of the entire Czech manufacturing industry.

In 2007, the development starting from 2006 shows that the dynamics of year-on-year growths of value added in wood-processing industry reported a very favourable situation as compared to the dynamics of this indicator in manufacturing industry. The year-on-year growth in wood-processing industry and in manufacturing industry reported a growth by +7.3 % and +7.7 % respectively. This was a very good result for wood-processing industry; however, it did not last for long.

In the next year, the economic power of both areas dropped due to the crisis and the wood-processing industry recorded year-on-year drops of value added when compared to the manufacturing industry. There were less new investments, the price of the labour force grew and also other factors contributed to the sector losing its competitiveness. One can only hope that the development will be stopped and that the 2014 trend will continue also in next years.

The cooperation and joint efforts of both forest production and the manufacturing industry with contribution of EU sectors will be necessary to provide for the needed competitiveness and efficient

marketing of Czech wood-based products on the Czech and international market in the years to come. The issue of financing play the key role in achieving higher competitiveness mainly in the wood-processing sector by implementing and installing highly efficient technics and technologies.

### **9. Wood pulp and paper in the Czech Republic in 2014.**

In the Czech Republic, the wood consumption for wood pulp amounted to 4 010 k m<sup>3</sup> of raw coniferous timber in 2014. The volume consisted of 2 772 k m<sup>3</sup> of coniferous pulp wood and 1 238 k m<sup>3</sup> of wooden chips and coniferous splinters.

The consumption of pulp wood grew by 87 k m<sup>3</sup> in 2013 as compared to 2012 and it amounted to the total of 2 374 k m<sup>3</sup> (i.e. by 3.8 %); in 2014 the consumption reached 2 772 k m<sup>3</sup>, i.e. a year-on-year growth by 16.8% namely 398 k m<sup>3</sup>.

The consumption of wooden chips and coniferous splinters grew by 31 k m<sup>3</sup> (i.e. by 2.7 %) in 2013 as compared to 2012; in 2014 the consumption reached 1 238 k m<sup>3</sup>, i.e. a year-on-year growth by 2.9% namely 398 k m<sup>3</sup>.

The paper industry managed by international value chains without any interference of the Government is developing according to the need of the Czech economy. The paper and pulp wood has been dropping over the last three years. In 2012, 2013 and 2014, the paper industry produced 692 k, 449 k and 445 k tons of pulp respectively. Chemical pulp production amounted to 689 k, 445 k and 442 k tons in 2012, 2013 and 2014 respectively. When comparing 2012 and 2014 figures, there was a drop by significant -35.7 %, i.e. -247 k tons in 2014. As for chemical pulp, the drop of the production was same as the total production between 2012 and 2014 as the total production remained unchanged and amounted to 3 k tons per year.

As already presented in previous market reports, the structure of the production of paper industry does not correspond to the domestic demand. The paper consumption is higher as the actual Czech production. The production does not correspond to the demand and the majority of products have to be imported (graphic paper and hygiene goods). This results in the foreign trade balance of the Czech Republic.

### **10. Evaluating the ecological and carbon footprint in the Czech Republic.**

Czech Republic has own concept called Strategic Framework for Sustainable Development of the Czech Republic for assessing the overall ecological footprint, dominated by the carbon footprint.

Along with this document, the Czech Information Environmental Agency and the Czech Statistical Office also collect data on health and education that are combined with data on gross domestic product in order to provide information for discussion on extra-economic dimensions of the quality of life in the Czech Republic, as done by UN, so called Human Development Index. In parallel, the Charles University Environment Centre cooperates with National Footprint Accounts on the methodology and verification of national accounts of ecological footprint and bio capacity.

As for carbon footprint, it focuses on the amount of greenhouse gases produced by our everyday lives. There is no special bio capacity defined for the carbon footprint and one assumes that CO<sub>2</sub> (as the waste product of the human society) will be absorbed by the available bio capacity of individual countries. In the Czech Republic, data on carbon footprint are developing promisingly also on lower levels. The numbers of companies performing such activities is growing. Hence, the number of cities and towns that have their carbon footprint calculated grew and they adopt measures for its reduction. Carbon footprint, the dominant part of the ecological footprint, defines the requirements of the bio productive area for absorbing greenhouse emissions and makes up 60% of the total ecological footprint. Therefore, its accommodation would require much higher bio capacity excess as it is currently available. The remaining bio capacity of other parts of the ecological footprint allows the absorption of only 6% of the carbon footprint and is to be compensated by the environment.

As for forest production, these issues and the development trends are covered by the national Forest Programme II. In 2014, the net drops in the total greenhouse gas emissions were reduced by 7.2 mil. tons of CO<sub>2</sub>, i.e. approx. greenhouse gas emissions produced by the agriculture. E.g. the equivalent agriculture land factor, which covers over the half of the Czech Republic, amounts to 2.51, i.e. the land is 2.51 times

higher as the average productive land. Higher yields are achieved due to energy and material inputs into agriculture, which leads to higher carbon footprint. Hence, one can assume that the drops in the forestry will be declining in the future. This will be caused mainly by the age structure of forest stands and planned increase of the share of broad-leaved tree species and hence the carbon storage in long term. In the Czech Republic steps are taken so that the reduction of carbon footprint pays off on any level.